



BAB TECHNOLOGIE GmbH

CUBEVISIONMODULE

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TABLE OF CONTENTS

1	Introduction.....	9
1.1	Range of functions.....	10
1.2	Technical data	11
1.3	Scope of delivery	12
1.4	Updates	12
1.5	Important information on the operating instructions	12
2	Assembly.....	13
2.1	LED status.....	14
2.2	Initial operation	15
2.2.1	System requirements	15
2.2.2	Establishing connections.....	16
2.2.2.1	BAB STARTER.....	16
	BAB STARTER installation.....	16
	Run BAB STARTER	16
	Devices in the foreign network area	17
	Devices in the same network area	18
2.2.2.2	Adjusting the network settings of your computer	18
2.2.2.3	Adjusting the network settings of the CUBEVISION MODULE.....	21
	Port settings	23
2.2.2.4	Calling up the CUBEVISION MODULE web interface	24
2.3	Initial operation of CUBEVISION MODULE KNX	26
2.4	Initial operation of CUBEVISION MODULE EnOcean	28
	Technical details about the EnOcean Interface.....	28
2.5	Language settings.....	28
3	CONFIGURATION	29
3.1	Logging in	29
3.2	General.....	30
3.3	Network.....	32
3.4	CUBEVISION Editor.....	33
3.4.1	Using the CUBEVISION Editor with BAB STARTER	34
3.4.2	Java settings / preparations on the client PC.....	35
3.5	EnOcean Editor	37
3.5.1	Using the EnOcean Editor with BAB STARTER.....	38
3.6	KNX.....	40
	Address Settings (virtual group addresses)	42
	Test KNX Interface	43
	EIS3 Time Sender	44
	EIS4 Date Sender	44
	DPT19.001 Date-and Time Sender	44
3.7	User administration.....	45
	Disabling Password Recovery	45
3.8	Remote Servicing.....	46
3.9	Backup / Restore	47
	Creating a backup	48
	Restoring a backup	48
3.10	SYSTEM / FIRMWARE UPDATE	49
4	CUBEVISION visualization.....	51
4.1	Using CUBEVISION in A browser	51
4.2	Configuring the presentation	52
4.3	Using in the CUBEVISION APP	54
	Limitation of project sizes on mobile devices	56
5	CUBEVISION navigation	57
5.1	CUBEVISION in tablet presentation	57



5.1.1	Quick navigation	58
5.1.2	Quick Floor Navigation.....	60
	Configuration of the floor designation	60
5.1.3	Instant Control Panel [ICP]	61
5.1.4	Extended Control Panel [ECP]	62
5.1.5	Extended Element View [EEV]	63
5.1.6	Central View	64
5.2	CUBEVISION in the phone presentation	66
5.2.1	Navigation	66
5.2.2	Central View	68
5.2.3	Favourites function.....	69
5.2.4	Column separator	70
6	Structure of the CUBEVISION Editor	71
6.1	The "File" menu	71
	Localisation	71
	Address layers	71
	Erasing history table	72
	Erasing state-table	73
6.2	The "Extras" Menu	74
	ESF Upload & data maintenance	74
	Image transfer.....	76
	History & state-table	77
	Sonos UPnP.....	78
6.3	Configure CUBEVISION	79
6.3.1	Building.....	80
6.3.2	Level.....	81
6.3.3	Room	82
6.3.4	Operating elements	83
6.3.5	Background image	83
6.3.6	Room icon	83
6.4	User administration.....	84
	Authorisations	85
6.5	Saving the configuration	87
7	CUBEVISION control elements	88
7.1	Standard Options for all control Elements	88
7.2	Control Elements	89
7.2.1	Column break.....	90
7.2.2	Switch/Dimmer.....	91
7.2.3	Pushbutton	93
7.2.4	Temperature/RTR.....	95
7.2.5	Jalousie	98
7.2.6	Window contact.....	100
7.2.7	RGB Control	102
	RGB control in the phone presentation	104
7.2.8	camera.....	106
	Camera.....	108
7.2.8.1	Support for Axis camera.....	108
7.2.9	Multimedia	109
	Manual configuration	110
	UPnP (Sonos)	111
	Squeezebox Controller	111
	Multimedia control in the phone presentation	112
7.2.10	Weather (lokal KNX).....	114
7.2.11	Weather (Internet).....	116
	Weather (Internet) in the phone presentation	117
7.2.12	Values / Diagrams	119
	Long Term Database.....	124
	Values / diagrams in the phone presentation	127
7.2.13	Text Display.....	129



7.2.14	Group switch / Scenes	130
7.2.15	Tunealbe White.....	132
8	SMART FUNCTION CREATOR.....	134
	SCENES AND SMART HOME FUNCTIONS DIRECTLY IN THE VISUALIZATION.	134
	Drop Zone	135
	Scenes Overview.....	136
	Scenes Trigger.....	138
	Trigger Types.....	138
	userspezified scenes	141
9	Launchpad.....	142
10	Usage of the EnOcean Editor	144
10.1	Operating principle EnOcean.....	144
10.2	EnOcean Configuration	145
10.2.1	EnOcean Configuration	145
10.3	EnOcean Settings.....	146
10.4	Adapting the EnOcean device.....	146
10.5	Emulating EnOcean devices	148
	Example: Emulate temperature sensor	149
10.6	KNX Addressing	149
10.7	Configuration example for EnOcean button	150
10.7.1	CUBEVISION MODULE as the receiver (actuator).....	150
10.7.2	CUBEVISION MODULE emulates EnOcean push button	150
11	Remote Access – plug & play VPN.....	151
12	Information.....	152
13	Appendix	153
13.1	Icons for controls	153



LIST OF FIGURES

Figure 1: CUBEVISION MODULE KNX	9
Figure 2: Front of CUBEVISION MODULE KNX	13
Figure 3: BAB STARTER icon	16
Figure 4: BAB STARTER – start menu	17
Figure 5: Entry with foreign network settings	17
Figure 6: Device details	17
Figure 7: Display of the device details	17
Figure 8: Entry in the same subnet area	18
Figure 9: Windows Network and Sharing Center	18
Figure 10: "LAN Connection" status	19
Figure 11: Properties of the LAN connection	19
Figure 12: TCP/IPv4 properties	20
Figure 13: Start page	21
Figure 14: Login dialog	21
Figure 15: CUBEVISIONMODULE main menu	22
Figure 16: CUBEVISIONMODULE network configuration	23
Figure 17: CUBEVISION MODULE start page	24
Figure 18: Logging in to the web interface	24
Figure 19: "Configuration" menu item	25
Figure 20: Back to main menu	25
Figure 21: KNX configuration	26
Figure 22: KNX – Changing the physical address	26
Figure 23: KNX – Assigning the KNXnet/IP tunneling address	27
Figure 24: Saving the configuration	27
Figure 25: Logging in	29
Figure 26: Configuration - General	30
Figure 27: Resolve Location	30
Figure 28: Network configuration	32
Figure 29: Configuration – CUBEVISION Editor	33
Figure 30: BAB STARTER – CUBEVISION MODULE menu	34
Figure 31: BAB STARTER – Starting the CUBEVISION Editor	34
Figure 32: BAB STARTER – CUBEVISION Editor login	34
Figure 33: CUBEVISION Editor started	35
Figure 34: Updating Java	35
Figure 35: Deactivating temporary files	36
Figure 36: Expanding Java main memory	36
Figure 37: Configuration – EnOcean Editor	37
Figure 38: BAB STARTER – CUBEVISION MODULE menu	38
Figure 39: BAB STARTER – Starting the EnOcean configuration	38
Figure 40: BAB STARTER – EnOcean configuration login	38
Figure 41: EnOcean Editor	39
Figure 42: KNX Configuration	41
Figure 43: Address setting (virtual group addresses)	42
Figure 44: Complete KNX configuration	43
Figure 45: Zeitsender und Datumsender	44
Figure 47: User Administration	45
Figure 48: Remote servicing	46
Figure 49: Saving the settings	47
Figure 50: Downloading the backup	48
Figure 51: Downloading the CUBEVISION firmware image	49
Figure 52: Configuration – System	49
Figure 53: Update file chosen	50
Figure 54: Keeping the network settings	50
Figure 55: Performing the update	50
Figure 56: Tablet presentation	51
Figure 57: Phone presentation, room navigation	51
Figure 58: Phone presentation	51
Figure 59: Calling up CUBEVISION	51
Figure 60: CUBEVISION presentation settings	52
Figure 61: CUBEVISION APP icon	54
Figure 62: CUBEVISION APP start screen	54
Figure 63: CUBEVISION APP server selection	55
Figure 64: CUBEVISION APP project (building) selection	55
Figure 65: CUBEVISION APP – First Visualization Page	56



Figure 66: Horizontal finger movement for shifting the room.....	57
Figure 67: Vertical finger movement for shifting levels	58
Figure 68: Starting Quick Navigation.....	58
Figure 69: View of Quick Navigation	59
Figure 70: CUBEVISION with Quick Floor Navigation	60
Figure 71: CUBEVISION Editor – Floor designation for Quick Floor Navigation	60
Figure 72: Instant Control Panel (seen on the right side).....	61
Figure 73: ICP expansion.....	62
Figure 74: Opening of Extended Control Panel. Click on "more..."	62
Figure 75: Extended Control Panel	62
Figure 76: Example Internet Weather.....	63
Figure 77: Example „Internet Weather“ in Extended Element View.....	63
Figure 78: Adding category	64
Figure 79: Central View.....	64
Figure 80: Central View visualization.....	65
Figure 81: Room navigation.....	66
Figure 82: Opening room navigation	66
Figure 83: Sliding horizontally	67
Figure 84: Sliding vertically	67
Figure 85: Touching	67
Figure 86: Central View.....	68
Figure 87: Adding category	68
Figure 88: Favourites.....	69
Figure 89: Column separator	70
Figure 90: Address layers.....	71
Figure 91: Clear Telegram History	72
Figure 92: Clear State Table.....	73
Figure 93: ESF Upload & Data maintenance.....	74
Figure 94: Maintaining ESF data.....	75
Figure 95: Editor - Image transfer	76
Figure 96: Editor - Image transfer	76
Figure 97: Record & State Table	77
Figure 98: Start Sonos UPnP Configuration.....	78
Figure 99: Sonos UPnP configuration.....	78
Figure 100: CUBEVISION Editor.....	79
Figure 101: configuration window for buildings	80
Figure 102: configuration window for levels.....	81
Figure 103: configuration window for rooms	82
Figure 104: Operating elements.....	83
Figure 105: Opening the security settings	84
Figure 106: Adding / deleting users.....	84
Figure 107: Managing the user administration	84
Figure 108: Security settings - Granting access to buildings.....	85
Figure 109: Security settings - Granting access to rooms.....	85
Figure 110: Save the CUBEVISION configuration	87
Figure 111: Column Break	90
Figure 112: Extended Control Panel [ECP].....	90
Figure 113: Element Switch/Dimmer.....	91
Figure 114: configuration window of switching/dimming.....	92
Figure 115: Element pushbutton	93
Figure 116: configuration window of pushbutton	94
Figure 117: Element RTR/Temperature.....	95
Figure 118: Element RTR.....	95
Figure 119: Element Temperature.....	95
Figure 120: configuration window of RTR/temperature.....	97
Figure 121: Element jalousie touch & slide	98
Figure 122: Element jalousie standard	98
Figure 123: configuration window of jalousie.....	99
Figure 124: Element "window contact"	100
Figure 125: configuration of window contact	101
Figure 126: Element RGB control	102
Figure 127: extended element view of RGB control.....	103
Figure 128: Configuration window of RGB control.....	104
Figure 129: RGB element phone presentation - EEV view 1	104
Figure 130: RGB element phone presentation - EEV view 2	105
Figure 131: RGB element phone presentation - further elements.....	105
Figure 132: camera element	106
Figure 133: extended element view of camera element.....	106



Figure 134: Configuration window of camera	107
Figure 135: Camera control phone presentation - EEV.....	108
Figure 136: Multimedia element	109
Figure 137: extended element view of multimedia element	109
Figure 138: Configuration window of multimedia for Sonos.....	110
Figure 139: Multimedia element - UPnP configuration	111
Figure 140: Multimedia element - Squeezebox Controller configuration	111
Figure 141: Multimedia EEV in the phone presentation	112
Figure 142: Second layer of the Multimedia EEV in the phone presentation	112
Figure 143: Multimedia EEV - playlist selection	113
Figure 144: Element Weather (Local KNX).....	114
Figure 145: Configuration window WEATHER (local KNX).....	115
Figure 146: Configuration of measured value.....	115
Figure 147: Element Weather (INTERNET)	116
Figure 148: Extended element view of weather (INTERNET)	116
Figure 149: Hit list. Selection Configuration window of WEATHER (INTERNET)	117
Figure 150: Hit list. Selection window of town	117
Figure 151: Weather (Internet)	117
Figure 152: Weather (Internet) EEV	118
Figure 153: List of all weather (Internet) control elements	118
Figure 154: element of values/diagrams	119
Figure 155: extended element view of values / diagrams	119
Figure 156: Zoom area enlarged	120
Figure 157: Diagram area enlarged.....	120
Figure 158: Temperature comparison.....	121
Figure 160: Configuration window of value/diagram element.....	124
Figure 161: Configuration window of the individual group addresses.....	125
Figure 162: Long-term databases – enable	126
Figure 163: Editor database.....	126
Figure 164: Long-term recording in visualization	126
Figure 165: Selecting the time view.....	127
Figure 166: Phone View – Diagramm	127
Figure 167: Diagrams, extended element view	128
Figure 168: List of all diagrams.....	128
Figure 169 CUBEVISION Text Display.....	129
Figure 170 Text Display configuration.....	129
Figure 171 Add Text Input	129
Figure 172: Element group switch – only icons	130
Figure 173: Element group switch - icons and a long text	130
Figure 174: Element group switch - Icons und a short text	130
Figure 175: Configuration window of „group switch/scene“	131
Figure 176: Scenes element “appending group address”	131
Figure 177 Tuneable White	132
Figure 178 Tuneable White Element in the Visualisation.....	132
Figure 179 Configuration Tuneable White	133
Figure 180: Open Smart Function Creator	134
Figure 181: Drop Zone.....	135
Figure 182: Scenes Overview.....	136
Figure 183: Scenes Trigger	138
Figure 184: Control panel with scene button	140
Figure 185: Userspezified scenes.....	141
Figure 186: Launchpad	142
Figure 187: CUBEVISION Settings	143
Figure 188: Menu.....	143
Figure 189: EnOcean Configuration	145
Figure 190: EnOcean Settings.....	146
Figure 191: Calling up properties	146
Figure 192: EnOcean Device Configuration	146
Figure 193: EnOcean Device Configuration	147
Figure 194: Emulating EnOcean device	148
Figure 196: Receiving KNX parameters	150
Figure 197: Sending KNX Parameters	150
Figure 198: CUBEVISIONMODULE - Remote Access plug & play VPN.....	151
Figure 199: System variables	152
Figure 200: Icons for controls.....	153



1 INTRODUCTION

Thank you very much for placing confidence in us and purchasing **CUBEVISIONMODULE**. CUBEVISION offers you an unparalleled visualization that is unique and intuitive. This documentation will enhance your experience with the product and help you achieve your goals faster.



Figure 1: CUBEVISION MODULE KNX

Product name:	CUBEVISIONMODULE
Intended use:	Visualization
Design:	Modular device (REG) housing 4 TP
Interfaces:	LAN, KNX or EnOcean
Item number:	10561 (KNX) / 13560 (EnOcean)

1.1 RANGE OF FUNCTIONS

The **CUBEVISIONMODULE** is a visualization gateway between KNX and/or EnOcean) and the Ethernet. It includes the established CUBEVISION visualization. CUBEVISION is a browser-based visualization based on HTML 5 technology, and free of licence costs: a visualization which can be operated intuitively and set and adjusted easily.

Functional overview:

- Integrated multi-user browser visualization based on HTML 5, free of licence costs
- Integrated Java-based visualization editor, free of licence costs
- 13 pre-formulated visualization elements with different function and feature modifications
- Automatic creation of the visualization based on building structure and element assignment
- File your own background images (jpg, png, gif)
- Favourites function optionally arranges the elements according to frequency
- Quick navigation to quickly navigate through the rooms
- "Quick Floor Navigation" for quick, efficient navigation through the floors
- Special interface for operating RGB and RGBW luminaires with scenes and favourite colours
- Special interface for automatic and manual multimedia control of Squeezebox, **AUDIOMODULE** and SONOS radio stations
- Special interface for displaying diagrams, with comparison and freeze function, bar graphs and data types from 1 bit to 4 bytes
- Special interface for displaying and retrieving weather data from the Internet with automatic configuration by simply entering the city or postcode
- Special interface for displaying weather data from KNX with temperature, wind speed, wind direction, brightness, atmospheric pressure, humidity, rainfall and any desired value
- Special interface for the display of IP camera pictures in MJPEG and JPEG incl. PTZ control and approach position
- Switch / dimmer element with relative / absolute dimming, value display and different icons
- Button element with toggle function, button, constant value, value display and different icons
- Temperature / RTR element with heating / cooling, extension, operating mode switching
- Blind element with roller shutters, blinds, Venetian blinds and "Touch & Slide" operation
- Window contact 1 bit, 1 byte and breakage of glass
- Value indicator, input with restriction, factor and offset
- Group / scene switch with 33 different icons and data type 1 bit and 1 byte
- Several visualization projects possible
- User administration with access restrictions up to individual pages possible
- Optional and freely selectable categorization of all elements for separate central overview
- Address status table with all 32,766 KNX as well as 32,768 virtual addresses for deriving the object states (no bus initialization necessary).
- Circular buffer for 20,000 telegrams, exportable as CSV file
- Assignment of SONOS radio stations via UPnP
- Smart Function Creator
- User defined scenes
- Integrated HOOC VPN solution
- Data backup and recovery
- Integrated update mechanism for software updates free of charge
- KNXnet/IP server with integrated KNXnet/IP routing and tunneling
- Time zone setting
- Synchronization with NTP time server
- User administration for the access to the configuration
- Address transfer from ETS (*.esf file)
- No data point restriction



1.2 TECHNICAL DATA

Article No. 10561 (KNX) | 13560 (EnOcean)

- Operating voltage: 12–32 V DC
- Typical power consumption 300 mA at 12 V DC
- Power consumption: ≤ 5 W
- Connection: Power supply via screw-type terminal
- Resistant to climate: EN 50090-2-2
- Ambient temperature: -5 to $+35$ °C
- Rel. humidity (non-condensing): 5 % to 80 %

Mechanical data:

- Assembly: Modular device (REG) housing 4 TE
- Dimensions (W x H x D) in mm: 70 x 90 x 63
- Housing: Plastic
- Degree of protection: IP20 (according to EN 60529)

Interfaces:

- Ethernet via RJ-45 connector
- KNX®: Twisted Pair via terminal ($= 1.5$ mm²)
- EnOcean®: SMA plug connector (incl. 2.5 m magnetic base antenna)

EnOcean specifications:

- Operating frequency: 868.3 MHz
- Range: 300 m in the free field / 30 m in the building (depending on the building material)
- Input objects: Any number
- Output objects: 128
- External antenna: 2.50 m cable, magnetic base and SMA plug connector.

Specific features:

- Exclusive visualization design
- Quick setup
- Automatic scaling on all end devices

Software requirements:

- Operating system: Platform-independent
- Communication: Network interface
- Modern standard browsers
- Java Virtual Machine or BAB STARTER (only for configuration)



1.3 SCOPE OF DELIVERY

The scope of delivery of **CUBEVISIONMODULE** includes the following content:

- 1x CD with the corresponding documentation and auxiliary programs
- 1x **CUBEVISIONMODULE**
- 1x 2.5 m magnetic base antenna (optionally available in the case of EnOcean version 13560)

A power supply unit for the device is NOT included in the scope of delivery!

In addition to the connection for the power supply (**12-32 V DC**), the **CUBEVISIONMODULE** has the following interfaces:

- 1x RJ-45: Ethernet 100Mbit/s Full Duplex
- KNX® / TP connection or SMA female connector for EnOcean (currently being planned)

1.4 UPDATES

We reserve the right to offer firmware updates free of charge for the **CUBEVISIONMODULE**. In our newsletter, you will be informed of any possible firmware updates. The update files are made available in the download section on our homepage.

1.5 IMPORTANT INFORMATION ON THE OPERATING INSTRUCTIONS

We reserve the right to make technical and formal changes to the product provided it is in the interest of technical progress. Therefore, the information in this documentation may deviate from the current state. Information on current **CUBEVISIONMODULE** firmware and also on this description ("**CUBEVISIONMODULE** documentation") can be found at www.bab-tec.de.



2

ASSEMBLY

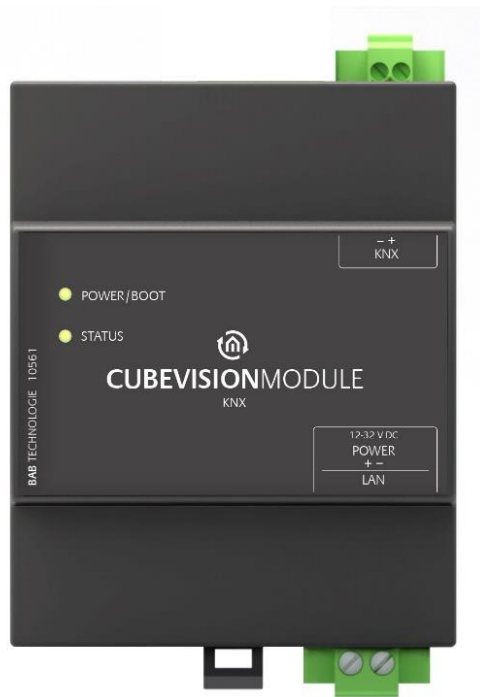


Figure 2: Front of CUBEVISION MODULE KNX

The device shown in these operating instructions is the **CUBEVISIONMODULE** (item no. 10561).
Modular device (REG) housing 4TE.
Dimensions (width x height x depth): 70 x 90 x 63 mm.

In order to assemble the device, please proceed as described below:

Note: The operating voltage of the CUBEVISION MODULE is 12-32 V DC.

- Remove the pluggable screw terminals to facilitate the connection process.
- Now connect the power supply cables and the KNX line (in case of the KNX/TP version) to the respective screw plug-in terminals.
Note: In doing so, please make sure that the polarity corresponds to that shown on the front of the housing.
- Screw the SMA connector of the magnetic base antenna to the SMA plug connector at the housing (in the case of the EnOcean version)
- Insert the screw plug-in terminals into the respective connections
- Snap the device onto the mounting rail according to DIN EN 60715 and connect the network cable.
- Switch on the supply voltage and check the LED status (see chapter below).



2.1 LED STATUS

The **CUBEVISIONMODULE** has two DUO LEDs ("Power/Boot" and "Status"). Each DUO LED has a green and a red LED. The top LED is the "Power/Boot" LED, the bottom LED is the "Status" LED.

POWER / BOOT LED

LED display	Status
OFF	The device is not ready for operation. No operating voltage is supplied.
GREEN	The device is ready for operation.
FLASHING ORANGE	The device is booting.

STATUS LED

LED display	Status
OFF	The device is booting
FLASHING GREEN	The device has been started; the LED simulates a "heartbeat". The flashing interval increases depending on the device utilization.
FLASHING RED	KNX: device is communicating over KNX EnOcean: device is communicating over EnOcean

Explanation:

The green "Power/Boot" LED lights up as soon as the **CUBEVISIONMODULE** is supplied with power. Two to three seconds after the power supply has been switched on, this LED also starts to flash red (flashing orange) until the booting process has been completed. Then the LED is permanently illuminated green, while the "Status" LED flashes green (simulates a "heartbeat"). The flashing frequency increases depending on the device utilization.

It takes approx. **three (3) minutes** to start the **CUBEVISIONMODULE**.



2.2 INITIAL OPERATION

If the **CUBEVISIONMODULE** has been mounted and started as described in chapter "Assembly", commissioning can now be continued as specified below.

Factory setting on delivery:

IP Address	192.168.1.229
Subnet Mask	255.255.255.0
Username	admin
Password	admin
Device Name	CVM

Note: The password must be changed immediately when logging in for the first time. If the password is lost, the device cannot be reset!

2.2.1 SYSTEM REQUIREMENTS

Operating system:	Platform-independent
For configuration:	Current browser (Chrome, Safari, Firefox) and BAB STARTER resp. latest Java installation (for CUBEVISION Editor)
CUBEVISION:	Software: Current Webkit / browser (Chrome, Safari, Firefox, Microsoft Edge) Hardware: High-performance hardware with 3D hardware acceleration

Do not use Internet Explorer

Note: Because CUBEVISION uses latest HTML 5 technologies and is containing 3-D animations, there could be problems running it on older hardware and hardware with too little hardware performance. In case of doubt, please check out functionality with our demonstration-CUBEVISION on our website www.bab-tec.de in the "Live" menu.

2.2.2 ESTABLISHING CONNECTIONS

In order to configure the **CUBEVISIONMODULE** and to retrieve the visualization, a current browser and a network connection to the device are required. If the device is in the condition on delivery, it can be accessed at the above-mentioned IP address and the network settings must be adjusted to the address range, where necessary. To do this, please follow the instructions provided in chapter "Adjusting the network settings of your computer".

2.2.2.1 BAB STARTER

If you do not know the network settings of the device, the BAB STARTER can help you to find out with which IP address the device is available. The software is available for Windows and MAC systems and can be found on the supplied CD or at www.bab-tec.de in the download section. For detailed information, please observe the separate documentation with respect to BAB STARTER!

BAB STARTER INSTALLATION

For Microsoft Windows, you receive a *.zip file to download. For MAC OS X, a *.mpkg file is available.

Note: A detailed description for BAB STARTER can be found in the related documentation on the supplied CD or can be downloaded at www.bab-tec.de.

Windows installation

- Run "BAB_STARTER_[Version]_setup.exe" to start the installation.
- Follow the instructions in the InstallShield Wizard and click on "Continue".
- In the end, confirm the installation with "Finish".

Thereafter, the BAB STARTER can be found in the Windows Start menu folder "BAB TECHNOLOGIE GmbH".

MAC OS installation

- Double click on "BAB STARTER_[Version].mpkg".

Note: It is possible that your system will advise you of a non-verified developer. In this regard, please note the information on the "Apple Gatekeeper"; see: <https://support.apple.com/de-de/HT202491> (as of 5 October 2015)

- Follow the instructions of the installation process and click on "Continue" to continue the installation.

The message "The installation was successful" confirms the successful installation. The BAB STARTER icon now appears in the "Programs" folder.

RUN BAB STARTER

Click on the BAB STARTER program icon to start the application



Figure 3: BAB STARTER icon

Note: With BAB STARTER, it is also possible to start the CUBEVISION Editor and EnOcean Editor separate from the search for devices described below, irrespective of whether a local Java Virtual Machine (JVM) is installed!



To display all active BAB devices in the network, click on the "Search for Devices..." menu after you have called up the STARTER.

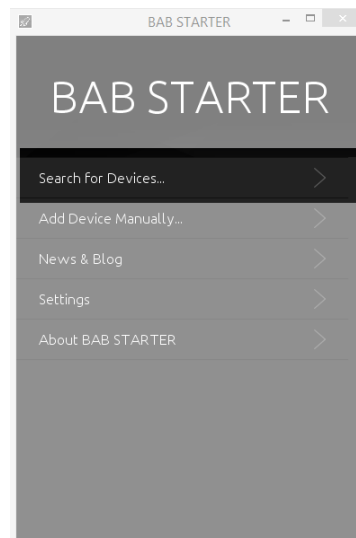


Figure 4: BAB STARTER – start menu

DEVICES IN THE FOREIGN NETWORK AREA

Whether a device is in the network area of your computer is highlighted by the contrast intensity of the entries. If the entry is displayed with low contrast, the device is not in the same network area (subnet) and cannot be reached without changes.

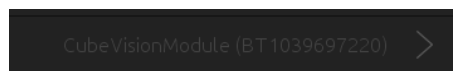


Figure 5: Entry with foreign network settings

To learn more about the network settings of the device, click on the respective entry and then on "Details".

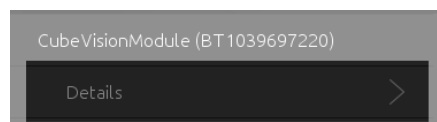


Figure 6: Device details

The following display shows the serial number, firmware, IP address (host) and net mask (display not implemented).

CubeVisionModule	
Serial Number	BT1039697220
Firmware	1.2.0
Host	192.168.1.229
Netmask	0.0.0.0

Figure 7: Display of the device details

- To bring the device into the network area of your computer, please proceed as described in chapter "[Adjusting the network settings of your computer](#)".

DEVICES IN THE SAME NETWORK AREA

If the contrast is sharper, this means that the device is in the same network area (subnet) and can be accessed immediately.

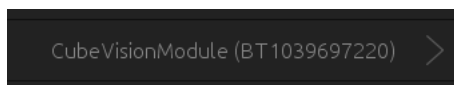


Figure 8: Entry in the same subnet area

Click on the entry so that the next menu opens. Apart from the device details, you can access CUBEVISION, EDITOR and SYSTEM there. For further description, see chapter "[CONFIGURATION](#)"

2.2.2.2 ADJUSTING THE NETWORK SETTINGS OF YOUR COMPUTER

In order to adjust the network settings of your computer and establish a connection to the device, please proceed as described below:

- Open the IP address settings (under Windows 7):
- Click "Start Button" --> "Control Panel" --> "Network"
- Select "Network Connection", then "LAN Connection"

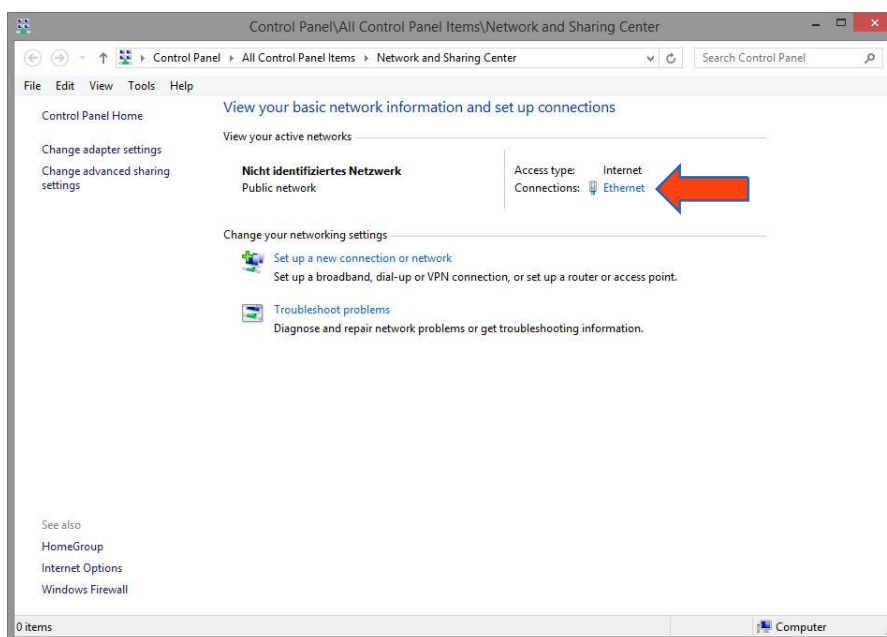


Figure 9: Windows Network and Sharing Center

- Click on "Properties":

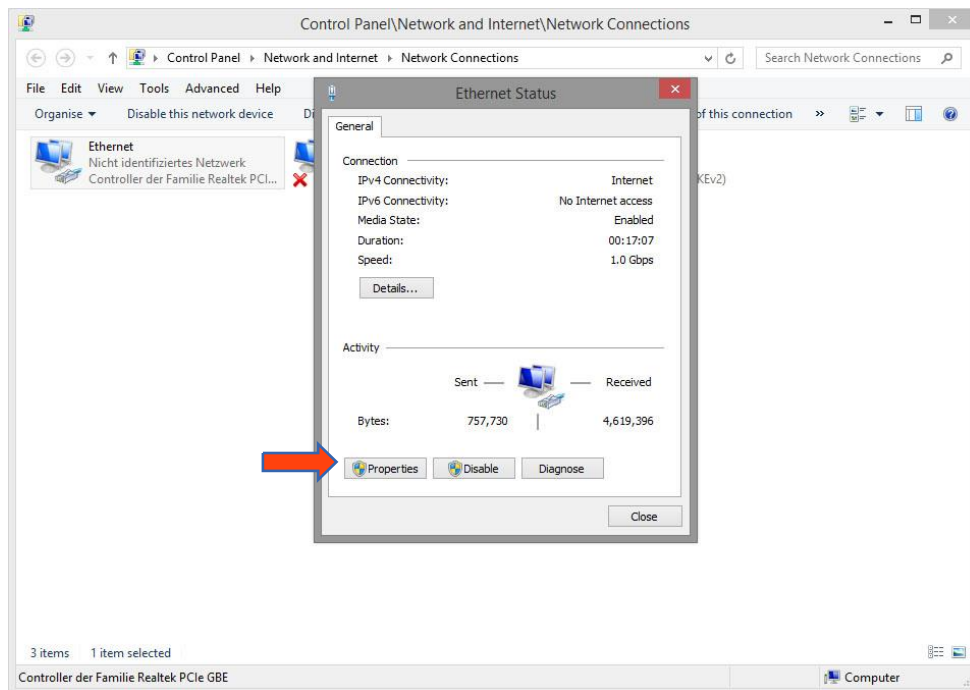


Figure 10: "LAN Connection" status

- Select "Internet protocol Version 4 (TCP/IPv4)" and click "Properties" again:

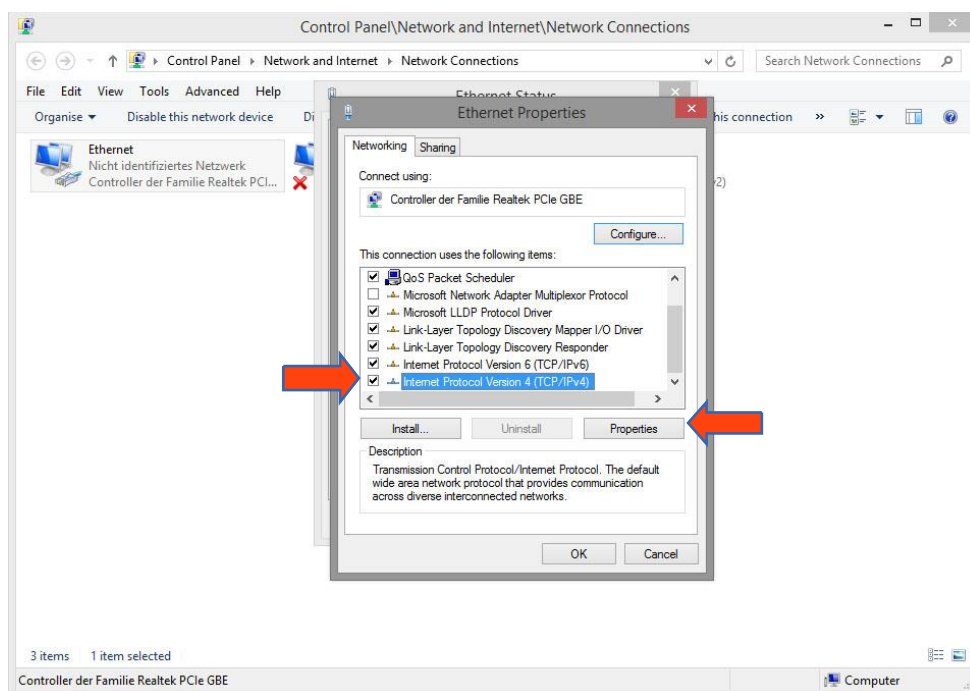
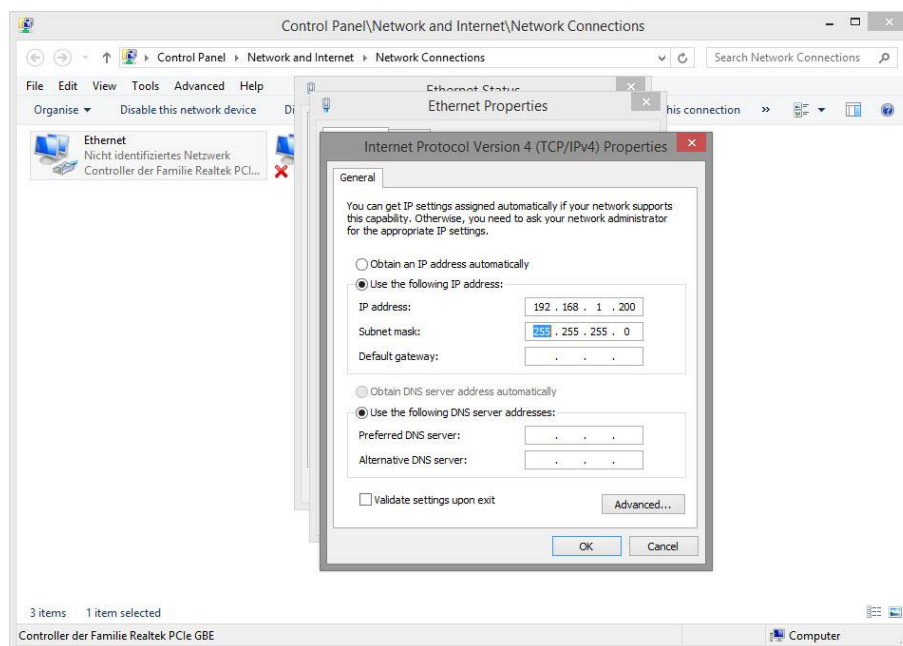


Figure 11: Properties of the LAN connection

- Now note down the current IP address settings or take a screenshot in order to ensure that you can reset the IP address setting following the configuration of the **CUBEVISIONMODULE**.
- Now change the IP address settings (IP address and subnet mask) as required:

**Figure 12: TCP/IPv4 properties**

Example of a valid configuration for the factory settings of the **CUBEVISIONMODULE**:

- Free IP address: 192.168.1.228
- Subnet mask: 255.255.255.0
- Now confirm your input with "OK".
- Close all windows until the "Windows Network and Sharing Center Settings" window is shown.

Thus, you have adjusted the network settings of your PC to those of the **CUBEVISIONMODULE**. The web interface of the CUBEVISIONMODULE can now be accessed by means of the browser. Please follow the instructions below to adjust the IP address setting of the device:



2.2.2.3 ADJUSTING THE NETWORK SETTINGS OF THE CUBEVISION MODULE

If the network prerequisites have been created, you can now access the configuration of the **CUBEVISIONMODULE** in order to adjust the network settings to the local requirements there. To do this, please proceed as described below:

- Enter the IP address of the **CUBEVISIONMODULE** in the address line of your browser (for factory settings: 192.168.1.229).

Do not use Internet Explorer!

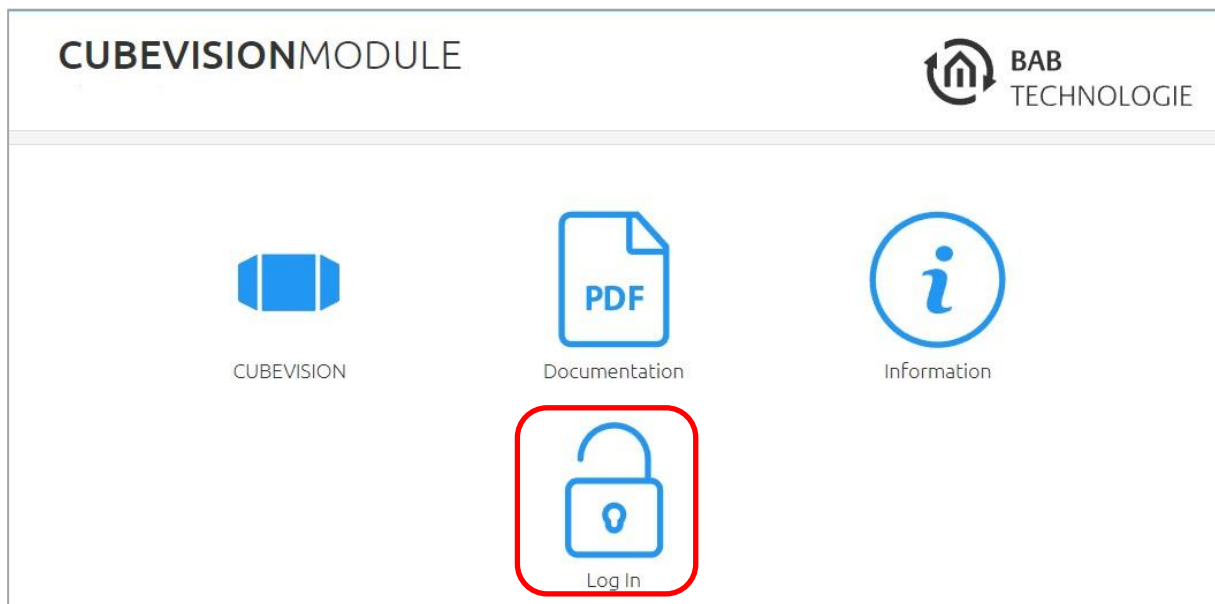


Figure 13: Start page

- The start page of the **CUBEVISIONMODULE** opens up. Click "Log In".
- A login dialog appears. For factory settings, the login data is as follows:

Username:	admin
Password:	admin

Figure 14: Login dialog

Note: The password must be changed immediately when logging in for the first time. If the password is lost, the device cannot be reset!

Note: Logging in only works if the browser is authorized to save cookies!

Please do not use Internet Explorer!

- The view on the start page changes. You can now access the following levels:
 - CUBEVISION
 - Configuration
 - Information
 - Log Out
- In order to change the IP address of the **CUBEVISIONMODULE**, please click "Configuration"

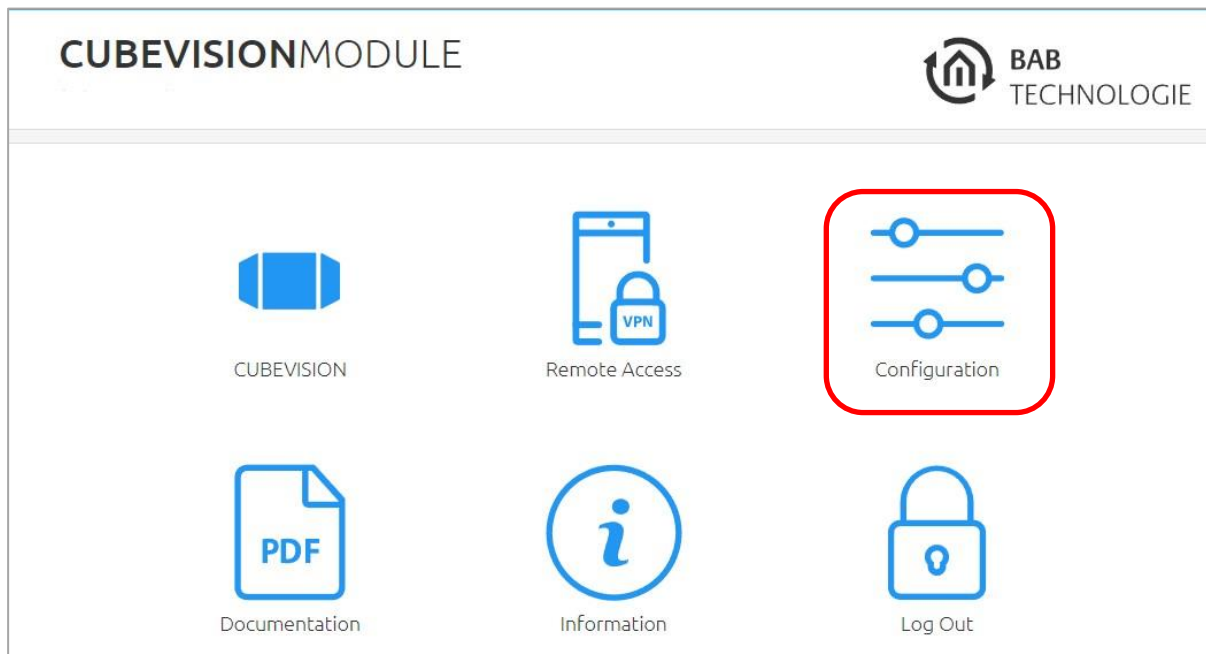


Figure 15: CUBEVISIONMODULE main menu

The configuration menu opens up. You can make the following settings in the "Network" menu item:

- DHCP:** If DHCP is active, the device automatically obtains the network settings. A DHCP server must be available in the local network.
- IP address / subnet mask / gateway:** Field for the static assignment of IP addresses. Please make also sure that the subnet mask (often 255.255.255.0) and the gateway entry are correct. (Often the IP address of the WLAN router).
Note: Without a correct gateway entry, the device will not be able to communicate with the Internet.
- DNS server:** DNS is the abbreviation for Domain Name System. The DNS server converts Internet addresses, for example "www.bab-tec.de" into the IP address "85.214.89.170" and vice versa. Without a valid DNS entry, NTP, weather services from the Internet and UPnP do not work.
- NTP server:** NTP is a free service for synchronizing the system time of Internet-compatible devices. If it is not possible to establish the connection to an NTP, the system time must always be checked and adjusted manually (see menu "[General](#)")
NTP server list: e.g. <http://www.pool.ntp.org/zone/europe>



CUBEVISIONMODULE
Version 1.5.1

BAB TECHNOLOGIE

> Start > Configuration

✓ Save Configuration

General

Network >

CUBEVISION Editor

KNX

User Administration

Remote Servicing

Backup / Restore

System

Device Settings

DHCP ☐

IP Address 192.168.1.229

Netmask 255.255.255.0

Gateway 192.168.1.1

DNS Server

DNS Server #1 192.168.1.1

DNS Server #2 8.8.8.8

DNS Server #3

NTP Server

NTP Server #1 0.de.pool.ntp.org

NTP Server #2 1.de.pool.ntp.org

NTP Server #3 2.de.pool.ntp.org

✓ Save Configuration

Figure 16: CUBEVISIONMODULE network configuration

Change the IP address settings as required. In order to save the settings made, click "Save Configuration". The server in the device is restarted, the browser automatically connects to the new IP address if possible.

Note: Please bear in mind that you might have to reset the IP address of your computer to the initial value in order to be able to access the CUBEVISIONMODULE after the change has been made.

Special feature when activating DHCP

If you have activated DHCP for the CVM according to the steps mentioned above, please use the DiscoveryTool as described in chapter "DiscoveryTool" in order to find out the current IP address configuration of the device.

PORT SETTINGS

Important note: A VPN connection is always preferable to simple port forwarding from a security point of view. External access via port forwarding is not recommended!

If the connection between the CUBEVISIONMODULE and client is monitored by means of a firewall or if access from the Internet is to be made possible, the following port settings must be taken into account:

Visualization: TCP Port 80 (http)

Configuration: TCP Port 80 (http)
TCP Port 36

Note: If you wish to make your CUBEVISIONMODULE available via the Internet, please protect such access using strong and secure passwords. In this respect, follow the currently applicable password rules.

2.2.2.4 CALLING UP THE CUBEVISION MODULE WEB INTERFACE

The **CUBEVISIONMODULE** is configured via its web interface so that it can be configured via each web browser. The "CUBEVISION Editor" and "EnOcean Editor" layers are Java applications and also require a Java Virtual Machine (JVM) or the BAB STARTER (see "[BAB STARTER](#)"). In order to call up the web interface, please proceed as described below:

- Open a browser and enter the IP address of the **CUBEVISIONMODULE** into the address line (Information on the factory settings can be found in chapter "[Initial operation](#)")

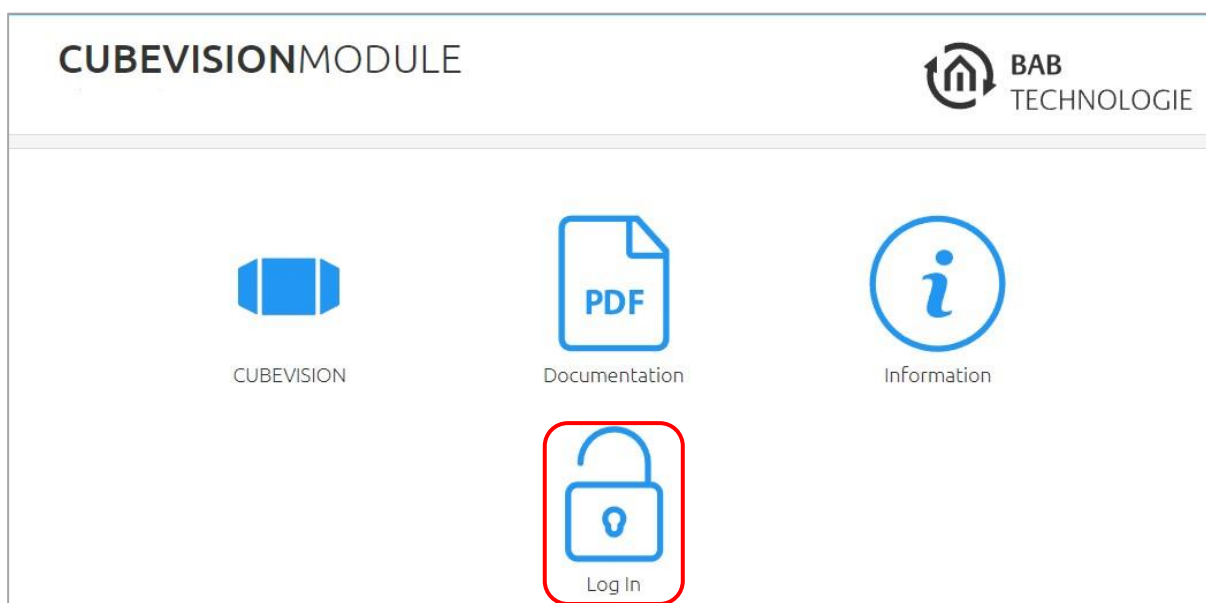


Figure 17: CUBEVISION MODULE start page

- You can access the CUBEVISION start page. From there, you can access the CUBEVISION visualization "CUBEVISION" and system information "Information".
- Use the user data to log in to the web interface: "Logging in". (Information on the authorization settings can be found in chapter "Initial operation")

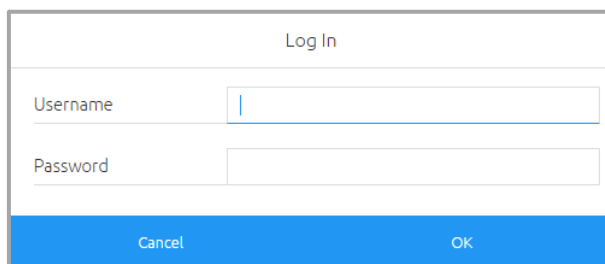


Figure 18: Logging in to the web interface



- You can then also access the "Configuration" menu item. See chapter "[CONFIGURATION](#)"

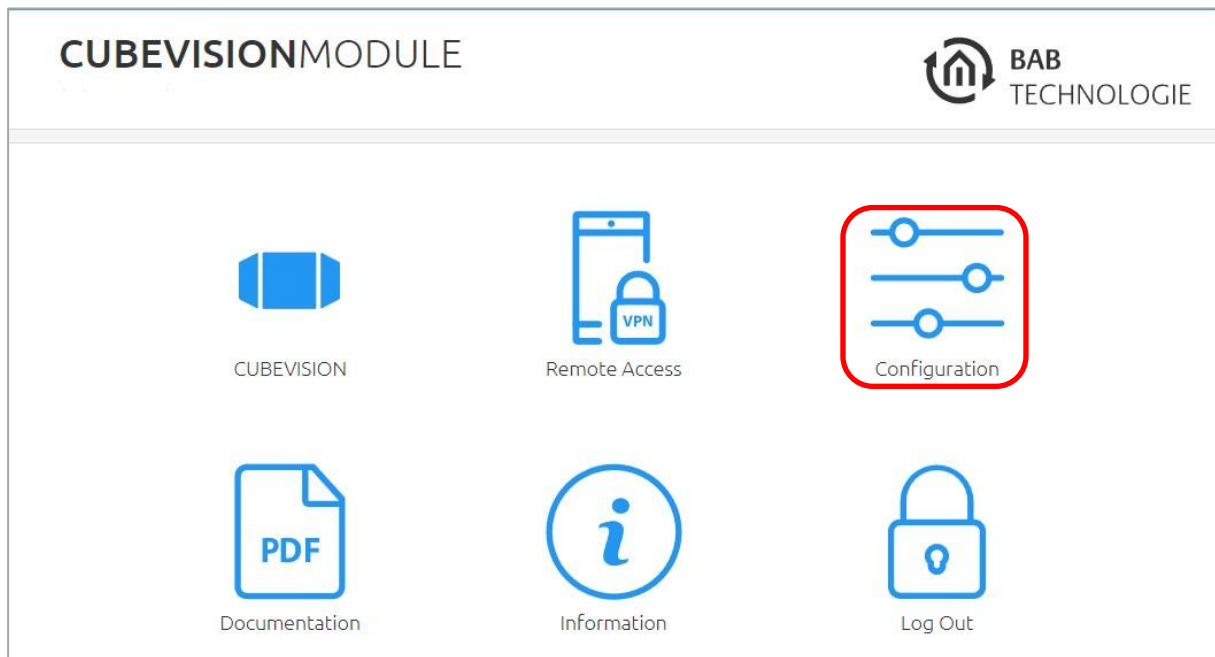


Figure 19: "Configuration" menu item

- To return back to the main menu, click on "Start".

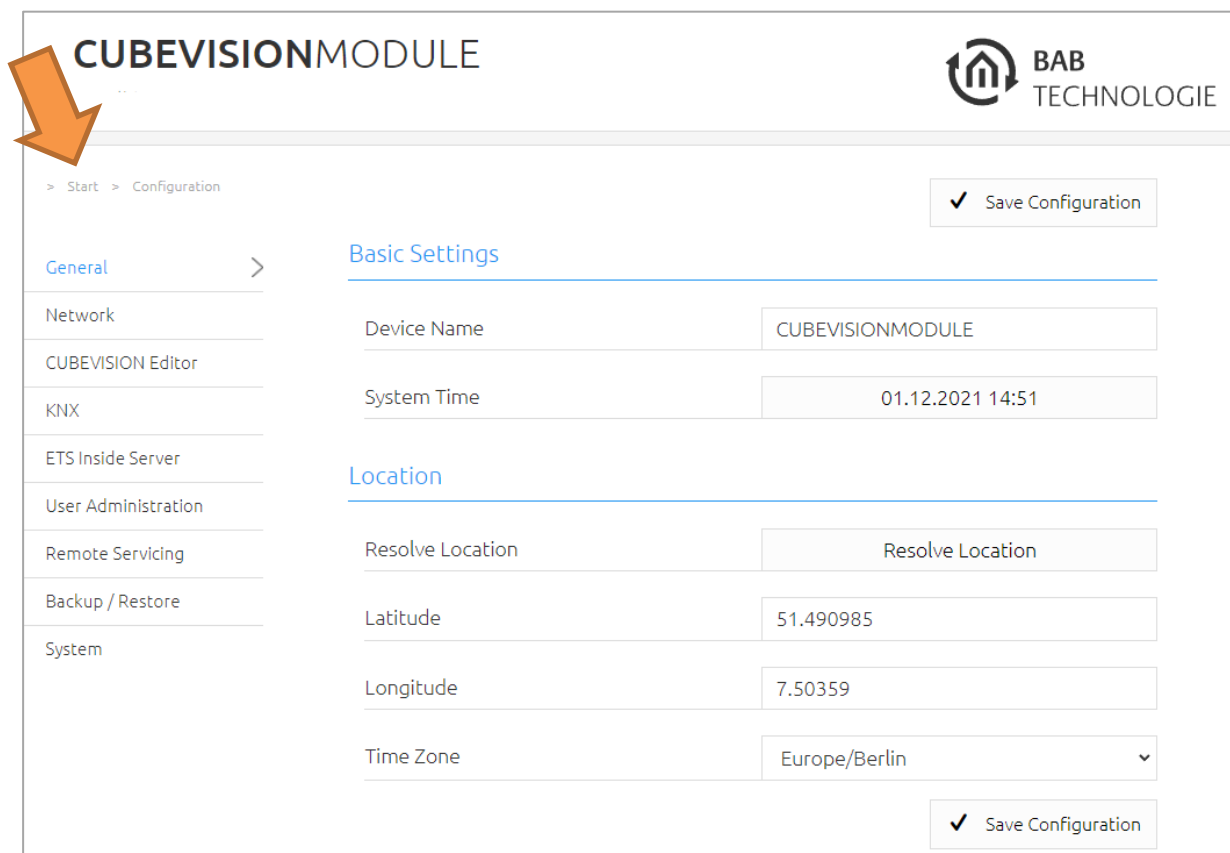


Figure 20: Back to main menu

2.3 INITIAL OPERATION OF CUBEVISION MODULE KNX

There is no ETS application for the **CUBEVISIONMODULE** KNX/TP (item no. 10561). All KNX-relevant settings are made via the web interface of the **CUBEVISIONMODULE**.

Note: Please use a "dummy" application for the ETS project in order to document that the physical address of the CUBEVISION MODULE is used.

- Call up the website of the **CUBEVISIONMODULE** and log in (See "[Calling up the CUBEVISION MODULE web interface](#)")
- Switch to the "Configuration" menu > "KNX".

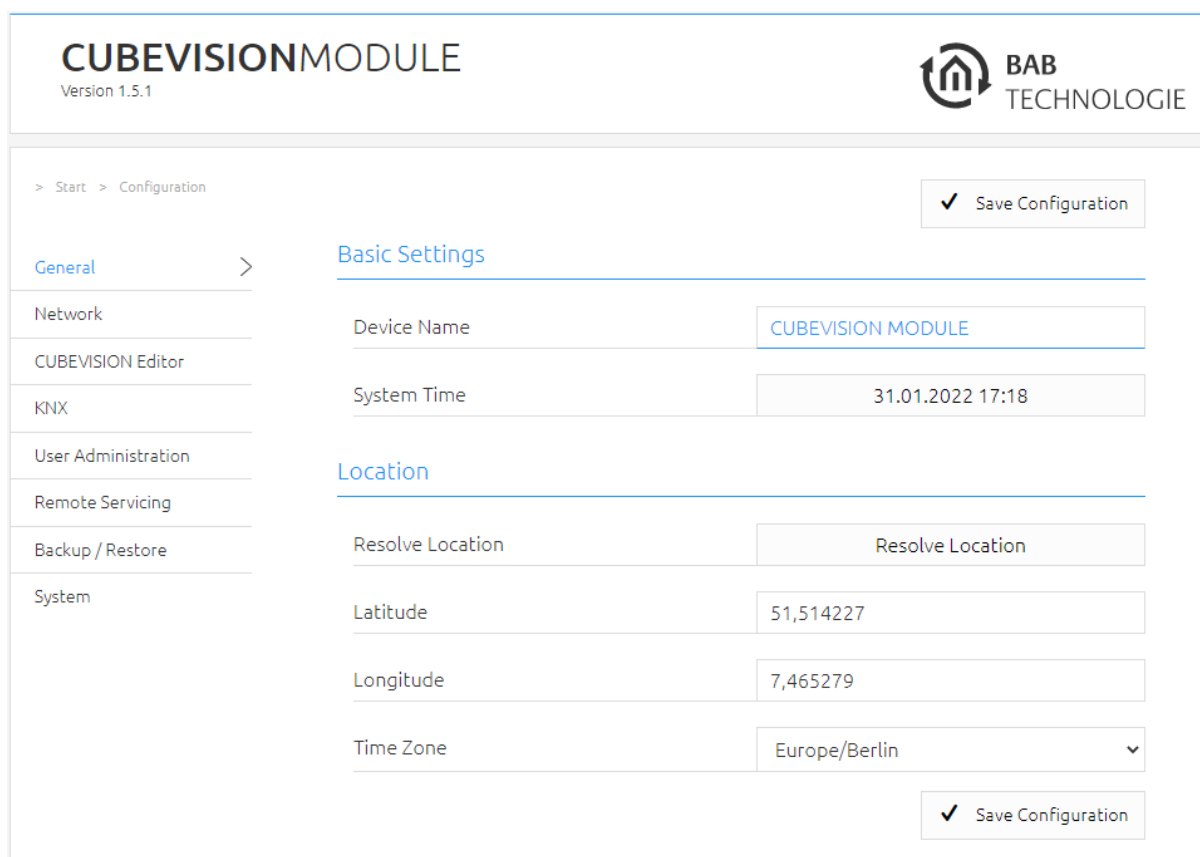


Figure 21: KNX configuration

- Change the "Physical address". Please observe the standards applicable to the assignment of physical addresses in a KNX system!

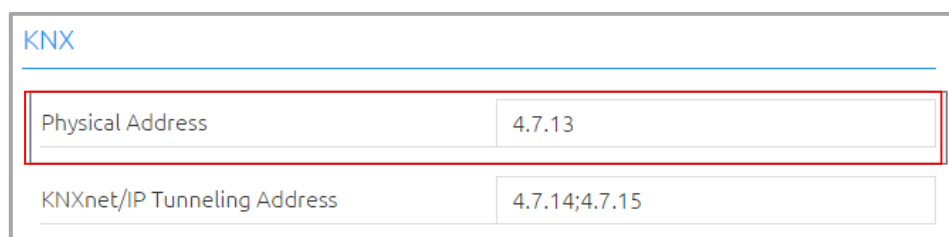


Figure 22: KNX – Changing the physical address



- Assign at least two (2) physical addresses (which are not used in the respective line) for KNXnet/IP tunneling

KNX	
Physical Address	4.7.13
KNXnet/IP Tunneling Address	4.7.14;4.7.15

Figure 23: KNX – Assigning the KNXnet/IP tunneling address

Note: These addresses are required in particular to establish the connection of the initial operation software ETS in order to use the CUBEVISION MODULE as an interface to KNX. Since ETS 5, at least two (2) free addresses are required here.

- Save the configuration

> Start > Configuration

✓ Save Configuration

Figure 24: Saving the configuration

Further information on the KNX configuration and setup of KNXnet/IP can be found in chapter "[KNX](#)"



2.4 INITIAL OPERATION OF CUBEVISION MODULE ENOCEAN

Please connect the plug of the magnetic base antenna to the SMA connector at the housing. Without an antenna, the device has only low transmission and received powers. As soon as the device has started, the EnOcean interface can be used.

Further information on the teaching and controlling of EnOcean devices can be found in chapter "[Usage of the EnOcean Editor](#)"

TECHNICAL DETAILS ABOUT THE ENOCEAN INTERFACE

EnOcean (868 MHz):

Operating frequency:	868.3 MHz
Range:	300 m in the free field / 30 m in the building (depending on the building material)
Input objects:	Any number
Output objects:	128
External antenna:	2.50 m cable, magnetic base and SMA plug connector.

2.5 LANGUAGE SETTINGS

Web interface

The language used for the **CUBEVISIONMODULE** web interface depends on the language set in the browser. At the moment, German and English are the standard languages used in the **CUBEVISIONMODULE**. If the browser is set to a language other than German or English, the language shown in the **CUBEVISIONMODULE** interface is English.

Java application

The language in the Java-based applications "CUBEVISION Editor" and "EnOcean Editor" depends on the language set in the browser when starting them via the browser and on the language setting of the respective operating system when using the BAB STARTER. If a language other than German or English is set, the language used is English.



3 CONFIGURATION

3.1 LOGGING IN

In order to access the configuration, you first must log in. To do this, click "Log In" at the top right of the browser window and enter your user data. In the condition on delivery, the user data is as shown below:

Username: admin
Password: admin

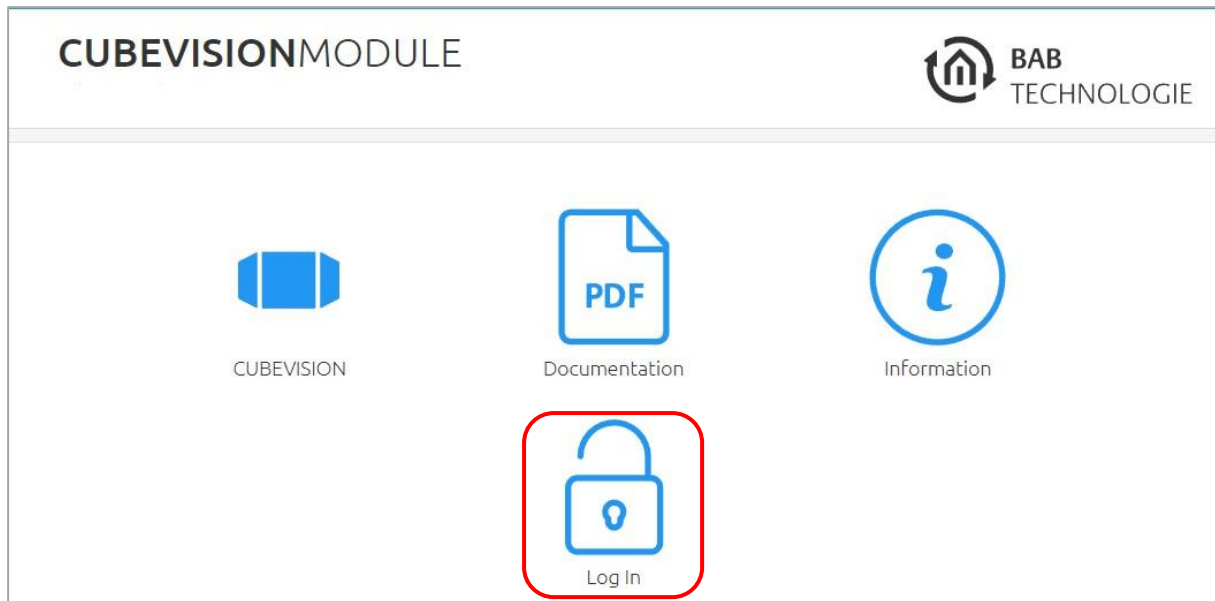
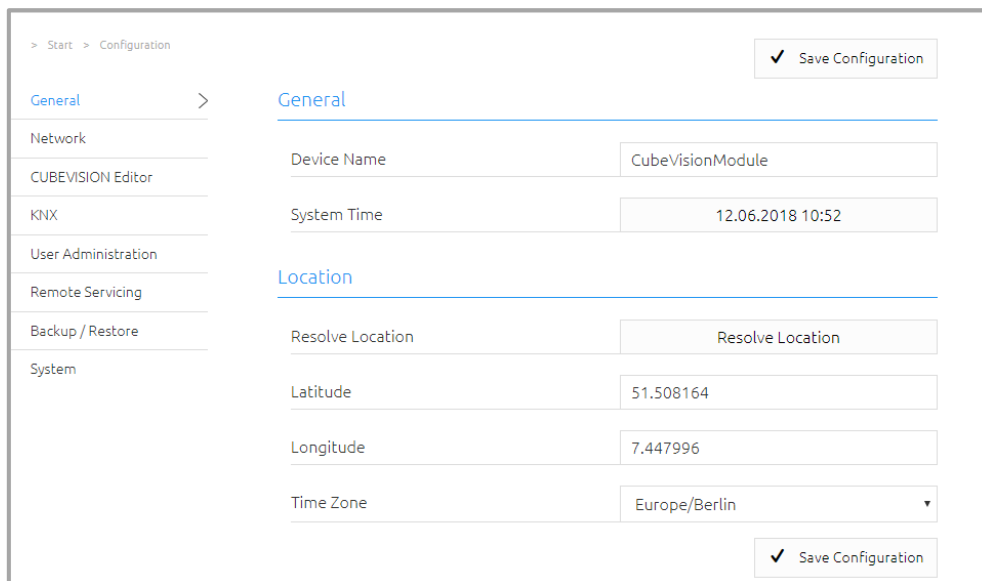


Figure 25: Logging in

Note: When logging in for the first time, you are asked to change the admin password. Please memorise the password, as the device cannot be reset!

3.2 GENERAL

The following settings can be made in the "General" menu:



The screenshot shows the 'General' configuration menu. On the left is a sidebar with a list of menu items: General (selected), Network, CUBEVISION Editor, KNX, User Administration, Remote Servicing, Backup / Restore, and System. The main area is titled 'General' and contains two sections. The first section has 'Device Name' (set to 'CubeVisionModule') and 'System Time' (set to '12.06.2018 10:52'). The second section, titled 'Location', has 'Resolve Location' (a button), 'Latitude' (set to '51.508164'), 'Longitude' (set to '7.447996'), and 'Time Zone' (set to 'Europe/Berlin'). There are 'Save Configuration' buttons with checkmarks at the top right and bottom right of the main area.

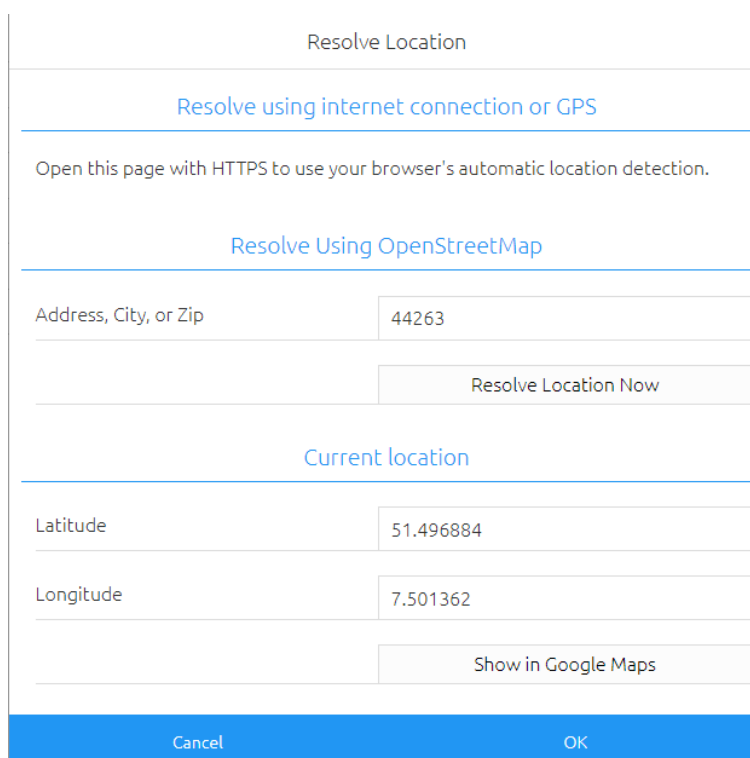
Figure 26: Configuration - General

Device name

Assign a unique device name in order to be able to distinguish the device from other devices where necessary. The device name is displayed in the DiscoveryTool and used as hostname [device name]. local.

Installation site

The installation site primarily determines the local system time of the device. Adjust to the correct time zone. The location can be entered manually. To do this, you need the correct information for latitude and longitude or determine the location automatically with the location determination "Determine location".



The screenshot shows the 'Resolve Location' dialog. It has a title bar 'Resolve Location'. Below the title bar is a section titled 'Resolve using internet connection or GPS' with a sub-header 'Resolve Using OpenStreetMap'. It contains a text input field for 'Address, City, or Zip' with the value '44263' and a 'Resolve Location Now' button. Below this is a section titled 'Current location' with input fields for 'Latitude' (51.496884) and 'Longitude' (7.501362), and a 'Show in Google Maps' button. At the bottom are 'Cancel' and 'OK' buttons.

Figure 27: Resolve Location



System time

The current system time of the device is shown. By clicking the button, the system time of the device is synchronized with that of the local PC.

Note: Since the CUBEVISION MODULE works with an internal status table which derives its time stamps from the system time, it is important that this time is correct at all times. Please ensure that the time is synchronised via an NTP time server or check the time manually.

3.3 NETWORK

In the "Network" menu item, several changes can be made, for example changing the IP address, DNS server or the NTP server. In addition, the DHCP can be switched on / off.

DHCP: If DHCP is active, the device automatically obtains the network settings. A DHCP server must be available in the local network.

IP address / subnet mask / gateway:

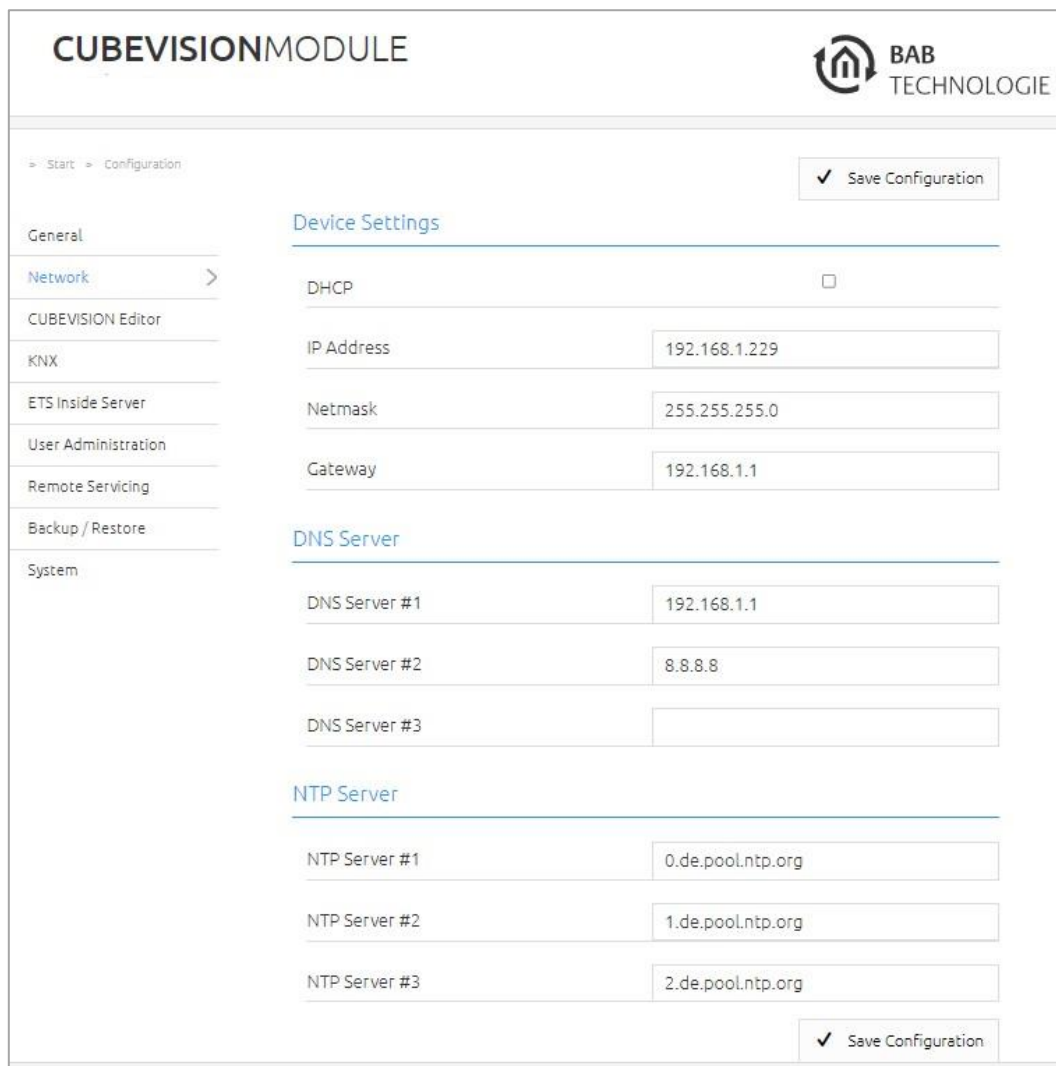
If DHCP is not activated, you must adjust the typical network parameters to the existing network.

DNS server: DNS is the abbreviation for Domain Name System. The DNS server converts Internet addresses, for example "www.bab-tec.de/" into the IP address 85.214.89.170 and vice versa.

NTP server: Configure an NTP server in order to ensure that the device can synchronize its internal clock (system time).

NTP server list:

<http://www.pool.ntp.org/zone/europe>



The screenshot shows the 'CUBEVISIONMODULE' web interface for network configuration. The left sidebar contains a menu with 'Network' selected. The main area is titled 'Device Settings' and includes sections for 'DHCP', 'DNS Server', and 'NTP Server'. Each section has input fields for configuration, and 'Save Configuration' buttons are present at the top right and bottom right of the main area.

Section	Parameter	Value
DHCP	DHCP	<input type="checkbox"/>
	IP Address	192.168.1.229
	Netmask	255.255.255.0
DNS Server	DNS Server #1	192.168.1.1
	DNS Server #2	8.8.8.8
	DNS Server #3	
NTP Server	NTP Server #1	0.de.pool.ntp.org
	NTP Server #2	1.de.pool.ntp.org
	NTP Server #3	2.de.pool.ntp.org

Figure 28: Network configuration



3.4 CUBEVISION EDITOR

A detailed description of the CUBEVISION Editor can be found in the chapter "[Structure of the CUBEVISION Editor](#)".

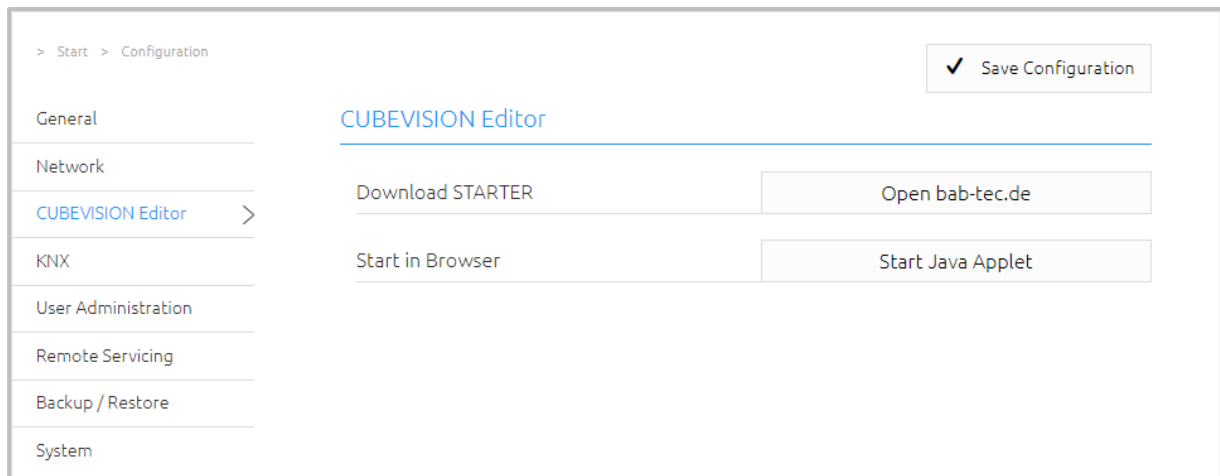


Figure 29: Configuration – CUBEVISION Editor

The EnOcean Editor is a Java application. You have two possibilities to start the editor.

1. You can use BAB STARTER, which you can download from our website „bab-tec.de“.

BAB STARTER allows you to start the EnOcean Editor without separately installing a browser or Java! See [Using the CUBEVISION Editor with BAB STARTER](#).

2. You can start the EnOcean Editor directly in your browser („Start Java Applet “)

Please note:

- Please use the Firefox 52 ESR browser
- Please install a current Java version

Make sure Java and Firefox are suitable for each other. If you choose to install a 64-bit Java, you must use Firefox 52 ESR 64-bit as well. <https://www.java.com/de/download/manual.jsp>

3.4.1 USING THE CUBEVISION EDITOR WITH BAB STARTER

To install and start the BAB STARTER, please observe the description and information in chapter "[BAB STARTER](#)".

If the **CUBEVISIONMODULE** is in the same network area, the BAB STARTER menu for the **CUBEVISIONMODULE** is shown after you have clicked on the corresponding entry.

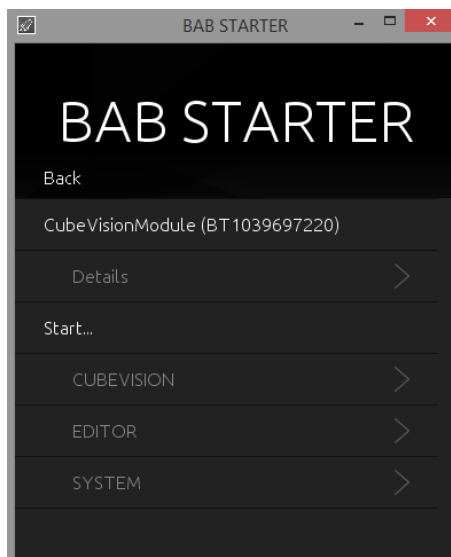


Figure 30: BAB STARTER – CUBEVISION MODULE menu

- Click on "EDITOR" in order to start the CUBEVISION EDITOR.

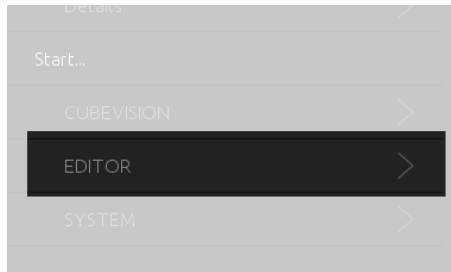


Figure 31: BAB STARTER – Starting the CUBEVISION Editor

- A login screen appears. Please log in with the user data of the **CUBEVISIONMODULE**.

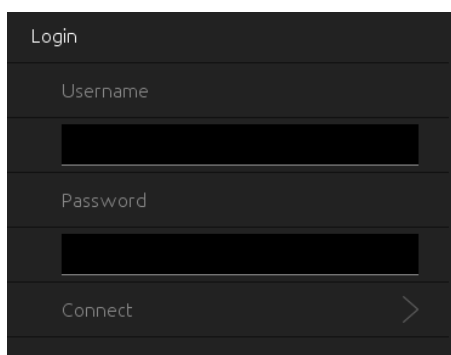


Figure 32: BAB STARTER – CUBEVISION Editor login

- The application starts directly within the BAB STARTER

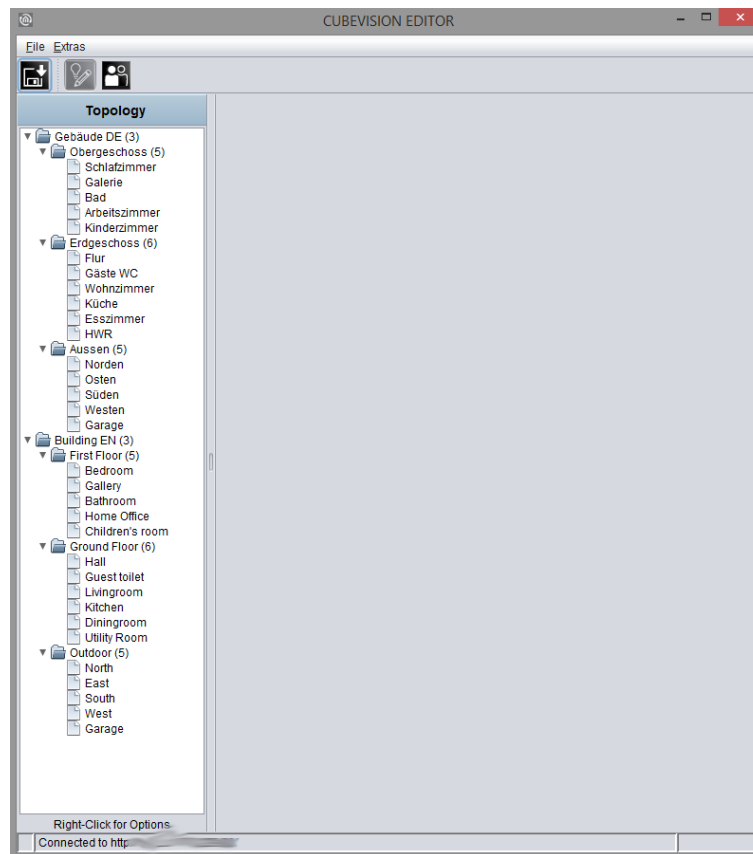


Figure 33: CUBEVISION Editor started

3.4.2 JAVA SETTINGS / PREPARATIONS ON THE CLIENT PC

Note: Only relevant if you do NOT use the BAB STARTER to call the CUBEVISION Editor, but a browser!

PC requirements

In order to be able to use the CUBEVISION Editor, you need Java and a browser. Thus, the editor is independent of the operating system. The actual CUBEVISION visualization works without Java.

Java and browser versions

We recommend using a current version of Google Chrome, Apple Safari or Mozilla Firefox as a browser. Please note that a current Java version has been installed and that the Java browser plug-in is up-to-date. If Java has not been installed yet, you will find a current version at www.java.com. Please check the following settings of your computer before starting any work in the CUBEVISION Editor.

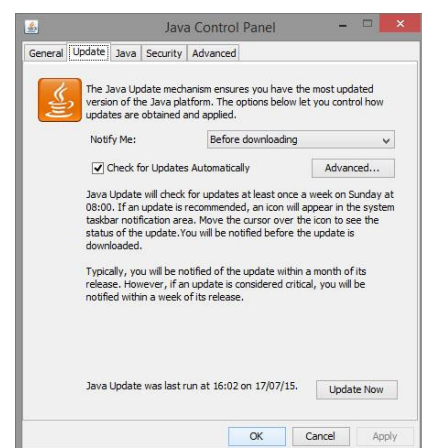


Figure 34: Updating Java

Deleting and deactivating temporary files

Please close all browser windows (also download windows etc.) and switch to the Java Control Panel via "Start" > "System Control" > "Java". On the first tab, "General", there are the "Settings" of the "Temporary Internet Files". Please remove the tick at "Leave Temporary Files on Computer" and delete all files using the "Delete files" button.

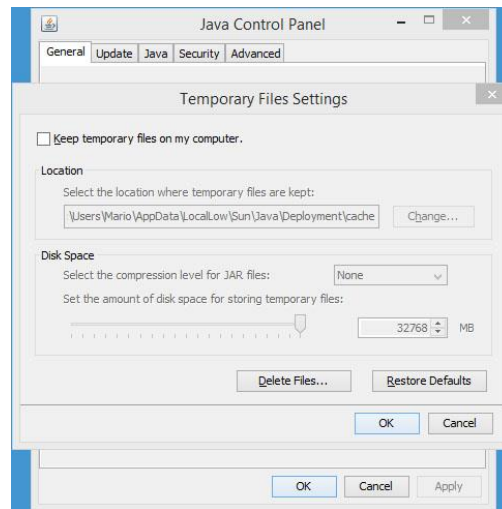


Figure 35: Deactivating temporary files

Expanding main memory for Java / deactivating old Java versions

Switch from the "General" tab to the "Java" tab. Please open the settings for the Java Runtime Environment via "Displays". The window shows you all Java versions installed on the computer; if several versions are installed, please de-install all versions except the current version. Double click into the "Java Runtime Parameters" field and enter "-Xmx256M" (pay attention to the minus sign). Then press "Enter" and leave the window using "OK".

In the "Java Control Panel" window below, it is important that you click "Apply" before closing the window with "OK".

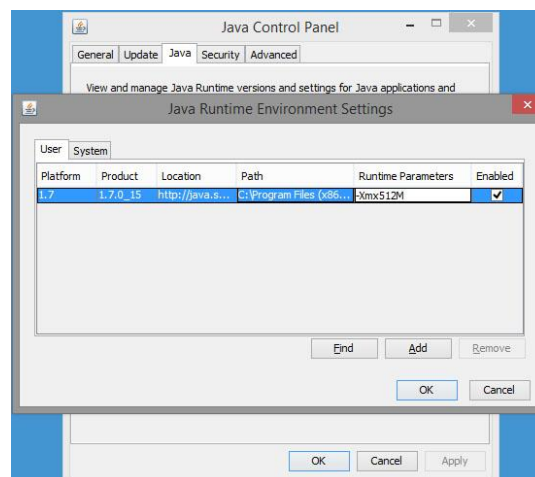


Figure 36: Expanding Java main memory

Afterwards, please also empty the cache data of your browser. Instructions on how to do this can be found on the Internet or in the help file of the browser. After all steps have been carried out and completed, the browser must be restarted.



3.5 ENOCEAN EDITOR

A detailed description for the EnOcean Editor can be found in chapter "[Usage of the EnOcean Editor](#)"!

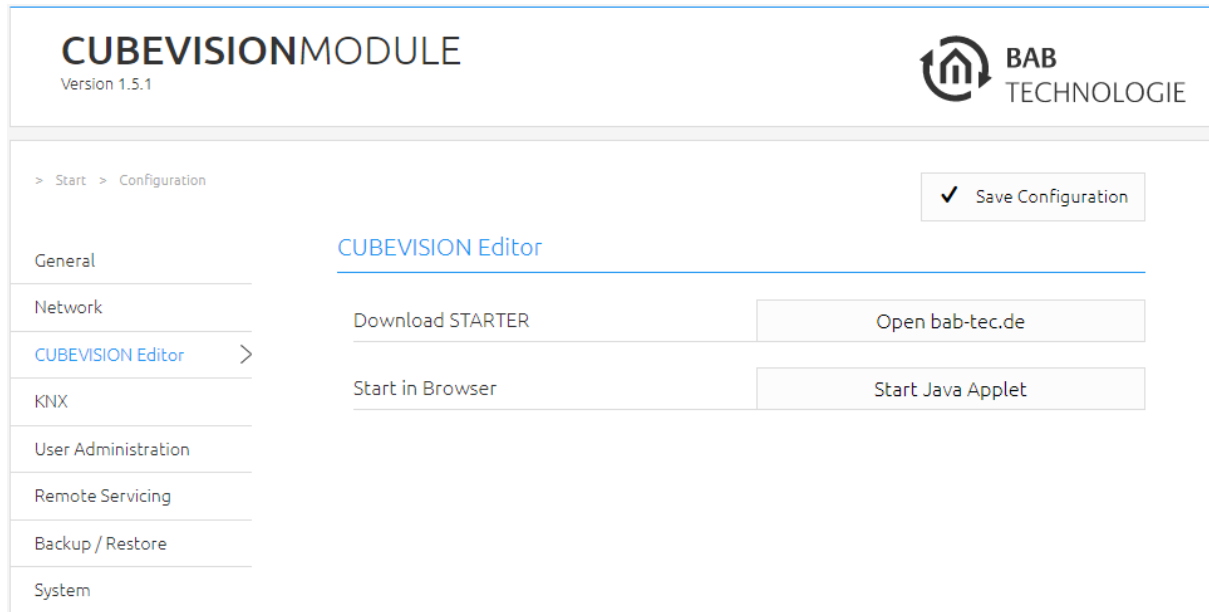


Figure 37: Configuration – EnOcean Editor

The EnOcean Editor is a Java application. You have two possibilities to start the editor.

1. You can use BAB STARTER, which you can download from our website „bab-tec.de“.

BAB STARTER allows you to start the EnOcean Editor without separately installing a browser or Java! See [Using the EnOcean Editor with BAB STARTER](#).

2. You can start the EnOcean Editor directly in your browser („Start Java Applet“)

Please note:

- Please use the Firefox 52 ESR browser
- Please install a current Java version
- Make sure Java and Firefox are suitable for each other. If you choose to install a 64-bit Java, you must use Firefox 52 ESR 64-bit as well. <https://www.java.com/de/download/manual.jsp>

3.5.1 USING THE ENOCEAN EDITOR WITH BAB STARTER

To install and start the BAB STARTER, please observe the description and information in chapter "[BAB STARTER](#)".

If the **CUBEVISIONMODULE** is in the same network area, the BAB STARTER menu for the **CUBEVISIONMODULE** is shown after you have clicked on the corresponding entry.



Figure 38: BAB STARTER – CUBEVISION MODULE menu

- Click on "ENOCEAN CONFIGURATION" in order to start the EnOcean EDITOR.

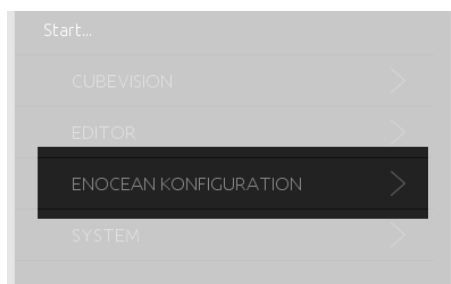


Figure 39: BAB STARTER – Starting the EnOcean configuration

- A login screen appears. Please log in with the user data of the **CUBEVISIONMODULE**.

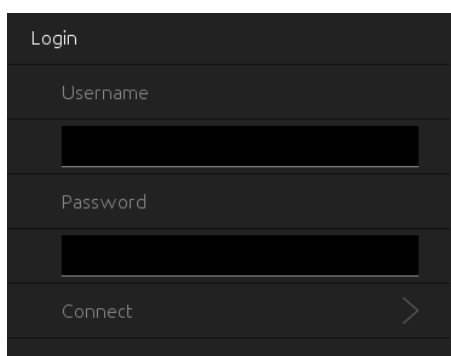


Figure 40: BAB STARTER – EnOcean configuration login

- The application starts directly within the BAB STARTER

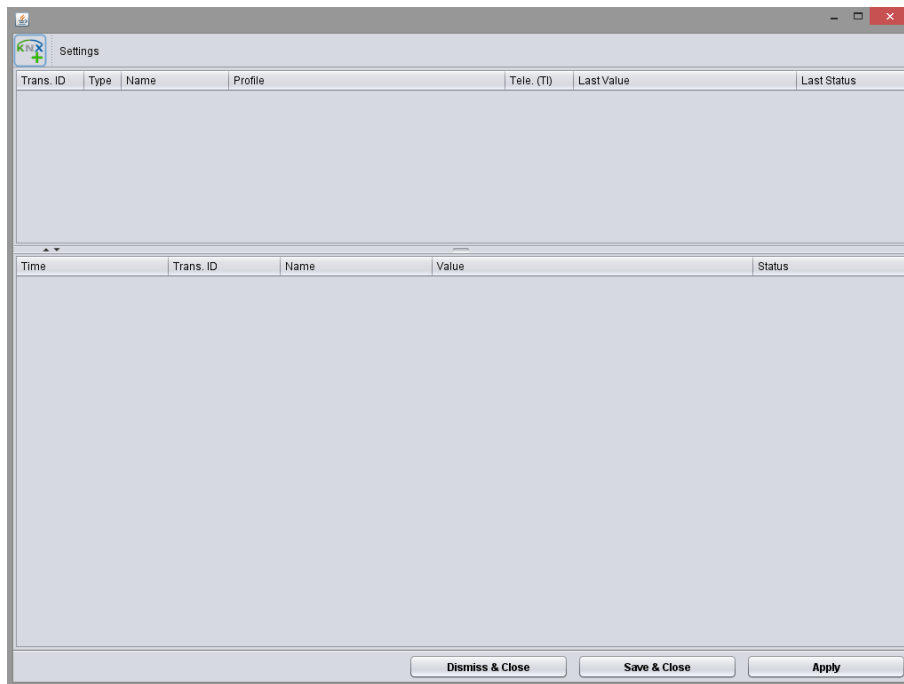


Figure 41: EnOcean Editor



3.6 KNX

The KNX-specific settings of the **CUBEVISIONMODULE** are made in the "KNX" menu. The KNX settings are available both for a **CUBEVISIONMODULE** KNX/TP (10561) and for a **CUBEVISIONMODULE** EnOcean (13560). In the case of a **CUBEVISIONMODULE** EnOcean, they are used for the parameterization of the KNXnet/IP server.

Physical address:

Here, you can determine the physical address to be used by the **CUBEVISIONMODULE** in the KNX network. Please make sure that the physical address corresponds to the installation site and does not occur twice.

KNXnet/IP Tunneling address:

This address is used by the internal KNXnet/IP server for a KNXnet/IP tunneling connection established to the device (using the CVM as a programming interface). Please note that this address must not be the same as the physical address (see above) and that it must not be used by any other participant in the line either.

KNXnet/IP Touting:

Activates KNXnet/IP routing for the coupling of lines and areas via IP. Can only be activated if the physical address corresponds to that of a line or area coupler. KNXnet/IP routing is based on multicast and all participants send a multicast group 224.0.23.12. Since multicast packages are usually not transferred by routers, "routing" only works within a subnet.

KNXnet/IP tunneling:

Activates the KNXnet/IP tunneling access to the device. This connection can be used to program KNX devices or to exchange data. The **CUBEVISIONMODULE** is the server. The above-mentioned address is used as the physical address for the connection. For each address, only one connection can be established at any one time. On the TCP/IP layer, the connection is made by means of unicast to UDP port 3671.

Telegram Rate Limiter:

The telegram rate limiter limits the telegrams sent by the CUBEVISION MODULE to 10 telegrams per second. This prevents the KNX bus from being overloaded. If more than 10 telegrams are generated per second, the telegrams run in a buffer memory and are sent from this in small steps of max. 10 telegrams to the KNX bus. The buffer memory can store up to 1000 telegrams. If the buffer memory is full, new telegrams are rejected until the buffer memory has released memory again (telegrams are sent to the KNX bus). The telegram rate limiter is disabled as default.

- Click on "Save configuration" to save the settings..



CUBEVISIONMODULE
Version 1.5.1

> Start > Configuration

General

Network

CUBEVISION Editor

KNX >

User Administration

Remote Servicing

Backup / Restore

System

✓ Save Configuration

KNX

Physical Address	1.3.21
KNXnet/IP Tunneling Address	1.3.248;1.3.249
KNXnet/IP Routing	<input type="checkbox"/>
KNXnet/IP Tunneling	<input checked="" type="checkbox"/>
Telegram Rate Limit	<input checked="" type="checkbox"/>

Address Settings

Virtual Group Addresses	<input checked="" type="checkbox"/>
Virtual Group Addresses Start	16/0/0

Test KNX Interface

KNX Address	1/0/1
Switch a KNX Address	Toggle
Read Address State	Request Status

EIS 3 Time Sender

Time (EIS 3)	
Transmission Interval (Seconds)	60

EIS 4 Date Sender

Date (EIS 4)	
Transmission Interval (Hours)	12

DPT 19.001 Date And Time Sender

Time and Date (DPT 19.001)	
Transmission Interval (Seconds)	60

Figure 42: KNX Configuration

ADDRESS SETTINGS (VIRTUAL GROUP ADDRESSES)

This section regulates the use of the "virtual group address area".

The virtual group address range can be completely deactivated. In addition, if the virtual group address range is activated, it can be determined from which group address the virtual group address range begins.

Address Settings

Virtual Group Addresses	<input checked="" type="checkbox"/>
Virtual Group Addresses Start	<input type="text" value="16/0/0"/>

Figure 43 Address setting (virtual group addresses)

The virtual group addresses start by default (factory setting) with the group address 16/0/0 and go up to 31/7/255.

If the "virtual group addresses" checkbox are activated, the range of the virtual group addresses can be set individually if required.

To do this, enter the first KNX group address for the virtual group address range in the "Start of virtual group addresses" field.

This makes sense on the one hand if more KNX group addresses are required which can be sent on the KNX bus - but at the same time not to do without the virtual group address range in order to keep the telegram load on the KNX bus low.

For example, the start of the "virtual group addresses" can be set to 31/0/0. In this configuration, the **CUBEVISIONMODULE** sends all group addresses up to 30/7/255 on the KNX bus and from group address 31/0/0 to 31/7/255 only internally.

If the virtual group addresses are deactivated ("Virtual group addresses" checkbox), the **CUBEVISIONMODULE** sends all group addresses (from 0/0/0 to 31/7/255) to the KNX bus without exception.

Information: Telegrams from the virtual address range are not sent to the KNX bus, but can be used for internal communication in the **CUBEVISIONMODULE**.



TEST KNX INTERFACE

KNX Address

Enter the desired Group address here

Switch a KNX Address

With this Button you can toggle a telegram on the desired group address

Read Address State

By clicking “Request Status” the group address state of the desired group address is requested and is shown in Pop-up window

The screenshot displays the CUBEVISIONMODULE configuration interface. The top header shows the product name and version (1.5.1) on the left and the BAB TECHNOLOGIE logo on the right. A navigation menu on the left lists various configuration categories, with 'KNX' currently selected. The main content area is titled 'KNX' and contains several settings: 'Physical Address' (1.3.21), 'KNXnet/IP Tunneling Address' (1.3.248;1.3.249), 'KNXnet/IP Routing' (unchecked), 'KNXnet/IP Tunneling' (checked), and 'Telegram Rate Limit' (checked). Below this is the 'Address Settings' section, which includes 'Virtual Group Addresses' (checked) and 'Virtual Group Addresses Start' (16/0/0). The 'Test KNX Interface' section at the bottom features three controls: 'KNX Address' (1/0/1), 'Switch a KNX Address' (Toggle button), and 'Read Address State' (Request Status button). A 'Save Configuration' button is located in the top right corner of the configuration area.

Figure 44: Complete KNX configuration



CUBEVISIONMODULE

Test KNX Interface

KNX Address

1/0/1

Switch a KNX Address

Toggle

Read Address State

Request Status

EIS 3 Time Sender

Time (EIS 3)

Transmission Interval (Seconds)

60

EIS 4 Date Sender

Date (EIS 4)

Transmission Interval (Hours)

12

DPT 19.001 Date And Time Sender

Time and Date (DPT 19.001)

Transmission Interval (Seconds)

60

Figure 45 Zeitsender und Datumsender

EIS3 TIME SENDER

With the set transmission interval (in seconds), the **CUBEVISIONMODULE** cyclically transmits the current time on the entered KNX group address.

EIS4 DATE SENDER

The **CUBEVISIONMODULE** sends the current date to the entered KNX group address with the set transmission interval (in hours).

DPT19.001 DATE-AND TIME SENDER

The **CUBEVISIONMODULE** sends the time and date in a KNX telegram to the KNX group address entered here cyclically with the set transmission interval (in seconds).



3.7 USER ADMINISTRATION

The user data required to access the **CUBEVISIONMODULE** web interface is managed here. This user data has nothing to do with the user data for the visualization but is used to protect the configuration of the **CUBEVISIONMODULE**. In order to change or add users, "User Administration" must be clicked in the "Configuration" menu item.

DISABLING PASSWORD RECOVERY

If this option is deactivated, the device must be sent in if the admin user password is no longer known.

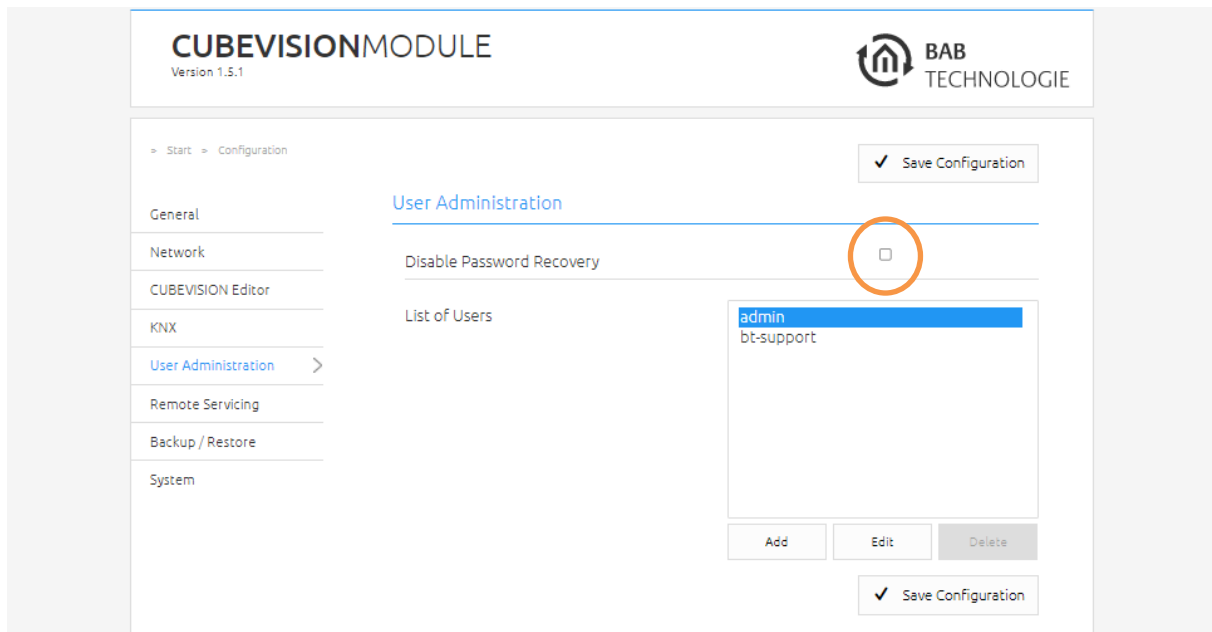
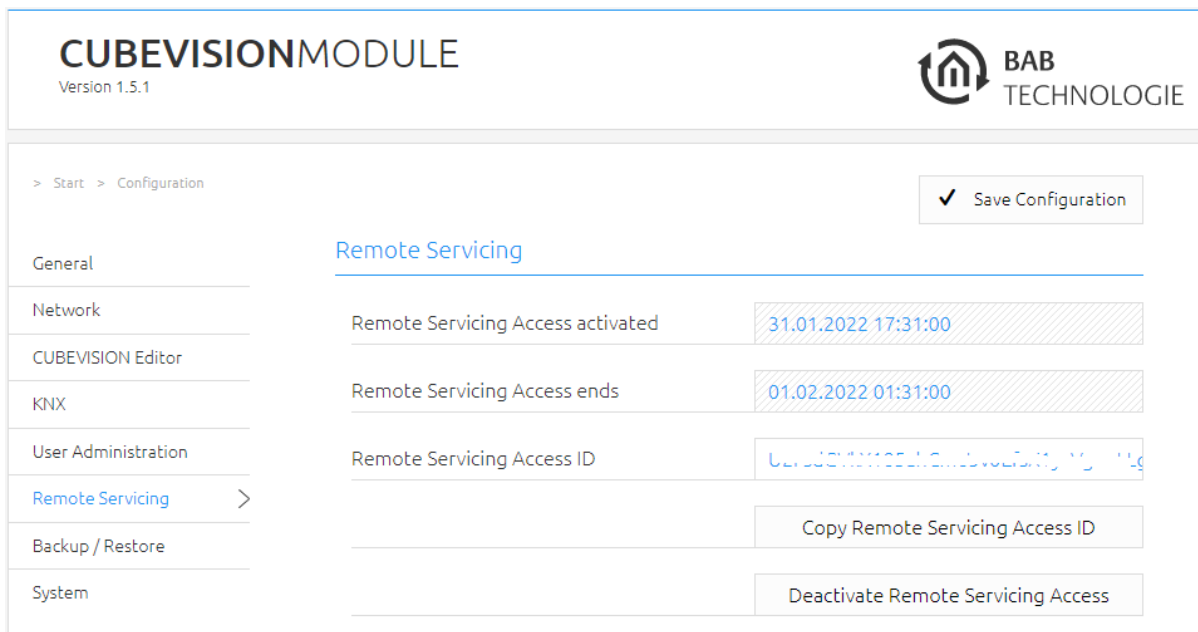


Figure 46: User Administration

3.8 REMOTE SERVICING

Remote Servicing is available as of firmware version 1.2.3.

Activate the Remote Servicing Access of the **CUBEVISIONMODULE**. Select a time between 2-12 hours after which the Remote Servicing Access is automatically closed. Remote Servicing Access is also deactivated again if the **CUBEVISIONMODULE** is restarted; this is independent of the set time. Remote Servicing Access can be deactivated at any time by clicking on "Deactivate Remote Servicing Access". Activate the Remote Servicing Access by clicking on "Activate Remote Servicing Access". Remote Servicing access is started. This process takes a few seconds and the Remote Servicing Access ID is displayed. Copy the ID and send it to info@bab-tec.de.



The screenshot shows the 'Remote Servicing' configuration page of the CUBEVISIONMODULE. The page has a header with the module name and version (1.5.1) on the left and the BAB TECHNOLOGIE logo on the right. A breadcrumb trail indicates the path: Start > Configuration. A 'Save Configuration' button with a checkmark is in the top right. On the left, a sidebar menu lists various configuration categories: General, Network, CUBEVISION Editor, KNX, User Administration, Remote Servicing (which is highlighted with a blue bar and a right-pointing arrow), Backup / Restore, and System. The main content area is titled 'Remote Servicing' and contains three rows of configuration fields. The first row is 'Remote Servicing Access activated' with a value of '31.01.2022 17:31:00'. The second row is 'Remote Servicing Access ends' with a value of '01.02.2022 01:31:00'. The third row is 'Remote Servicing Access ID' with a value that is partially obscured but appears to be 'CUBEVISIONMODULE...'. Below these fields are two buttons: 'Copy Remote Servicing Access ID' and 'Deactivate Remote Servicing Access'.

Configuration Item	Value
Remote Servicing Access activated	31.01.2022 17:31:00
Remote Servicing Access ends	01.02.2022 01:31:00
Remote Servicing Access ID	CUBEVISIONMODULE...

Buttons: Save Configuration, Copy Remote Servicing Access ID, Deactivate Remote Servicing Access

Figure 47: Remote servicing

Before you activate Remote Servicing Access, contact Support.



3.9 BACKUP / RESTORE

For safety reasons, the configuration data of the **CUBEVISIONMODULE** should be backed up at regular intervals in order to ensure that the current configuration status can be restored at any time. A current backup is also required for firmware updates.

CUBEVISIONMODULE
Version 1.5.1

> Start > Configuration

General

Network

CUBEVISION Editor

KNX

User Administration

Remote Servicing

Backup / Restore >

System

Save Configuration

Backup Settings

Modules	Configuration	<input checked="" type="checkbox"/>
	States & History	<input type="checkbox"/>
	CUBEVISION	<input checked="" type="checkbox"/>
Comment	<div></div>	
<div>Create a Backup</div>		

Restore Settings

Select Backup File

Select Backup File

Modules	Configuration	<input type="checkbox"/>
	States & History	<input type="checkbox"/>
	CUBEVISION	<input type="checkbox"/>
Backup creation date	<div></div>	
Firmware Version	<div></div>	
Comment	<div></div>	
<div>Restore</div>		

Figure 48: Saving the settings

CREATING A BACKUP

By activating the check boxes in the "Modules" section, you determine which part of the configuration data is backed up

- *Configuration:* All configuration data except for the CUBEVISION configuration data.

Note: The network settings are not backed up but depend on backup data.

- *States & History:* The Address State Table and History Table are backed up. This is important in order to receive status information of the saved project after a restoration.
- *CUBEVISION:* Backs up the CUBEVISION configuration.

In the "Comment" field, comments on the backup can be added.

- Click on "Create a backup" to initiate the backup process.
- The backup file is created by the system and offered automatically for download in the form of the download dialogue.

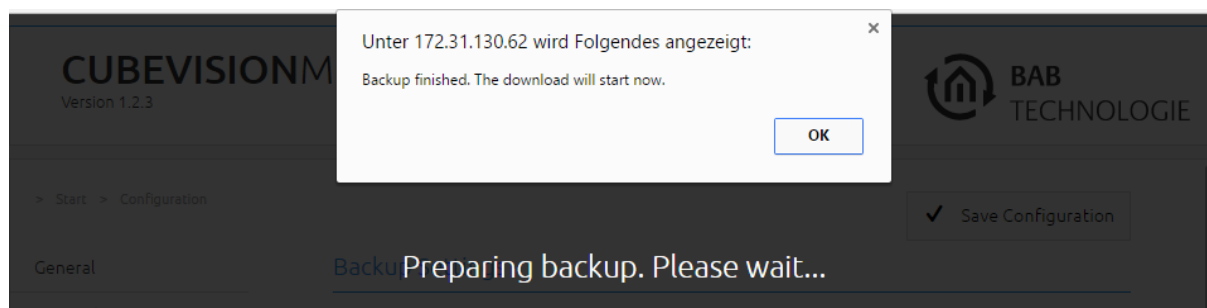


Figure 49: Downloading the backup

RESTORING A BACKUP

- Choose a **CUBEVISIONMODULE** backup file via the "Select Backup File" button. The files have the ending "*.cvm.bkp".
- In the "Backup creation date", "Firmware Version" and "Comment" sections, information about the currently chosen file is shown.
- In the "Modules" section, it is shown which modules are available in the chosen backup file. Using the check boxes, it is also possible to determine which modules are to be restored.
- *Configuration:* All configuration data except for the CUBEVISION configuration data.

Note: The network settings are not part of the backup file.

- *States & History:* The Address State Table and History Table are restored. This is important in order to receive status information in the CUBEVISION after a restoration.
- *CUBEVISION:* Restores the CUBEVISION configuration data.



3.10 SYSTEM / FIRMWARE UPDATE

In general, all **CUBEVISIONMODULE** firmware, version 1.0.1 and higher, can be updated. There are two hardware versions for which different firmware images are available:

- Devices with f/w 1.0.1 or higher: All firmware files with the number 1.0.X can be used
- Devices with f/w 1.1.0 or higher: All firmware files with the number 1.1.X can be used

The firmware update is free of charge. The current firmware files can be found on the BAB homepage. In order to update the device, please proceed as described below:

- Download the current firmware image in the download section www.bab-tec.de

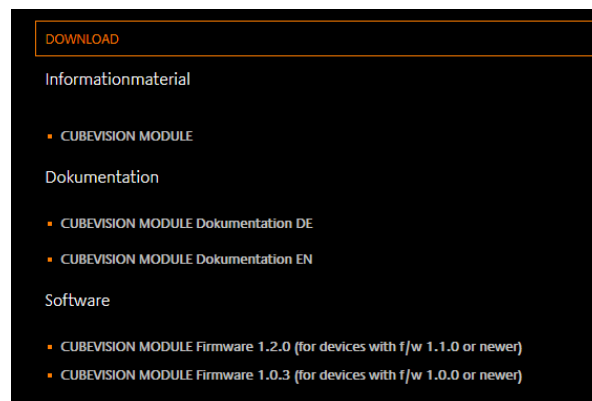


Figure 50: Downloading the CUBEVISION firmware image

- Unpack the file in any folder

Note: Generate a new backup including all apps and app instances before you launch the update (see "Backup the settings"). The update process restores the factory settings.

- Open "Configuration" – "System"

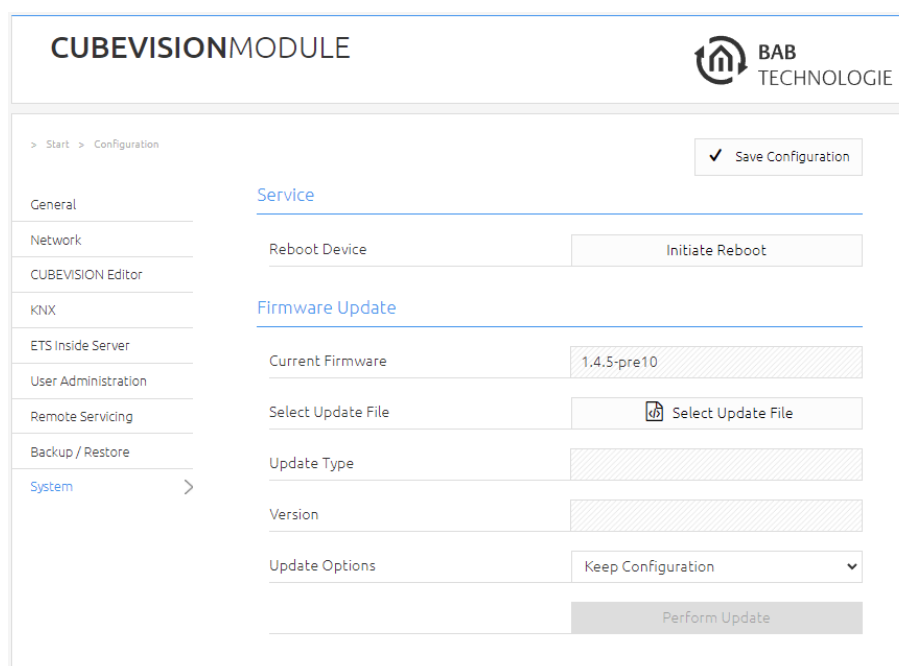


Figure 51: Configuration – System

- Select the firmware image file (ending *.bin) via the "Select Update File" dialogue. The type and version of the update are shown

Figure 52: Update file chosen

- Decide how to perform the update. The following option can be selected:
 - Keep Configuration: restores the configuration after the update. PLEASE CREATE FOR SECURE ALWAYS A BACKUP.
 - Keep Network Setting: keep your current network settings after the update.
 - Reset Configuration: set the CUBEVISIONMODULE after the update to the factory settings.

Figure 53: Keeping the network settings

Note: If the "Reset configuration" option is selected, the CUBEVISIONMODULE can be reached under the default IP address after the update process. (for factory settings, see "[Initial operation](#)")

- Start the update process by clicking on "Perform Update".

Figure 54: Performing the update

- Wait until the update process has been completed. The web interface is updated automatically if the process has been completed successfully.



4 CUBEVISION VISUALIZATION

CUBEVISION is one of the most innovative visualizations. The design and layout of the visualization are created automatically and the user must only specify the building structure and link the functions. CUBEVISION automatically scales to the screen size and opens up either in the "Phone" or in the "Tablet" presentation depending on the resolution.

"Tablet" presentation



Figure 55: Tablet presentation

"Phone" presentation

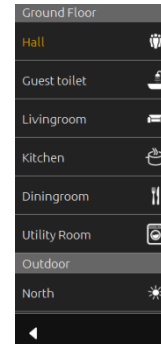


Figure 56: Phone presentation, room navigation

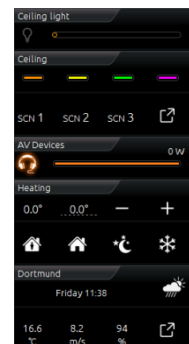


Figure 57: Phone presentation

4.1 USING CUBEVISION IN A BROWSER

In order to start CUBEVISION in the browser, call up the start page of the **CUBEVISIONMODULE** and click on "CUBEVISION". You then access the project (building) selection.

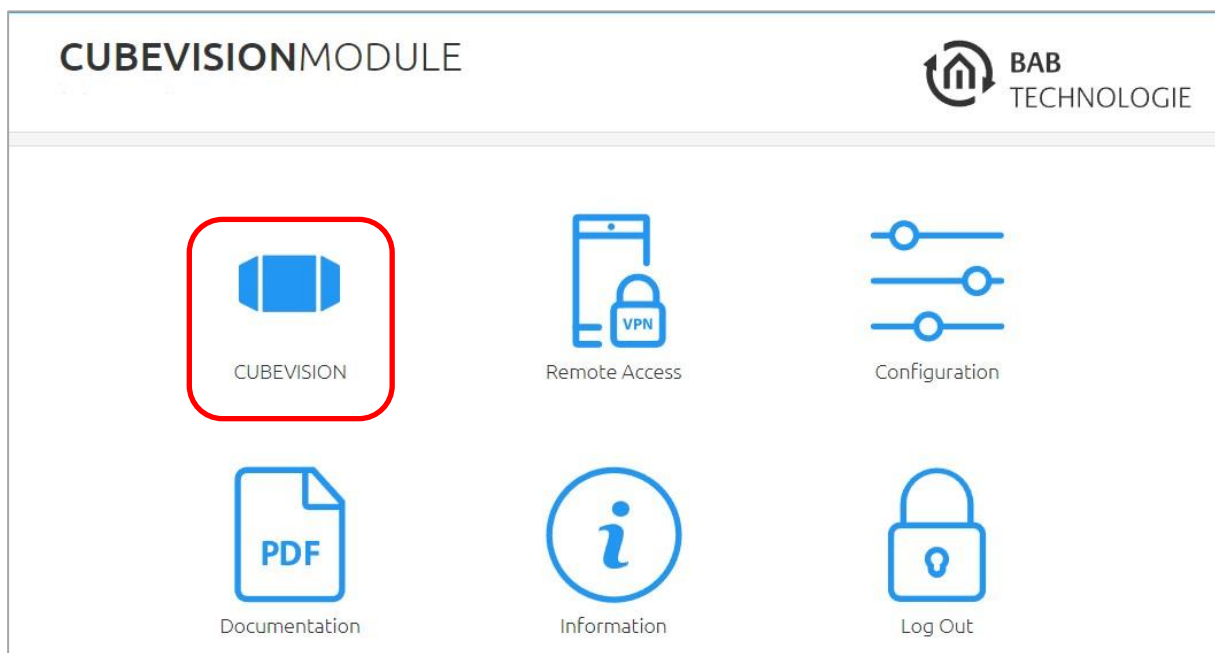


Figure 58: Calling up CUBEVISION

Note: The visualization uses the most recent HTML 5 browser technology. For this reason, it is important to only use the recommended browsers for the CUBEVISION presentation.

Overview of the recommended browsers and presentations on different terminal devices

PC:	<ul style="list-style-type: none">▪ Browser: Google Chrome, Mozilla Firefox▪ Possible presentation: Phone, tablet
MAC:	<ul style="list-style-type: none">▪ Browser: Apple Safari▪ Possible presentations: Phone, tablet
Android tablet:	<ul style="list-style-type: none">▪ Browser: Google Chrome▪ Possible presentations: Phone, tablet
Android phone:	<ul style="list-style-type: none">▪ Browser: Google Chrome▪ Possible presentations: Phone (tablet not recommended)
Apple (iOS) tablet:	<ul style="list-style-type: none">▪ Browser: Apple Safari▪ Possible presentations: Phone, tablet
Apple (iOS) phone:	<ul style="list-style-type: none">▪ Browser: Apple Safari▪ Possible presentations: Phone (tablet not recommended)
Windows phone / tablet:	<ul style="list-style-type: none">▪ Browser: Internet Explorer▪ Possible presentations: Only phone

4.2 CONFIGURING THE PRESENTATION

The presentation of CUBEVISION is usually carried out automatically. This means that CUBEVISION recognises automatically which resolution is to be presented and scales correspondingly. From a resolution of 1,024 x 768 pixels and above, the tablet presentation is chosen. In order to make manual adjustments to the presentation, please proceed as described below:

- Presentation in the browser: Open the CUBEVISION menu item in the main menu of the **CUBEVISIONMODULE**.
- Presentation in the APP: Close an already opened APP via the task manager of your mobile device and open it again so that you can access the start screen of the APP (see chapter "Using the CUBEVISION APP")
- Click "Settings" (see figure below, orange circle).

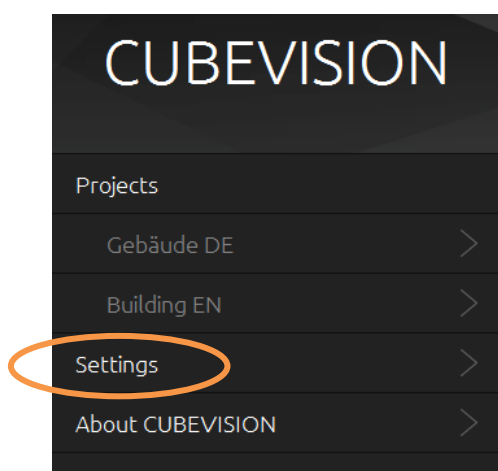
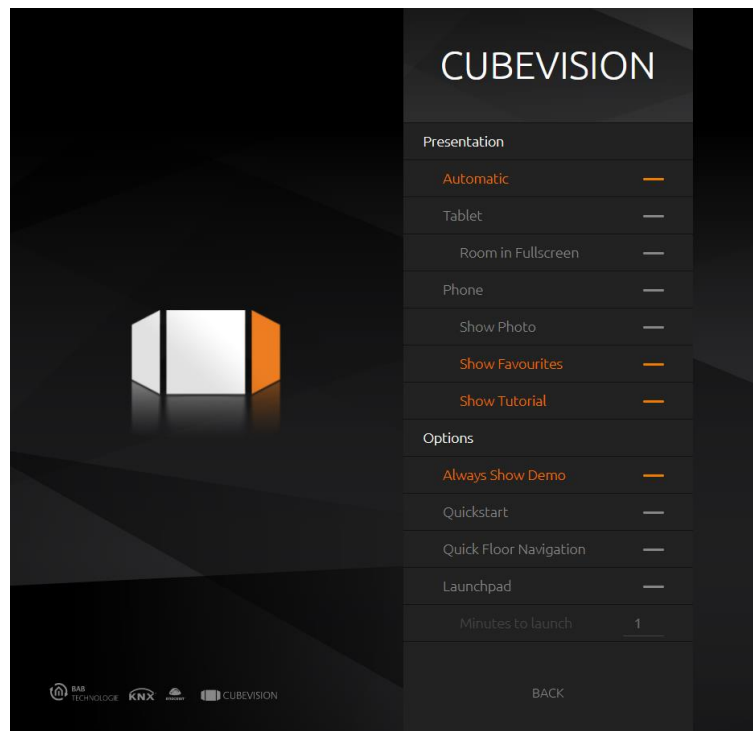


Figure 59: CUBEVISION presentation settings

- You can change the display in the following menu.
The following configuration options are available:



Displays - Automatic / Tablet / Phone

The CUBEVISION has two display modes. "Tablet" describes the 3-D cube display for devices with larger displays, "Phone" the display for smaller, e.g. smartphone displays. The "Automatic" setting is used to select the respective display depending on the resolution of the CUBEVISION itself. The visualisation automatically scales to the screen size:

Minimum size (minus respective status bars) with "Automatic" for tablet display = 950x700 (according to DPR).

Show photo

Background pictures are also displayed in the phone view

Show favourites

Favourites are also displayed in the phone view

Show tutorial

The user is guided through the operation at the first start (applies to the phone view).

Always show demo

Only relevant for the CUBEVISION APP. Shows a demo project even if no project has been created.

Quickstart

Only relevant for the CUBEVISION APP. Calls the last opened project directly.

Quick Floor Navigation

On mobile devices (smartphone, tablet) the Quick Floor Navigation optimises the performance of the CUBEVISION by using less memory.

Launchpad

Activates or deactivates the Launchpad. If the launchpad is active, a time in minutes can be set for the launchpad to appear automatically (1-65535 minutes).

Confirm your selection with "OK" and call up the required visualization project (building).

4.3 USING IN THE CUBEVISION APP

For iOS and Android devices, an APP for calling up CUBEVISION is available in the respective stores. This APP is called "CUBEVISION APP". The application is free of charge. In order to call up CUBEVISION from the **CUBEVISIONMODULE** in the APP, please proceed as described below:

- Install the APP from the respective store (Google Play, Apple App Store).



Figure 60: CUBEVISION APP icon

- Start the application. The start screen of the APP opens up. If CUBEVISION-compatible end devices (EIBPORT, **CUBEVISIONMODULE** and **FACILITYMASTER**) have already been added before as favourites, they are listed here. They can be deleted again using the "Remove favourites" button. The start settings of the visualization are changed using the "Settings" button

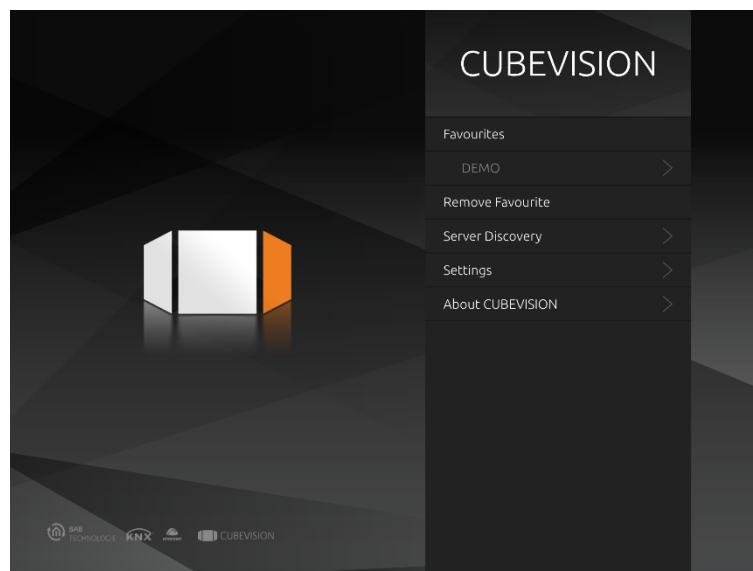


Figure 61: CUBEVISION APP start screen

- In order to add a new server (device), click the "Server Discovery" button. A second screen opens up and shows you all devices available in the network are shown at "Discovered Servers" with their respective serial numbers. Both **EIBPORT** or **FACILITYMASTER EIBPORT** (serial number starts with "BT01") and **CUBEVISIONMODULE** ("BT103") are displayed.

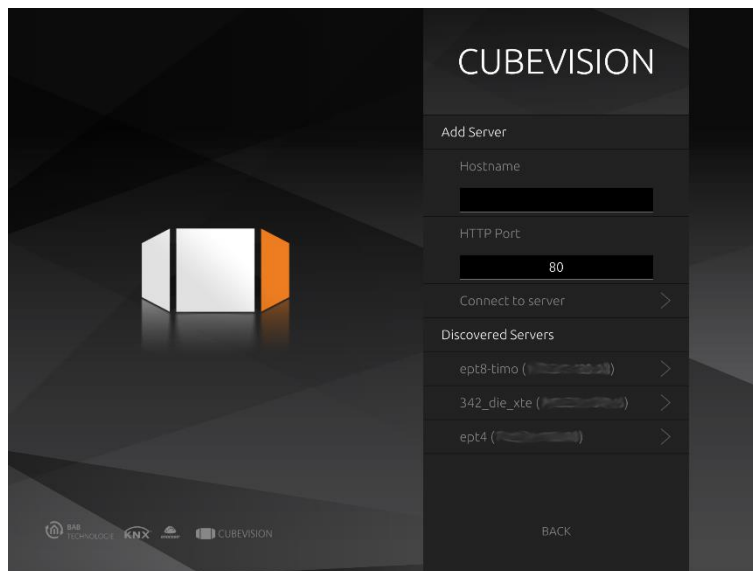


Figure 62: CUBEVISION APP server selection

- If the required server (device) is not available, an additional server can be added using the “Add server” menu and entering the respective hostname and http port.
- If there are several CUBEVISION projects (buildings) on the required server (device), a project (building) selection is shown after the server has been selected. In order to save the server as a favourite in the above-mentioned list of favourites, the "Save as favourite" check box must be activated.

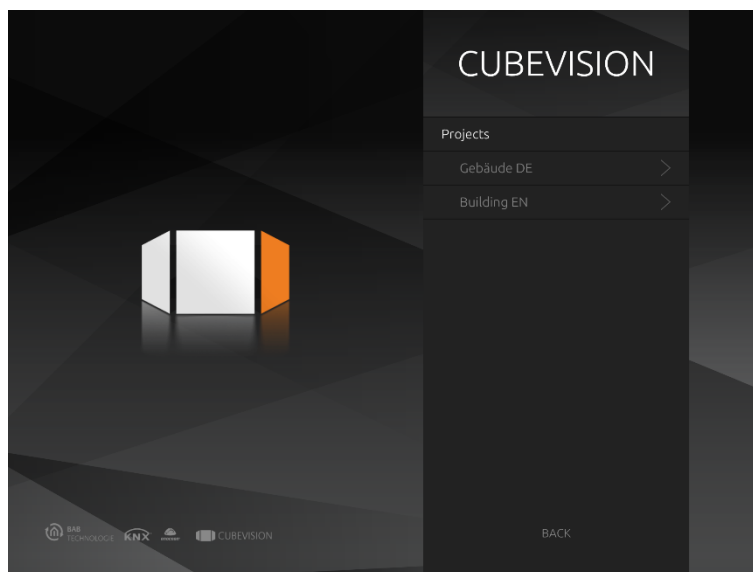


Figure 63: CUBEVISION APP project (building) selection

After the required project (building) has been selected, the visualization is started with the start page set and specified in the configuration.

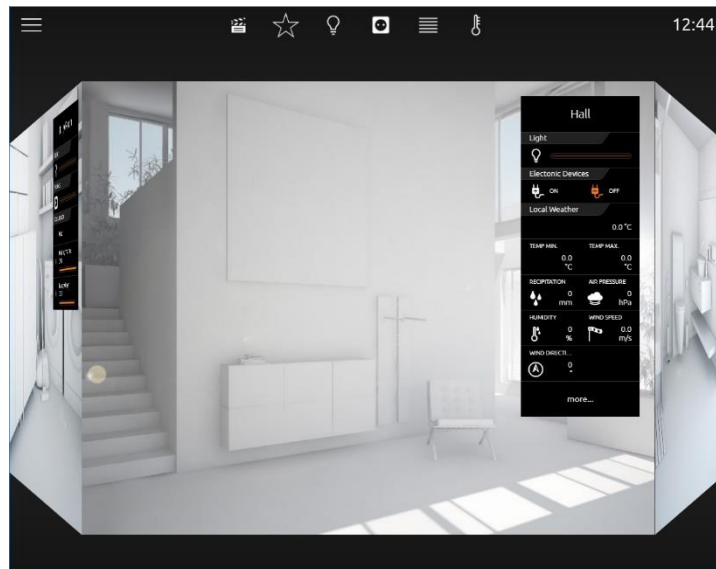


Figure 64: CUBEVISION APP – First Visualization Page

LIMITATION OF PROJECT SIZES ON MOBILE DEVICES

Because of the memory usage, the size of the CUBEVISION project is limited. The limit on iOS devices is reached a bit earlier than on Android devices. If a critical memory level has been reached, a "Memory Warning" appears. Due to the fact that the CUBEVISION APP shares the resources with other applications, the limit can also be reached earlier if a resource-intensive application is used.

Optimizing performance

In order to optimize the performance of the CUBEVISION, please take the following aspects into account:

- Reduce rooms and floors as far as possible
- Use optimized background images
- Use the Quick Floor Navigation to ensure that only one floor at a time is loaded



5 CUBEVISION NAVIGATION

This chapter describes how to operate and navigate CUBEVISION. In addition to this, the individual elements are explained in order to get familiar with all CUBEVISION special features, techniques and automatic procedures.

There are two types of presentation as described in the chapter above: "Tablet" and "Phone".

The elements of the "Tablet" presentation are as follows below:

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

The elements of the "Phone" presentation are as follows below:

- Room Navigation
- Central View
- Favourites
- Room View
- Extended Element View [EEV]

5.1 CUBEVISION IN TABLET PRESENTATION

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.

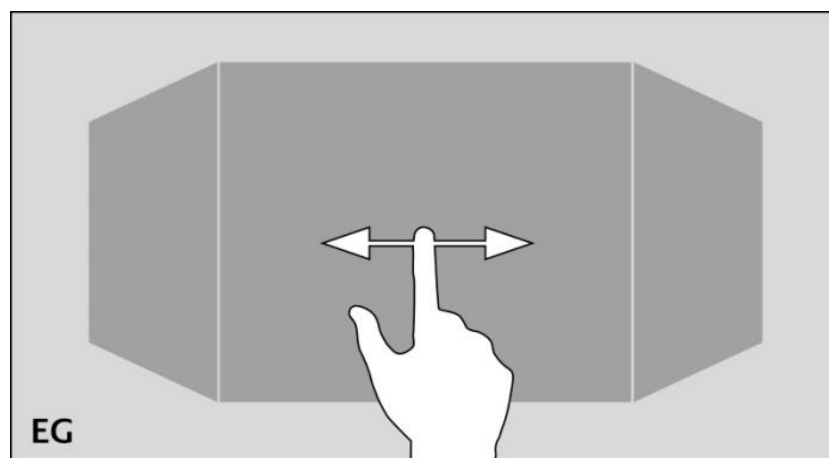


Figure 65: Horizontal finger movement for shifting the room

The vertical finger movement serves for navigation through levels resp. floors. If the end of vertical direction will be reached, an orange colored 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.

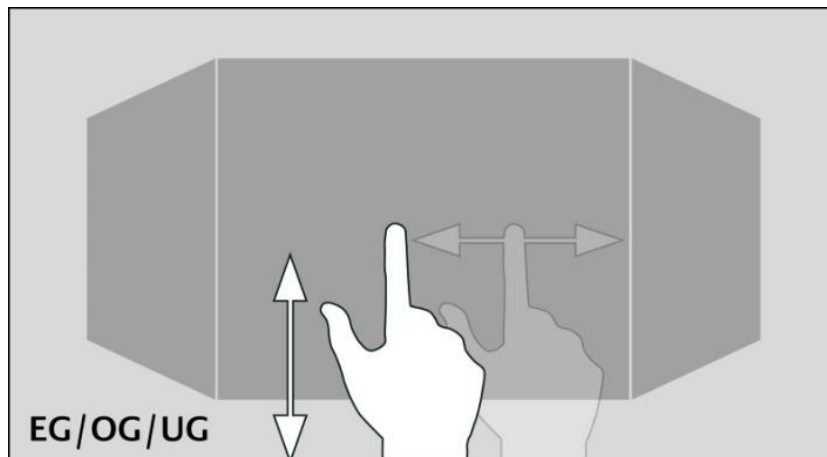


Figure 66: Vertical finger movement for shifting levels

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.

5.1.1 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).

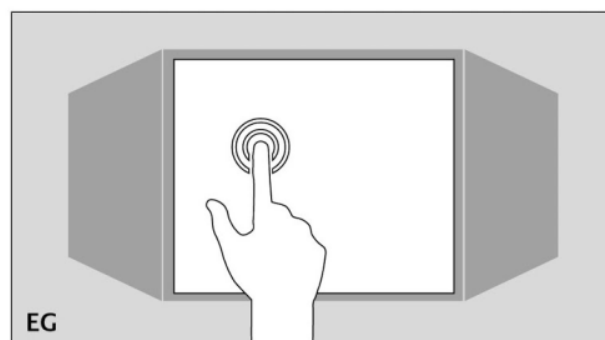


Figure 67: Starting Quick Navigation

**Closing Quick Navigation:**

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

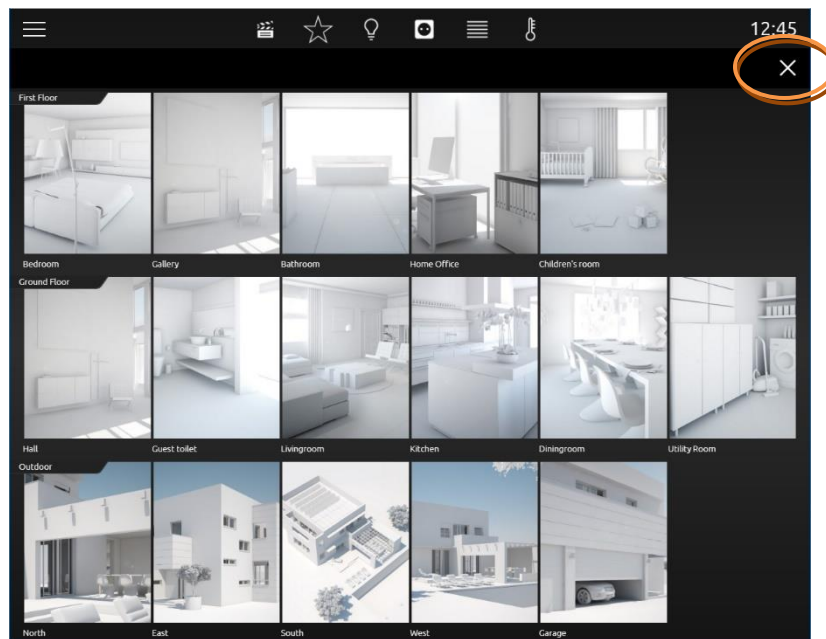


Figure 68: View of Quick Navigation

Please note: Quick Navigation can be disabled completely when necessary

5.1.2 QUICK FLOOR NAVIGATION

The Quick Floor Navigation is another type of navigation through the floors. Instead of pulling the cube in the "Tablet" view upwards or downwards to switch between floors, a navigation icon is displayed on the right-hand corner of the screen, via which you can select the floors directly.

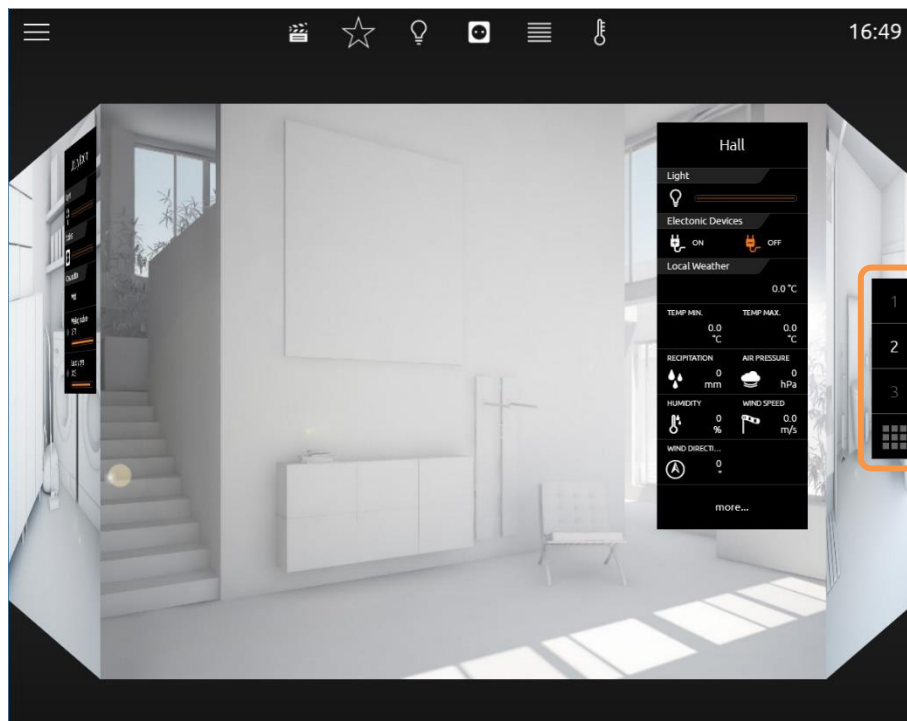


Figure 69: CUBEVISION with Quick Floor Navigation

On mobile devices (smartphone, tablet), the Quick Floor Navigation optimizes the performance of the CUBEVISION, as less memory is required.

CONFIGURATION OF THE FLOOR DESIGNATION

In order to change the display designations of the Quick Floor Navigation, the "Short Name" input field is available in the CUBEVISION Editor when clicking on the respective floor. Here, a maximum of two (2) digits can be assigned to each floor. If no entry is made, the floors are numbered consecutively from top to bottom.

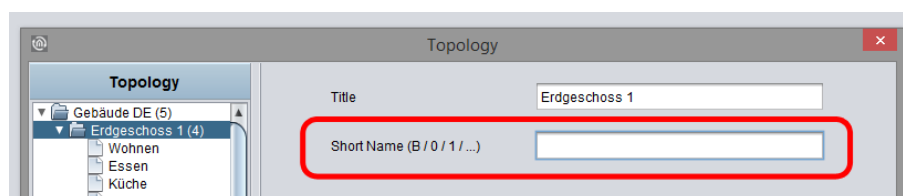


Figure 70: CUBEVISION Editor – Floor designation for Quick Floor Navigation



5.1.3 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 favorite 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 favorite 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 favorite 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 71: Instant Control Panel (seen on the right side)

5.1.4 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) this view can be closed.



Figure 72: ICP expansion

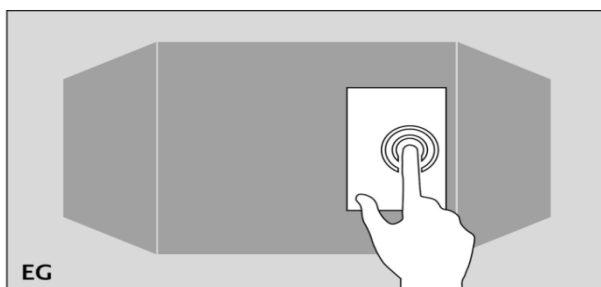


Figure 73: Opening of Extended Control Panel. Click on "more..."

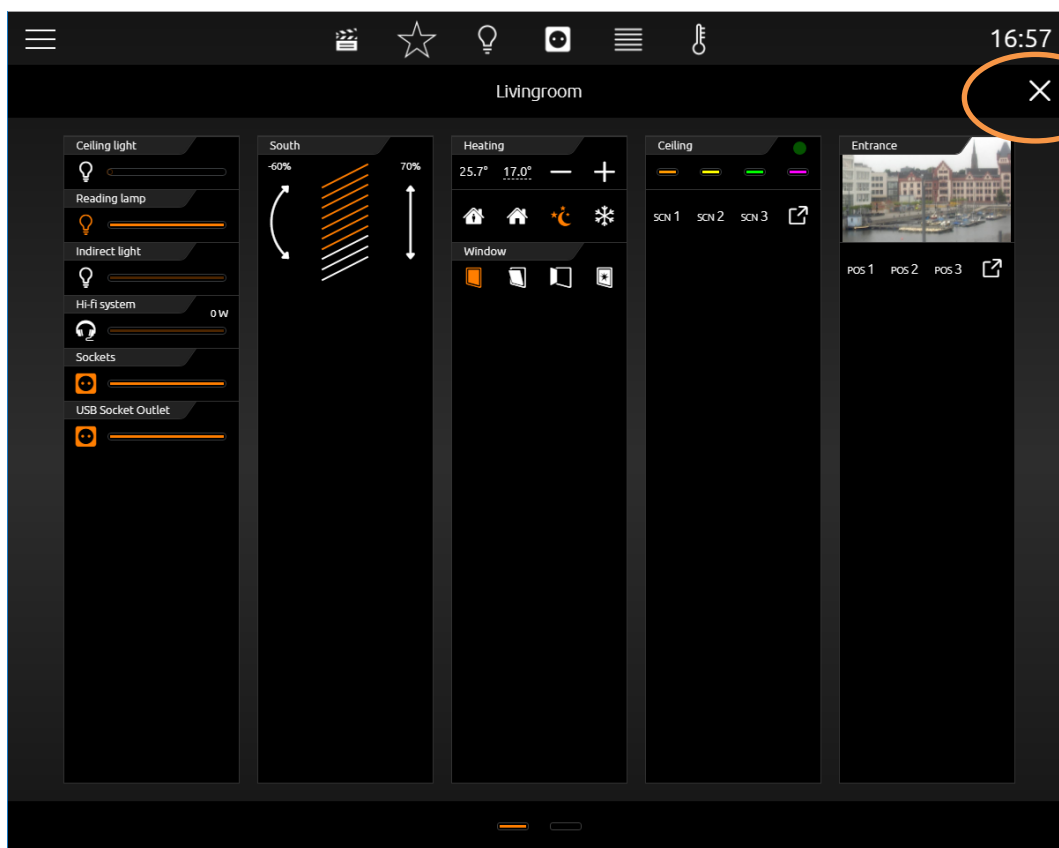


Figure 74: Extended Control Panel



5.1.5 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 below).

Example:

This extended element view is generated fully automatically. The extended element view of the Internet Weather Symbol is shown in the figure above and marked by an orange circle.

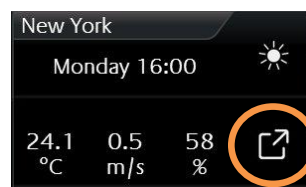


Figure 75: Example Internet Weather

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 the figure below marked by an orange circle...



Figure 76: 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). In this way, the user can switch between both elements back and forth.

5.1.6 CENTRAL VIEW

"Central View" is an additional function allows a room-independent central overview of the required functions. Each visualization element includes the "Central View" menu item and can thus be assigned the required central view.

Here, it is possible to add categories to the "Central View" menu according to your own wishes and requirements.

To do this, please proceed as described below:

- Click the  symbol (see figure on the right-hand side, red circle).
- A new window opens up, in which you can now create new categories.
- Operations (see figure below, "Add category"):

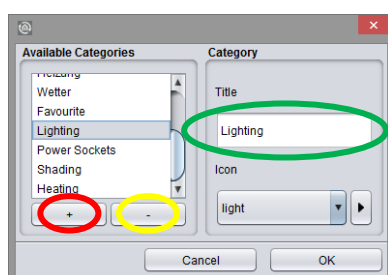


Figure 77: Adding category

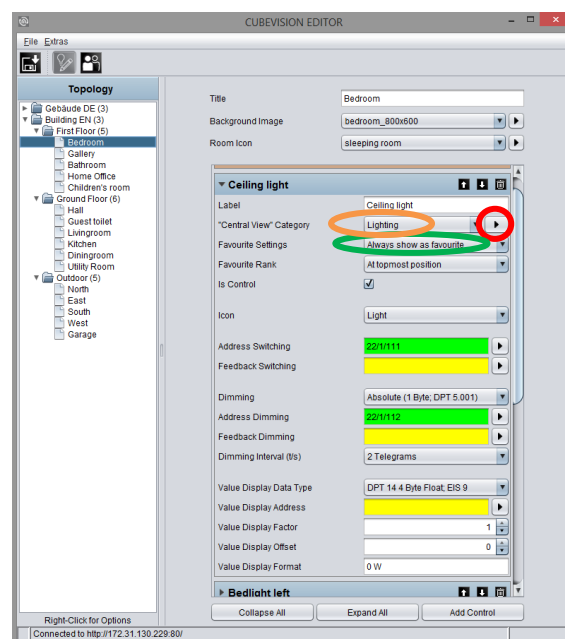



Figure 78: Central View

Symbol	Functions
"+"	By clicking "+", a category can be added.
"-"	By clicking "-", a category can be removed.
Title	Here, the category can be assigned a title.
Icon	Here, you select a specific icon for the category.
	Click this symbol to add an individual picture for the icon.
Cancel	By clicking "Cancel", you cancel the adding process.
OK	By clicking "OK", a new category is saved.

As soon as the control element has been assigned a required "Central View" category, the corresponding menu item is generated in a status line above CUBEVISION in the tablet presentation.

In this way, it is possible to generate any group of control elements in the "Central View" menu.

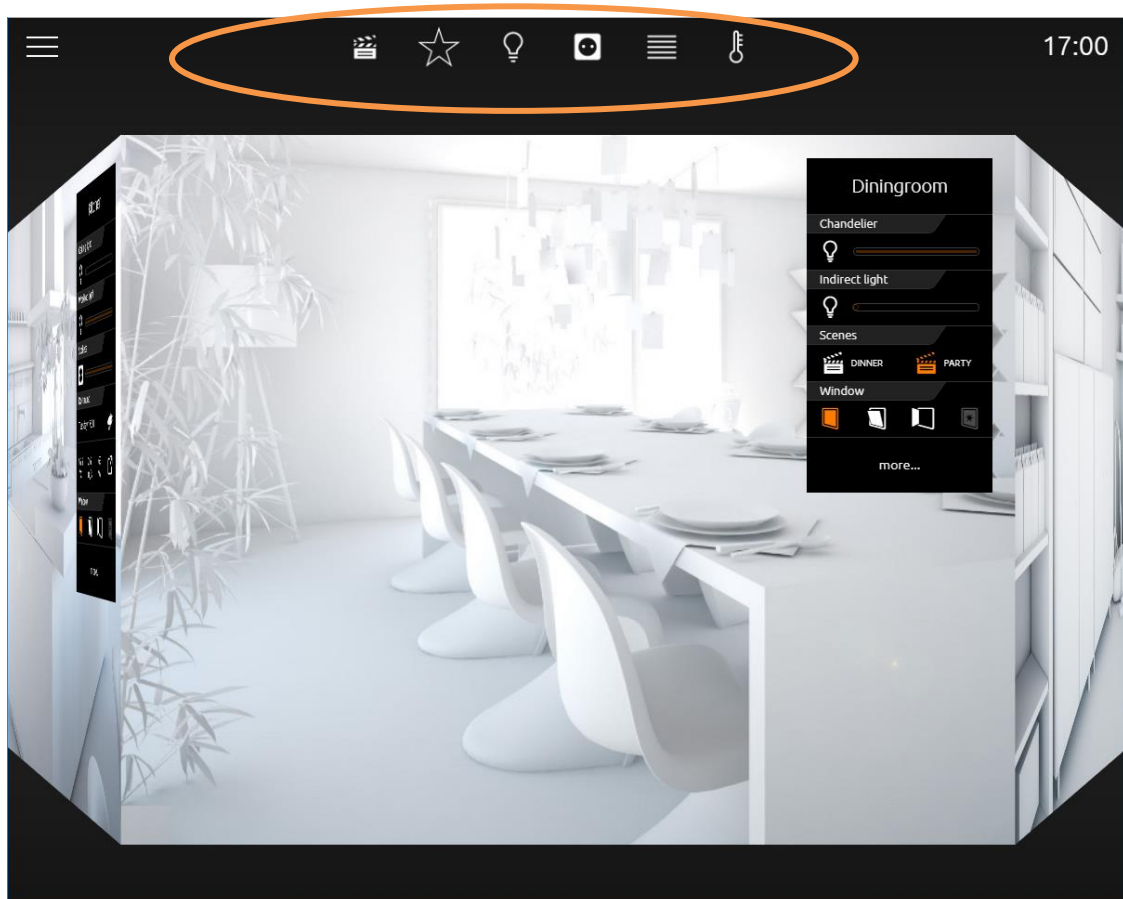


Figure 79: Central View visualization

5.2 CUBEVISION IN THE PHONE PRESENTATION

It is possible to navigate through the building structure by sliding horizontally, sliding vertically and touching. Thus, intuitive operation of the visualization on the smartphone is ensured. The phone presentation is designed in such a way that so-called "one-thumb operation" is possible (depending on the screen size).

5.2.1 NAVIGATION

The navigation through the building structure in the phone presentation differs from that in the tablet presentation. In order to access the visualization on different floors or in different rooms, you must touch the symbol (see figure below, orange circle).

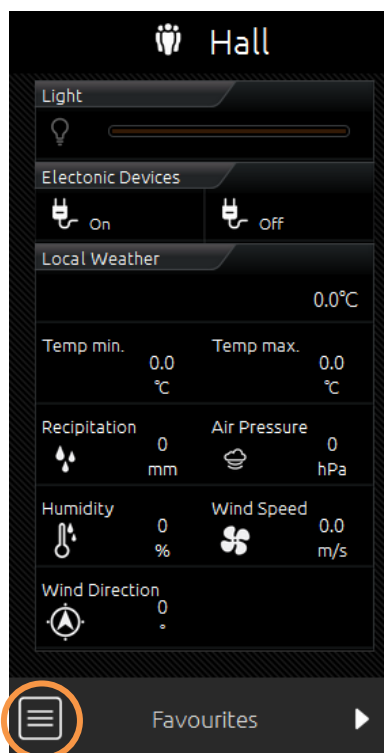


Figure 81: Opening room navigation

You can access the room navigation (see figure on the right-hand side). In general, it depends on how many floors and rooms were created in the topology.

In this example, there are four "layers":

- Central View (see chapter "Central View")
- First Floor
- Ground Floor
- Outside

In order to access the required page, just touch the corresponding menu item.

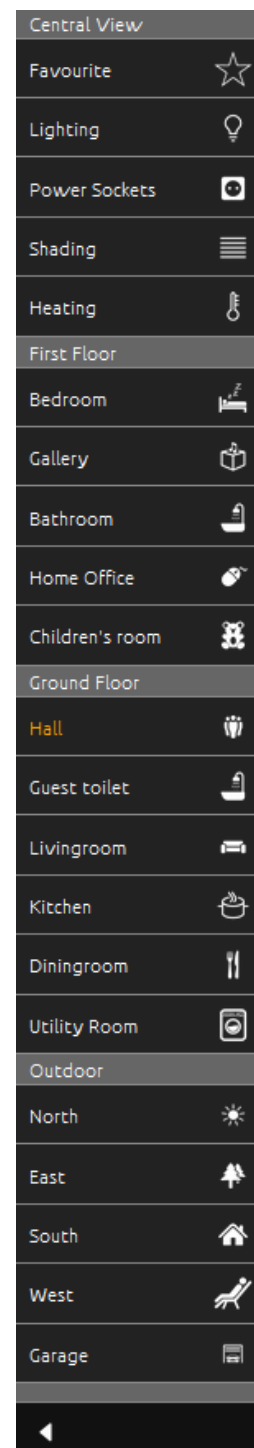


Figure 80: Room navigation



Navigation within a room [room view]

If you have used the "Column Separator" element during configuration in order to categorize the elements, switch between the columns within a selected room by sliding horizontally.

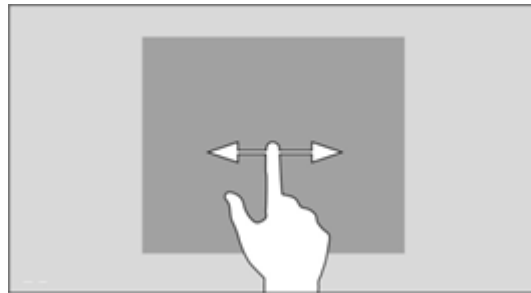


Figure 82: Sliding horizontally

Navigation – within the columns of a room

The control elements within the columns are arranged one below the other. As of a certain number of control elements, they protrude from the visible area of the screen. In order to access the required control element, sliding vertically is required.

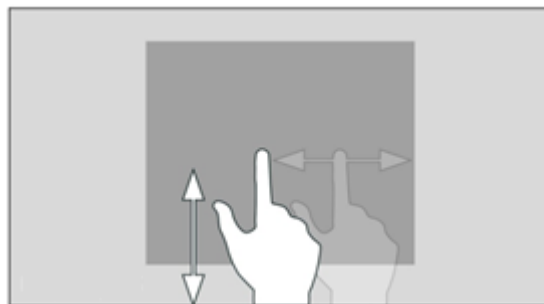


Figure 83: Sliding vertically

Operating an element

By "touching" a control element, it is activated for the respective condition. The surrounding functions are shaded in order to visually mark the selection and make it clear. Only then can the control element be operated correspondingly. In order to exit this mode, it is necessary to touch the screen outside the operable area.

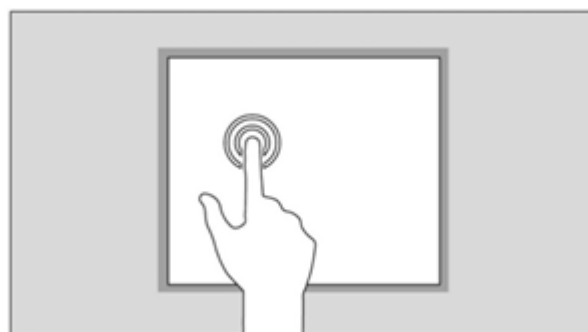



Figure 84: Touching

5.2.2 CENTRAL VIEW

"Central View" is an additional function allows a room-independent central overview of the required functions. Each visualization element includes the "Central View" menu item and can thus be assigned the required central view.

Here, it is possible to add categories to the "Central View" menu according to your own wishes and requirements.

To do this, please proceed as described below:

- Click the  symbol (see figure on the right-hand side, red circle).
- A new window opens up, in which you can now create new categories.
- Operations (see figure below, "Add category"):

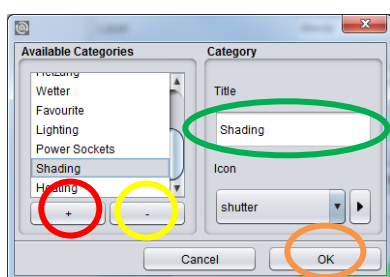


Figure 86: Adding category

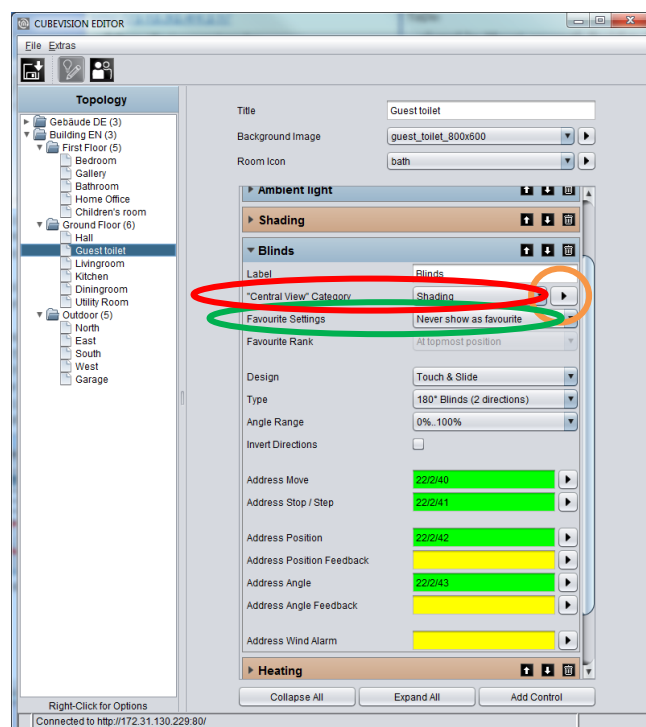



Figure 85: Central View

Symbol	Functions
"+"	By clicking "+", a category can be added.
"-"	By clicking "-", a category can be removed.
Title	Here, the category can be assigned a title.
Icon	Here, you select a specific icon for the category.
	Click this symbol to add an individual picture for the icon.
Cancel	By clicking "Cancel", you cancel the adding process.
OK	By clicking "OK", a new category is saved.

As soon as the control element has been assigned a required "Central View" category, the corresponding menu item is generated in a status line above CUBEVISION in the tablet presentation.



5.2.3 FAVOURITES FUNCTION

Upon request, the favourites function generates an automatic sorting of the control elements according to how frequently they are used (clicked). To do this, the control elements are sorted into the "Favourites" column provided in the phone presentation, whereas the respective control elements are sorted into the Instant Control Panel [ICP] in the tablet presentation.

In order to ensure that a control element is considered by the favourites function, the following settings must be taken into account in the control element configuration.

Option	Functions
Automatic	Here, functions are added to favourites according to the frequency of clicks.
Always show as favourite	Here, functions are always added to favourites.
Never show as favourite	Here, functions are never added to favourites.

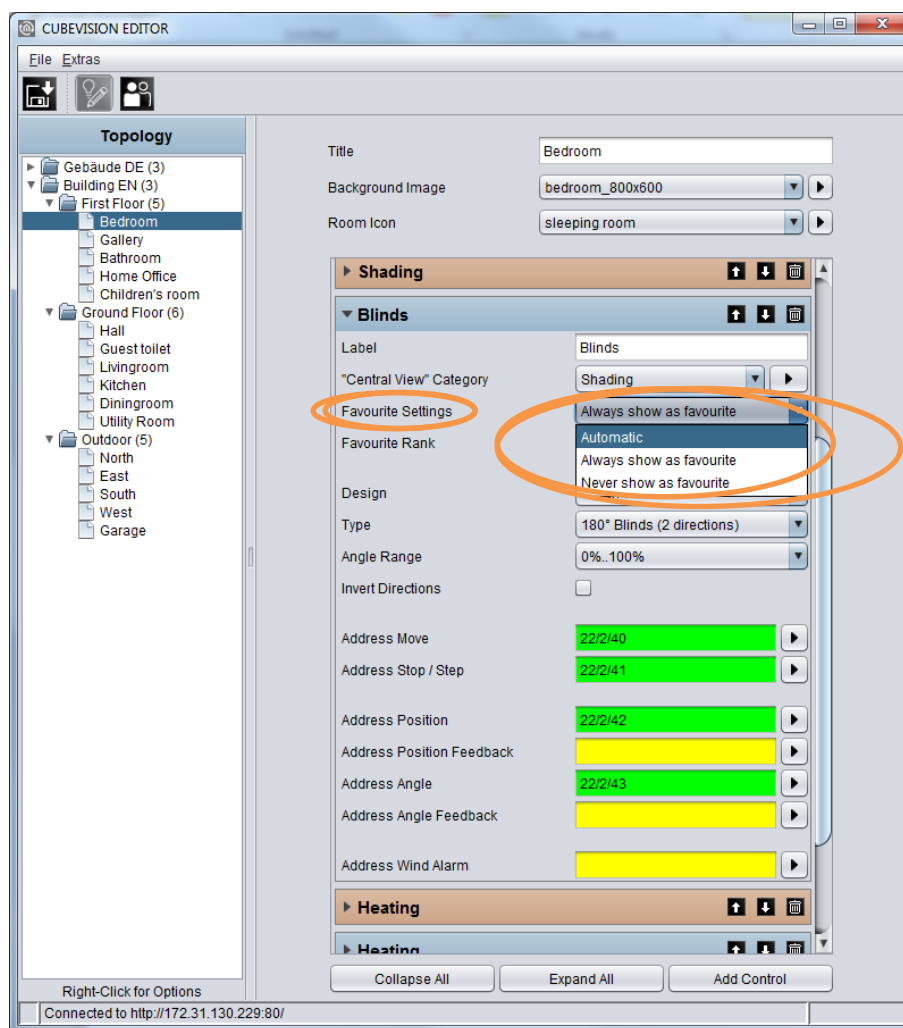


Figure 87: Favourites

5.2.4 COLUMN SEPARATOR

With the "Column Separator" control element, the user also has the option of influencing the assignment of the control elements to the individual columns in the phone presentation.

In the following example (see figure below), a "Column Separator" control element was inserted between "All Sockets" and "Blinds". Separating the columns, the "Blinds" control element is moved to the second column.

The column can be separated by clicking "Add" in the CUBEVISION Editor. The following window now opens up (see figure below, orange rectangle).

Now the "Column Separator" function can be selected; at the same time, the column separator can be assigned a title (name). This title specifies the group generated by the separation more precisely.

Example: In the "Controlling" column separator element (see figure below, green rectangle), all control elements by means of which something can be controlled (ceiling light, ventilation etc.) have been inserted.

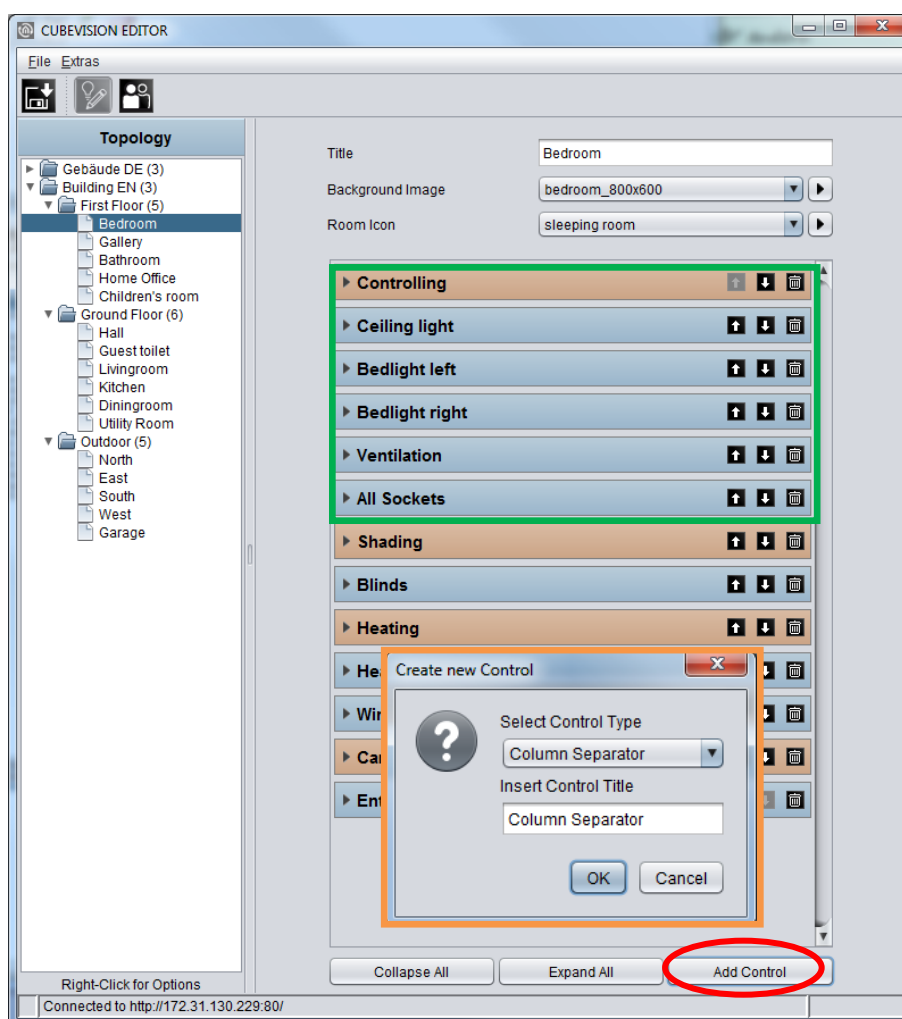


Figure 88: Column separator



6 STRUCTURE OF THE CUBEVISION EDITOR

To call up the CUBEVISION Editor, please observe the information provided in chapter "[CUBEVISION Editor](#)".

6.1 THE "FILE" MENU

LOCALISATION

In future, the localisation menu is to provide the option of adjusting the software language.

ADDRESS LAYERS

In the editor, group addresses are displayed in two layers (mm/ssss) or three layers (mm/M/sss). Available group addresses are converted in the visualization editor if necessary.

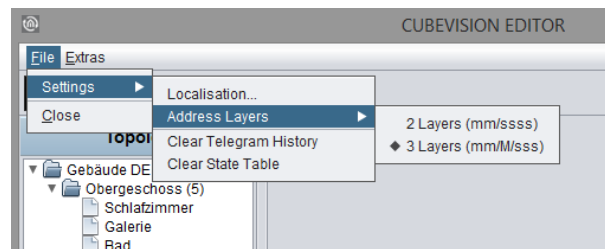


Figure 89: Address layers

ERASING HISTORY TABLE

The **CUBEVISIONMODULE** stores 500,000 messages. These lie in a SQLite database and can be used by the graph in the visualization. The last 20,000 telegrams simultaneously in the operating system itself deposit to you as with external programs to read. With this function, this record is deleted immediately, which are preserved 500 000 telegrams in the SQLite database.

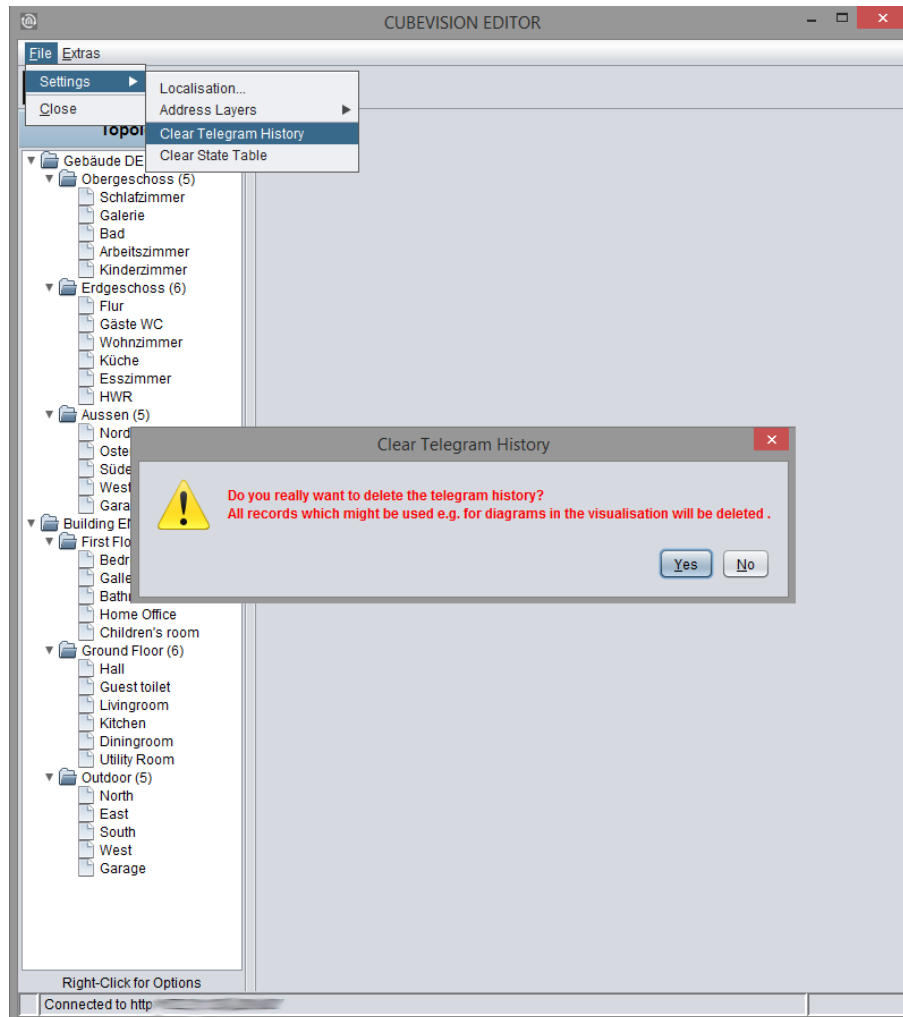


Figure 90: Clear Telegram History



ERASING STATE-TABLE

This table stores the state of all given group addresses. These entries will control working of visualization and jobs. The last condition is determined with the aid of the telegram's time signature. The state table can be erased without rebooting.

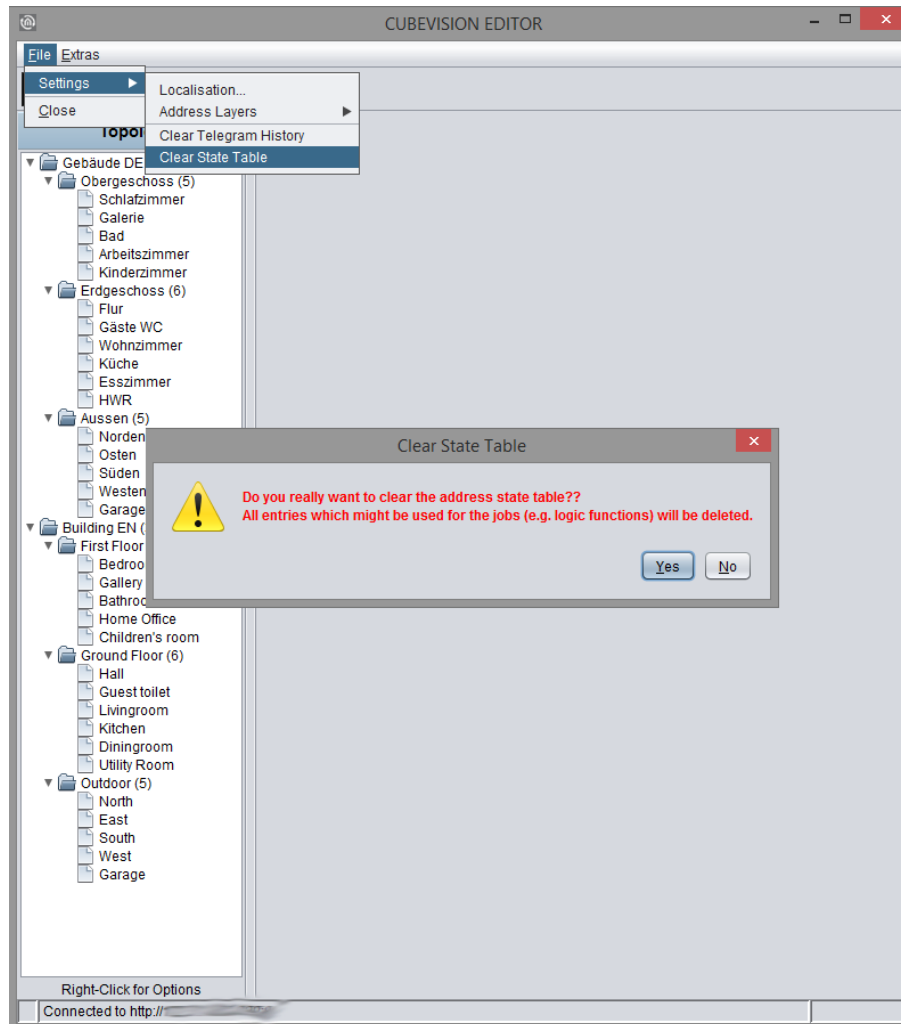


Figure 91: Clear State Table

6.2 THE “EXTRAS” MENU

ESF UPLOAD & DATA MAINTENANCE

All group addresses and your EIS typecast with their identifiers are stored in ESF-file. This file will be generated in ETS 3.0 over File > data exchange > export to OPC-server. Data of ESF-file match the kind of project, which is created in ETS. Loaded up to **CUBEVISIONMODULE**, this file offers the convenience, that the placing and the clearness of group addresses will be simplified.

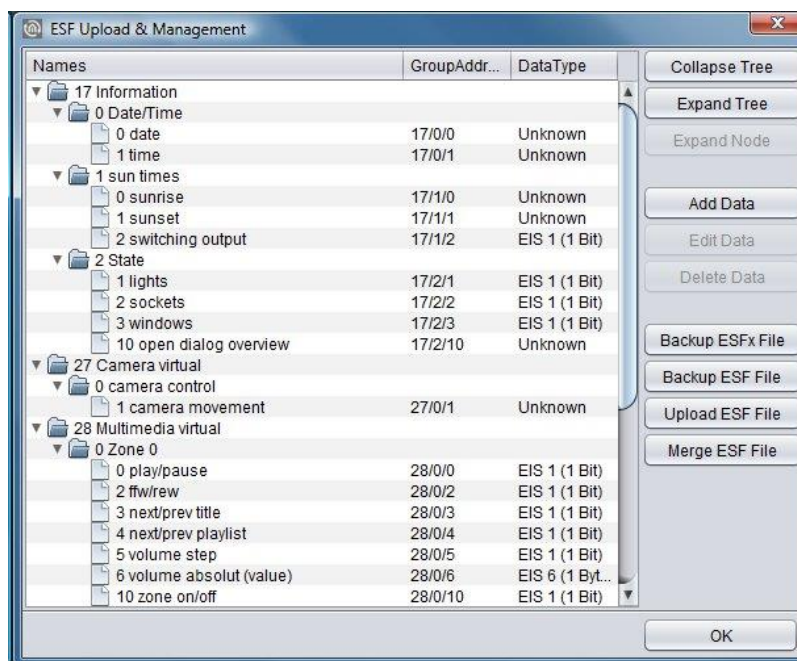


Figure 92: ESF Upload & Data maintenance

For the virtual group addresses or for changings on the existing address data the dialog offers the possibility to maintain the address file. You are able to enter addresses and identifiers.

Please note: If you have made alterations in ESF data of EIBPORT already and if you are uploading this new data from ETS, your modifications will be overwritten by new data.

Collapse tree / Expand tree:

A tree outlines the complete address space of the ESF-file. In case the tree is collapsed, only main groups are displayed, otherwise (expand tree) all groups and their addresses are shown on the screen. Opening and closing of data entries inside the tree works by key click on considered arrow symbols.

Expand node:

The address space of one main group is called node. Opening one node, you can have a look at a certain part of the tree.

Add data:

This function allows filling in new, not yet existing addresses. You can enter address as well as the identifier.

**Edit data:**

In a marked address, you can edit the name, but you can't edit the address.

Erase data:

Selected group address will be deleted from the ESF-file

Backup ESF file:

This item runs a backup from CUBEVISIONMODULE as a ESFx file (xml type), to a free chosen directory.

ESF file backup

The file will be as original ESF file saved as well as the ETS generated.

Caution: As with the original ETS export any data type links to go out EIS1 lost!

Upload ESF-file:

This button opens the file explorer to select the desired ESF-file. Click on item "Upload" will start uploading at once, without further confirmation.

ESF file inputting

Opens an additional menu that allows a new or second ESF file can be merged into the present. An existing ESF file can thus be easily expanded with a more recent case have subsequently result in changes to the ETS project.

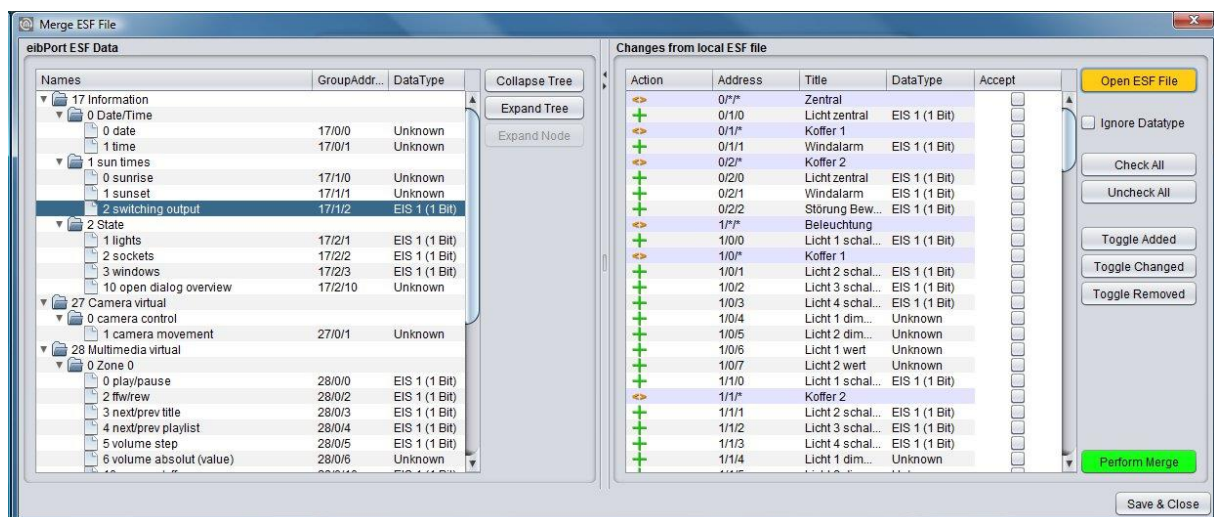


Figure 93: Maintaining ESF data

The "ESF inputting data" is divided into two halves. In the left half of the existing ESF file is displayed. In the right half of the change (not file a second ESF) which would result in merging the two files are displayed. To identify which operation is performed with which group address, the data in the column "Action" will be marked with a symbol. A "+" symbol indicates that the corresponding address of the existing ESF file is added. A "-" means the address of the existing file will NOT be added, and the "<>" marks the addresses by the new data will be overwritten. After all necessary steps have been made, the window must be on the button "Save & Close" closed. In addition, the following switches:

- ESF Open File: This button opens a file browser with the ESF, the desired file is selected with the extensions
- Ignore Data Type: If this box is checked the data types are ignored during the merge.
- Select All: There are all those actions' in the local file with the hook marked "Accept."
- Remove selection: The current selection is removed, all the hooks are removed in "acceptance".
- Select New: There are selecting only the addresses (or actions) is added to the new addresses.
- Select Changes: There will be selected all the addresses (or actions) in the existing addresses replaced by new ones.
- Select Deleted: There are all selected addresses

IMAGE TRANSFER

This dialogue stores and manages images for visualization in **CUBEVISIONMODULE**. The images could be sorted to various categories or be deleted.

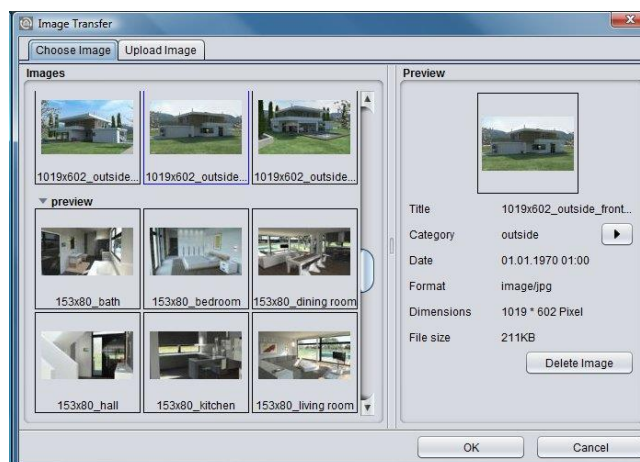


Figure 94: Editor - Image transfer

- Choose Image: In this tab, all uploaded images are managed. If you mark a picture, a „Preview“ is shown in the right window. With the help of item “category”, you can refer the image to a existing or a new category. Categories and referred pictures appear in the left-hand window. Button „Delete Image“ erases the marked picture out of category.

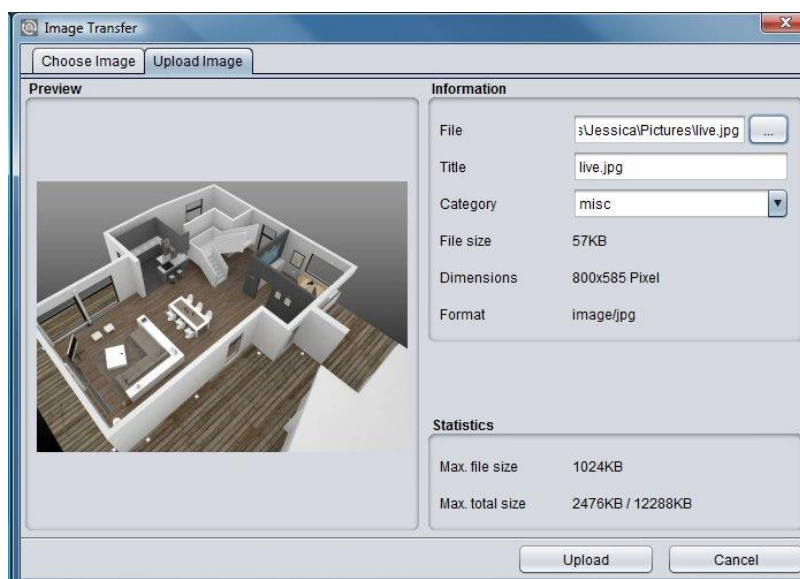


Figure 95: Editor - Image transfer

- Upload Image: This tab makes possible to upload new images. Along with it, you choose a picture, which you can see right in window and then you enter a title to this image. With the help of „category“, you refer a category. Image information appears directly after selection on the screen.
In the area „statistics“, maximal permitted data size and actual used data space of your image are shown. Key click on „Upload“ starts storing images directly.
Images could also be uploaded by using „drag & drop“. Pull the desired image e.g. from desktop to visualization surface and the dialogue „Upload“ opens automatically then.



HISTORY & STATE-TABLE

The **CUBEVISIONMODULE** beneath the SQLite database (500,000 frames) stores a record of the last 20,000 messages (storage ring) and provides a state table that always displays the current status of all group addresses.

A state does not exist, when the address never was used. The actual state is defined by the moment of telegram is being received. Using a backup, state table and the history table are saved as well.

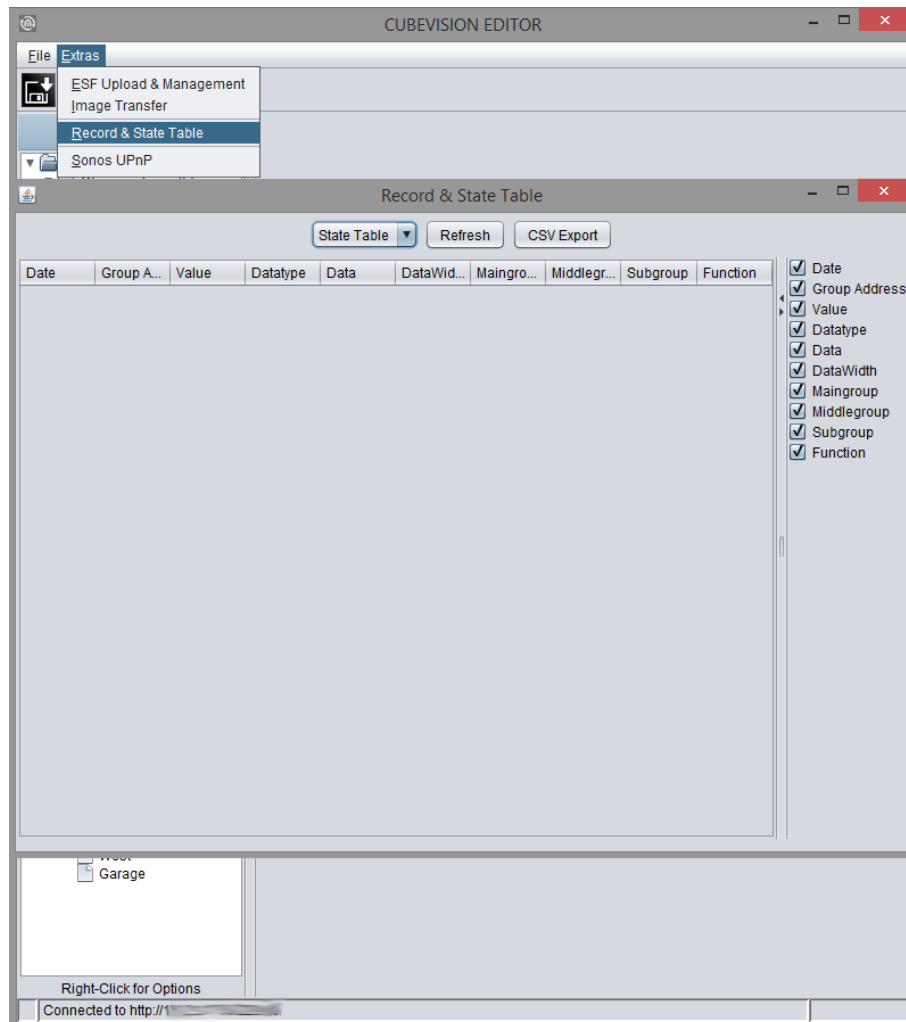


Figure 96: Record & State Table

- *Refresh:* You can choose between state table and history table. The „Refresh“ Button loads up actual table onto the screen. This may take a while.
- *Presentation:* Data will be sorted by date. On the right side, you can choose by the help of little checkmarks, which data fields should be shown. At the dividing line of the two parts you are able to hide the one or the other information by clicking the little arrows.

SONOS UPNP

In order to be able to control the available SONOS players using the CUBEVISION "Multimedia" control element, it is necessary to assign the respective players the required radio stations. To do this, switch to the "Sonos UPnP" menu in the "Extras" menu.

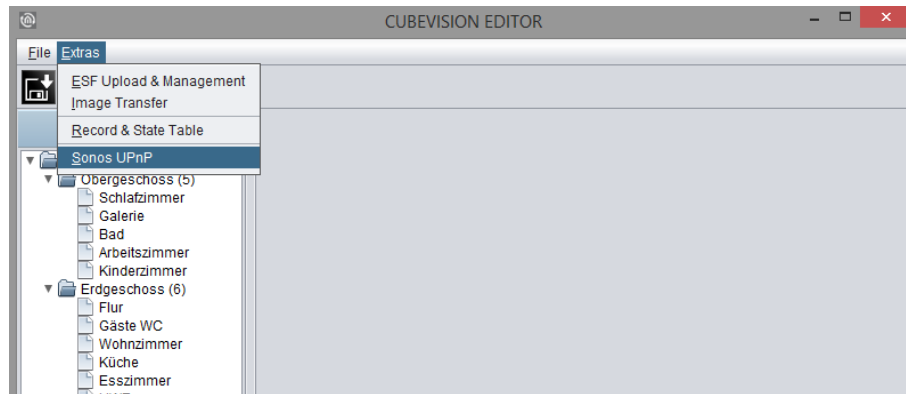


Figure 97: Start Sonos UPnP Configuration

Now a new browser window with the UPnP configuration opens up.

In order to ensure that the required radio stations can be played via the CUBEVISION "Multimedia" control element, the available SONOS devices must first be assigned the required stations. To do this, please proceed as described below:

1. Open the SONOS App on the smartphone, tablet or PC.
2. Select the required player in the SONOS APP.
3. Search for the required radio station.
4. Select the same SONOS device in the configuration mask of the **CUBEVISIONMODULE**.
5. Click "Update" (see figure below, orange circle).
6. Now you see the current title and the current URI.
7. Click "Add Current Stream" (see figure below, green circle).
8. Finally, click "Save" (see figure below, red circle)
9. Repeat these steps until all of your SONOS players have been assigned the required radio stations.

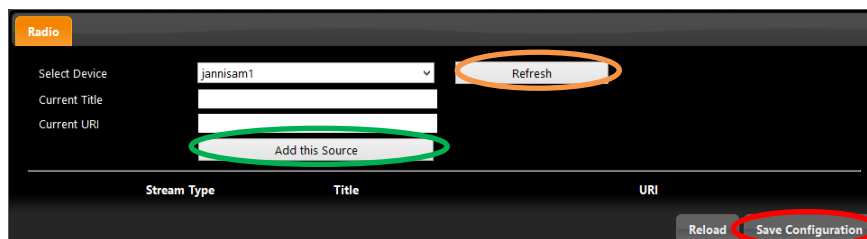


Figure 98: Sonos UPnP configuration



6.3 CONFIGURE CUBEVISION

In order to configure the CUBEVISION visualization the CUBEVISION Editor is been used.

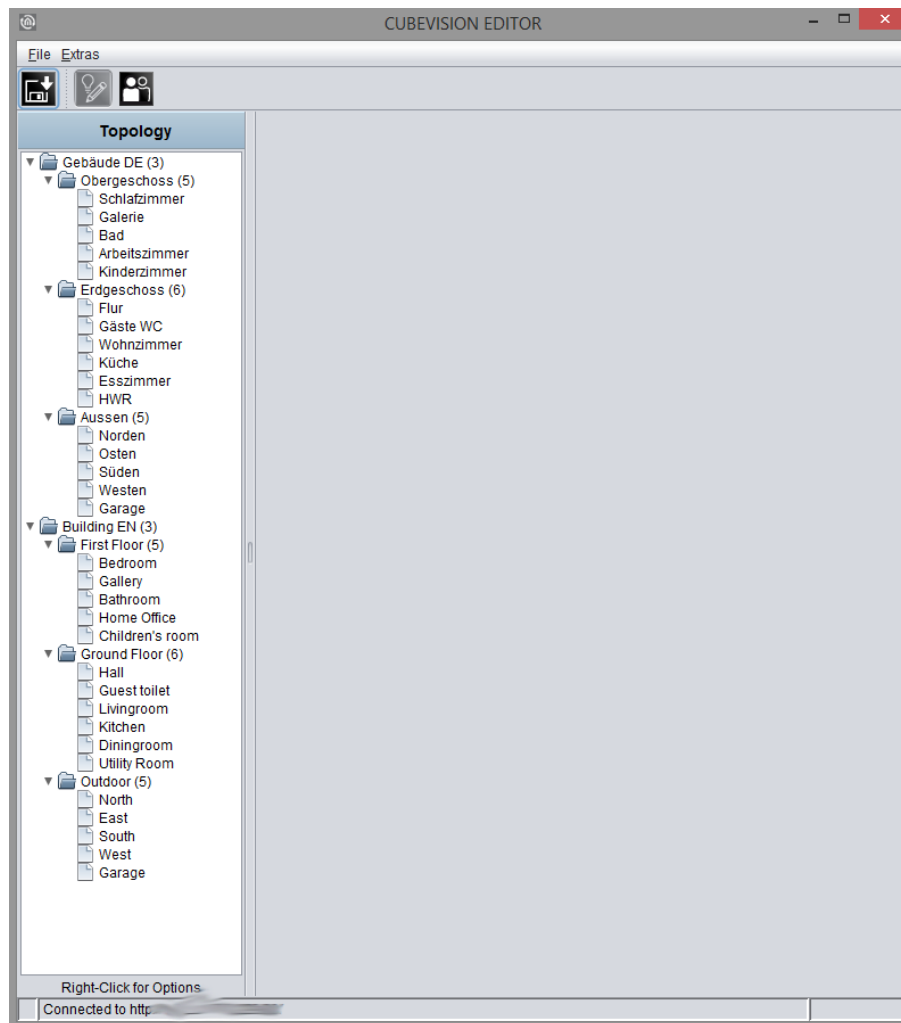


Figure 99: CUBEVISION Editor

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

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.

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.

A little bit about topology of the buildings (see figure). 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 being placed. They present the floors of a building. Below the last directory level, the rooms can be found.

In figure above, 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 above, an orange box encircles the popup menu.

6.3.1 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.

After appending the building, the right side of the configuration window shows corresponding options, as shown in figure below. 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].

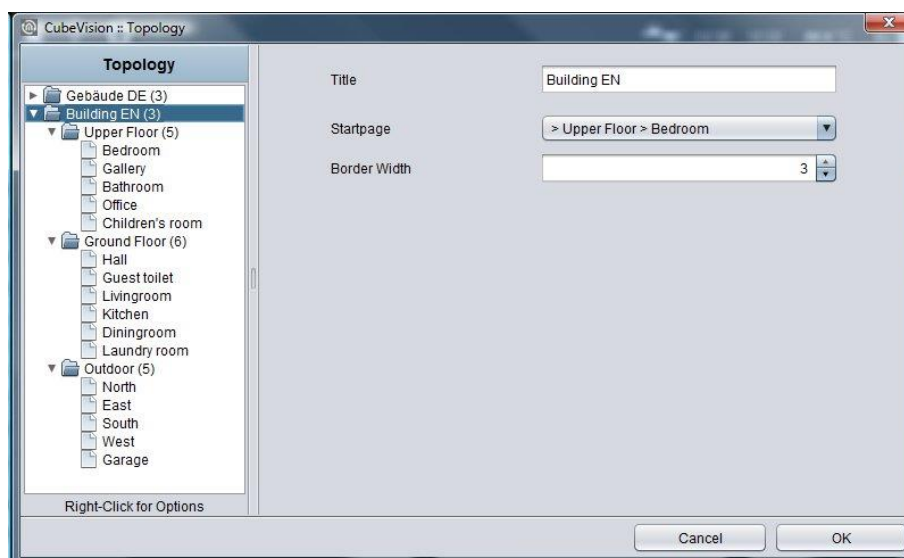


Figure 100: configuration window for buildings

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.



6.3.2 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) 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).

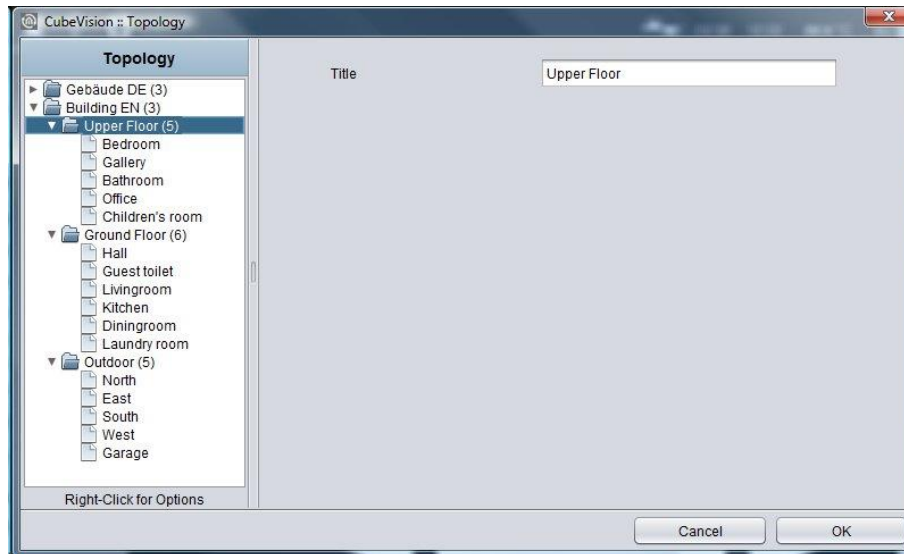


Figure 101: configuration window for levels

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.

6.3.3 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 below):

- 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.
- 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 5.3.4.

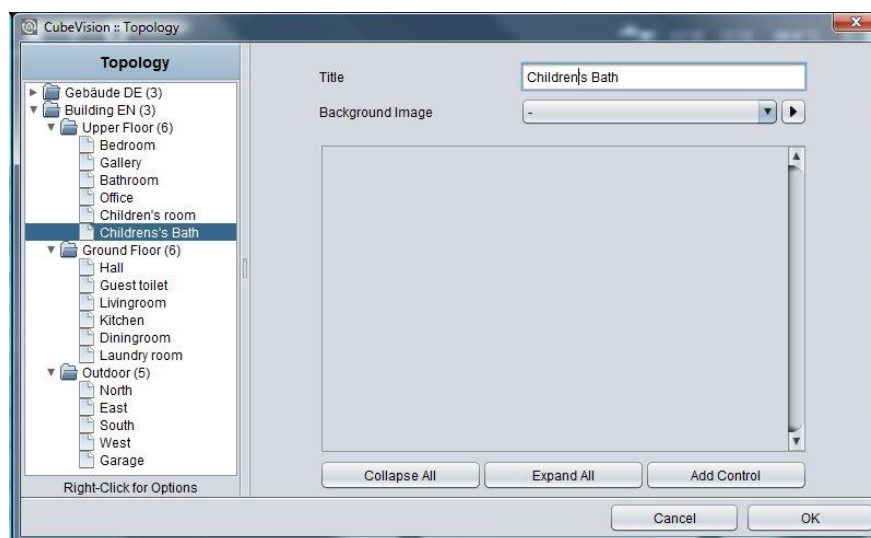


Figure 102: configuration window for rooms

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



6.3.4 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 below 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

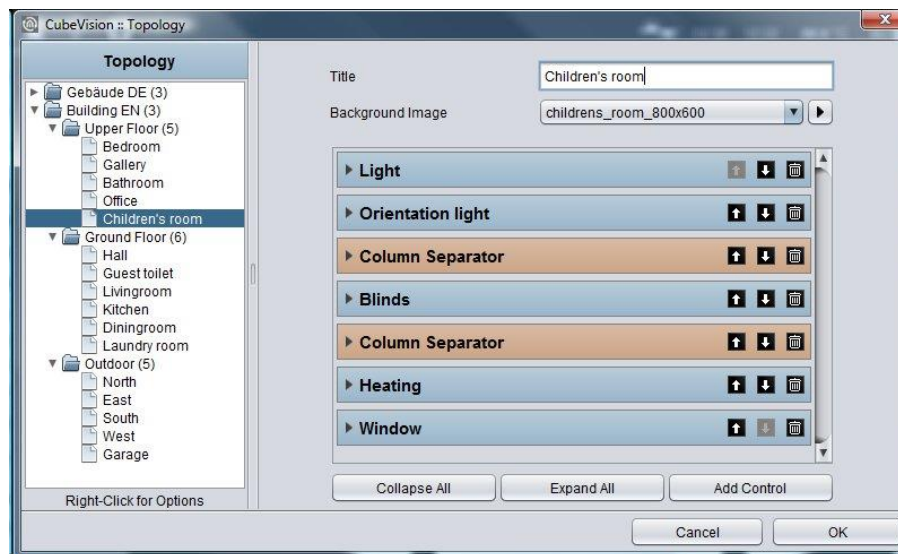


Figure 103: Operating elements

6.3.5 BACKGROUND IMAGE

The recommended resolution for the background image of the room depends on the size of the terminal device on which the visualization is to be displayed.

In general, the resolutions should be higher for larger terminal devices (PCs, 21" Touch Panel PC) than for small terminal devices (smartphone or tablet).

If all of the background images are of very high resolution, there are no problems for large screens; however, the waiting time might be slightly higher for small devices.

6.3.6 ROOM ICON

The "Room Icon" selection determines the symbol that is presented in front of the name of the room in the room navigation in the CUBEVISION phone presentation. A certain number of symbols has already been loaded onto each device.

6.4 USER ADMINISTRATION

The access to the visualization is managed in the security settings.

Note: Please protect your visualization with a strong and secure password if it is available via the Internet.

Switching to security settings

The security settings are opened using the corresponding button in the menu bar of the CUBEVISION Editor. In this menu, it is possible to switch between the "Visualization" and "Security Settings" menu items. Only the button that is selected in the view is marked at one time.

Settings

The user administration can be activated and deactivated. If the user administration has been deactivated, no user login is carried out.

- With both "User Administration" and "Displaying User List in Login Dialog" deactivated, you can immediately access the projects (buildings).
- With "User Administration" activated and "Displaying User List in Login Dialog" deactivated, the user must be entered.
- With both "User Administration" and "Displaying User List in Login Dialog" activated, you can select the user from a user list and only have to enter the password.



Figure 104: Opening the security settings

Adding / deleting users

A new user is created via the corresponding symbol. As a first step, you must assign a unique name. This name is automatically taken over in the field "User Title" and "Username". As a second step, a password must be entered. In order to delete a user, you must first mark the respective user in the user overview.



Figure 105: Adding / deleting users

Note: The user is irrevocably deleted without any safety warning.

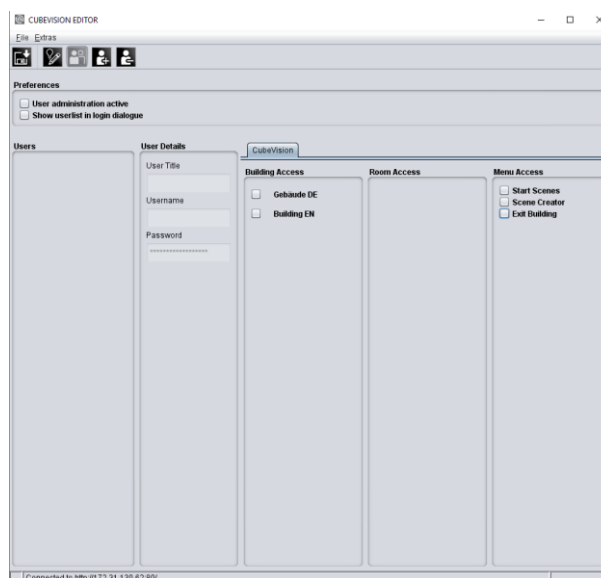


Figure 106: Managing the user administration



AUTHORISATIONS

Each user can individually be assigned the access rights to the projects (buildings) and visualization pages (rooms).

Granting access to buildings

Here, the projects (buildings) are shown. If a building is activated via the check box, the respective user is granted access to all rooms (visualization pages) of the building.

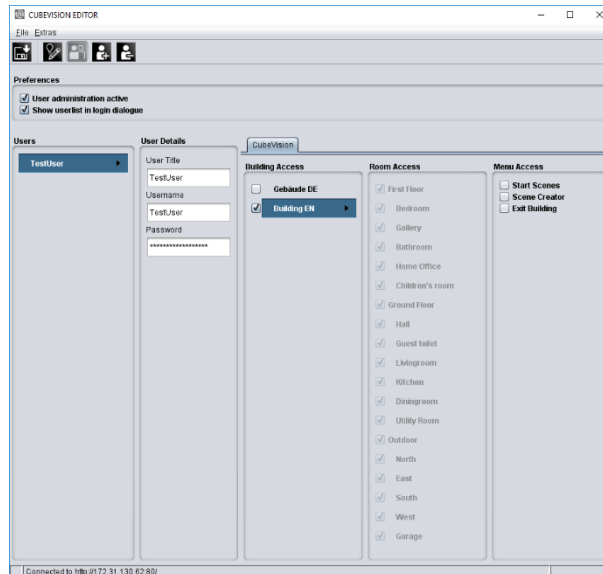


Figure 107: Security settings - Granting access to buildings

Granting access to rooms

Here, access to individual rooms or layers for the respective user can be granted. To do this, the check box in "Granting access to buildings" must not be set. It is thus possible to make your own authorization settings in "Granting access to rooms" for each room and layer via a check box.

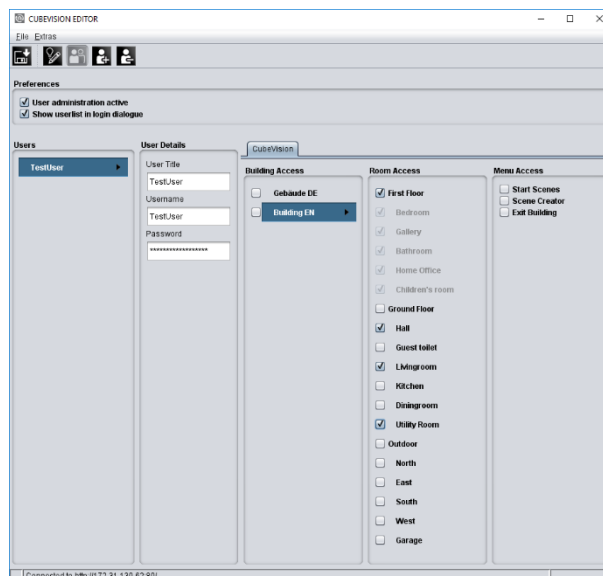


Figure 108: Security settings - Granting access to rooms

Menu Access

- *Start Scenes*: Here you can specify whether a user is allowed to trigger the scenes that have been configured in Scene Creator.
- *Scene Creator*: Here you can define whether a user is allowed to use the "Scene Creator". If the function is deactivated, the Scene Creator is not displayed for this user in the CUBEVISION.
- *Exit Building*: If this function is deactivated, the user cannot leave the building/project.

Note: These functions are disabled as default.

**Saving the settings**

The security settings are saved with the CUBEVISION configuration data using the "Save" button in the CUBEVISION Editor (see chapter "Saving the configuration").



6.5 SAVING THE CONFIGURATION

A little tip: After the visualization project (building) has been created, it is sufficient to save the change by clicking the "Save" symbol (see figure below, orange circle). The changes are thus written into the **CUBEVISIONMODULE**! While working with CUBEVISION Editor, it is recommended to open a browser with the visualization in parallel in order to check and control the view of the visualization. If a new room, layer or control element is added, the changes are confirmed by clicking "Save". In the web browser, simply press the "F5" (updating) key once in order to make the change visible.

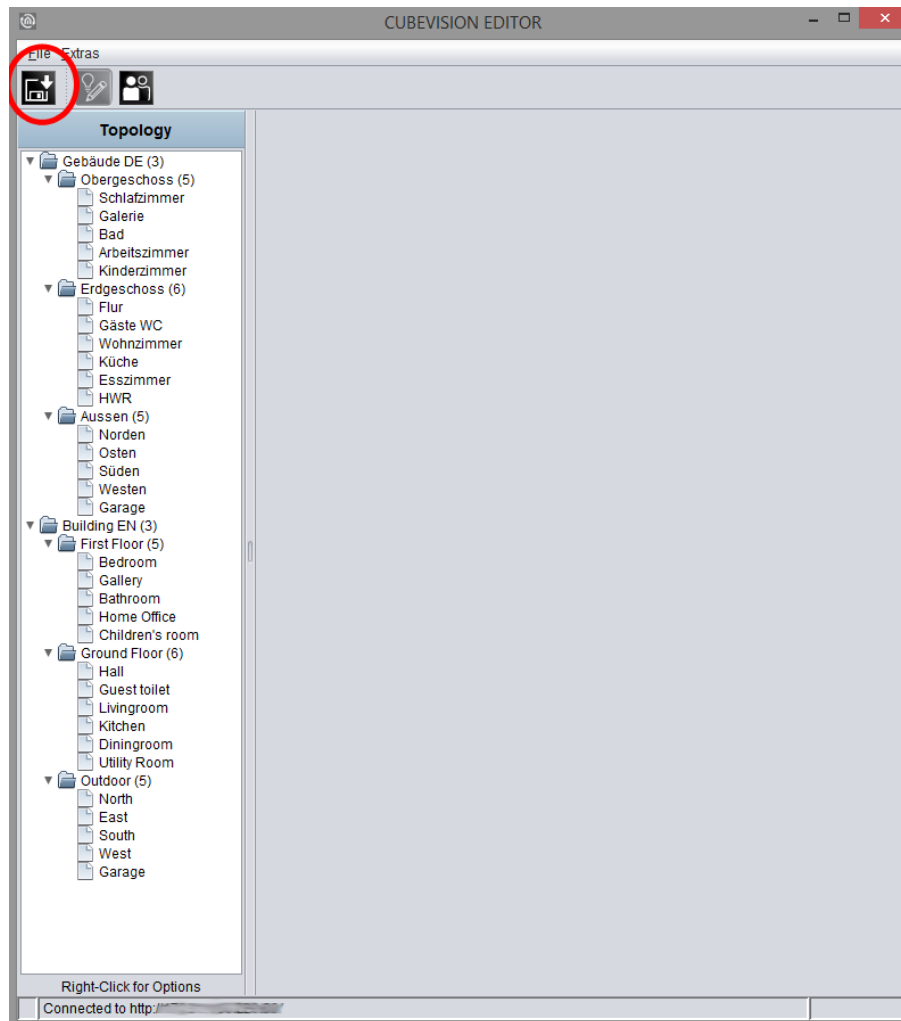


Figure 109: Save the CUBEVISION configuration

7 CUBEVISION CONTROL ELEMENTS

For CUBEVISION, 13 completely new (control) elements with new functions were created. The size of these control elements is stated in height units, because elements will be placed in always equal broad columns. In the tablet presentation ([ICP], [ECP]) these columns always have a height of eight (8) height units. In the "Phone" presentation view, the columns can have any height. These columns are always 8 heights unit's 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 5.

7.1 STANDARD OPTIONS FOR ALL CONTROL 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).
- **„Central View“ Kategorie:** Bestimmen Sie hier, welcher Zentral-Ansicht Kategorie („Central View“) das jeweilige Element zugeordnet wird. Die „Central View“ Menüleiste wird oberhalb der CUBEVISION angezeigt (in der Tablet- Ansicht, siehe Kapitel *„Fehler! Verweisquelle konnte nicht gefunden werden.“*) und bietet einen zentralen Zugriff auf eine Gruppe von Elementen. Auf diese Weise können Sie bspw. alle Lichtschalter oder alle Heizungssteuerung hinter einem zentralen Menüpunkt zusammenfassen. Die Kategorien können in einem separaten Menü, erreichbar mit Hilfe der Pfeiltaste rechts neben der Auswahl, konfiguriert werden.
- **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).



7.2 CONTROL ELEMENTS

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

1. Column break
2. Switch/Dimmer
3. Button
4. Temperature/RTR
5. Jalousie
6. Window contact
7. RGB controlling
8. Camera
9. Multimedia
10. Weather (local KNX)
11. Weather (Internet)
12. Values / Diagrams
13. Textanzeige
14. Group switches / Scenes
15. Tuneable White

7.2.1 COLUMN BREAK

CUBEVISION control 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 on the right), 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)

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

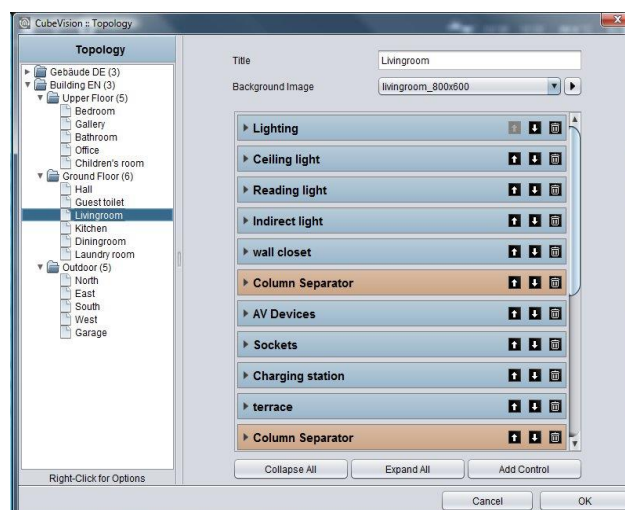


Figure 110: Column Break

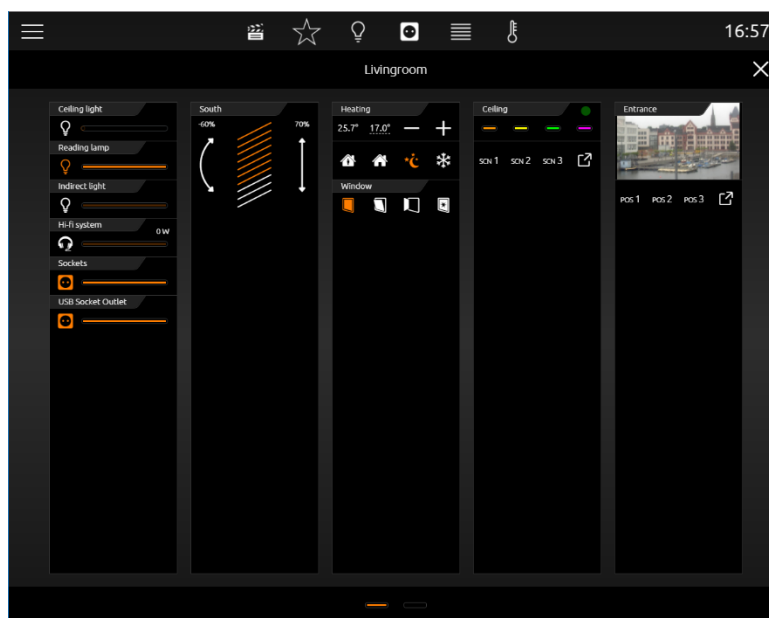


Figure 111: Extended Control Panel [ECP]



7.2.2 SWITCH/DIMMER

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

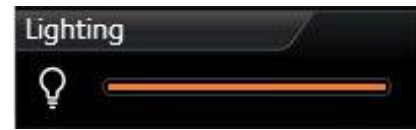


Figure 112: Element Switch/Dimmer

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

For the control 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, control element offers a value object (top right in control 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 control element possesses (Identifier see figure below):

1. **Icons.** These 34 symbols are located on the left side and can display one active or inactive state (see figure, 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 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 control 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 control element and if the circle is absented in the bar, it is about a pure switch.
- In a switching control element, the complete area of the control element reacts as a switching button.
- A combined switching and dimming control 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 „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.

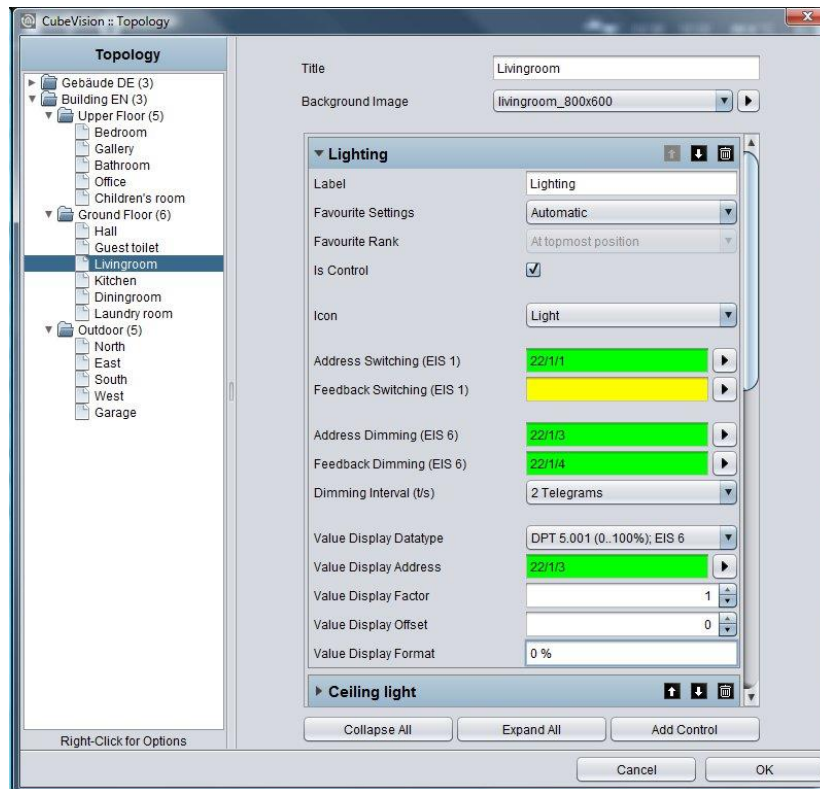


Figure 113: configuration window of switching/dimming



7.2.3 PUSHBUTTON

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



Figure 114: Element pushbutton

This control element is a pure switching control 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 control element. Also, for these elements different symbols are selectable, too (here they are 34)

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

1. **Icons.** These 34 symbols are located on the left side and can display one active or inactive state (see figure, 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 control 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 on the right. This control 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.

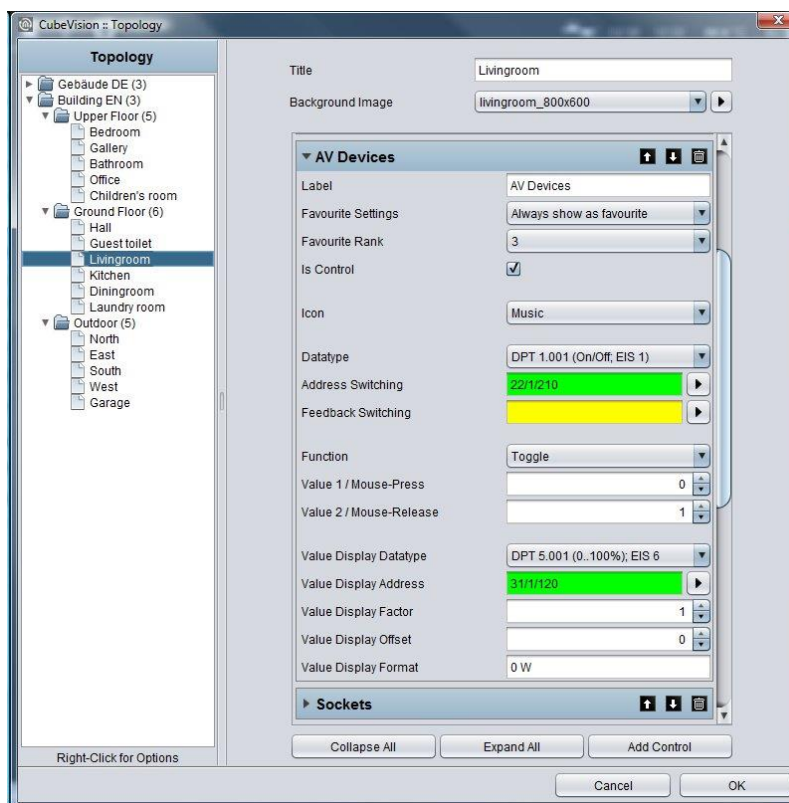


Figure 115: configuration window of pushbutton



7.2.4 TEMPERATURE/RTR

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

Temperature/RTR control element undertakes the control of the heating in CUBEVISION control element. So, this control 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 (see figures), 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 control 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 control element three different views are for selection:

- Temperature und RTR display
- Temperature Display and
- RTR Display

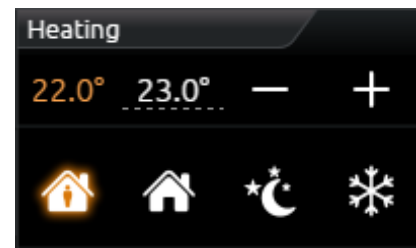


Figure 116: Element RTR/Temperature

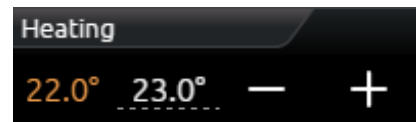


Figure 118: Element Temperature



Figure 117: Element RTR

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

1. **Type.** This choice defines the control 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 setpoint current operation mode (EIS5).** Group address for the actual temperature. If the control 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 control element is configured as a substation, only the NOMINAL temperature will be shown.
4. **Control setpoint by.** The address of the RTR via the setpoint temperature is to be set. Your selection in which way the setpoint temperature can be controlled:
 - Setpoint current operation mode
 - Basic setpoint presetting
 - Basic setpoint shift
5. **Basic Setpoint presetting.** The input field is active if selected in previous menu item and it is address for setting the basic setpoint.
6. **Basic Setpoint Shift.** The input field is active if selected in previous menu item and this is input address for the basic setpoint shift temperature. The datatype is DPT 6.010 (EIS14).
7. **Data Type External Unit.** Usually the external unit changes the „Basic Setpoint Shift“ value with an DPT 6.010 value (-128, +127) multiplied with a configured step width. If the setpoint is changed in a different way (e.g. directly using the basic setpoint temperature), the data type DPT 9.001 (EIS5) can be selected here.
8. **Min and Max basic 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.

9. **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 send, when RTR switches to the state of heating.
10. **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.
11. **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.
12. **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.
13. **Data type operation mode (EIS1 und EIS14u).** Das RTR/Temperature control 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 control element will highlight the symbol *comfort*, in case of a "0", the symbol *standby* will show 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, switching of operation mode by EIS14u is configured. If the user switches to the mode comfort for example, the control element will send the value "1" to the group address 22/3/16. The other way round, if the control element receives value "2" on the group address, the RTR display will switch to standby.

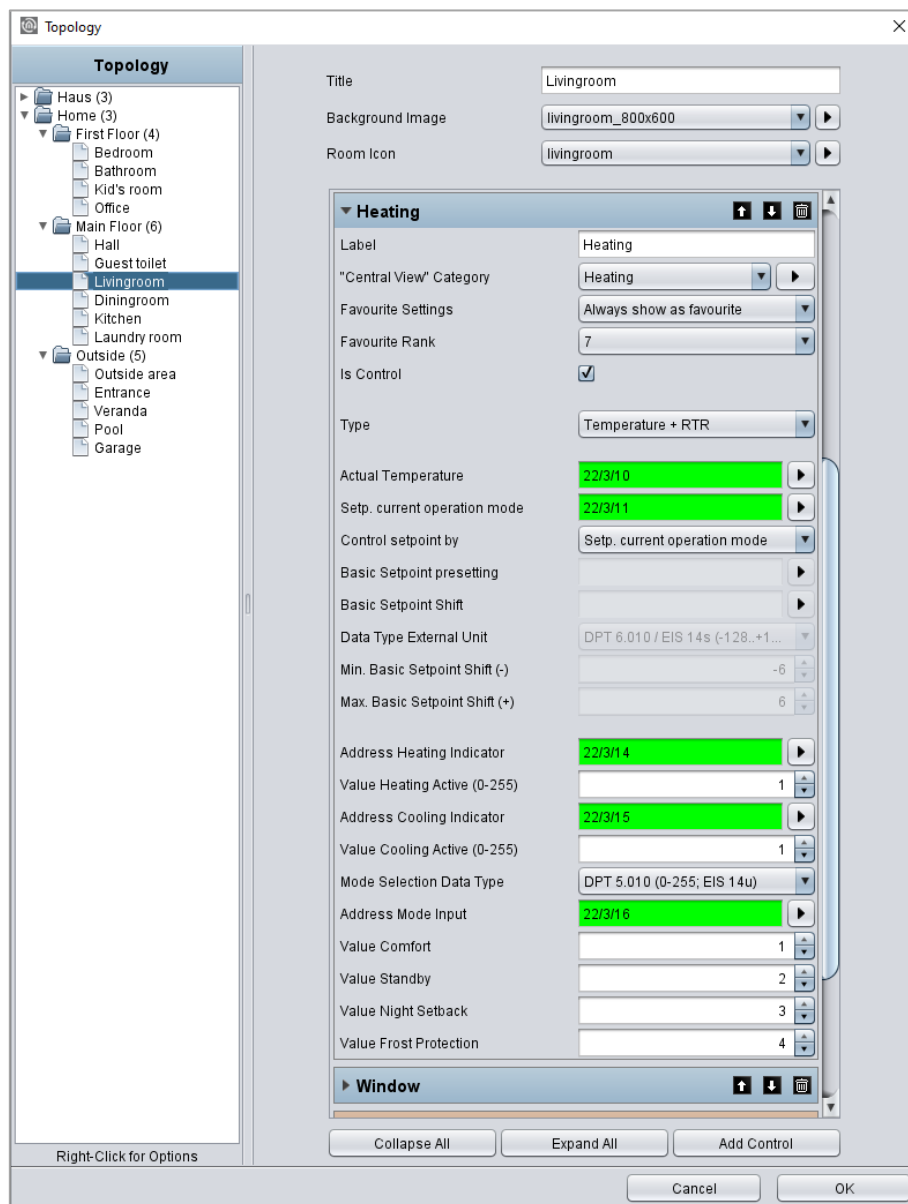


Figure 119: configuration window of RTR/temperature

7.2.5 JALOUSIE

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

Shadowing will be controlled by the control element jalousie. The control 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 figures two types of jalousie control element are illustrated. The control of these control elements takes place in two ways:

- Standard (for push-button)
- Touch & Slide (for sliding)

As its name implies, you can use in type „standard“ a button and in type „touch & slide“ a slider. Figure shows how to control the control element by “touch & slide” and figure right 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 control 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 control element has got following configuration fields (identifier see figure below):

1. **Display.** This choice defines the type of control unit for the jalousie control 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 control element, also a kind of preview.
2. **Type.** This control 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-

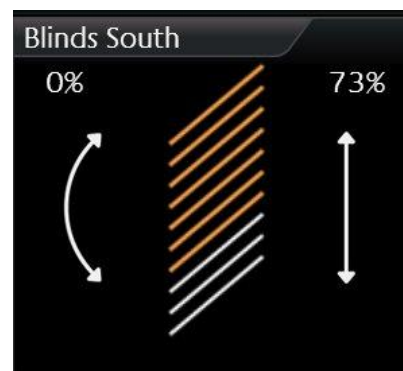


Figure 120: Element jalousie touch & slide



Figure 121: 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 "raising and lowering" of the blinds.
 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 control element uses this value for displaying the position of the control element.
 8. **Address feedback position (EIS6).** If in this field a group address is filled in, so the control 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 control 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 control 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.

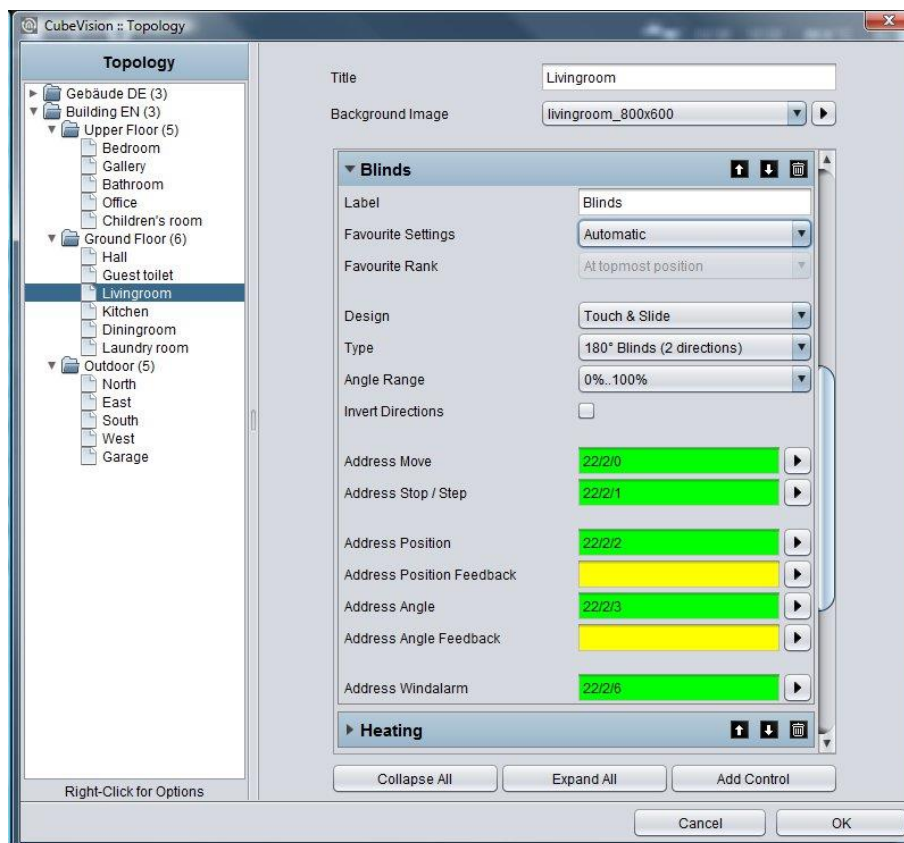


Figure 122: configuration window of jalousie

7.2.6 WINDOW CONTACT

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



Figure 123: Element "window contact"

To illustrate the state of windows, control 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 control 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 control element can announce glass breakage.

Independent from the data type, this control element always has its own group address.

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

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 *tilted 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.

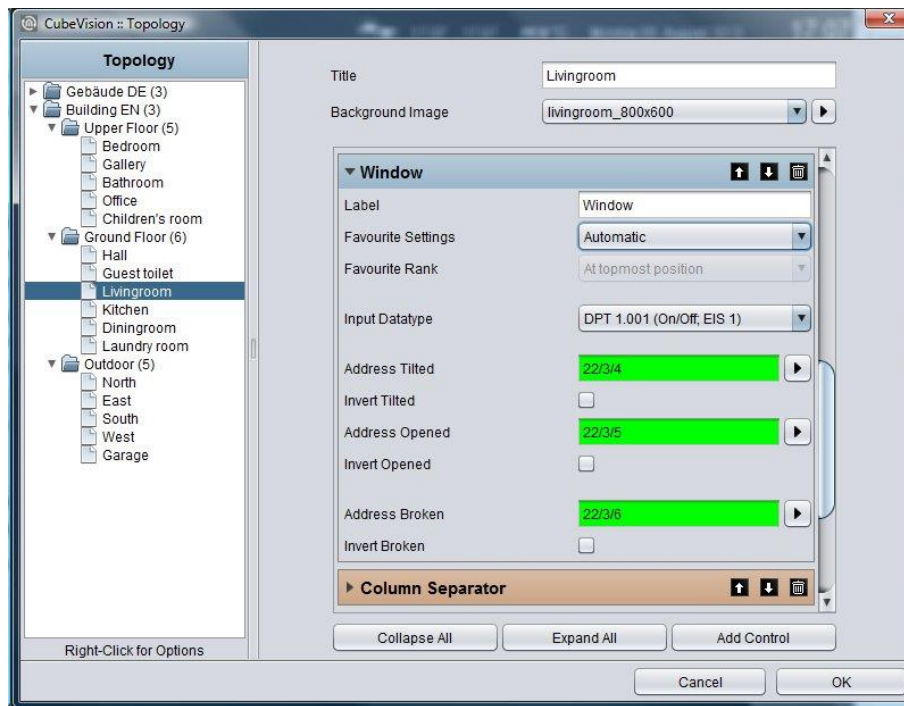


Figure 124: configuration of window contact

7.2.7 RGB CONTROL

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

Of course, a control of RGB lighting must not be absent in CUBEVISION control element. The control 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 control element has got to 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 control 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 displays the RGB control 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 favourite 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 125: Element RGB control

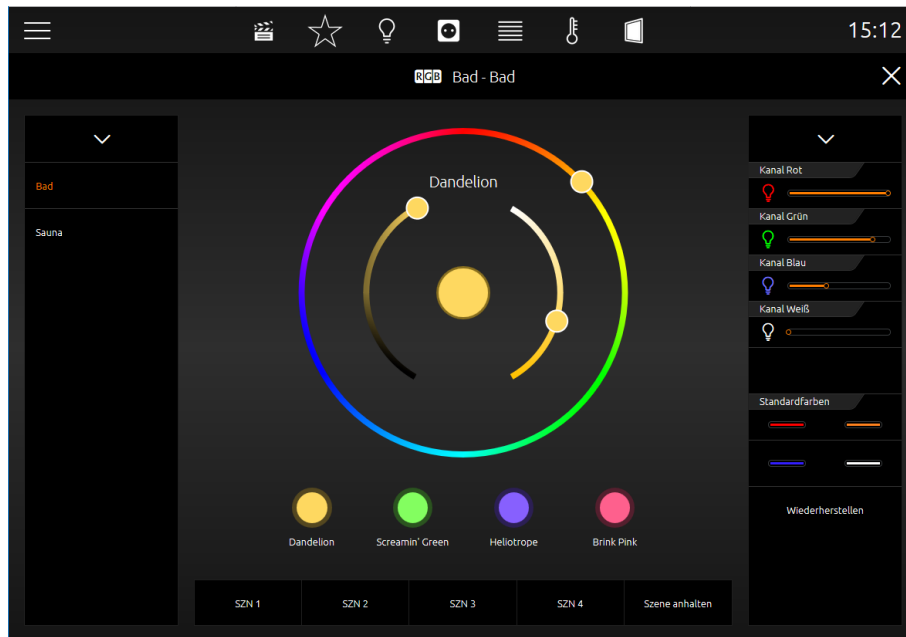


Figure 126: extended element view of RGB control

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

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.

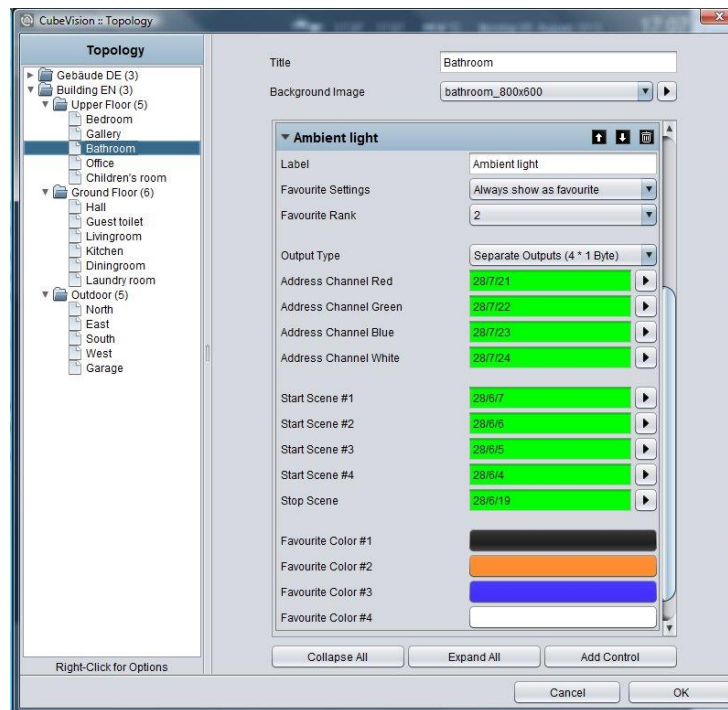


Figure 127: Configuration window of RGB control

RGB CONTROL IN THE PHONE PRESENTATION

The extended element view ([EEV]) of the RGB control has a different structure in the phone presentation of the CUBEVISION due to the optimization on smaller displays.

EEV view 1

If the control element is opened in the extended element view ([EEV]), only the colour circle and the scene control are displayed at first.

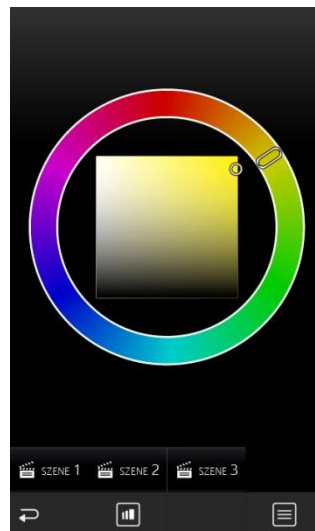


Figure 128: RGB element phone presentation - EEV view 1



EEV view 2

In order to display the individual channel control and the default colour settings instead of the colour circle, it is possible to switch between the different views using the "View" symbol.



Figure 129: EGB element phone presentation - EEV view 2

List view

Touching the "List" symbol displays a list with all RGB controls created in the room. In this way, further control element can be accessed without having to navigate through the rooms in a time-consuming manner.

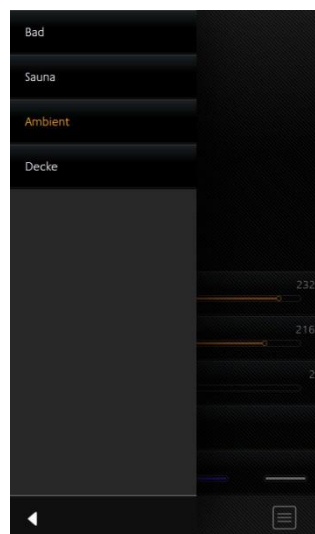


Figure 130: RGB element phone presentation - further elements

7.2.8 CAMERA

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

The camera control element also has got two kinds of views. A small camera view (preview), with a small choice of functions for ICP and ECP (see figure). 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).

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 control element also will not display these in visualization. As a feature, camera control element offers the possibility to display the three different display formats 4:3, 16:9 and 16:10.



Figure 131: camera element

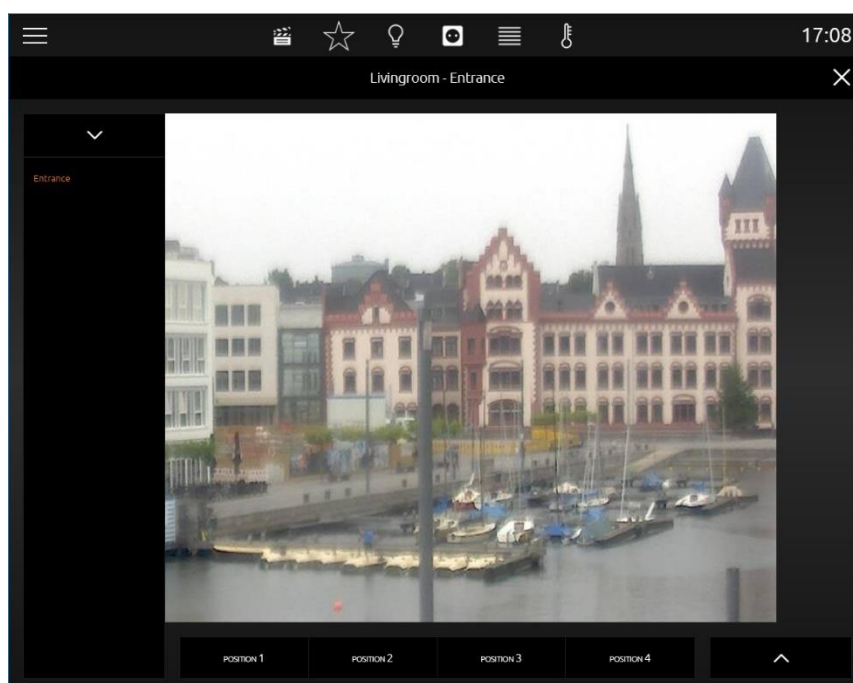


Figure 132: extended element view of camera element



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

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 to #4.** Paths for configured and stored positions of the camera.

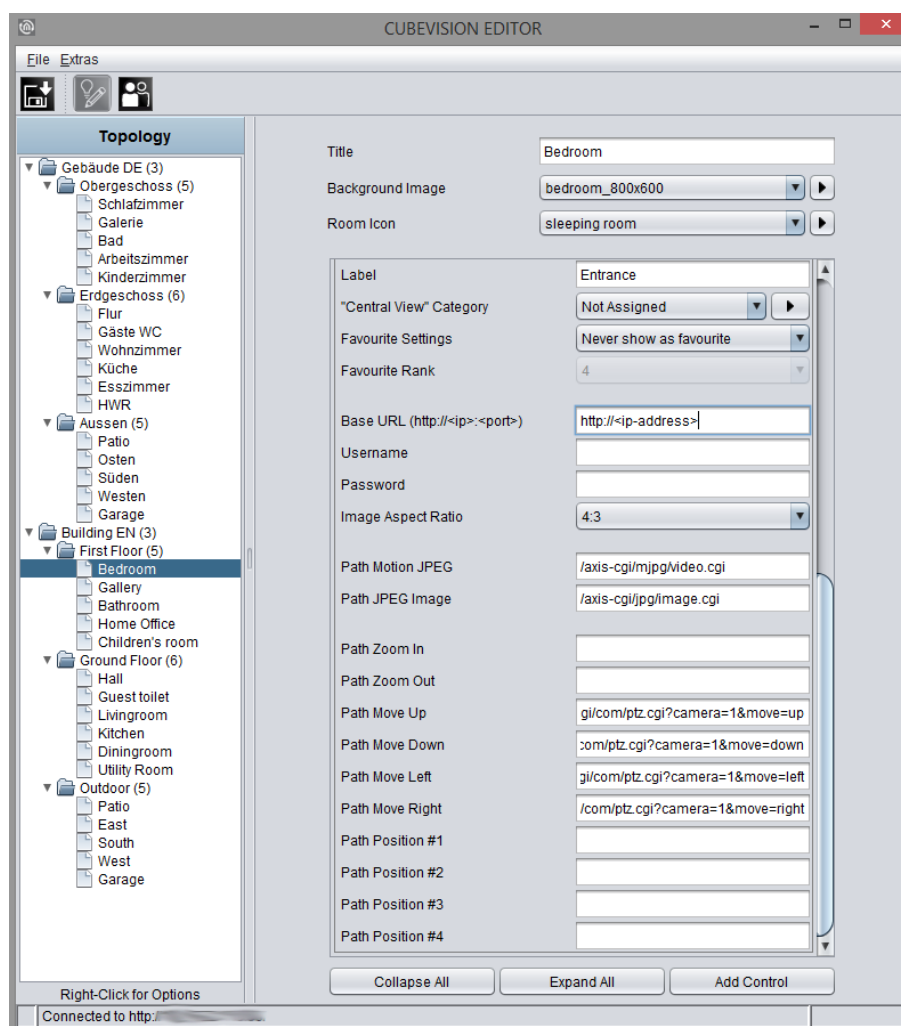


Figure 133: Configuration window of camera

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

CAMERA

Camera control in the phone presentation

The extended element view ([EEV]) of the camera control has a different structure in the phone presentation of the CUBEVISION due to the optimization on smaller displays.

EEV (Extended Element View)

The camera control element has a simplified view in the EEV of the phone presentation. It consists of the camera picture including the (optional) control elements and the position keys.

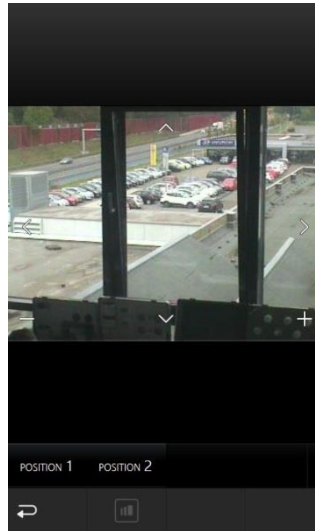


Figure 134: Camera control phone presentation - EEV

7.2.8.1 SUPPORT FOR AXIS CAMERA

Load default values:

This function automatically fills in the paths for an Axis camera. For cameras from other manufacturers, please contact the manufacturer of the camera to find out the paths for your camera.



7.2.9 MULTIMEDIA

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

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. If the *EEV* is opened for this control element, a cover and a dynamic playlist selection are additionally displayed. The Squeezebox Player, **AUDIOMODULE** ("Squeezebox Controller") and the SONOS System are supported as a multimedia client. As soon as these devices are available in the network, they can be chosen for linkage in the configuration.

Beside control options, multimedia control element also displays information. To this belong interpreter, album, track and cover (as far as music information are available).



Figure 135: Multimedia element

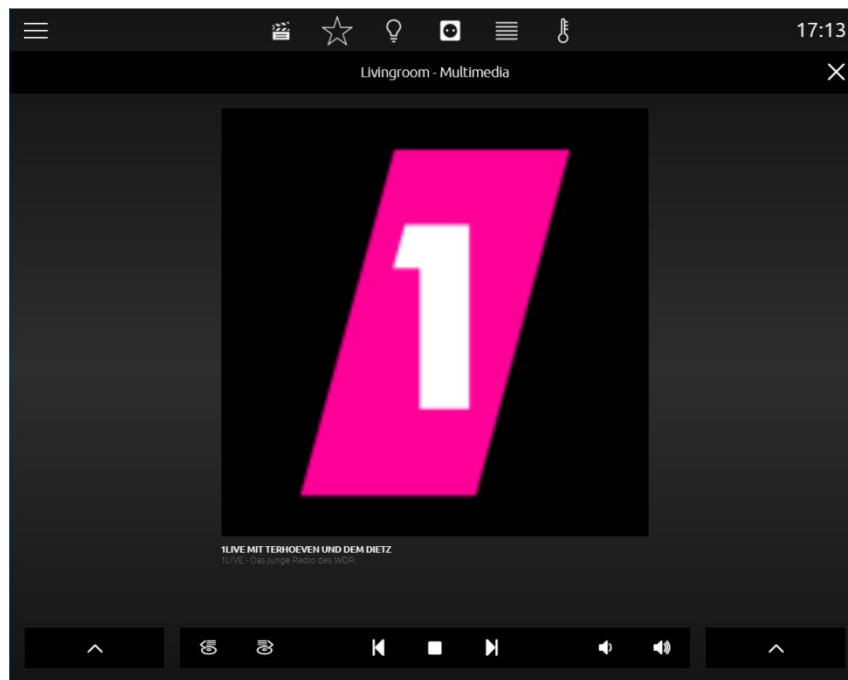


Figure 136: extended element view of multimedia element

A click on the cover display opens the playlist menu. This is closed again with a further click next to the cover.

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

System.

What kind of type should be controlled by multimedia? For selection are:

- a) Manual configuration
- b) UPnP (Sonos) and
- c) Squeezebox

MANUAL CONFIGURATION

If this choice is selected for the system, the control element displays a list of group address fields (see figure). This precept will be used for controlling different media (RS232, http-request, infrared, group addresses etc.) for example. This control element has the following configuration fields (see figure below):

- Play/Pause. EIS1 group address
- Playlist forth/back. EIS1 group address
- Track forth/back. EIS1 group address
- Loudness gradually. EIS1 group address
- Silent. EIS1 group address
- Info track. EIS15 group address
- Info interpreter. EIS15 group address
- Info album. EIS15 group address
- Cover URL. Path to actual cover

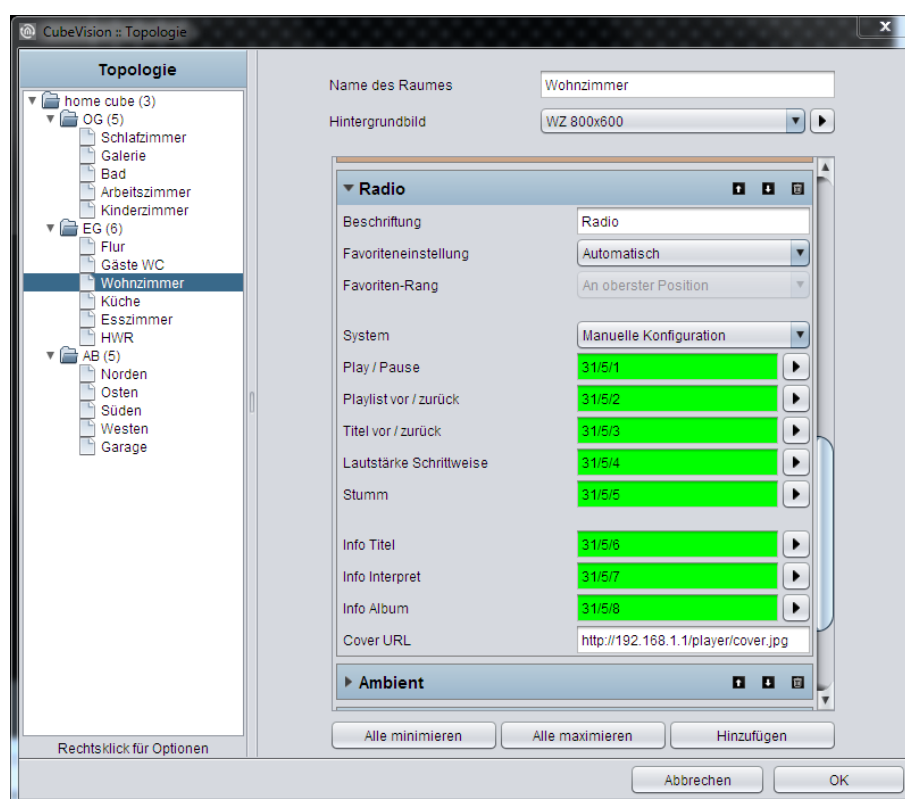


Figure 137: Configuration window of multimedia for Sonos



UPNP (SONOS)

If UPnP (Sonos) has been selected as a system, the SONOS radio stations can be controlled using the multimedia control element. In the "System" selection, the "Select UPnP Device" menu item is displayed. With this menu item, it is possible to select the SONOS device to be controlled.



Figure 138: Multimedia element - UPnP configuration

Requirements for controlling SONOS devices

In order to be able to control the radio stations of SONOS devices using the multimedia control element, it is necessary to first assign the respective SONOS players the required radio stations in the **CUBEVISIONMODULE**. To do this, please open the "Sonos (UPnP)" configuration as described in chapter "Extras".

SQUEEZEBOX CONTROLLER

In order to control a Squeezebox or an **AUDIOMODULE** using the multimedia control element, "Squeezebox Controller" must be selected in the "System" menu. After the selection has been made, the "Select Squeezebox" button displaying the Squeezebox devices and **AUDIOMODULE** available for linkage in the network appears. Select the required device and confirm the dialog with "OK".



Figure 139: Multimedia element - Squeezebox Controller configuration

Requirements for the control of Squeezebox players and the AUDIO MODULE

Please note that at least one Squeezebox player instance and a Logitech Media Server with xPL Hub and ExPL Plugin must be available in the network in order to control Squeezebox players and the **AUDIOMODULE**. For further information, please refer to the **AUDIOMODULE** documentation.

MULTIMEDIA CONTROL IN THE PHONE PRESENTATION

The extended element view of the multimedia control element in the phone presentation of CUBEVISION differs from that in the tablet presentation.



Figure 140: Multimedia EEV in the phone presentation

EEV view 1

In the first layer of the phone EEV view, the Cover Art and the "Play/Pause", "Volume Up/Down", "Mute" (bottom) and "Next Title/Previous Title", "Title" (top) control elements are shown.

EEV view 2

Use the "View" symbol to switch to the second layer of the EEV. In the second layer of the phone EEV view, additional information such as "Artist", "Title" and "Album" is displayed.

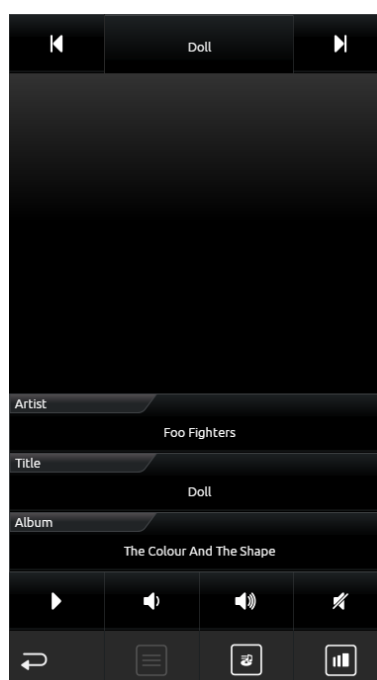


Figure 141: Second layer of the Multimedia EEV in the phone presentation



Playlist selection

A playlist selection is called using the "Playlist" symbol. If a SONOS device has been linked to the multimedia control element, the radio stations linked in the "Sonos (UPnP) Configuration" can be chosen here (see above or in chapter "Extras"). If an **AUDIO**MODULE or a Squeezebox has been linked, the playlists created in the Logitech Media Server are available here.

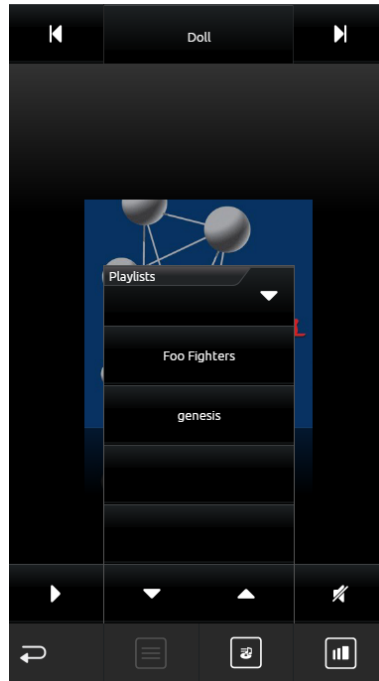
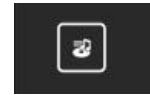


Figure 142: Multimedia EEV - playlist selection

7.2.10 WEATHER (LOKAL KNX)

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

This is an control element for simply showing measured data of the home weather station, in the CUBEVISION. The element standardly displays (across the complete width of the control 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).

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

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

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 for example, both values in the second line (h.temp and t.temp) are created by the universal type.



Figure 143: Element Weather (Local KNX)

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

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 control 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), in which new measured values can be applied or existing values could be modified. Options:
 - a. **Type.** For weather control element, the six most usual measure values are deposited with a symbol. These are the types: wind speed, wind direction, brightness, air pressure, humidity, precipitation 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 below the measured value
 - c. **Unit.** The unit, which will be entered here, will be shown in CUBEVISION 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.

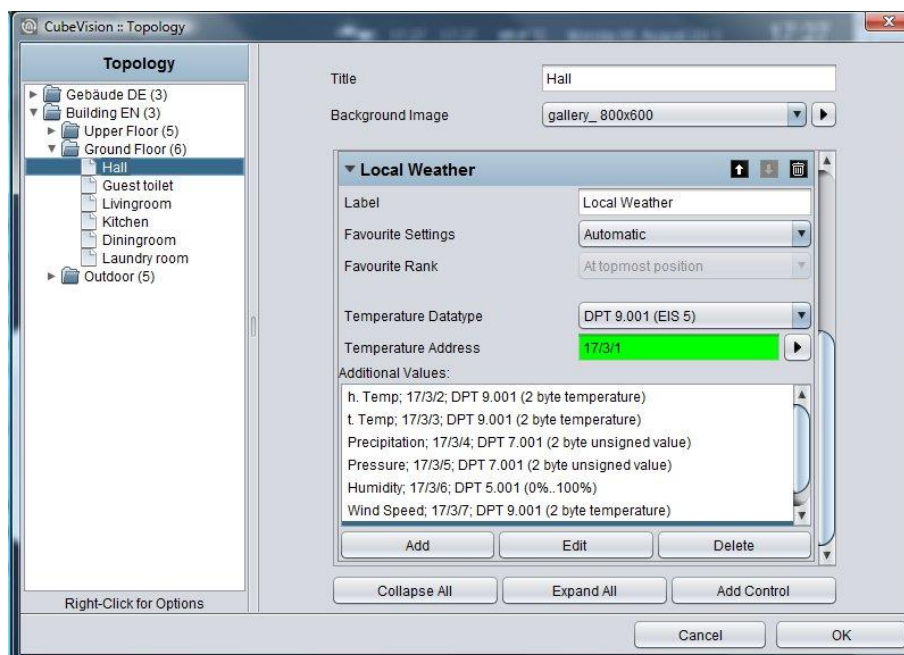


Figure 144: Configuration window WEATHER (local KNX)

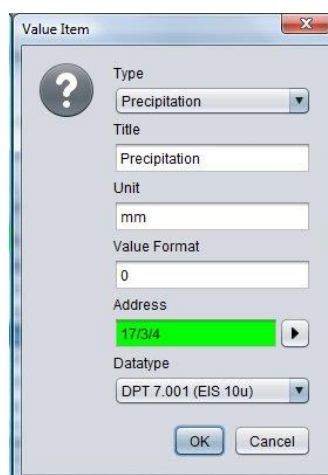


Figure 145: Configuration of measured value

7.2.11 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 is able to download

weather data out of the internet. The control 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 an icon, which shows the actual weather conditions (see figure).

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). 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.

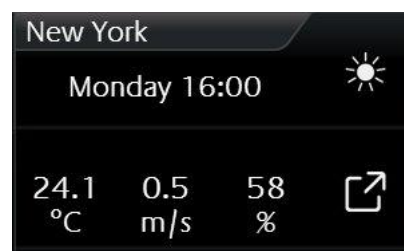


Figure 146: Element Weather (INTERNET)

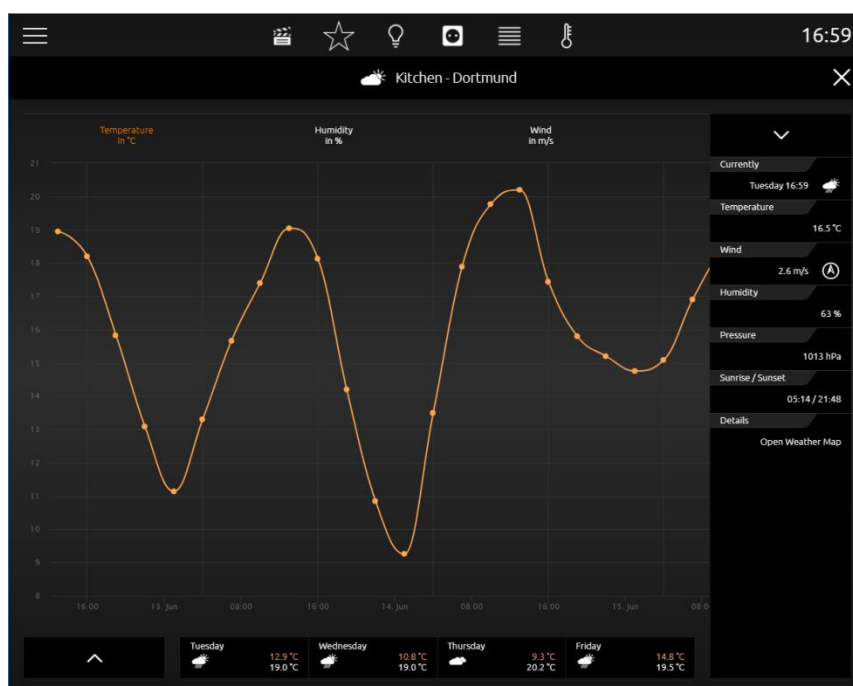


Figure 147: Extended element view of weather (INTERNET)

In spite of the enormous information and the comfortable display of data, the configuration of this control element only consists of two fields, which have to be filled in. There are: 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 shows configuration of control element and figure below displays the hit list of searched town „Dortmund“.

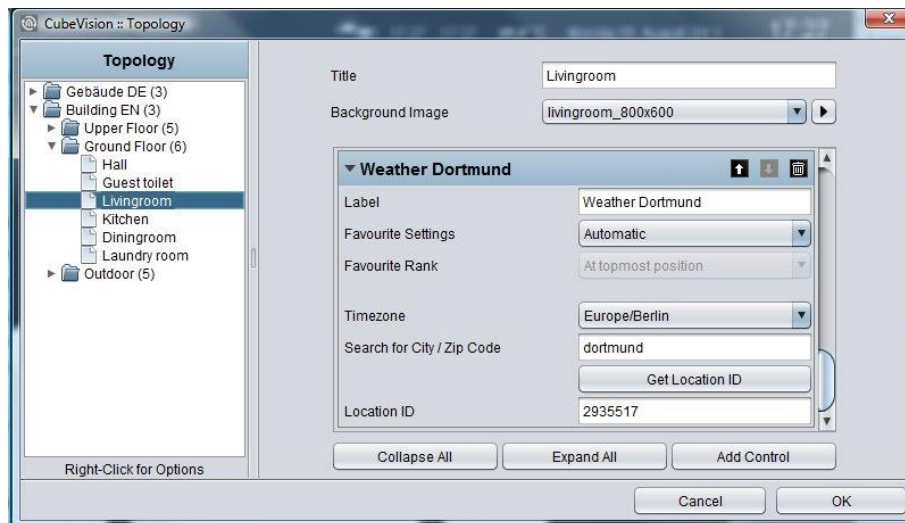


Figure 148: Hit list. Selection Configuration window of WEATHER (INTERNET)

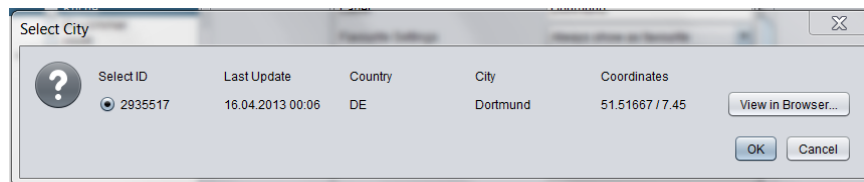


Figure 149: Hit list. Selection window of town

WEATHER (INTERNET) IN THE PHONE PRESENTATION

The visualization in the phone presentation differs from the visualization in the tablet presentation on a number of points.

The figure on the right-hand side (weather (Internet)) shows the current time, the day of the week, the current temperature, the current wind speed, the rain probability and an icon displaying the current weather conditions (see figure on the right-hand side, marked yellow). By clicking the symbol circled in orange, you can access the EEV phone presentation of the weather (Internet) control element (see figure "Weather (Internet) EEV")

By clicking the symbol circled in red, you can access a list in which all weather (Internet) diagrams are listed (see figure "List of all weather (Internet) control elements").

By clicking the symbol circled in green, you can return to the menu.

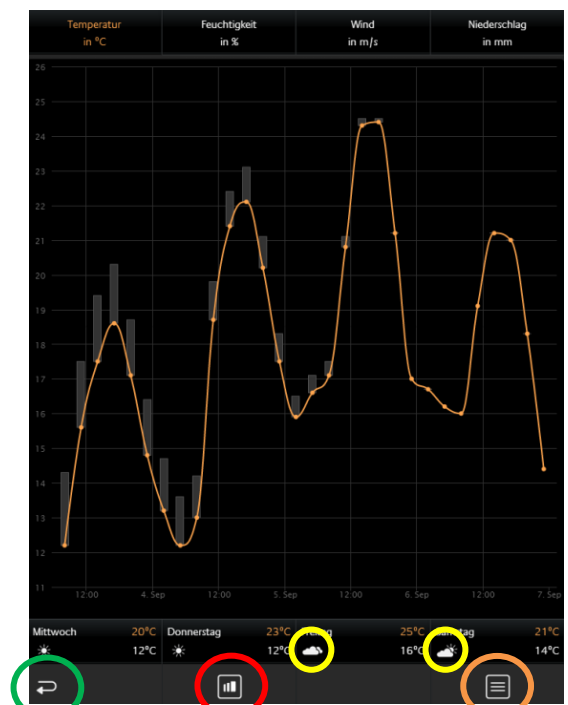


Figure 150: Weather (Internet)

In the EEV phone presentation as well as in the tablet presentation, the current day including time, temperature, wind speed, humidity, atmospheric pressure and sunrise / sunset is displayed.

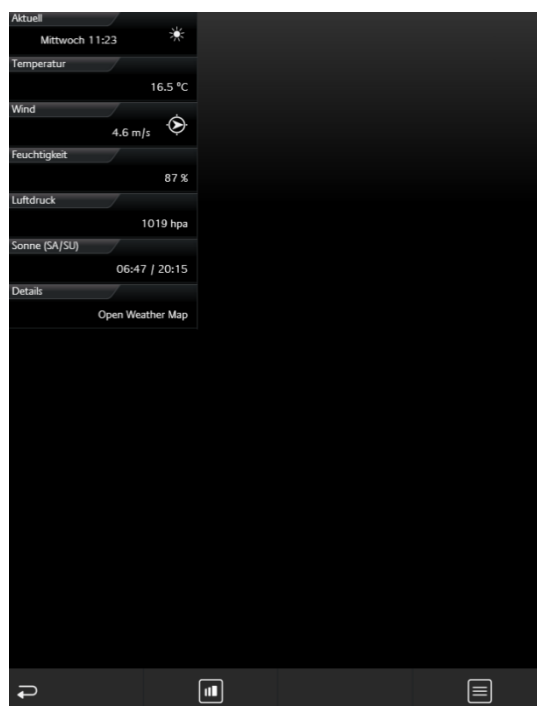


Figure 151: Weather (Internet) EEV

In the figure below, it is possible to choose between all weather (Internet) control elements in the room. Thus, tedious and unsystematic searching for different weather (internal) control elements is no longer necessary.

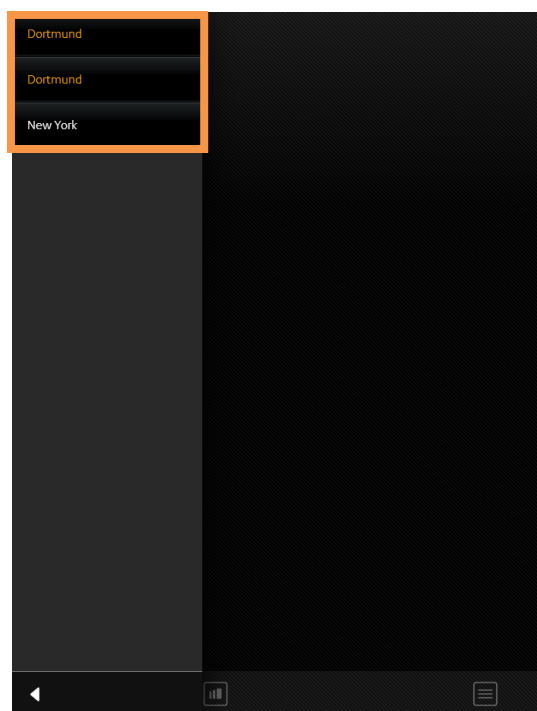


Figure 152: List of all weather (Internet) control elements



7.2.12 VALUES / DIAGRAMS

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

Behind the control 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 control 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). 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 below).

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

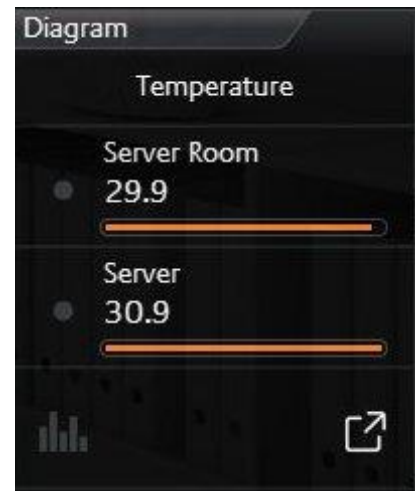


Figure 153: element of values/diagrams

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 control 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 154: extended element view of values / diagrams

Because the control 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 control 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 control element (see figure above) will be enough. By the way, this line with the diagram symbol only will be displayed, if the diagram was activated for this control element.

Value for diagram selecting Always if the diagram will be opened (see figure above), 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 above). 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 above). 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 below 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 below shows a blue arrow, which marks, how far the time range was drawn up. Figure below displays, how desired time range has been enlarged afterwards. By the button “Reset Zoom”, enlargement will be cancelled. This button only will be displayed in the center 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 155: Zoom area enlarged



Figure 156: Diagram area enlarged



Figure 157: 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 above 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 158: Comparison of different values with different units

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

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 control element has got following configuration fields (identifier see figure below):

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 a control element. In doing so, an additional line will be inserted, by which the diagram can be opened. (see figure “element of values/diagrams”)
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 “element of values/diagrams”)
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, control 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 “configuration window value” 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 control 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, control 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 control 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 below), 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 control element scales automatically the y-axis.
 - Minimum/Maximum Value. These data represent the upper and lower border of y-axis.
- Graphics Colour. The colour, which is selected here, will be used for the graph.
- Draw as steps. Prevents the linear connection of successive telegram values. This way you get a more sensible representation as a square wave e.g. for EIS1 values.
- 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.
- Trace timeout. Two successive values are only connected if the time interval between the values is smaller than this timeout.

This allows better detection of problems such as missing sensor values.
This means that you should set the value higher than the interval between two values that would be expected in a normal case.
If the timeout is set too low (e.g. 30 minutes if a sensor sends every hour), the graph will only consist of single values that will never be connected.

LONG TERM DATABASE

- Active Long-Term Database

If the recording is deactivated, all previously recorded data of this value will be deleted. Please use the CSV export in the visualization to save already recorded data.

- Record Interval. Here you can set the time at which interval a group address is recorded.
- Interval Calculation. Here you can set the way in which the group address is recorded.
 - Latest Value. The last value is recorded at the set time.
 - Maximum Value. Only the maximum value is recorded.
 - Minimum Value. Only the minimum value is recorded.
 - Average. The average value is recorded.
 - Interpolated Value. The interpolated value is recorded.
 - Telegram Count. The number of telegrams is recorded.

Note: The long-term recording always saves only the data in the selected interval calculation. If the type of interval calculation is changed, all previously recorded data of this value will be deleted. Please use the CSV export in the visualization to save already recorded data. Alternatively you can start another recording for the same value with different settings.

Note: In the case of long-term recording for minimum value and maximum value, if a factor < 0 is used under "Value" for the interval calculation, it must be noted that the maximum value is set for recording the minimum value and the minimum value is set for recording the maximum value.

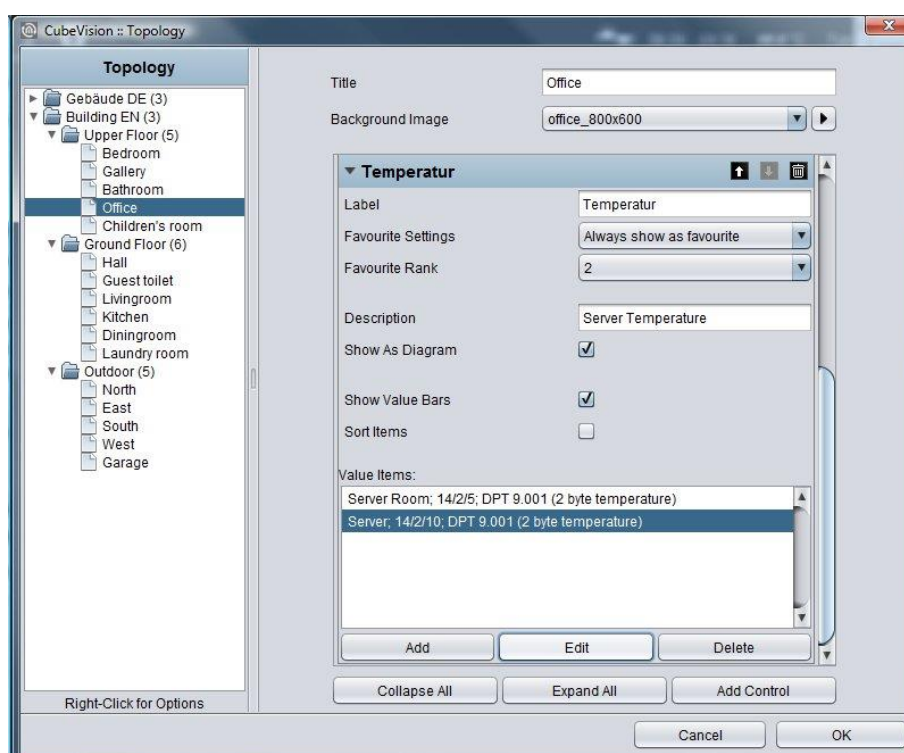


Figure 159: Configuration window of value/diagram element



Value Properties

?

Value

Title

Server Room

Address

14/2/5

Data Type

DPT 9.001 (EIS 5)

Factor

1

Offset

0

Format

0. #

Value Input

Is Control

☐

Min. Input Value

0

Max. Input Value

0

Diagram

Y-Axis

Temperatur

Diagram Trace Colour

Trace Design

Line

Draw as Steps

☐

Trace Type

Absolute

Interval

15

Timeout

30

Long Term Database

Activate Long Term Database

☒

Record Interval

15 Minutes

Interval Calculation

Latest Value

OK

Cancel

Figure 160: Configuration window of the individual group addresses

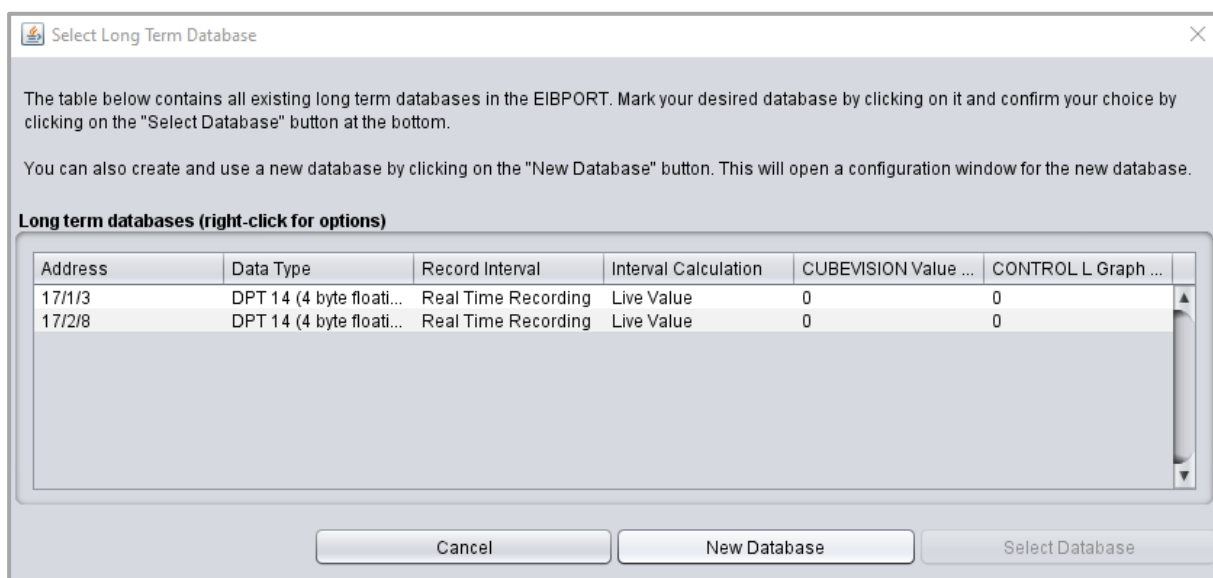


Figure 161: Long-term databases – enable

Create a new database:

Address

Data type

Record interval (live, 10 minutes, ..., 24 hours)

Interval calculation (e.g. latest value, maximum or minimum value, average, etc.)

Value calculation (absolute value, difference value)

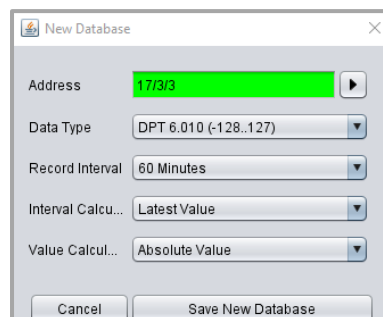


Figure 162: Editor database

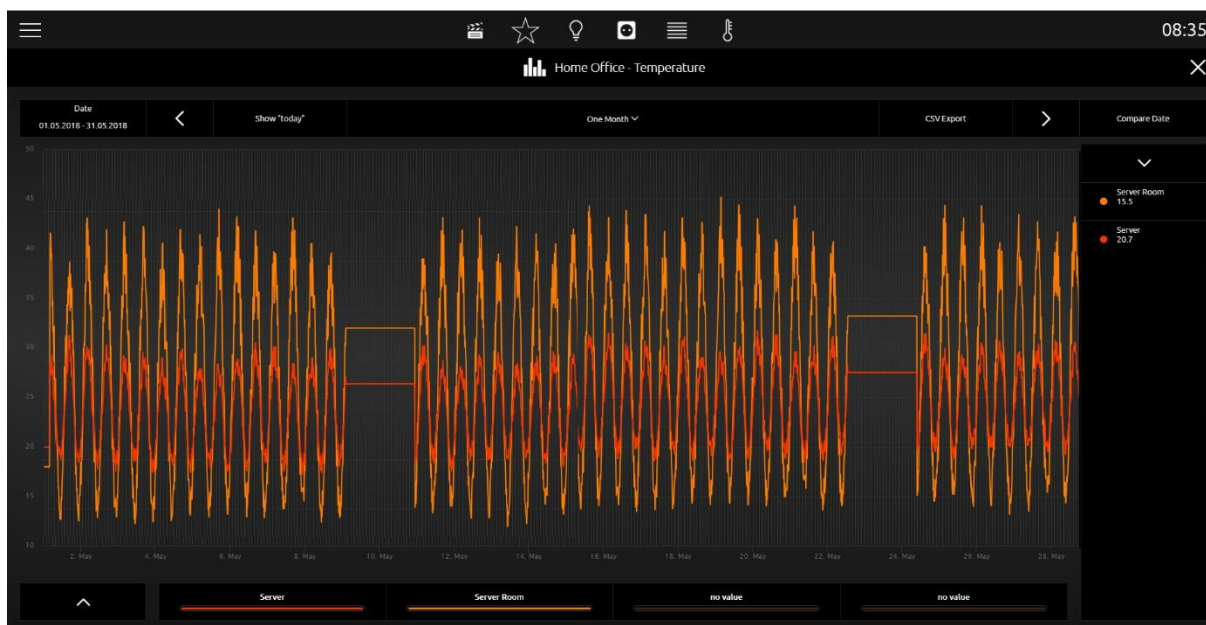


Figure 163: Long-term recording in visualization

In the visualization, the view of the long-term recording can be selected between recording for 1 day, recording for 1 week or recording for 1 month.

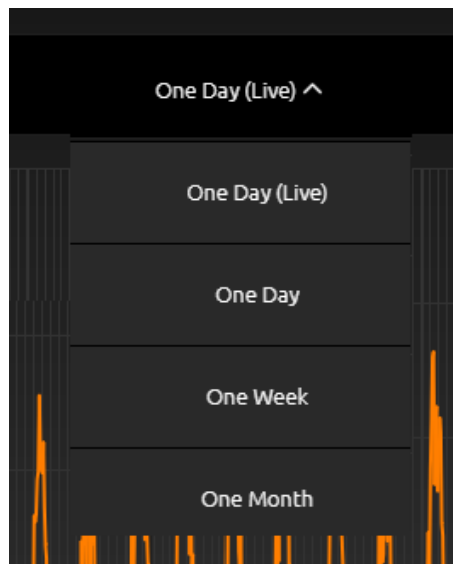


Figure 164. Selecting the time view

VALUES / DIAGRAMS IN THE PHONE PRESENTATION

The visualization in the phone presentation differs from the visualization in the tablet presentation on a number of points.

By clicking the symbol circled in orange, you can access the EEV phone presentation of the "Value / Diagram" control element.

By clicking the symbol circled in red, you can access a list in which all diagrams are listed.

Clicking the symbol circled in green, you can return to the menu.



Figure 165: Phone View – Diagramm

In the EEV phone presentation, further details about the respective diagrams can be found, just like in the tablet presentation.

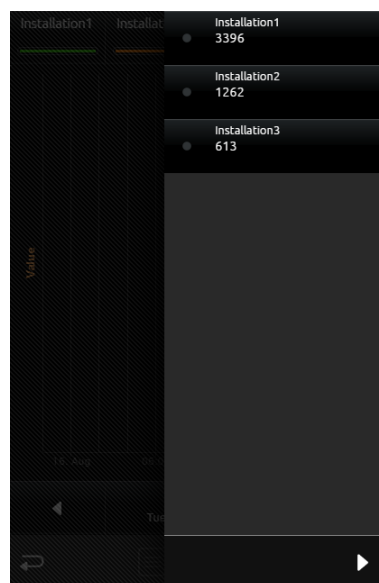


Figure 166: Diagrams, extended element view

In the figure below, it is possible to choose between all diagram control elements in the room. Thus, tedious and unsystematic searching for different diagram control elements is no longer necessary.



Figure 167: List of all diagrams



7.2.13 TEXT DISPLAY

- Option: Is it operable? No
- Extended view:: No
- Height units: 1 per text input

This element is used to display EIS 15 (DPT 16) text strings in the CUBEVISION.

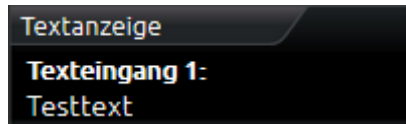


Figure 168 CUBEVISION Text Display



Figure 169 Text Display configuration

The element can display several text inputs. A text input is inserted via the "Add" button.

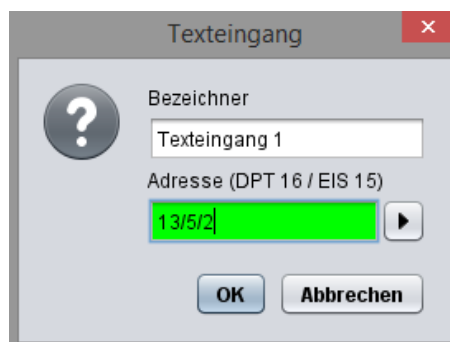


Figure 170 Add Text Input

7.2.14 GROUP SWITCH / SCENES

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

Sense and purpose of this control element is, that a group of symbols, which contain different group addresses (four at a max), can be collected/placed in one control 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 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 control element, this function already is implemented.

Layout of the control element's outline will be selectable freely. and 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 171: Element group switch – only icons



Figure 172: Element group switch - icons and a long text



Figure 173: Element group switch - Icons und a short text

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

1. **Width for function.** With it, the layout of the control element will be determined. For selection are available "Icons" (figure "Element group switch – only icons"), "icons and a short text" (see figure above) and "Icons and a long test" (figure above middle).
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.** The Figure below shows 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.

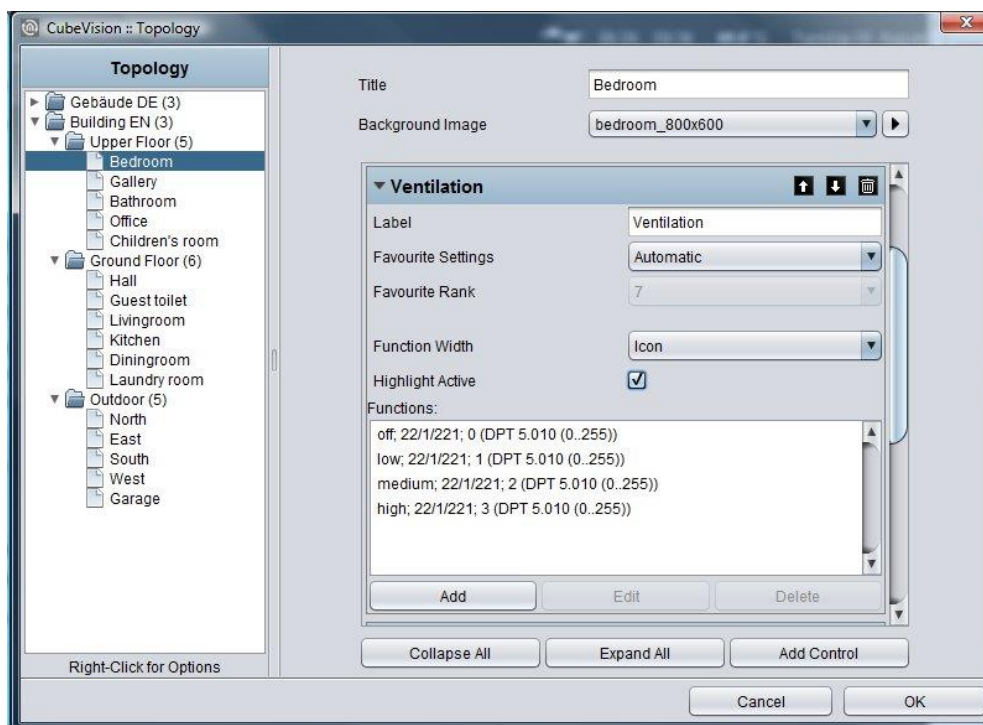


Figure 174: Configuration window of „group switch/scene“

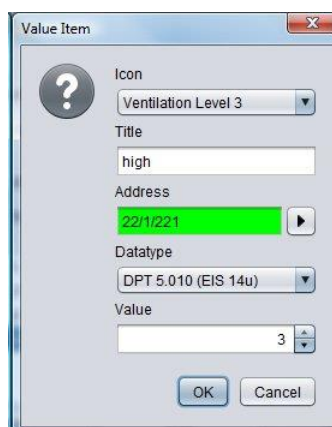


Figure 175: Scenes element “appending group address”

7.2.15 TUNEALBE WHITE

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

This Tuneable White visualization element is used to control lamps via the CUBEVISION, where it is possible to set the colour temperature from warm to cool white. In addition, four predefined colour temperatures and brightness value combinations are available as preselection that can be called up directly. Via the CUBEVISION visualization itself, it is also possible to mix up to four of these combinations and save them as favorites.

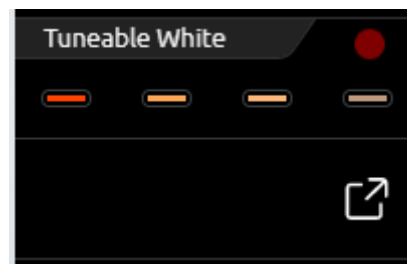


Figure 176 Tuneable White

This control element has two views. A compact one with two height units, for the ICP or for the ECP and another one in the EEV. The compact view shows a maximum of four combinations in the first line (see illustration above right).

In addition, the current set colour temperature and brightness value combination is displayed in the upper right corner of the element as feedback.

The second view shows the Tuneable White control element in the EEV further control options. In addition to the selection of preset colour temperatures and brightness values, the EEV also offers the user-selected favorite combinations for selection.

The illustration below shows the Tuneable White control element in the EEV view. In the right column there are two "sliders" with which the colour temperature and brightness value can be set. In the center of this view there are two circles that can be used to comfortably select the colour temperature and brightness value with a tap of the finger. Directly below there is a line with 4 buttons each for the favorite combination. Below these buttons, the respective value for the colour temperature and brightness value is also displayed for each colour temperature and brightness value combination. In the middle of the two circles, the round area shows the currently set combination. A currently set combination can be saved as a favorite simply by dragging and dropping it onto one of these buttons.

To send the colour values to a Tunable White lamp, enter the group address for all colour temperature and brightness values a separate group addresses. Here are the data types:

- Colour temperature as 2byte value
- Brightness as 1byte value

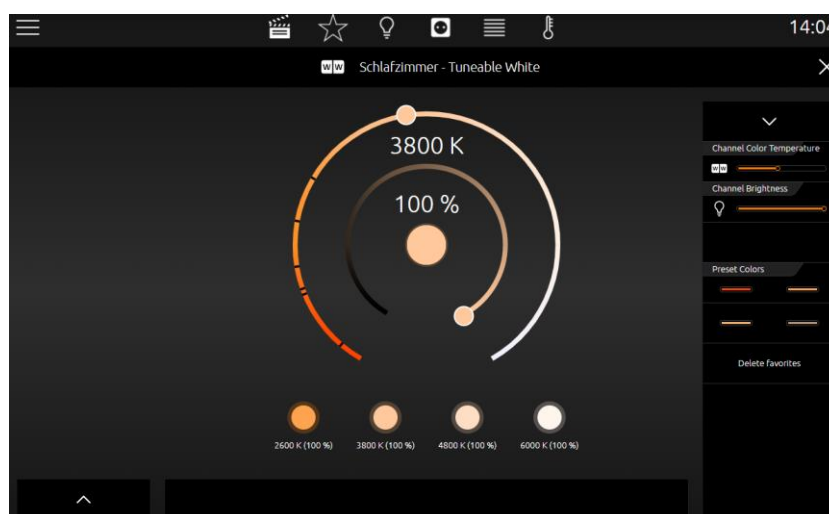


Figure 177 Tuneable White Element in the Visualisation



This control element has the following configuration (see illustration below):

1. **Colour temperature (2 bytes).** Communications object for controlling the colour temperature.
2. **Brightness (1 byte).** Communications object for controlling the brightness.
3. **Minimum colour temperature.** Determine which minimum value may be set via the visualization.
4. **Maximum colour temperature.** Determine which maximum value may be set via the visualization.
5. **Colour temperature step width.** The value set here defines the "step width" of the colour temperature when adjusted by the user. For example, you can define that the colour temperature can be changed in 100K steps by the user.
6. **Discrete colour temperature control.** Activates the discrete colour temperature control. In this mode, the value range of the colour temperature control is limited to up to 10 set values. The set colour temperature values are displayed as markers in the visualization.
7. **Values for the discrete colour temperature control.** The window is displayed if the option §Discrete colour temperature control§ is activated. Here you can define the colour temperature values that are jumped to directly during operation.
8. **Favorite settings.** Favorite settings for colour temperature (Kelvin) and brightness (percent). These settings are displayed as a separate button and can be activated with a click.

▼ Tuneable White

Beschriftung: Tuneable White

"Central View" Kategorie: Nicht zugeordnet

Favoriteneinstellung: Automatisch

Favoriten-Rang: An oberster Position

Farbtemperatur (2 Byte): 1/1/1

Helligkeit (1 Byte): 1/1/2

Minimale Farbtemperatur: 1000 K

Maximale Farbtemperatur: 7000 K

Farbtemperatur Stufenweite: 100 K

Diskrete Farbtemperatursteuerung: ☒

Werte für die diskrete Farbtemperatursteuerung

- 1200 K
- 1750 K
- 1800 K
- 2000 K
- 2400 K
- 2800 K

Hinzufügen Ändern Löschen

Favoriteneinstellungen

- 1000 K (100 %)
- 2700 K (100 %)
- 3200 K (100 %)
- 4000 K (75 %)

Hinzufügen Ändern Löschen

Figure 178 Configuration Tuneable White

8 SMART FUNCTION CREATOR

SCENES AND SMART HOME FUNCTIONS DIRECTLY IN THE VISUALIZATION.

With the »Smart Function Creator«, you can create scenes and smart home functions very easily and intuitively. Simply add visualization elements to a scene with drag & drop and use clocks and events as triggers. You can combine multiple triggers with AND resp. OR connections. That's how easy it is to create smart home functions with CUBEVISION 2.

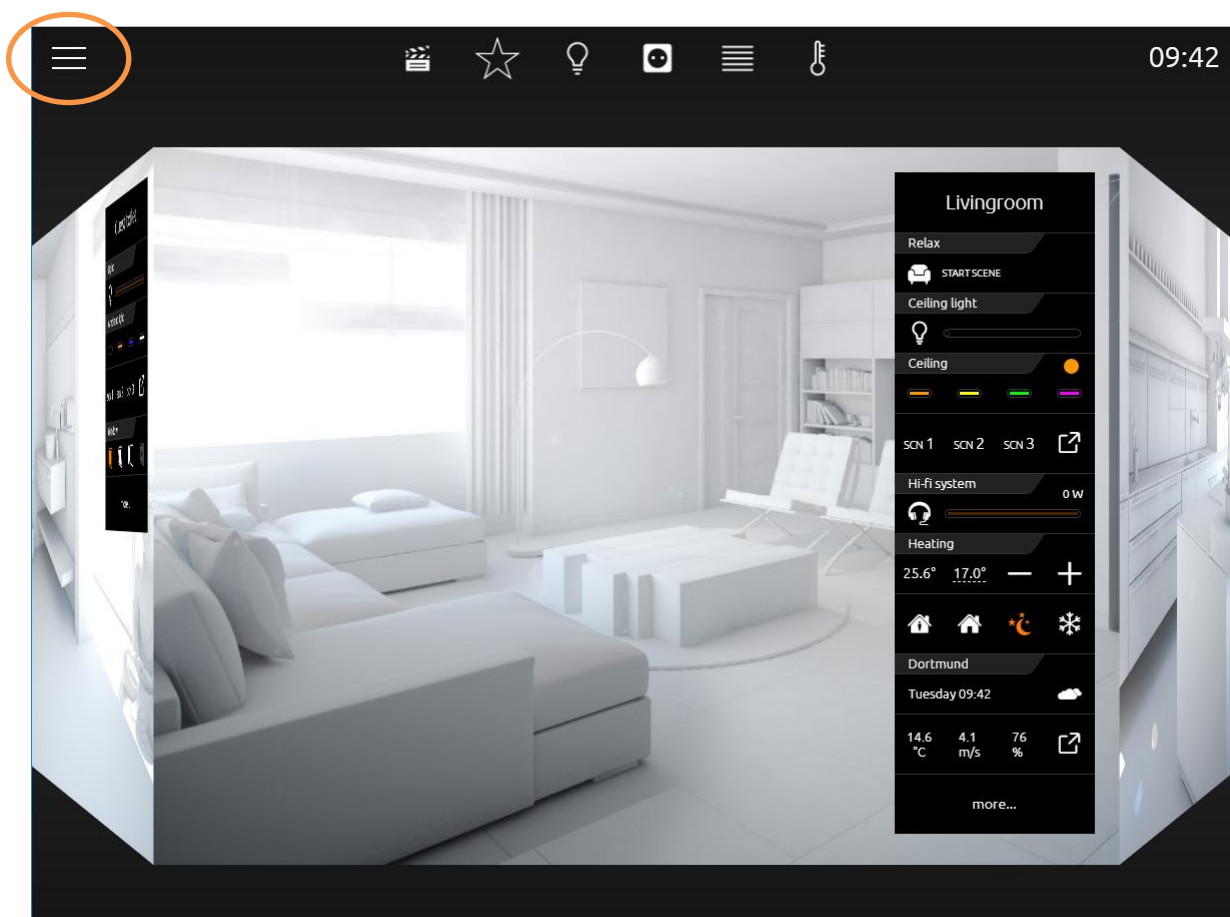


Figure 179: Open Smart Function Creator

Pressing the „burger menu icon“ will open the menu. Pressing „Smart Function Creator“ will enable the drop zone (figure).

You can drag & drop the desired elements from the Instant Control Panel [ICP] or Extended Control Panel [ECP] into this drop zone (figure).



DROP ZONE

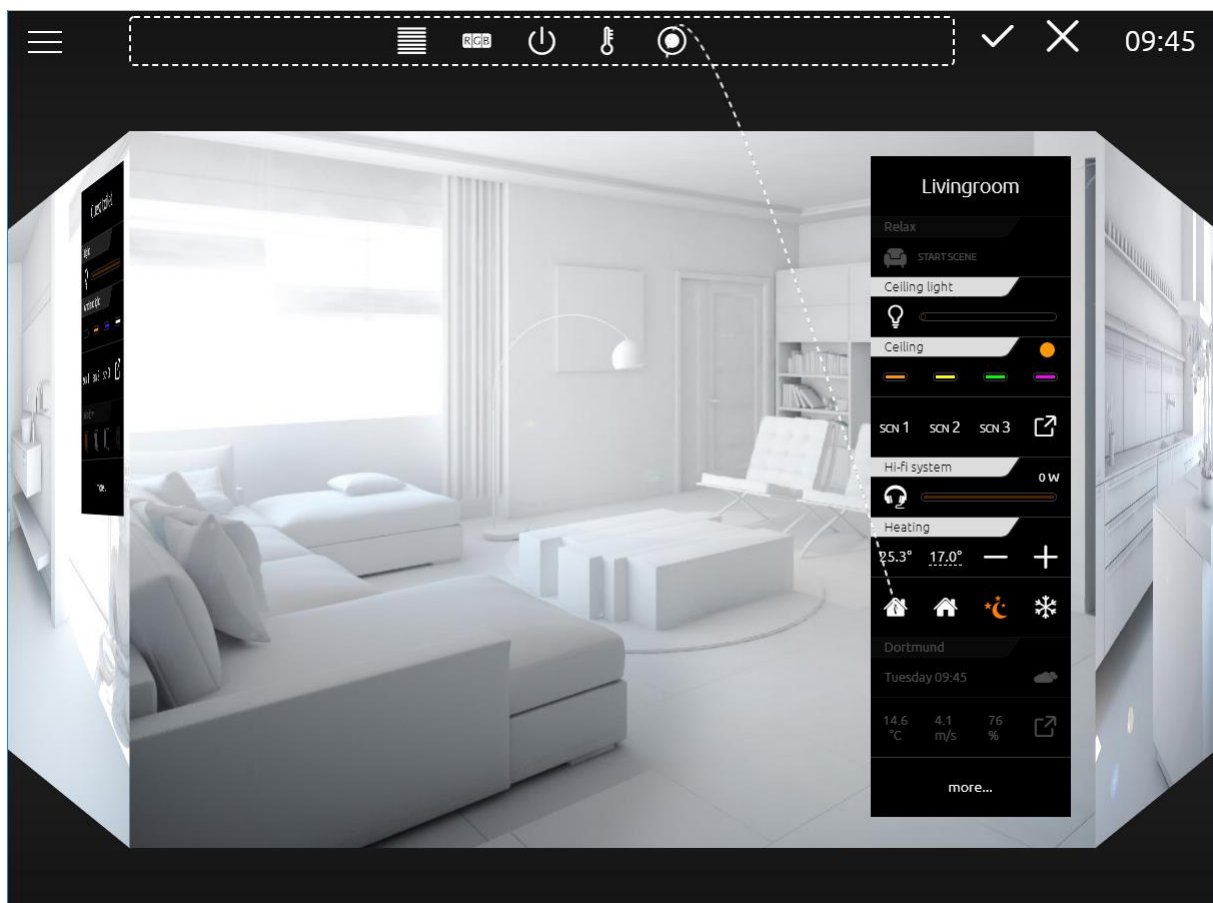


Figure 180: Drop Zone

Drag & drop the desired elements from the Instant Control Panel [ICP] or Extended Control Panel [ECP] into the drop zone. You can still navigate to any room and gather all desired elements. When you are done adding elements, check out the scene by pressing the checkmark icon . You will be lead to the scene overview (see figure).

SCENES OVERVIEW

The scene overview lists all the elements you added to the drop zone (see figure). The order corresponds to the order in which you added them.

Choose Scene Icon

Please enter a scene title

×

Active	Floor	Room	Title	Function	Value	Delay	Move	Delete
<input checked="" type="checkbox"/>	Ground	Livingroom	Ceiling light	Switch	Off	0 Seconds	↕	🗑️
<input checked="" type="checkbox"/>	Floor			Absolute Dimmer	0%	0 Seconds	↕	🗑️
<input checked="" type="checkbox"/>	Ground	Livingroom	Ceiling	Color	Orange Peel	0 Seconds	↕	🗑️
<input checked="" type="checkbox"/>	Floor							
<input checked="" type="checkbox"/>	Ground	Livingroom	Heating	Mode	Night Setback	0 Seconds	↕	🗑️
<input checked="" type="checkbox"/>	Floor			Setpoint Temperature	17°	0 Seconds	↕	🗑️
<input checked="" type="checkbox"/>	Ground	Livingroom	Heating	Mode	0	0 Seconds	↕	🗑️
<input checked="" type="checkbox"/>	Floor			Setpoint Temperature	17°	0 Seconds	↕	🗑️
<input checked="" type="checkbox"/>	Ground	Livingroom	South	Position	70%	0 Seconds	↕	🗑️
<input checked="" type="checkbox"/>	Floor			Angle	20	0 Seconds	↕	🗑️

Continue Editing

Continue to Triggers

Figure 181: Scenes Overview

You can edit individual elements in the scene overview at any time.

Active

Every element is active by default. If an element has multiple functions, they all will be active. Uncheck the box here to deactivate an element or individual function of an element.

Deactivated elements or functions will be ignored when executing the scene. You can reactivate them at any time by checking the box again.

Floor

The name of the floor in which the room with the element is situated. This name is assigned in the CUBEVISION Editor.

Room

The name of the room to which the element belongs. This name is assigned in the CUBEVISION Editor.

Title

The name of the element itself. This name is assigned in the CUBEVISION Editor.

**Function**

Lists the functions of the element.

Value

Lists the values of the elements as they will be set in the scene. You can edit these values here, with the exception of the RTR element. The values of RTR Elements can only be changed in the Instant Control Panel [ICP] or Extended Control Panel [ECP] prior to adding them to scenes.

Delay

You can configure a delay between individual elements of your scene. The delay is set in seconds.

Example: You configure a 5 seconds delay between switch „Reading Lamp“ and switch „ind. lighting“. If you start the scene now, the first two elements will be executed without delay, then the scene pauses for 5 seconds before continuing to execute the other elements.

Move

Drag and drop this icon to change the order of the elements.

Delete

Press this icon to remove elements from your scene.

Give your scene a title. This will help you distinguish between scenes later on. Press or left-click into the field „Please enter a scene title“. In addition to a title, you can also assign an icon to your scene. Press „Choose scene icon“ and choose one of the 450 provided icons. The icon will appear in manual triggers and the Launchpad, if configured.

If you need to add additional elements to your scene at this point, press the button „Continue editing“. The cube and the drop zone containing the elements you added so far will be visible again, you can add more elements and check out the scene once more.

Otherwise, press „Continue to triggers“, to configure how your scene should be triggered (cf. figure).

SCENES TRIGGER

There are three types of scene triggers: „Time and Date“, „Event“, and „Manual“.

You can use individual triggers or combine them with „AND“ as well as „OR“. If a scene for instance should run automatically on a schedule, provided some conditions are met, you must combine the time and event triggers with „AND“. You could however additionally configure a „Manual“ trigger. This trigger is then combined with the first trigger in a „OR“ way.

The scene will start either automatically, if time and event conditions are all met, or it can be started manually, independent of the event conditions of the time trigger.

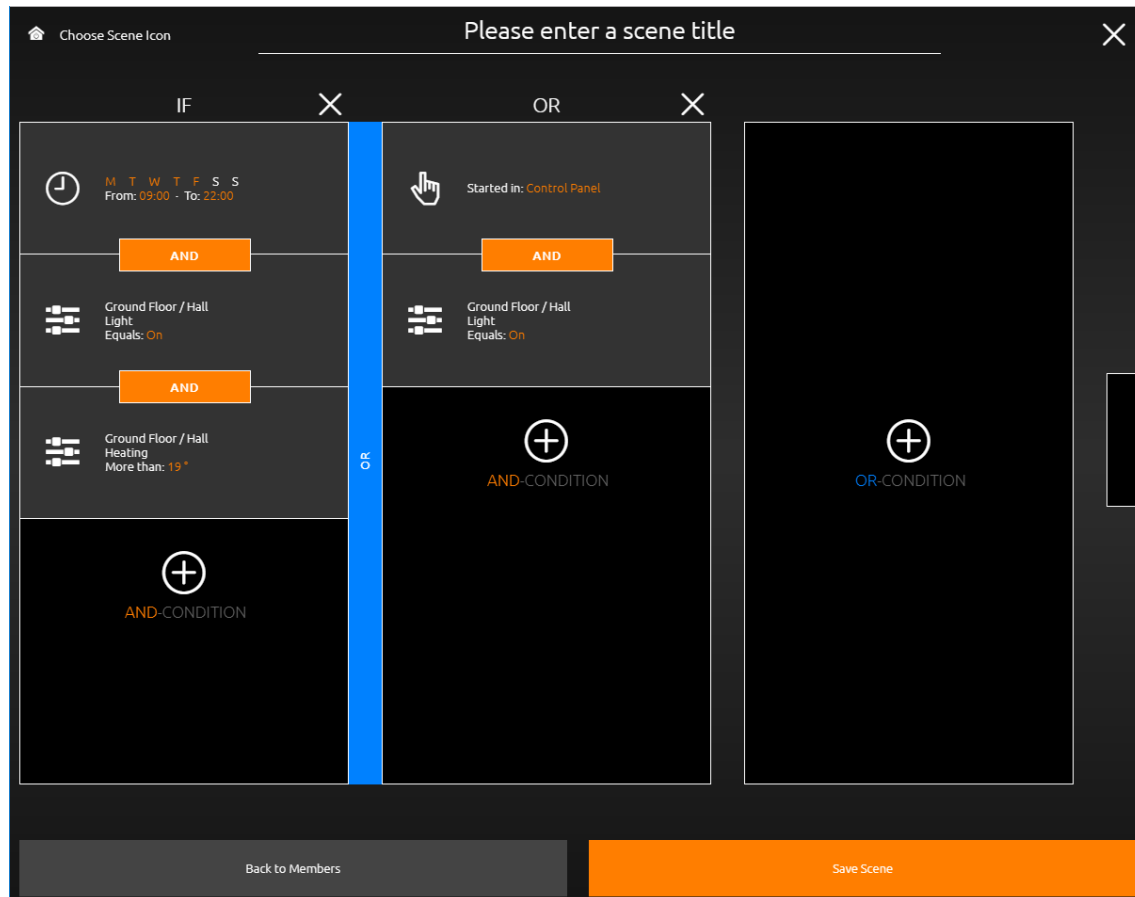


Figure 182: Scenes Trigger

TRIGGER TYPES



Time and Date



Event



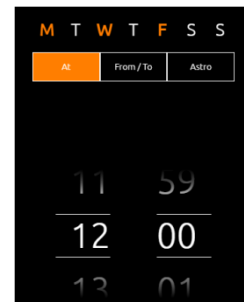
Manual



Time and Date

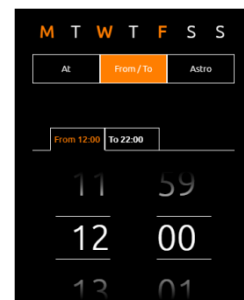
This trigger type is a simple weekly timer, with optional “astro” timer functionality.

- **At:** In this mode, the scene will be triggered at the exact configured time, on the selected days of the week. Selected weekdays are highlighted in orange. At least one weekday must be selected in order to activate the timer.

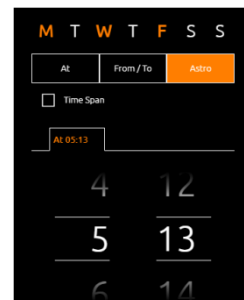


- **From/To:** Use this setting to combine events and time restraints with „AND“.

For example, the front door light can be turned on sometime between 7 and 10 pm, if the ambient brightness falls below a threshold configured in an event trigger. Should the ambient brightness only fall below the threshold sometime after 10pm, the scene will not be triggered anymore.



- **Astro:** The time you configure here denotes the scene start time at this exact day. It represents the position of the sun at your configured location ([find the Location configuration under the menu “general”](#)) at this time on the day you configure this element. Every day the scene start time is adjusted to ensure the position of the sun is as it was at the time you wanted the scene to start on the day of the configuration. If you open the configuration weeks later, the time here will differ from what you configured, because the sun is at the desired position at a different time of day.



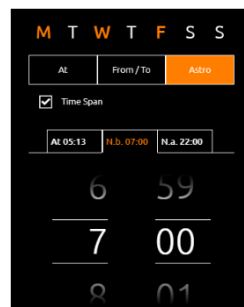
Example:

Your blinds should open at dawn. You configure the time by choosing the time dawn occurred that very day. Dawn varies every day, thus the scene start time shifts every day, with possibly multiple hours difference throughout the year, depending on your location.

Time Span: You can curb the variation using this function

Example:

Your blinds should open at dawn. Yet, during summer dawn is too early for you. Using time span limits, you can force the scene not start before 7am.



Event

This trigger type starts a scene when a predefined condition is met. All available conditions of all the elements which you configured in the CUBEVISION Editor will be automatically listed.

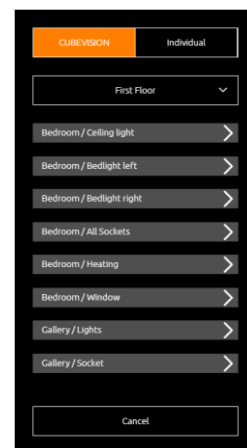
Individual events can also be configured.

For this purpose, a group address from the KNX project is entered in the "individual" area. The correct data point type must be observed.

- **Send always:**

If the "Send always" option is deactivated, a filter is set that triggers the scene only once, even if subsequent values meet the condition. Only a value that does not fulfill the condition resets the filter. If after resetting the condition the scene is triggered again.

If the option "Send always" is activated, no filter is set and the scene is retriggered with every new value that fulfills the condition.



Manuell

You can manually start scenes with this trigger type.

The scene button with which to trigger the scene can be assigned to the Launchpad (see [Launchpad](#)), the Control Panel, or both.

If you enable „Show in Control Panel“, you can then select one or more rooms in which you want the scene button to appear. Scene buttons are automatically placed at the top of the Instant Control Panel [ICP]. If you add more than one scene to a panel, they will be sorted alphabetically. Each button will show the title and icon you configured for the scene (see following figure).

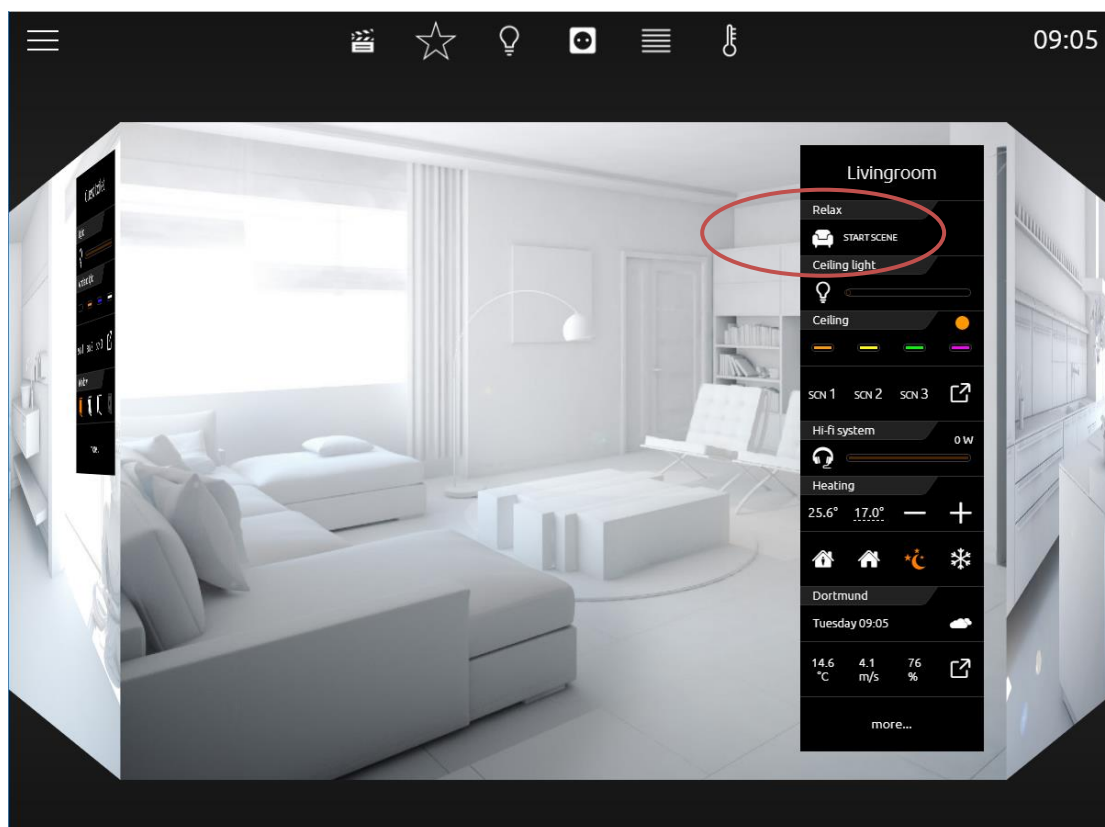
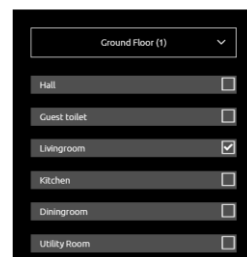
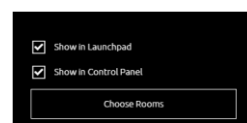


Figure 183: Control panel with scene button



USERSPEZIFIED SCENES

If a user administration has been created for the CUBEVISION visualization and is active, then when creating scenes via the users, these are provided with a group symbol.

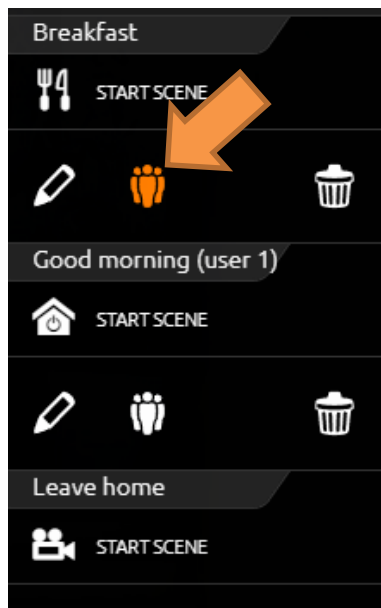


Figure 184: Userspezified scenes

Here the user can determine whether the scene should only be used individually or for everyone. For example, each family member can create individual favourite scenes.

If the group symbol is pushed and thus activated (orange), this scene is available to all users. However, only the creator of this scene can continue to edit or delete this scene.

Example with 3 scenes:

Scene "Breakfast"; created by user 1 and released for use by all others. Only user 1 can edit or delete the scene further.

Scene "Good morning (user 1)": created by user 1 and only he can start, edit or delete the scene.

Scene "Leaving home": Scene created by another user or by the admin. User1 can only start this scene, e.g. switching on power supply of a camera.



9 LAUNCHPAD

The Launchpad provides quick access to up to 6 scene triggers. It can be enabled in the settings section of the CUBEVISION start page.

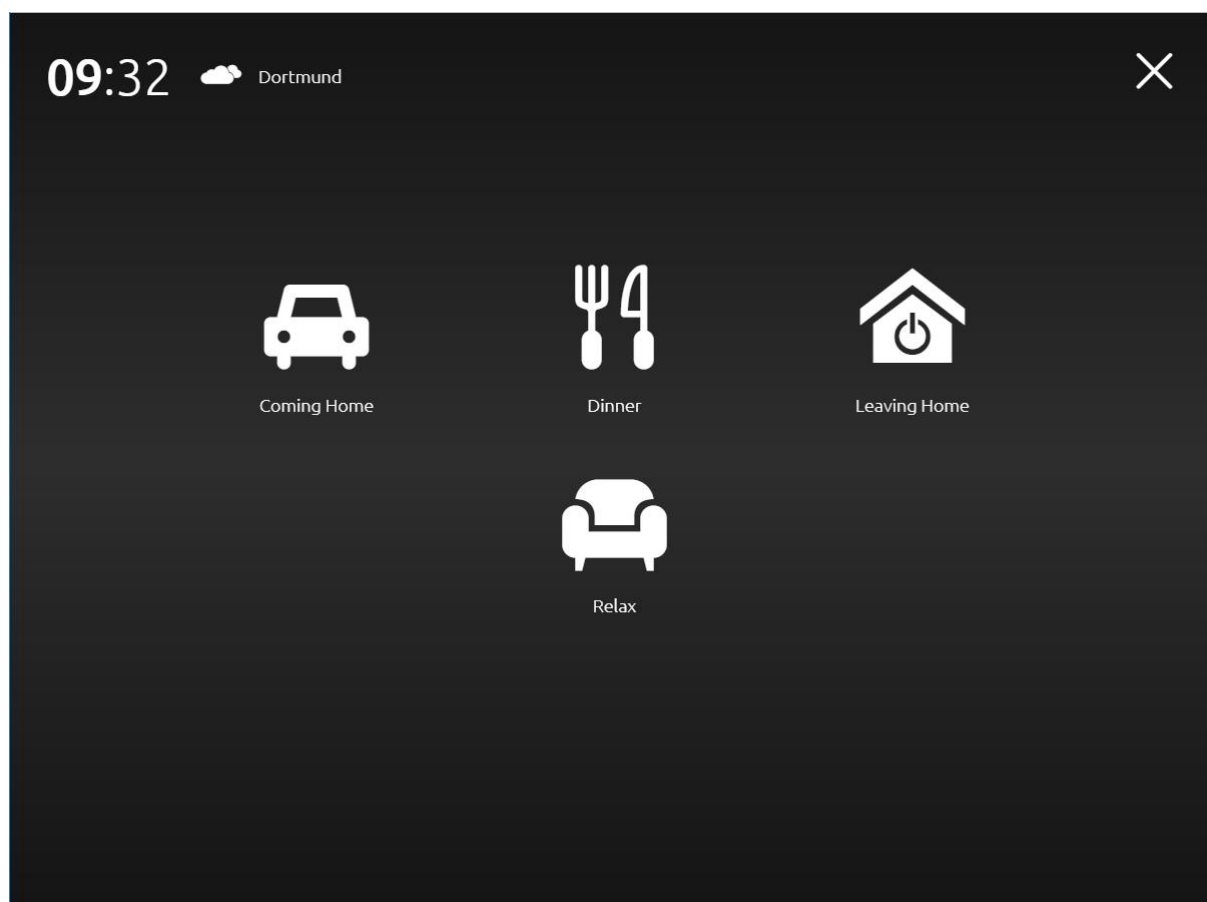


Figure 185: Launchpad

*Launchpad disabled:*

The menu entry is greyed out if the launchpad is disabled.

Launchpad enabled:

If the Launchpad is enabled, the menu entry is orange, and you can set the time of inactivity in minutes after which the launchpad will automatically appear. You can also open it at any time by accessing the menu and pressing the Launchpad entry.

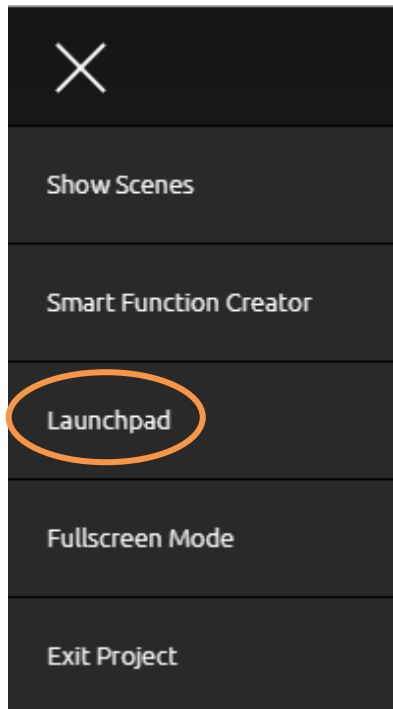


Figure 187: Menu

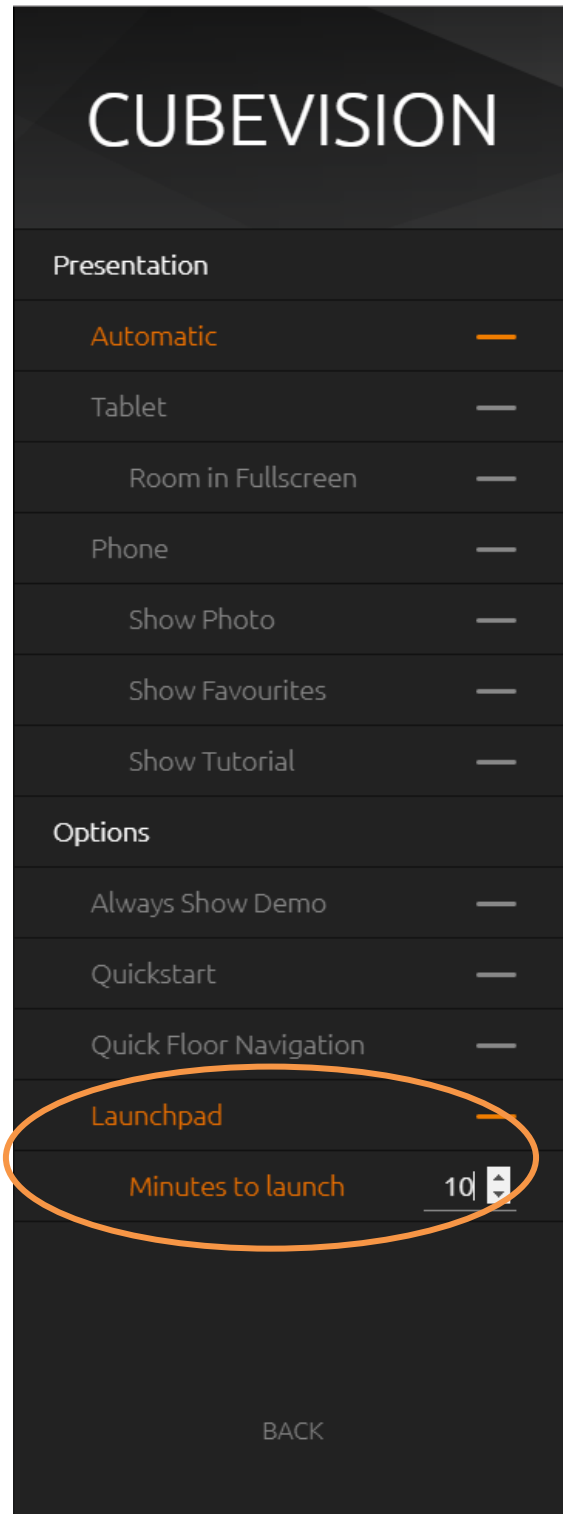


Figure 186: CUBEVISION Settings

10 USAGE OF THE ENOCEAN EDITOR

In order to open the EnOcean Editor please follow the description in chapter “[EnOcean Editor](#)”!

10.1 OPERATING PRINCIPLE ENOCEAN

An EnOcean radio network consists of sensors and actuators. The sensors utilize your ambient energy to transmit the corresponding radio signal. So that an actuator can interpret and respond to the signals of a sensor, the actuator must be adapted to the sensor. The so-called EnOcean Profiles (EEP) determine how the data provided by the sensor are to be interpreted. Thus, it is important that sensor and actuator utilize the same EnOcean Profile (EEP).

Device categories / sensors

EnOcean distinguishes between three device categories in its sensor technology. The device category gives information about the kind of EnOcean signal involved and simultaneously about what the receiver can expect.

- Switch module: A module which sends out a corresponding radio signal via user interaction. That is switches, rockers, position and key card switches as well as window handles.
- 1 byte sensor: A sensor which sends out information of 1 byte size.
- 4 byte sensor: A sensor which sends out information of 4 byte size.

Actuators

Actuators will perform their controlling on the basis of sensor signals. Therefore, sensor and actuator have to be adapted to each other. Thus, it is important to know which EnOcean profile is to be emulated to address a LINKMOUDULE actuator correctly. The actuator manufacturer will inform you about which profile the actuator utilizes.

EnOcean Profiles (EEP)

The EnOcean profiles (EnOcean Equipment Profile - EEP) define the device category, the function and the device specification. During the **CUBEVISIONMODULE** configuration, the KNX parameters automatically adapt to the selected profile. The profile consists of 3 number pairs separated by a hyphen:
XX-XX-XX

The different positions represent the following:
ORG-FUNC-TYPE

- ORG determines which messages form the communication base (see also 'Device categories/sensors').
- FUNC determines which device is involved, that is e.g. a switch or a temperature sensor.
- TYPE determines the exact specifications of the device functionality.

Transmitter ID (Trans. ID)

Is a definite device address which only exists once? This address allows the sending device to be identified.

Teaching Telegram / LRN Telegram

Is a special telegram used to "teach" the sensor to recognize the actuator, that is, to adapt the actuator to the sensor? It is important for the actuator to know from which hardware address it gets its sensor data. There are several kinds of adapting mechanisms. Please consider the respective descriptions.



10.2 ENOCEAN CONFIGURATION

The **CUBEVISIONMODULE** internally works with the KNX group address system. In order to continue to use received EnOcean signals within the device or to trigger EnOcean telegrams, KNX group addresses must be used. You will find information about this in chapter "[KNX Addressing](#)".

10.2.1 ENOCEAN CONFIGURATION

In order to access the corresponding **CUBEVISIONMODULE** configuration mask, open the menu "configuration" – "EnOcean Editor". Java Applets must be able to be started (please note also the indications in chapter "EnOcean Editor"). The window generally consists of 3 areas:

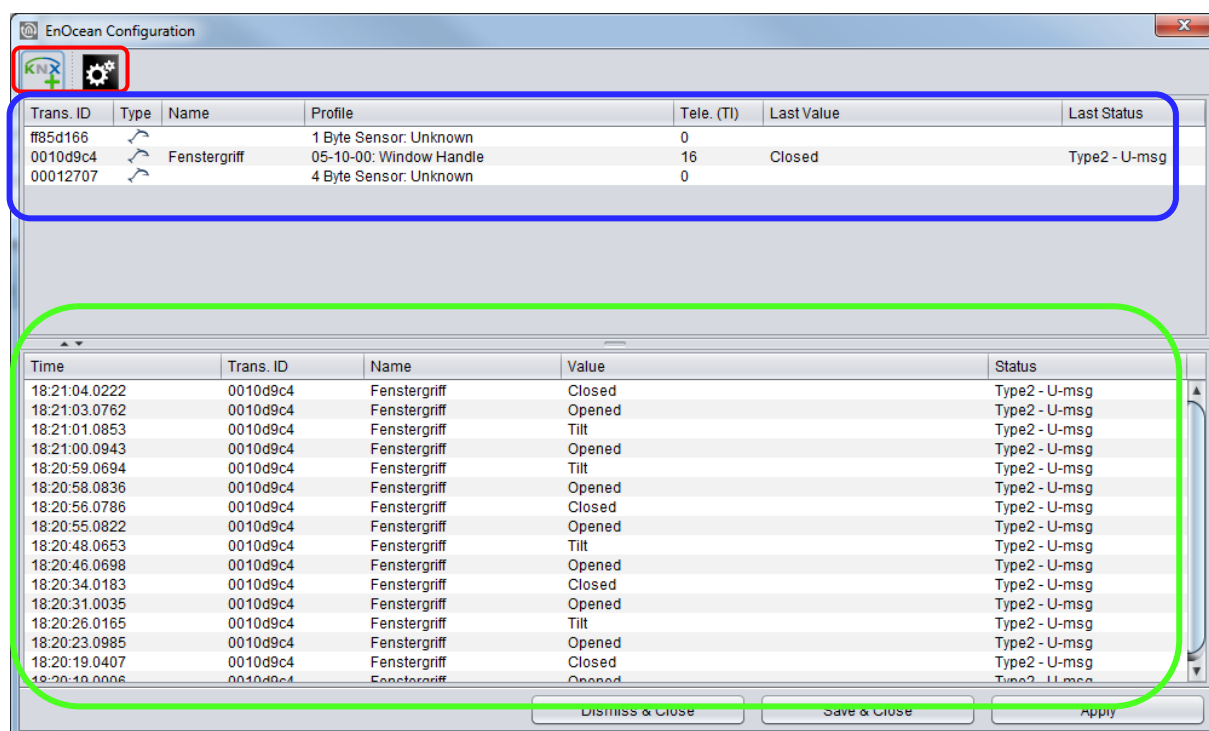


Figure 188: EnOcean Configuration

- (Red) *Configuration Menu*: Basic settings of the EnOcean module are adjusted here and the EnOcean devices are emulated.
- (Blue) *Device List*: All EnOcean devices are ordered and listed here in the order of their device ID (Trans. ID).
- (Green) *Telegram List*: All received EnOcean telegrams are listed here in the order of their arrival time.

Additionally, at the bottom of the window there are the action buttons available for securing or discarding the settings.

10.3 ENOCEAN SETTINGS



The EnOcean settings show the hardware parameters of the incorporated EnOcean module (TCM 300 Transceiver). The following settings can be performed:

EnOcean active

Here, you can switch the module on or off.

Repeater

The repeater function is used to repeat a receiving signal in order to increase its range. The following settings are available:

- *Off*: Repeater function is turned off.
- *Level 1*: The telegram is repeated by one repeater only.
- *Level 2*: The telegram is repeated by two repeaters.

RX sensitivity

Determine the receiving sensitivity in which you want the EnOcean module to work. You can choose between "Low" and "High".

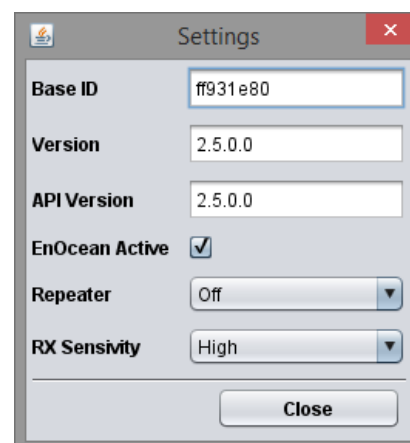


Figure 189: EnOcean Settings

10.4 ADAPTING THE ENOCEAN DEVICE

All EnOcean devices within range are displayed both in the device list and in the telegram list as they are sending something. As already mentioned, the EnOcean telegram must be connected with a group address in order to make it usable for the CUBEVISIONMODULE. This is done as follows:

1. Mark the device of interest in the device list.



Figure 190: Calling up properties

Advice: If you are not sure which device has which Trans. ID, activate the device of interest and look up in the device list for which device the telegram counter increases (column "telegrams").

2. When you have detected the device of interest, mark it with the mouse, press the right mouse button and click 'Properties'. Alternatively, double-click on the device.
3. The window "EnOcean Device Configuration" will open. Via this dialogue, the EnOcean devices will be "adapted".
4. Initially, assign a definite "Device Name", referring to the device function. In the input screen, you will further find the following parameters:

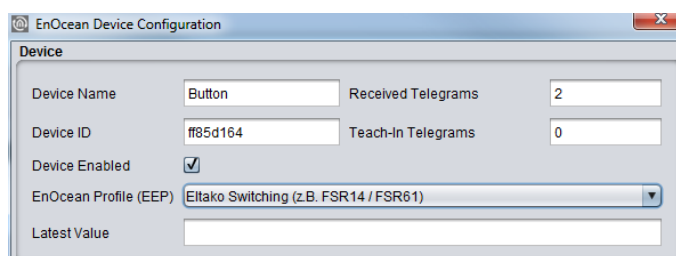


Figure 191: EnOcean Device Configuration



- *Device ID:* This is the unique device address through which the device is identified.
- *Received Telegrams:* Here, the number of telegrams already received by the CUBEVISIONMODULE from this device is counted.
- *Teach-in Telegrams:* If the device should send teach-in telegrams, their number is shown here.
- *Device Active:* If you would like to keep the device in the EnOcean configuration without using it, you can deactivate it for the CUBEVISIONMODULE usage via this option.
- *EnOcean Profile (EEP):* The different EnOcean devices are defined via so-called profiles. Hereby, the device category involved is detected as early as at the signal input and a pre-selection is made. Then it is also possible to select from the profiles known from the CUBEVISIONMODULE. As soon as a profile is selected, the corresponding KNX parameters are shown underneath.

Figure 192: EnOcean Device Configuration

- *Last Value:* This field interprets the payload of the last radio signal from this device ID according to the selected profile. If there is no profile selected, the crude data are shown.
5. Select the corresponding profile of your EnOcean device. If you are not sure about which profile your device 'speaks', please contact the manufacturer of the device. After the right profile has been selected, one or more input fields appear in the "Parameters" area:

Different parameters appear depending on which profile has been selected. If one switch (rocker) has been selected, various additional functions can be carried out (see chapter "[Configuration example for EnOcean button](#)").

6. Now, enter the corresponding KNX group addresses in the address fields to obtain a connection to the selected EnOcean device. You will find detailed information about the KNX group addresses and their assignment in chapter "[KNX Addressing](#)".
7. When you have entered the addresses in the parameters as requested, close the *EnOcean Device Configuration* window.
8. Save the changes in the window "EnOcean Configuration" via the button „Save & Close“ or "Assume" (the window stays open).

As soon as this step is taken, the entered KNX telegrams are triggered via EnOcean signals. In order to be able to use the addresses more easily later, you should enter them into the ESF data with a definite designation (see Chapter "[KNX Addressing](#)")

10.5 EMULATING ENOCEAN DEVICES

The **CUBEVISIONMODULE** provides a Transceiver Module which not only permits receiving but also sending EnOcean telegrams. In order to do this, the **CUBEVISIONMODULE** emulates an EnOcean device. Via a configuration mask, you can determine which device is emulated with which KNX telegram by the **CUBEVISIONMODULE** (the device internally works with KNX group addresses also during the EnOcean execution).

Assigning a new emulated device

In order to assign a new device, please click the KNX logo in the configuration menu ("Editor" > "Extras" > "EnOcean Configuration"). Thus, a window designated "New Emulated Device" will open.



In the upper half of the window, you will be asked to choose a hardware address. The address is unique and 128 different addresses can be assigned in total. If a device has already been assigned, the device name is highlighted in red on the ID list.

Selecting the device category

Depending on which actuator is to be controlled by EnOcean, the appropriate device category has to be selected. Additionally, the appropriate profile can be preselected directly beneath the corresponding category. By confirming with "OK", the settings will be confirmed and the "EnOcean Device Configuration" window will open.

Defining emulated device ("EnOcean Device Configuration")

The device assigned in this way is initially provided with a definite device name. Additionally, the following parameters are presented (see also chapter "[Example: Emulate temperature sensor](#)")

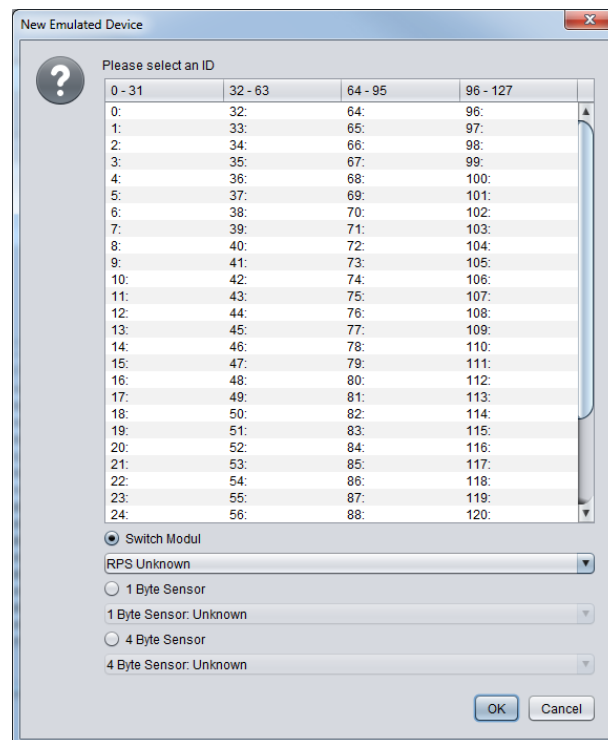


Figure 193: Emulating EnOcean device

- **Device ID:** Is the definite hardware address you have selected before. Cannot be modified at this point.
- **Received Telegrams:** Shows the number of telegrams already received from this hardware address. In an emulated device, this number should generally be "0".
- **Teaching Telegrams:** Shows the number of "teaching telegrams" already sent from this hardware address.
- **Device Active:** If you would like to keep the device in the EnOcean configuration without using it, you can deactivate it for the **CUBEVISIONMODULE** usage via this option.
- **EnOcean Profile (EEP):** Here, the profile the emulated device should use is selected. The profile settings depend on the actuator to be communicated with. If the profile is unknown, the manufacturer of the actuator can provide information.
- **Last Value:** This field interprets the user data from the last telegram according to the selected profile or simply displays it.

After all settings have been performed as requested, continue with the corresponding KNX parameters in the lower window section. These comply with the profile and are sent as KNX telegrams when there has been an EnOcean signal detected at receipt.



EXAMPLE: EMULATE TEMPERATURE SENSOR

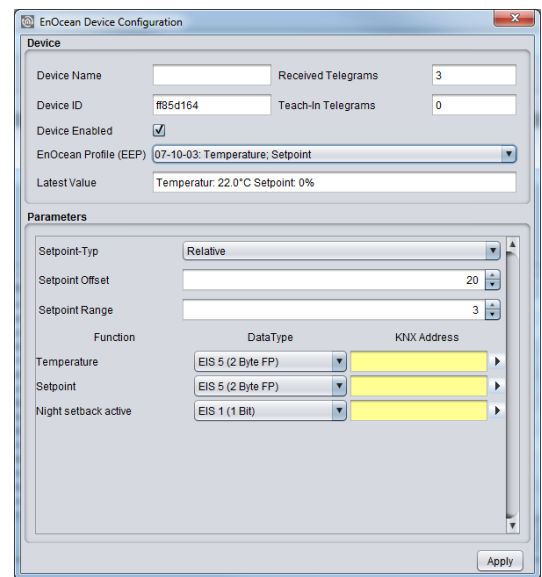
Profile

"07-10-03 temperature, target value" is selected as the profile.

Parameters

According to this profile, the following parameters are available:

- *Basic Target Value:* Enter the basic target value for the actuator here. 20°C are preselected.
- *Maximum Target Value Modification:* Enter the maximum value in °C to modify the target value here. 3°C are preselected here.
- *Temperature:* Enter the group address transmitting the current temperature value (data type EIS 5) here.
- *Target Value:* Enter the group address to modify the absolute target value (data type EIS 5) here
- *Sending Teaching Telegram:* When the corresponding actuator is in the "learning" mode, the emulated sensor can be adapted via this trigger.



When all parameters are set as required, close the window "EnOcean Device Configuration" and save your settings via the "Save & Close" or "Accept" button.

Figure 194: Receiving EnOcean device parameters

10.6 KNX ADDRESSING

The CUBEVISIONMODULE addressing concept is based on the group addressing of the KNX system. Sending EnOcean Telegrams as well as transmitting received telegrams is performed based on KNX group addresses only. The KNX group address is a 16-bit address which is split in a so-called 'real' and a 'virtual' section. Additionally, there is a 2-digit as well as a 3-digit representation:

3-digit:

MG= Main Group / CG= Central Group / SG= Subgroup
MG / CG / SG

2-digit:

MG= Main Group / SG= Subgroup
MG / SG

Note: The CUBEVISIONMODULE interface only supports the 3-digit representation.

Real / Virtual Address Space

The KNX address space ranges in total from 0/0/0 to 31/7/255 (in the 3-digit representation). Therein, the range from 15/7/255 is designated as real address space and the address space from 16/0/0 to 31/7/255 as virtual address space.

Note: For the communication between EnOcean and KNXnet/IP routing, only the real address space is used.

10.7 CONFIGURATION EXAMPLE FOR ENOCEAN BUTTON

In the following, an exemplary configuration for sending and receiving of an EnOcean button profile (profile "05-02-01: 2Rockers, Light & Blind") is shown.

10.7.1 CUBEVISION MODULE AS THE RECEIVER (ACTUATOR)

This switch provides either one or two rockers and transmits their status within a radio signal. In order to link these radio signals with KNX, various functions are available:

- *Switch / Dim:* The EnOcean push button can be used as a switch and as a dimmer. Thereby, a long keystroke is interpreted as a dim command.
- *Push Button:* When pushing the button, an EIS 1 telegram of the value 1 is triggered. When 'letting go', a telegram of the value 0 is triggered. One address can be assigned per position respectively (I and O).
- *Switch:* When pushing the button, the status is only changed once; either a 1 or a 0 is sent.
- *Blind:* For the "Move" and the "Step" commands, there is one address entered respectively (EIS 1).

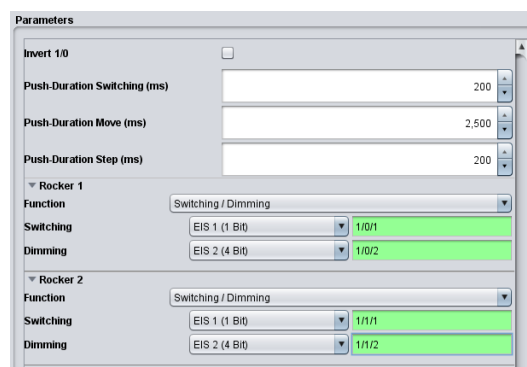


Figure 195: Receiving KNX parameters

Additionally, the output to the KNX addresses can be inverted. In this case, the actual output "1" becomes "0" and vice versa.

10.7.2 CUBEVISION MODULE EMULATES ENOCEAN PUSH BUTTON

When the profile mentioned above is emulated by the **CUBEVISIONMODULE**, the parameter screen looks slightly different. The "switch" is missing as this function cannot be carried out with EnOcean.

Functions

- *Switch / Dim:* There is one switch and one dim address for each rocker. The information on if it was switched or dimmed is sent in the KNX via different group addresses.
- *Push Button:* For the button, there is one address for the value "0" and one for the value "1". At reception on the respective input object, the corresponding EnOcean signal is transmitted.
- *Blinds:* The blind control also consists of two EIS 1 objects. One is for the 'Move' command ("1"), the other one for the 'Step' command ("0").

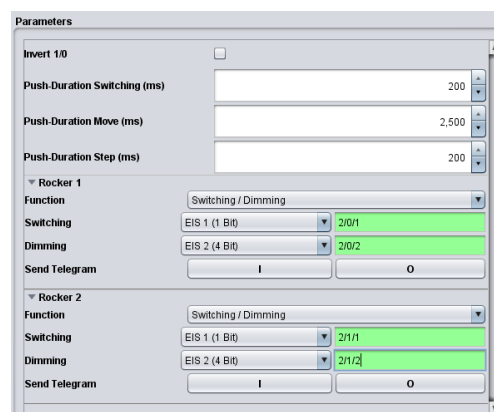


Figure 196: Sending KNX Parameters

Sending a Telegram

These buttons may be used to adapt the emulated device to the actuator of interest. These two buttons simulate the respective rocker directly from the EnOcean configuration.

Inverting

The respective EnOcean output values are inverted. The "1" becomes a "0" and vice versa.



11 REMOTE ACCESS – PLUG & PLAY VPN

In the menu item "Remote Access" there is the function from firmware version 1.5.0 to use the **CUBEVISIONMODULE** as a HOOC gateway in order to establish a secure VPN connection to your building control.

The integrated VPN solution eliminates the need to purchase and install costly additional hardware. The HOOC CONNECT E Gateway in the **CUBEVISIONMODULE** connects to the HOOC Cloud via an encrypted and secured VPN connection. It forms the heart of the HOOC VPN solution and offers a comprehensive user administration as well as many additional features such as a KNX bus monitor or alarm messages with push function.

Further instructions on setting up, configuring and using the Plug & Play VPN solution can be found in the separate document: "Documentation-HOOC".

More information at <https://bab-technologie.com/hooc/?lang=en>

The HOOC Gateway Manager Configuration menu is located on the **CUBEVISIONMODULE** web interface under the "Remote Access" menu.

1. Please call up the web interface of your **CUBEVISIONMODULE**:
2. Click on the menu item „Remote Access“, here highlighted red.

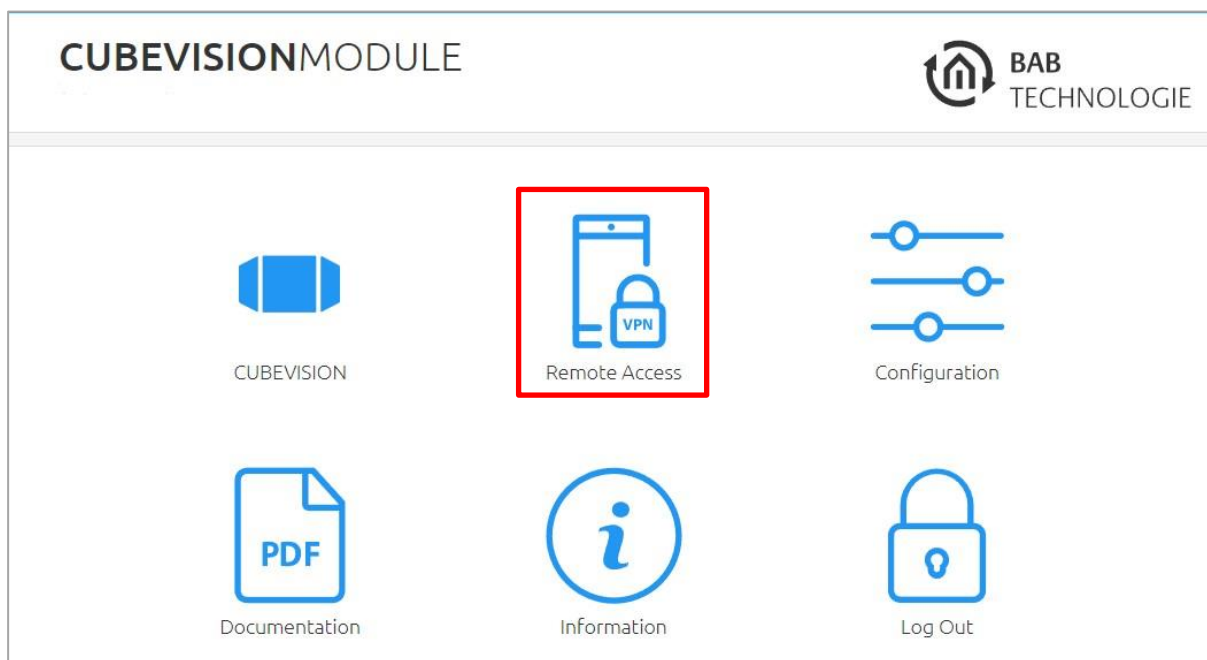


Figure 197: CUBEVISIONMODULE - Remote Access plug & play VPN



12 INFORMATION

Find important information about your **CUBEVISIONMODULE** can be found here. Please have this information ready if support is required.

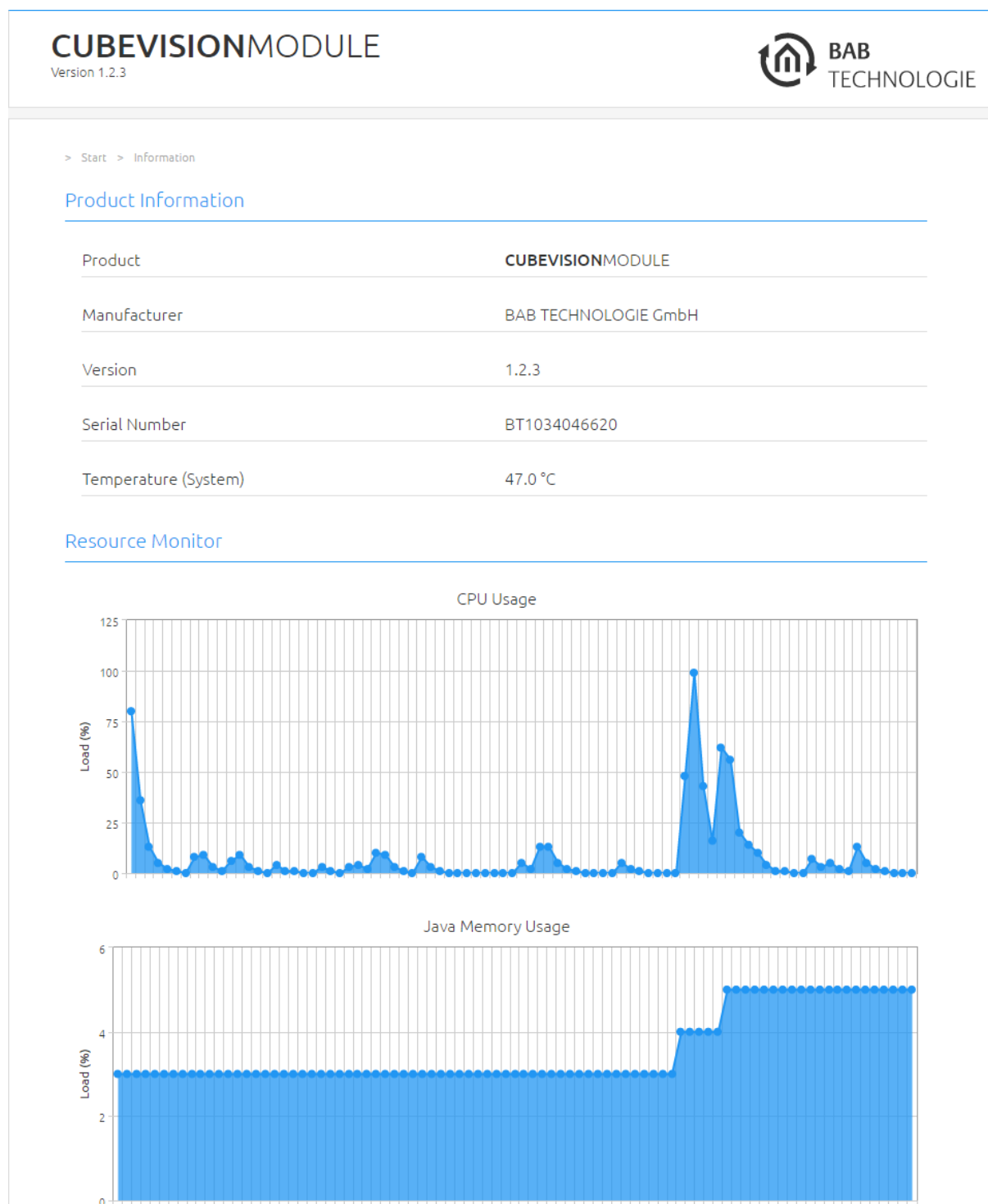


Figure 198: System variables

Note: Since the device is equipped with several CPU cores, the processor utilisation may exceed 100%.

Note: The Java memory utilisation is not relevant to this device.



13 APPENDIX

13.1 ICONS FOR CONTROLS

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

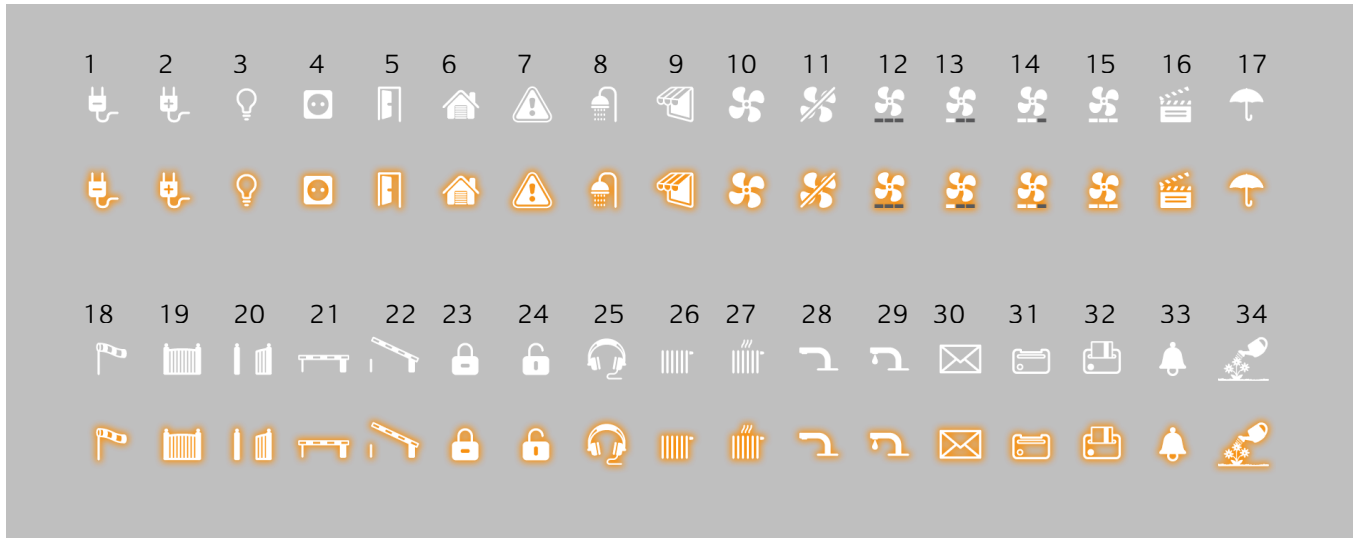


Figure 199: Icons for controls

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. "Key card present", |
| 15. "Fan level 3", | 32. "Key card absent", |
| 16. "Scene", | 33. "Bell" and |
| 17. "Rain", | 34. "Watering", |