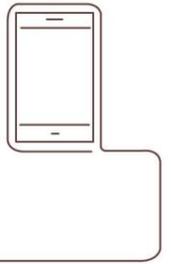


# INSTALLATION MANUAL

for the Application iHC-MA



▶ Google play

**INELB**<sup>®</sup>

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## 1. Introduction

The iHC-MA application is an accessory to the iNELS intelligent electrical installation enabling control of the entire system from a smart phone equipped with the Android operating system. The main advantage of the application is the possibility of controlling all integrated technologies from a single application, whether you are connected at home in the local network (LAN) or anywhere away from home with Internet access (mobile phone data, Wi-Fi connection, etc.).

The elegance of iNELS blends perfectly with any modern home, and thanks to the iHC-MA application, it enables constant monitoring of the electrical installation and comfortable central controlling of the entire home from a single place. Thanks to the iHC-MA, you have control over the lights, the blinds, shutters, sockets, heating, appliances, sprinklers, video cameras, multimedia (audio, video), Miele home appliances, door phones, air-conditioning, recuperation, weather station information, consumed energy status and more.

The menu is divided into clearly structured sections in which the icons indicate individual functions. Here you will also find faster access to your favorite functions, and you will maintain a constant clear view of what is happening in other zones of your home.

The application now lets you secure individual rooms. By entering the password on the web interface of the iMM server, you activate the security for the given rooms and thus prevent an unauthorized person from controlling iNELS via iHC.

The iHC application can function:

- Directly with the central unit using a virtual server, where you can control iNELS bus elements, e.g. lighting (switching, dimming), the blinds, roll shutters, sockets, security system, scenes, central functions, sprinkling or heating
- With the Connection Server, where you can control video cameras, air-conditioning, recuperation, door phones and a weather station, or monitor the consumed energy status

iHC is short for iNELS Home Control, and the letters after the dash determine the device (T – tablet, M – mobile phone) and the operating system (A – Android, I – iOS/Apple). The iHC-MA application is thus designed for smart phones with the operating system Android 2.2 and higher. It is optimized for devices with display resolution of 800x480. The application language corresponds to the language set in the OS Android.

### Availability of the application

The application is available at Google Play (previously Android Market) under the name iNELS Home Control Mobile. The application is regularly updated.

The iHC-MA application is available for download here:

<https://play.google.com/store/apps/details?id=cz.elkoep.ihcma&hl=cs>

If you don't own an iNELS unit and you want to try your hand at controlling, we recommend our Promo application, by which you can control our showroom in Holešov. You can find the application at Google Play under the name iNELS Home Control – Promo (green icon).

The promo application is available for download here:

<https://play.google.com/store/apps/details?id=cz.quiche.ihcmpresentation>

## 2. Installing the application on the device

(Steps a) and b) are in case of installing from a file)

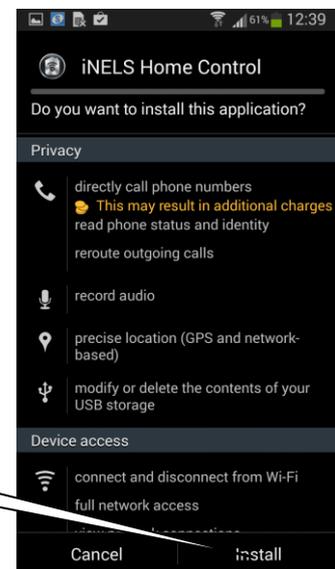
- a) Prior to the actual installation, you must enable installation from unknown sources on the phone

Allow installation of the application from sources outside of Google Play



- b) Run the installation file iHCm\_ddmmrr.apk. The application will notify you of the sources to be used. Confirm by tapping "Install" and wait for the installation to finish. Installation lasts around 15-30 s, based on the type of phone.

Button confirming Install



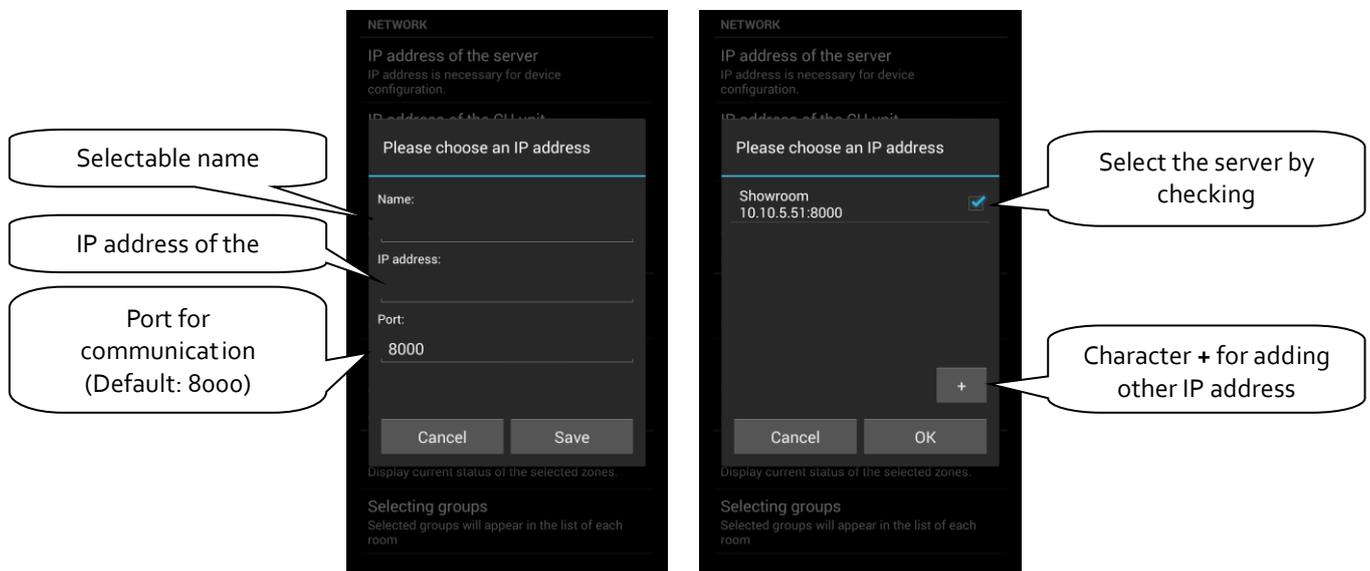
- c) After completing installation, the device will offer the option of opening the newly installed application.

### 3. Basic settings

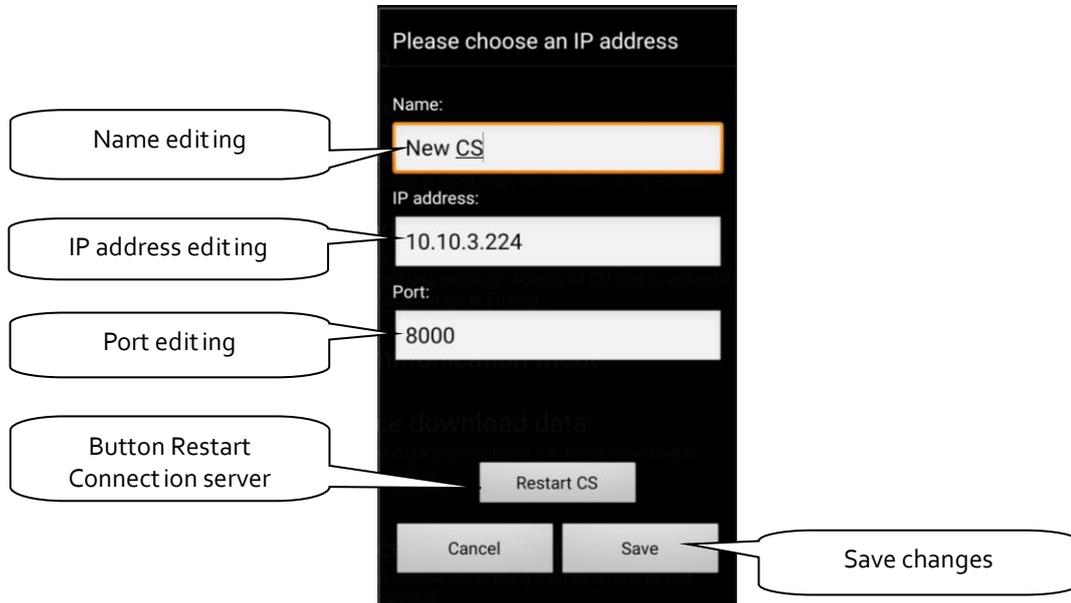
By tapping **Settings**, you open the basic settings menu of the application.



- a) The next step depends on whether you are connecting to the Connection Server, or to a virtual server. The following images presume connection to the Connection Server. Select the button **IP address of server** and a dialog box for IP address settings will appear. First add the new server by tapping the button "+" for storing servers. Then type in a selectable name and IP address of the iMM Server. Enter the port – the default port is **8000**. Tap **Add** and check this server. Then instead of **Add**, **OK** appears, which you then tap to confirm the changes.
- When working with a virtual server the procedure is similar, but it uses the buttons **IP address of CU unit** and the default port is **61682** (for iNELS2) or **9999** (for iNELS3). See page 41.



Editing: long press on the required Connection server to enter the editing menu, after saving the changes it is necessary to force a data download (see page 7).  
There is also a Restart CS button in the edit menu.



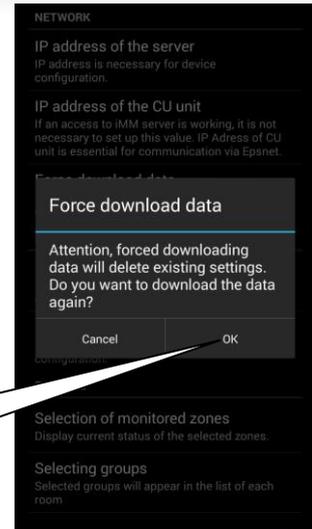
**List of usable ports:**

Port	Protocol	Description
8080	TCP	Connection Server - access to web-interface
8081	TCP	Connection Server - access to update server web-interface
9000	TCP	Connection Server - access to web-interface of LMS Audio zone and Audio player GUI
9001	TCP	Connection Server - access to daemon supervisor web-interface overview (daemon maintenace and logging)
8090	TCP	iMM Client - access to web-interface client part
61695	TCP	LARA - access to web-interface / remote control for third-party devices and applications
62000	TCP	LARA - access to port related to DLNA server. It is based on UPnP to stream audio content.
80	TCP	eLANRS485-232 - access to web-interface
8000	TCP	iHC applications - access to encrypted communication between applications and Connection Server / iMM server
9999	UDP	iHC applications - access to communication between applications and central unit CU3
61682	UDP	iHC applications - access to communication between applications and central unit CU2
9999	UDP	iHC applications - access to communication between applications and RFPM-2M
80	TCP	eLAN RF - access to web-interface
8001	TCP	iHC applications - access to unencrypted communication between applications and Connection Server / iMM server

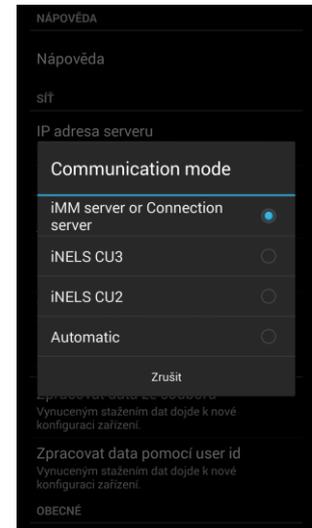
More detailed description of the port use:  
[https://en.wikipedia.org/wiki/List\\_of\\_TCP\\_and\\_UDP\\_port\\_numbers](https://en.wikipedia.org/wiki/List_of_TCP_and_UDP_port_numbers)

- b) The next step is **Force download data**. A notification appears in the window that the new data will replace the currently downloaded data, even if the forced data download is occurring for the first time. Confirm by tapping **OK**.  
In case of a virtual server, the button **Force download data** is not used, but rather the button **Process data from file**.

By pressing OK, you confirm the data download from the selected server

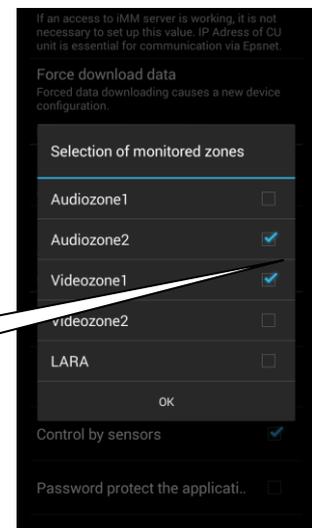


- c) When optimizing communication between the iHC application and the central unit iNELS<sub>2</sub>, the central unit iNELS<sub>3</sub>, Connection Server, you must select the device with which the application is to work. You perform this option through "**Communication mode**".
1. If you are using Connection Server, select the first option.
  2. If you are only using a virtual server and the application is thus directly connected in the central unit, select the second or third option according to your type of central unit.
  3. Select the fourth option if you are not sure with which device the application is communicating.



- d) In case you want to monitor in the application the connected Audiozones and Videozones, you must select these zones in the menu **Selection of monitored zones**.

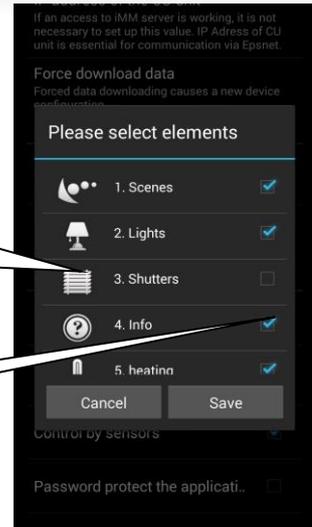
By checking it, you confirm monitoring of the Zone



- e) **Selection of groups.** The order of groups can be changed by the drag and drop method – just tap and hold your finger on an icon and place it in any order you wish.

When holding an icon, you can move it up or down the list to any position.

Select the group by checking



- f) **Video camera settings** – the manual later describes that there are two options for displaying the application – Tiles or List. At the List of video cameras, all connected video cameras are available. However, if you wish to have video cameras closer "at hand", you can add video cameras to the quick display - Tiles. For adding a video camera or group of video cameras under a single Tile, press the button **New video camera**, then select the check box of the required video camera. You can also give the Tile any name you like. Alternatively, you can remove the added Tile by tapping **Remove video camera**.

Supported cameras:

iNELS cam

AXIS protocol VAPIX2 from camera firmware version 4.0.X.X and VAPIX3 from firmware version

5.0.X.X

Cameras with ONVIF protocol profile S. with ONVIF link certification

Cameras supporting RTSP stream

*Note: The option of using video cameras requires an Connection Server. The application is also capable of displaying video cameras with the protocol onvif, which you have connected to the Connection Server. Details on connecting onvif video cameras can be found in the manual to the Connection Server.*

Item for setting the intercom

Items for adding, removing (into the tile display) and selection of the video camera mode

List of video cameras, which you can add under the video camera icon in the tile display

It preserves the aspect ratio of the video camera

It automatically adjusts the aspect ratio of video cameras

Always full-screen display of the video camera

Please select a camera

Entrance

Garage

Living room

Outdoor

Parking

TV room

Name of the camera:  
camera

Cancel Add

g) **Setting the intercom function** – this function enables data communication between door phones 2N, iHC applications. The iHC application can receive calls from another iHC application, and a door phone 2N. Communication is voice, in case of a door phone with video camera, the image is also transferred. The application can also call on any of the mentioned devices.

To access the intercom settings, you must click the button **Intercom settings** and then check the option **Allow intercom**. This provides access to the setting options for the log-in name, password and server address. The log-in name and password must be entered exactly as the accounts were created on the Connection Server. It distinguishes lower/upper case letters (case-sensitive).

You can enter contacts manually in the field **Contacts**, or you can **Download contacts from server**.

*Note: The option of using the intercom function requires an Connection Server.*

Log-in name set on the server in the Intercoms tab

Password name set on the server in the Intercoms tab

Field for entering the IP address of the Connection Server

Field for downloading contact from server

Selecting this check box will allow access to the settings option, and then the actual function of the intercom

Field for adding a contact to your contact list to call

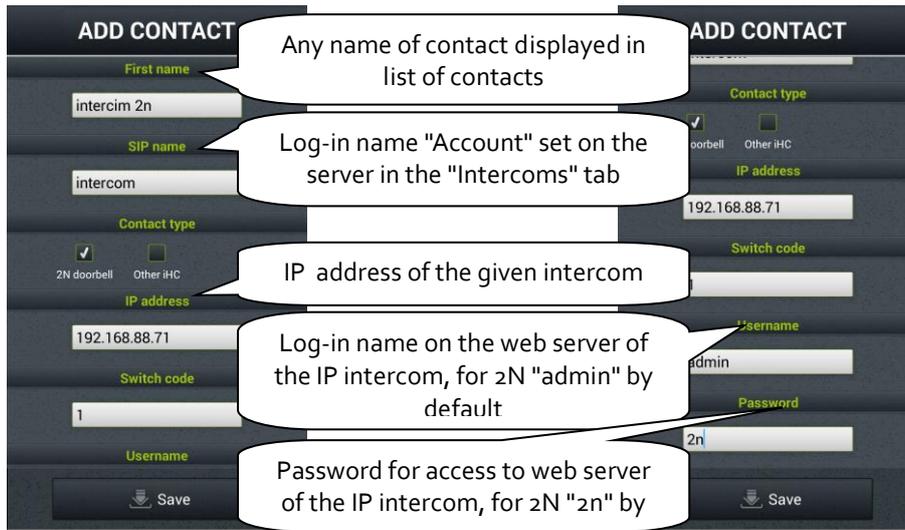
In the section Contacts, a new contact is added by pressing the button **Add contact**

You must then check to select the **Type of contact**

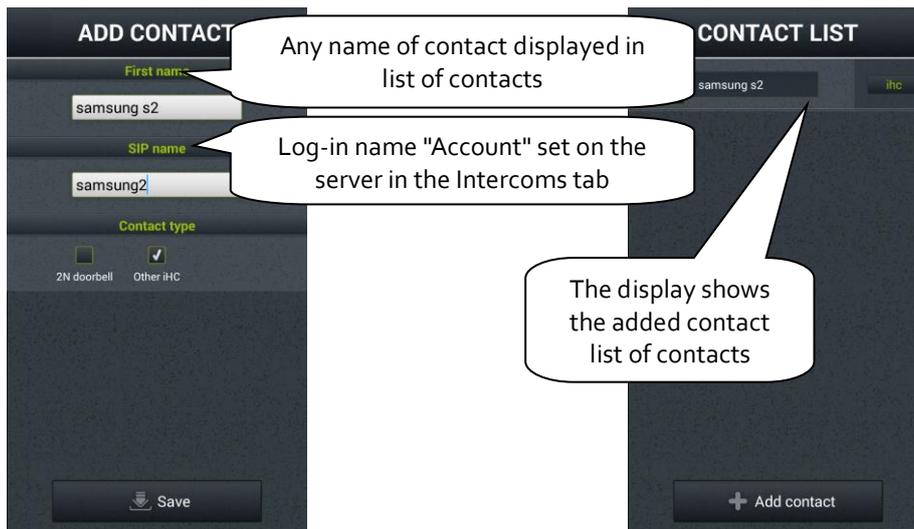
The selection 2N intercom adds a contact of the IP intercom type, e.g. 2N

The selection Other iHC adds a contact of the type of iHC application in the telephone or tablet, or IMM application on the Videozone

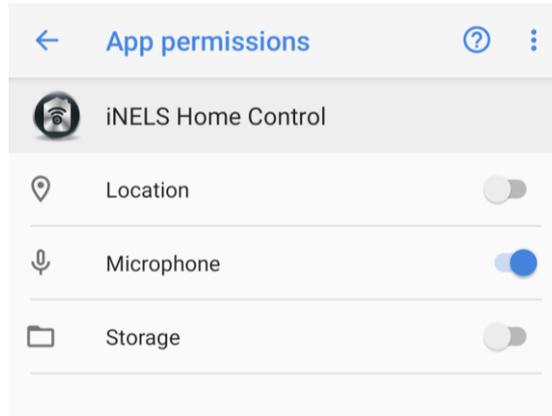
Adding a contact of the type 2N intercom takes place as follows:



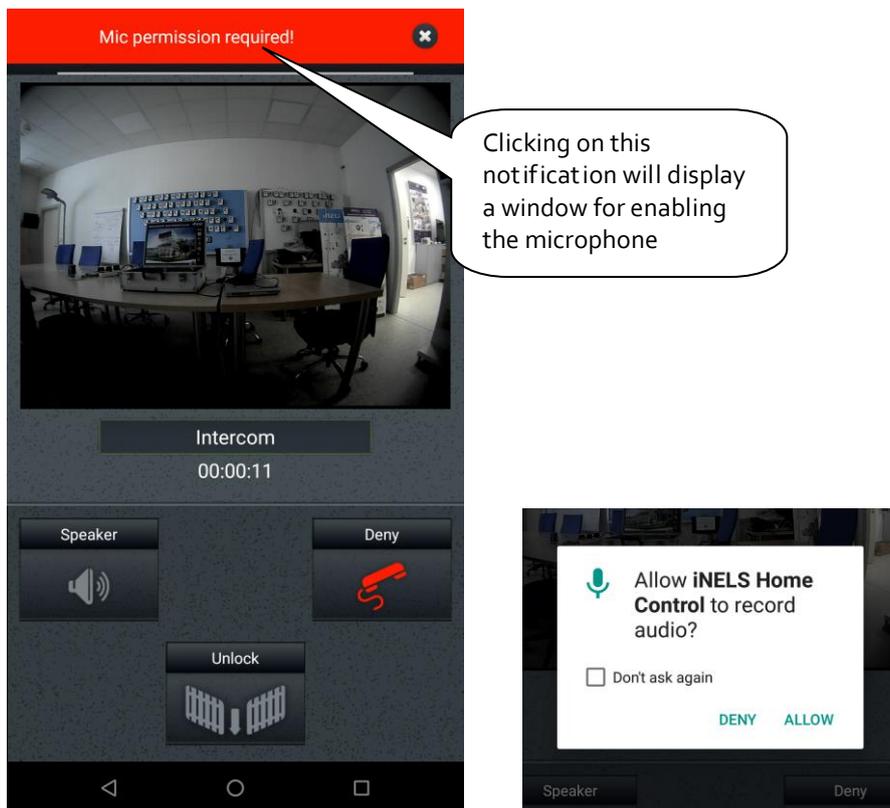
For adding a contact of the type Other iHC, it is necessary to enter the following data:



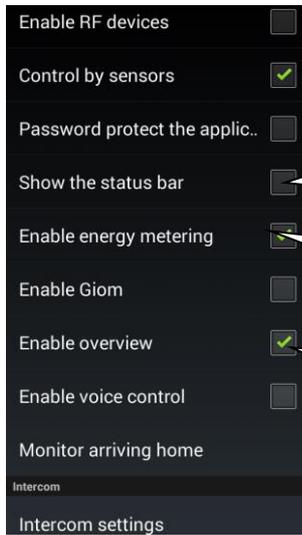
Note: You must enable the microphone function on your phone for the particular application to function properly. The authorization is done in the settings of your phone, in the iHC application, in the Application Permissions – Microphone.



If you do not have the Microphone enabled function, it is possible that the application itself will prompt you to do so.



h) Further settings



Select the check box for use of an accelerometer for recording video cameras and dimming control

Displaying the status panel along with the application (Status panel is a panel with the signal strength, time and battery status indicator)

Select the check box for permission and displaying Energy metering

Check for allowing display of the icon with summary of active system inputs

## 4. Control

### a) Tiles

The basic method for displaying the iHC-MA application are so-called **Tiles**. It is a general overview of elements, where you can see at first glance according to the icons, either backlit or not, the active or inactive elements of the iNELS bus electrical installation and other Tiles for controlling integrated devices, e.g. Multimedia, Miele, Intercom, Energy, etc.

If you want to change from displaying **Tiles** to displaying **List**, just tap on **Room**.

**Room – name of room**

**Tiles "Multimedia" for controlling Zones (audio, video)**

**Tile "Energy" for visualization of energy consumption**

**Outdoor thermometer**

**When tapping on Room, the application switches to the List display mode (see further in the manual)**

**Status bar of monitored Zones**

**Calling up the menu – same function as the settings button**

**Indoor thermometer**

**Independent controlling of iNELS, here e.g. blinds**

**Arrows for switching between rooms**

**By dragging across the screen, you can scroll up and down through the tiles**

**Heat Control – current and set temperature**

**Heat Control - selected heating mode (automatic, manual)**

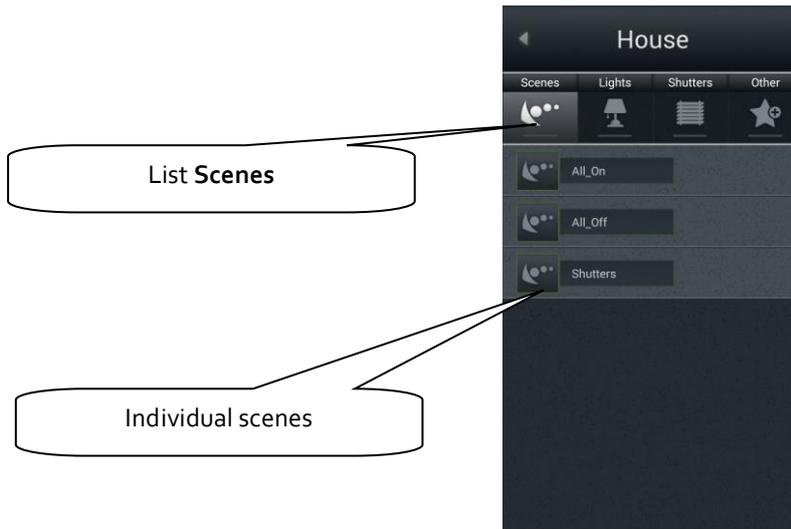
**Heat Control - current heating mode**

**Tiles for controlling Miele electrical appliances**

**b) Scenes**

**Scene** list allows to make selected user-defined active or inactive, e.g.. "Lights\_ON", Lights\_OFF", "Watch\_TV", "Dominio\_START", etc. For names of individual icons, we recommend not using gaps or diacritical marks.

It is possible to create scenes on the web interface of the iMM server or already in iDM. Especially for more complex and comprehensive scenes, it is a good idea at the web interface of the iMM server to take an already created scene exported via *export.pub* (iNELS2) or *export.imm* (iNELS3) file.



**c) Lights**

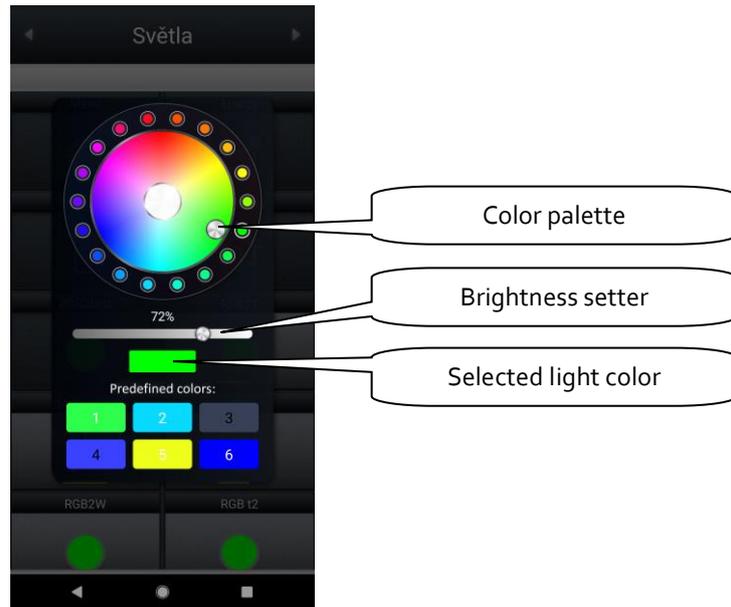
The **Lights** List is used for controlling individual lights or entire light circuits. When displaying the List, two basic types of displays are distinguished.

- For switched light circuits, controlled by on/off, the output status is indicated by a lit/unlit lamp.
- For dimmed light circuits, where you can set various brightness intensity levels, this brightness intensity is indicated by an analog clock.
- User can select one of two icons related to RGB lighting adjustment.  
 RGB - regular adjustment (e.g. of RGB LED strip) which includes color palette and brightness adjustment.  
 RGB v2 - adjustment that allows user to set particular value for each channel using color palette. Brightness adjustment is not included.

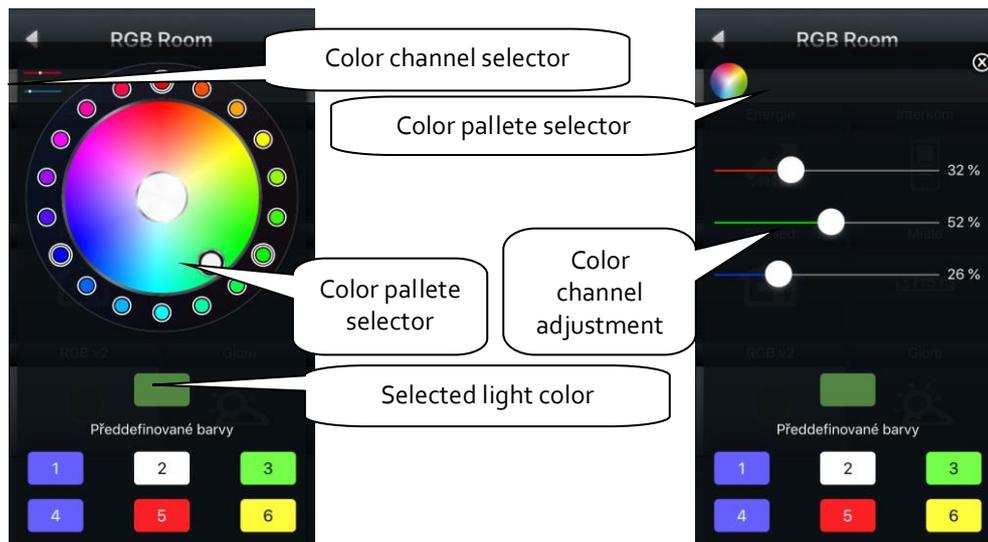
Dimming is controlled by the slider, by which it is possible to slide using your finger or by tilting the telephone (accelerometer function). This dimming slider is displayed by pressing and holding your finger on the desired dimmable light circuit icon.



RGB:



RGB V2:



Color presets stored on particular device.  
Long press - save the selected color, short press - setting the selected color

d) **Blinds / roll shutters / awnings**

In the **Blinds** List, you can easily control the blinds, roll shutters, garage door, entrance gate and all devices with bidirectionally rotating drives.

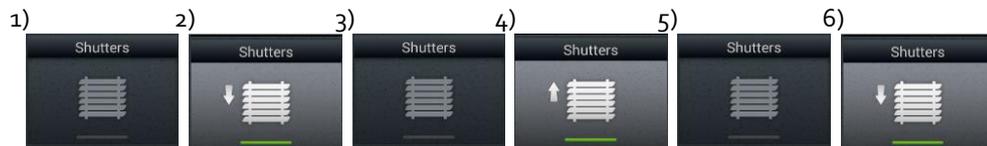


Operation according to the type of icon:



More status icons:

The control logic for the **Tile** for controlling the blinds/roll shutters/awnings is as follows:

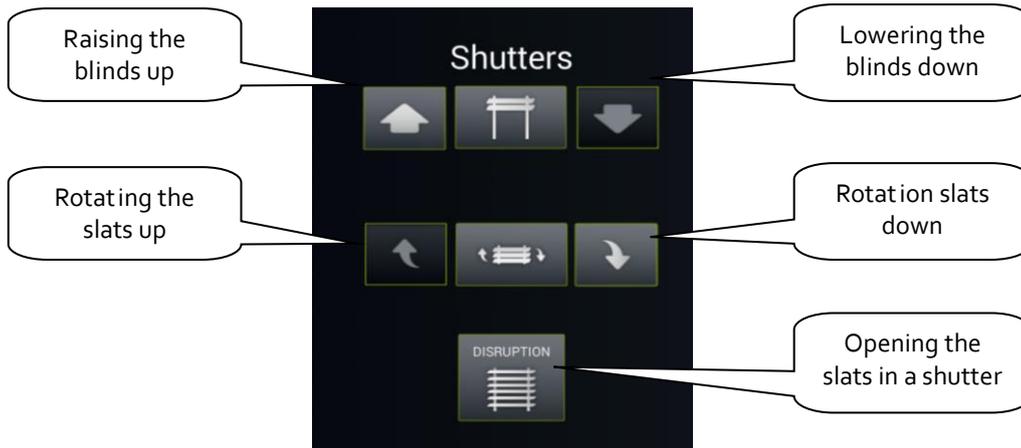


- a) Blinds not moving
- b) With the first press of the icon, the blinds roll up
- c) With the second press, the blinds stop in their current position
- d) With the third press, the blinds roll down
- e) With the fourth press, the blinds stop in their current position
- f) The entire sequence continues with further presses...



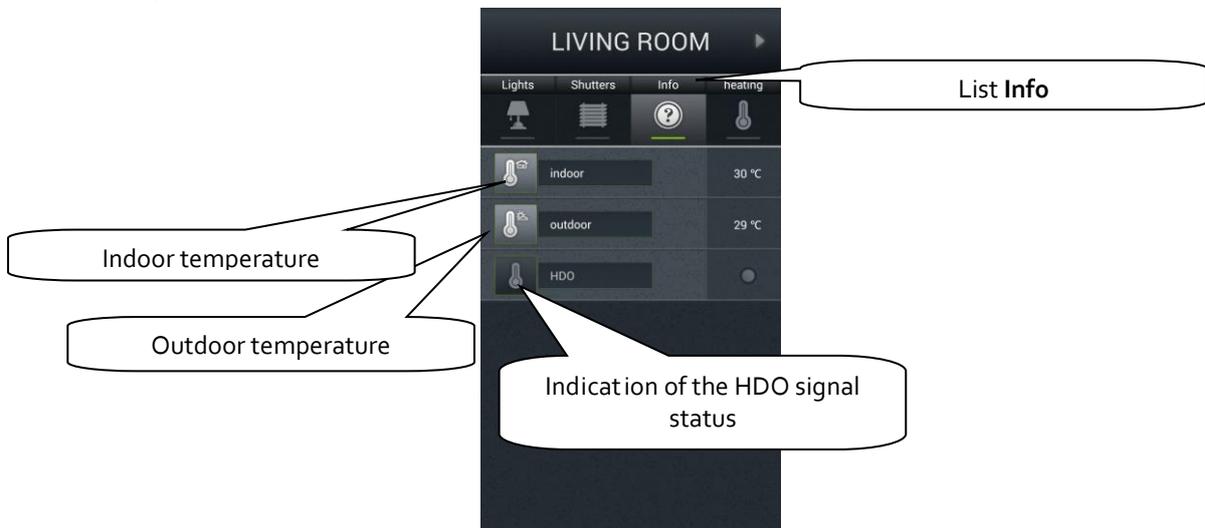
Special icon:

- Brief touch: control is the same for multi-state icons
- Long touch the icon to expand the menu:



**e) Info**

In the **Info** List, you can monitor the indoor and outdoor temperature and other additional information from the system. Here you can e.g. monitor the HDO signal status, the status of other sensors, etc.



- f) In the **Other** bookmark you can easily see and control individual electronic systems that form a part of the iNELS electroinstallation, e.g. control of the watering system, control of different appliances, and the like.

**g) Miele**

You can open the **Miele** list either by the icon in the **Tiles** or by the arrows for switching between **Lists**.

This part of the application enables you remote management of Miele home appliances, which are connected through communications modules to the network Miele@Home. Communication between appliances and the communication interface Miele Gateway occurs via powerline.

For the version Miele&home 2.0, data transfer between appliances and the Gateway module takes place wirelessly via the technology ZigBee.

Miele Gateway then transfers this powerline communication to the Ethernet network. To transfer this protocol, it is necessary to use the Connection Server.

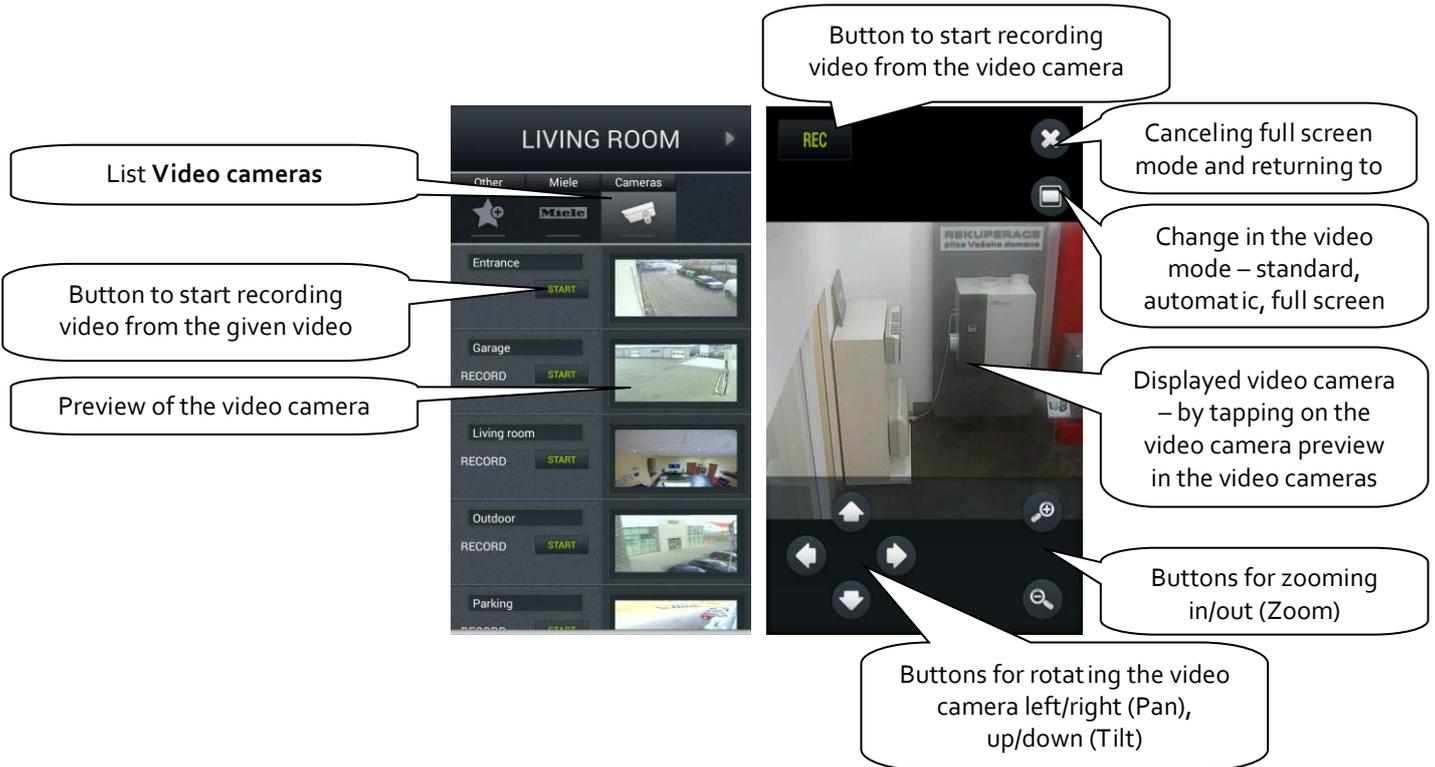
For Miele appliances, it is possible to monitor statuses of equipment or devices and to control some of their functions, whereas safety is ensured, and it is not possible e.g. to turn on an induction hob. One interesting option is activation of remote starts.



**h) Video cameras**

Using the **Video cameras** List, you can monitor the image from IP video cameras to control PTZ video cameras and record video coming from the desired camera. The iNELS system supports connection to up to nine IP video cameras.

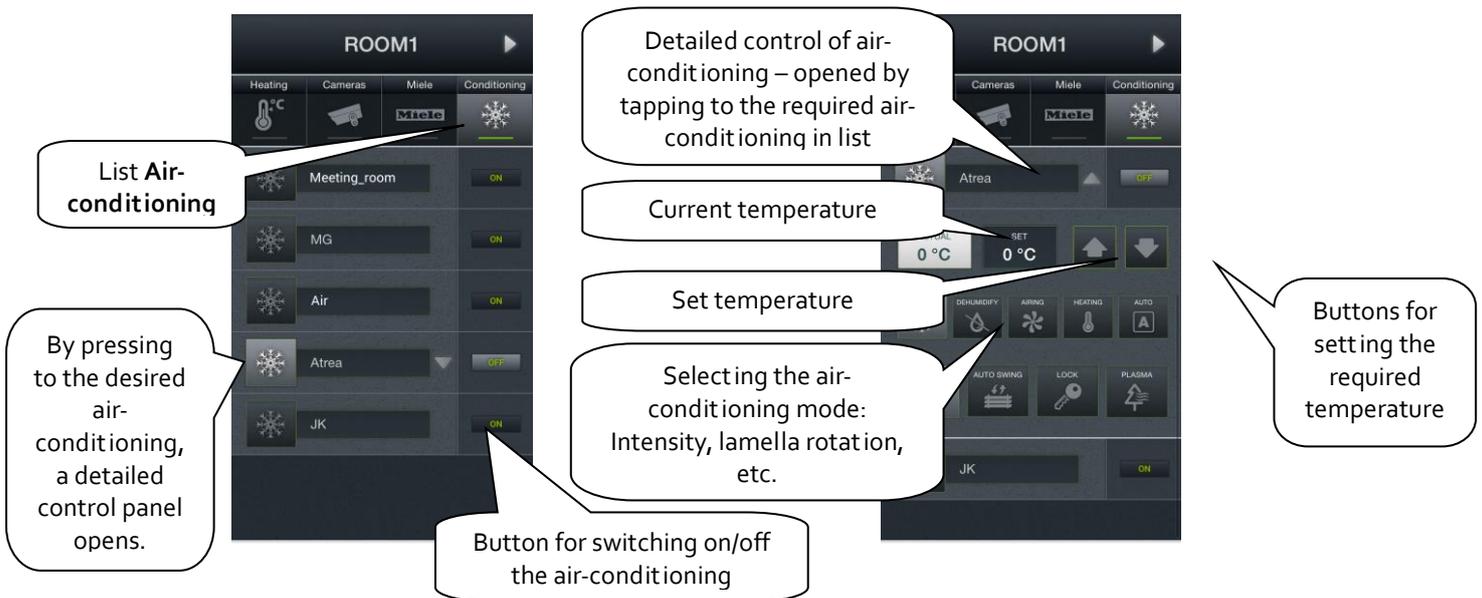
Displaying a desired video image full screen is done by pressing the given video camera preview. By pressing the video camera icon, you open the panel for controlling PTZ (pan, tilt, zoom).



i) Air-conditioning and recuperation

- Control of air-conditioning is bi-directional, so you can fully use the option of your air-conditioning, such as fan speed control, lamella movement or controlling modes, e.g. plasma. From amongst AC units, **LG** is directly supported (the outdoor unit must be fitted with the sub-module PI485) and, by means of **CoolMaster**, another eight brands indirectly (Daikin, Sanyo, Toshiba, Mitsubishi Electric, LG, Fujitsu, Mitsubishi Heavy and Hitachi).
- When controlling recuperation, you can determine the method of air exchange, fan speed, temperature or set periodic air exchange. Supported recuperation units include those of the brands **Atrea** and **AirPohoda**.

Are you considering buying a different A/C or recuperation brand? Just ask us, we might just directly integrate it.

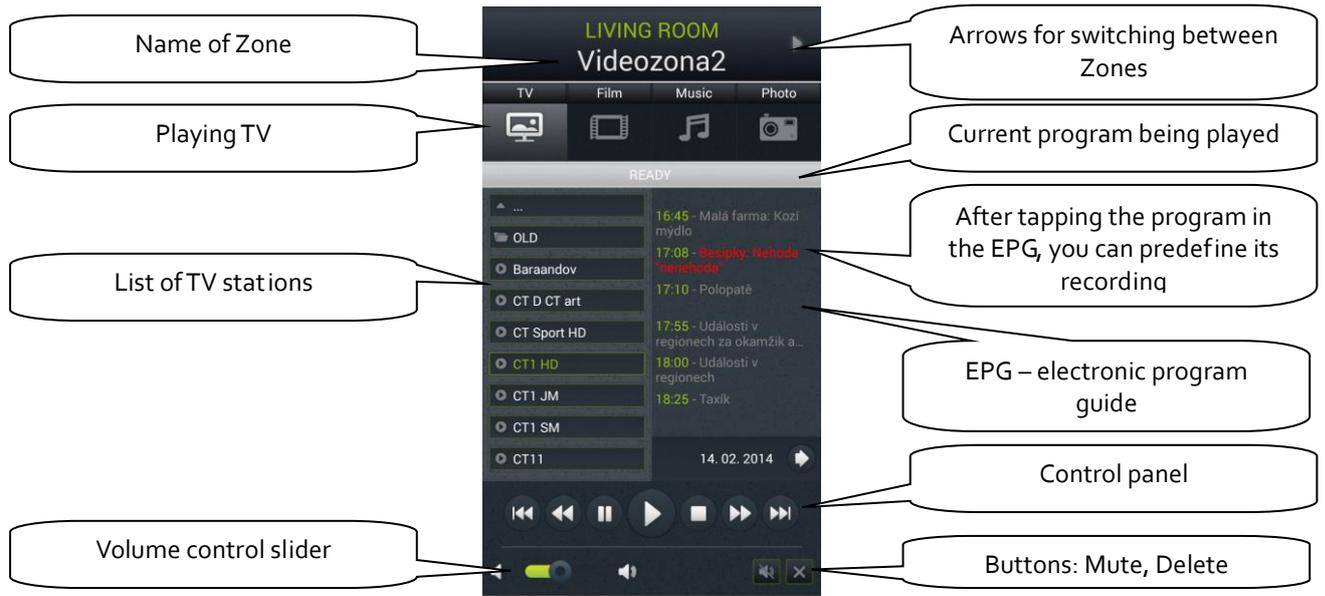


**j) Multimedia**

Control of Multimedia is possible only if included in the system iMM Client/Server. iMM Client/Server can be used as a Videozone (for starting up music, movies, browsing photos or watching television) and further enables using Audiozones, e.g. Audio Zone (AZ-R) or LARA Radio and LARA Intercom, where you can control audio.

Enter the list via the tile Multimedia.

You can switch on/off the entire Zone and the devices attached to it tapping on the name Zones. An active Zone is indicated in white letters, an inactive (switched off) Zone is indicated in red letters.





k) **GIOM3000 Meteostation**

GIOM3000 is visualising meteostation with an ethernet output and, within the iHC-TA application, it provides us with information on the following nine meteorological quantities:

- 1) Wind speed
- 2) Pressure
- 3) Wind direction
- 4) Temperature
- 5) Windchill
- 6) Dew point
- 7) Barometric altitude
- 8) Relative humidity
- 9) Absolute humidity



**l) Energy metering**

You can open the energy metering screen by tapping the Tile **Energy**. The iNELS system enables you to measure consumption of gas, electricity (5 zones) or water (hot, cold). For each medium, it is necessary to have a meter with impulse output. These impulses are scanned on units of binary inputs, and with the help of readers, the amount of consumed energy is assessed.

Energy consumption can be displayed in units (e.g. kWh) or in a price value (e.g. in CZK). For each period set up however you wish, the application enables drawing of a consumption graph (data stored in SQL database).

The screenshot shows the 'ENERGY METERING' screen. At the top, there are tabs for 'Gas', 'Electricity', 'water', and 'Summary'. Below these are buttons for 'DAY', 'WEEK', 'MONTH', and 'YEAR'. A 'PERIOD' section has 'From' and 'To' input fields. There are checkboxes for 'gas', 'water', and 'electricity'. The main area displays data for 'GAS', 'WATER', and 'ELECTRICITY', each with 'CONSUMPTION' and 'PRICE' values. A legend at the bottom identifies 'WATER' (red), 'ELECTRICITY' (green), and 'GAS' (yellow). A graph area shows consumption over time with a refresh button in the top right and a back button in the bottom right.

Energy metering – opened by tapping the Tile **Energy**

Selection displaying required energy or overview of all energy types

Selection of time segment

Graphic display – by pressing the icon, you switch to the display with drawn consumption graphs

Numeric display – in measuring units, in price value

Button for updating data

Legend

Button for returning back to Energy metering

## 5. Configuration of Rooms

Configuration of elements is performed in the iMM Control Center ("iMM CC") at the tab "Rooms".

In "Rooms", you can create any number of virtual groups (Rooms), into which you enter any Elements and Zones.

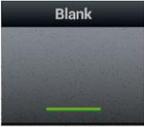
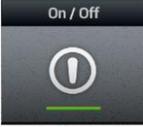
- Elements – created based on the exported file "export.pub" from the software iDM2 or "export.imm" from the software iDM3
  - export data from iDM2 see chapter no. 9
  - export data from iDM3 see chapter no. 8
- Zones – created based on the iMM Server configuration.

The screenshot shows the 'iMM Control Center / Configuration of rooms' interface. The 'Rooms' tab is highlighted in the top navigation bar. The 'New room' form includes a text input for 'Name of new Rooms', a 'Protect by password' checkbox, and password/confirm fields. Below the form is a table listing existing rooms with 'Edit', 'Up', 'Down', 'Set password', 'Rename', and 'Remove' actions.

**Annotations:**

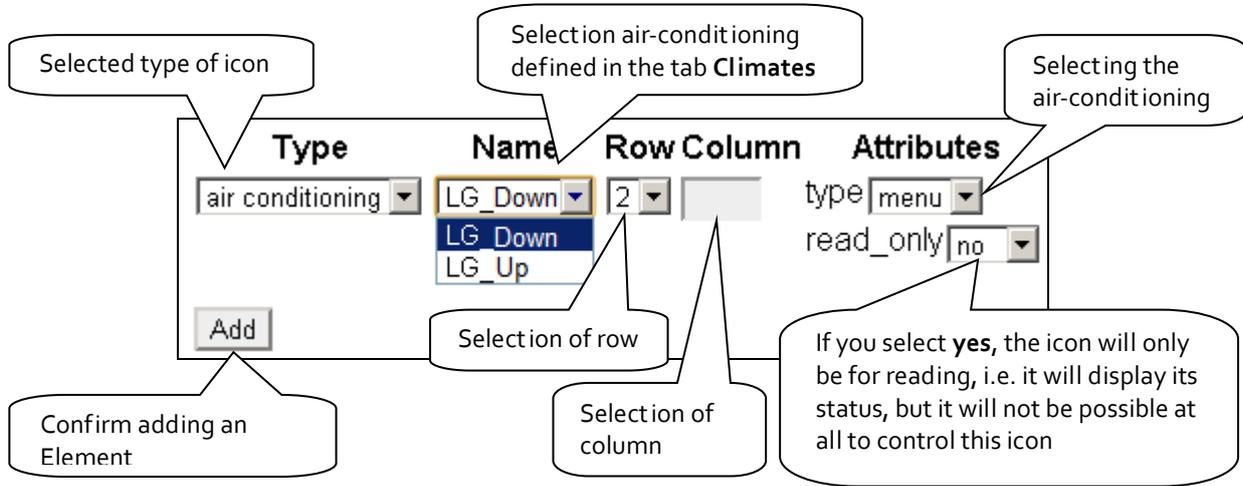
- Name of new Rooms:** Points to the text input field for the new room name.
- Select this check box if you want to password protect control of the given Room:** Points to the 'Protect by password' checkbox.
- Password and confirmation. Note: only asterisks appears when entering:** Points to the password and confirm input fields.
- Edit the given Room:** Points to the 'Edit' button in the room list table.
- Remove the given Room:** Points to the 'Remove' button in the room list table.

## 6. Description of Elements

More status icons		Dimmable icon		Special icon	
Conditioning ON/OFF		Blank		Air conditioning	
Dehumidify		Lamp		Airing	
Garage		Light group		EZS	
Gate		Light		Heat Control	
Heating		RGB		Indoor thermometer	
iNELS scene		RGB V2		Meteostation	
Shutters		Tunable white		Outdoor thermometer	
On/Off				Scene	
Watering				Shutters	
				Zone	

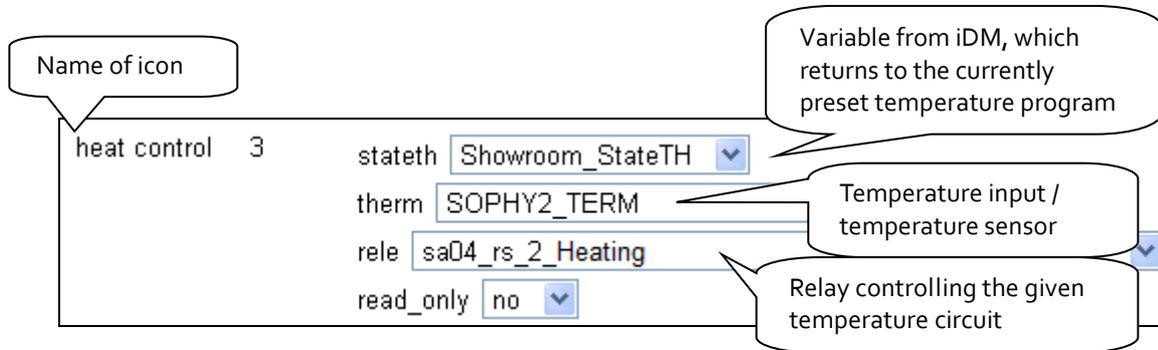
**Air-conditioning**

Icon for controlling air-conditioning units. After selecting this icon, only LG air-conditioning units are filtered, defined in the tab **Clims**.



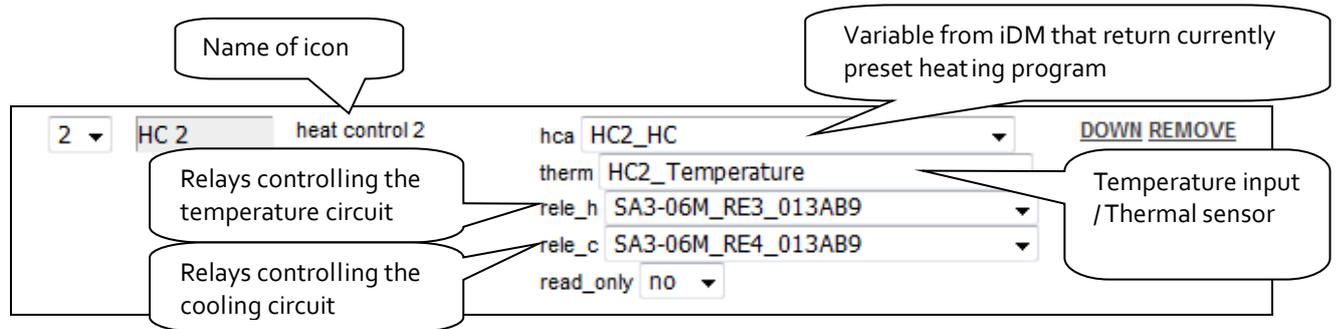
**Heat control**

The Heat Control icon enables control and switching of a preset temperature program from iDM. By pressing and holding, you can switch between MAN and AUTO modes. If the temperature circuit is closed, the icon is backlit.



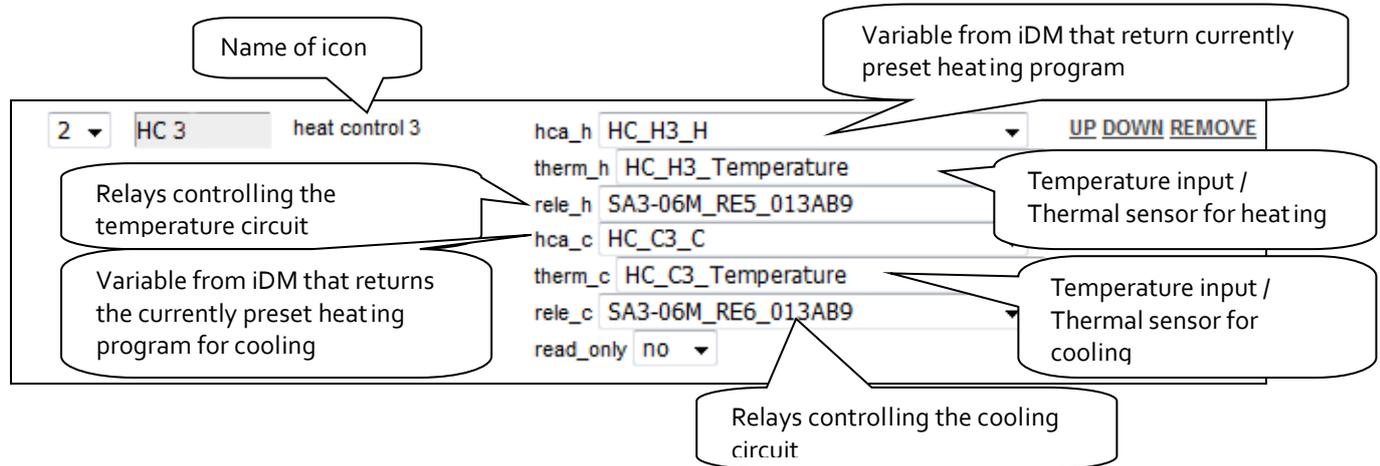
**Heat control „2“ (Heating / cooling control)**

The Heat Control 2 icon lets you briefly control and switch preset temperature programs from iDM.  
On the right side of the icon, press and hold to switch between **heating / cooling** / circuit off.  
With the long press on the left side of the icon, switch to **auto / manual** mode.  
Manual temperature mode changes are active until the next time stamp set is reached.  
The icon can switch between heating / cooling, but both circuits are controlled by one set temperature.  
If the heating circuit is closed, the icon is backlit.



**Heat control „3“ (Heating / cooling control)**

The Heat Control 3 icon lets you briefly control and switch preset temperature programs from iDM.  
On the right side of the icon, press and hold to switch between **heating / cooling** / circuit off.  
With the long press on the left side of the icon, switch to **auto / manual** mode.  
Manual temperature mode changes are active until the next time stamp set is reached.  
The HC3 icon also has the option to set up heating / cooling with its own thermometer and relay separately - these features are hidden under one icon.  
If the heating circuit is closed, the icon is backlit.

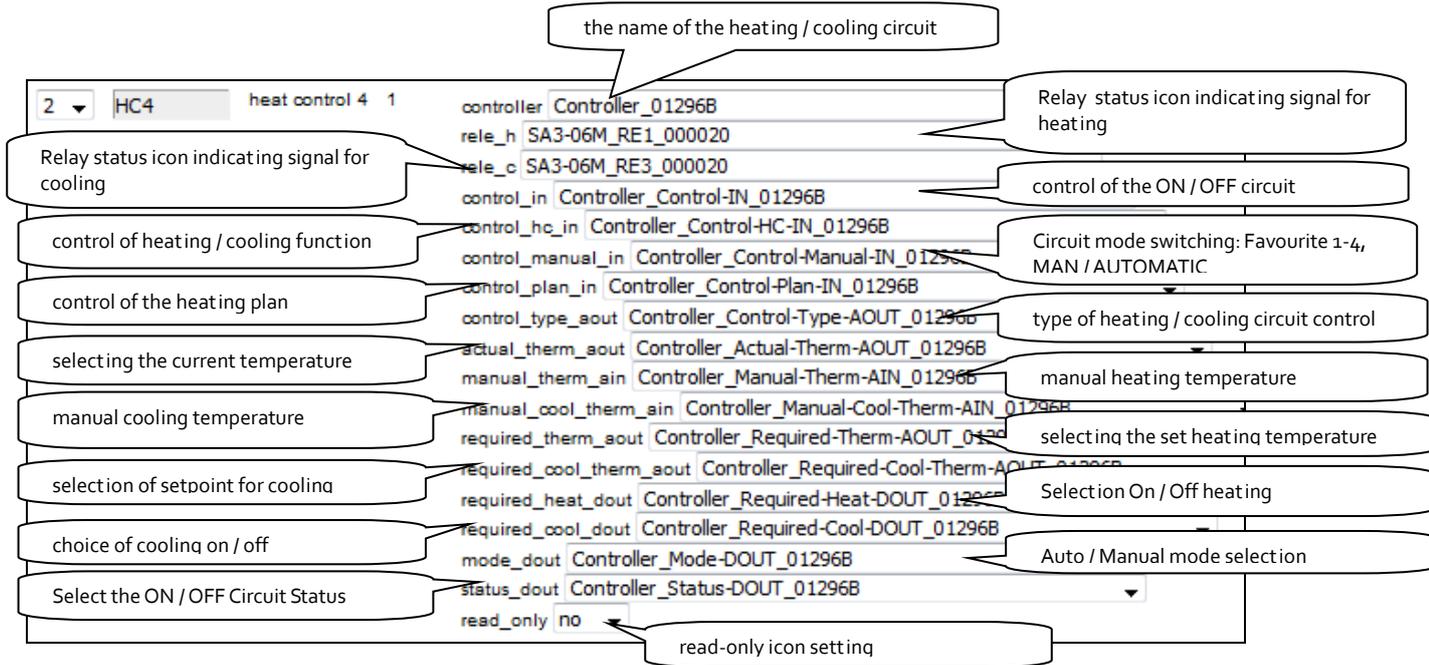


**Heat control „4“ (Heating / cooling control)**

The Heat Control 4 icon lets you briefly control and switch pre-set temperature programs from iDM. Favourite 1, Favourite 2, Favourite 3, Favourite 4, Manual, Automatic

On the right side of the icon, press and hold to switch between **heating / cooling / circuit off**. With the long press on the left side of the icon, switch to Plan Type: Normal, Holiday, and Special Holiday. The manually changed temperature mode is active until the next user action.

The HC4 icon also has the option to set up heating / cooling with its own thermometer and relay separately - these features are hidden under one icon. If the heating circuit is closed, the icon is backlit.



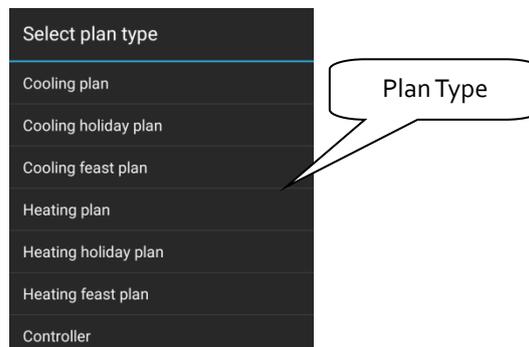
After entering the name of the circuit (first row of the **controller**), the other fields will be filled in automatically.

**Set schedules for HC4**

Using the application, you can create online time and temperature plans for heating and cooling zones. In the application's quick menu, select the "heating" icon. Here you will find all of the HC4 heating and cooling zones you have created in IDM.

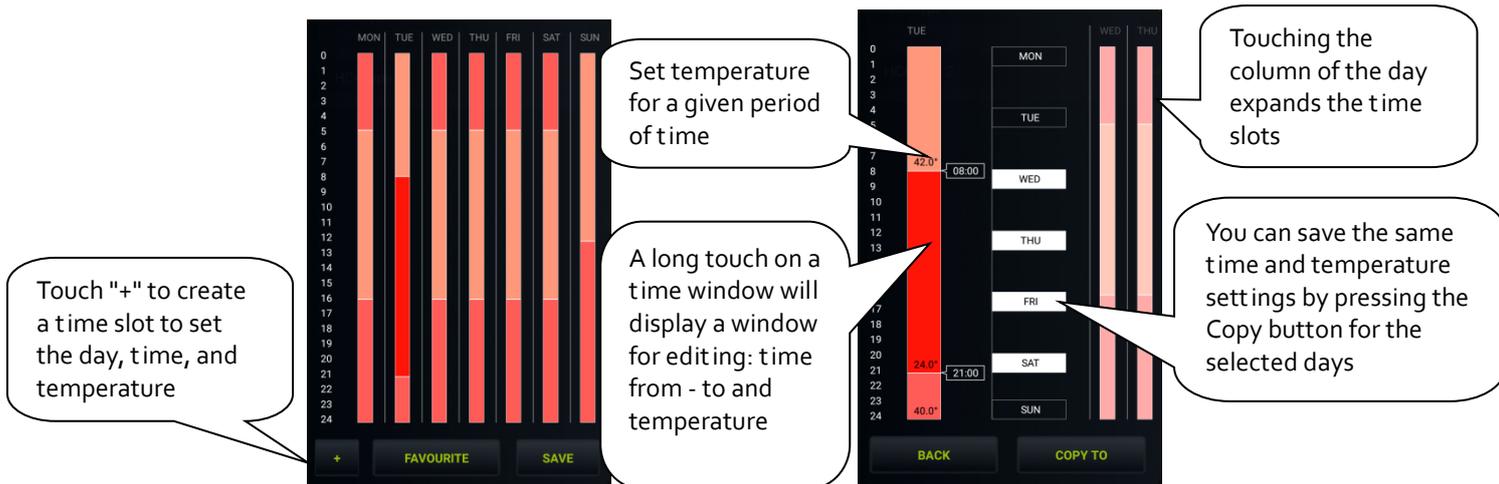


Click the PLANS button to open the Types of Plans that you can create and edit.



- Temperature / Cooling Plan

For each day, you can set up time slots (max. 16 / day) at the desired temperature. If you want to have the same settings on other days, highlight them and press the copy button.



- Cooling / Temperature Holiday Plan

The setting is the same as for temperature / cooling plans - for 7 days a week.

- Cooling / Temperature Holiday Plan

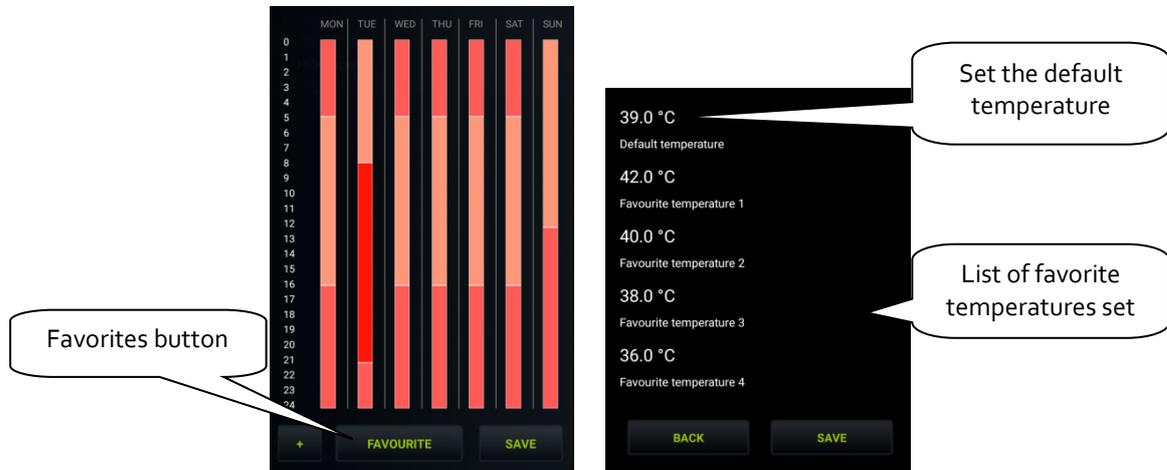
The setting is the same as for temperature / cooling plans, but only for 1 day (from 0:00 to 24:00). You can set your favourite temperatures for a holiday.



- Controller
  1. Holiday: Set the days when the HC4 will be switched to holiday and temperature / cooled according to the temperature / cooling schedule set for this mode.
  2. Manual setting: adjustable manual mode and temperature. After saving the settings, the HC4 will be switched to manual mode for the set time and temperature.

- Select your favourite temperature

Touching the Favourites button will display a menu where you can set your favourite temperatures..



### Control HC4

Under the HC 4 icon also are a few other types that are related to the setting of these circuits in the IDM (for details see the IDM manual).

The Heat Control 3 icon lets you briefly control and switch pre-set temperature programs from iDM.

Favourite 1, Favourite 2, Favourite 3, Favourite 4, Manual, Automatic

On the right side of the icon, press and hold to switch between **heating / cooling / circuit off**.

With the long press on the left side of the icon, switch to Plan Type: Normal, Holiday, and Special Holiday.

1. Basic control HC4



2. Autonomous dual temperature control



- Circuit shows ON / OFF status
- displays the set heating and cooling temperatures
- The circuit can only be switched on or off by long pressing the thermometer icon

3. Autonomous single-temperature



- Displays the TOP / COOL / OFF status
- The display of the set temperature is the same as for the basic control
- The circuit can only be switched on or off by long pressing the thermometer icon

Note: Running the manual mode of the HC4 icon directly in the room will change the mode until next user intervention (i.e. unlimited by time).

Example of set heating / cooling circuits in IDM:

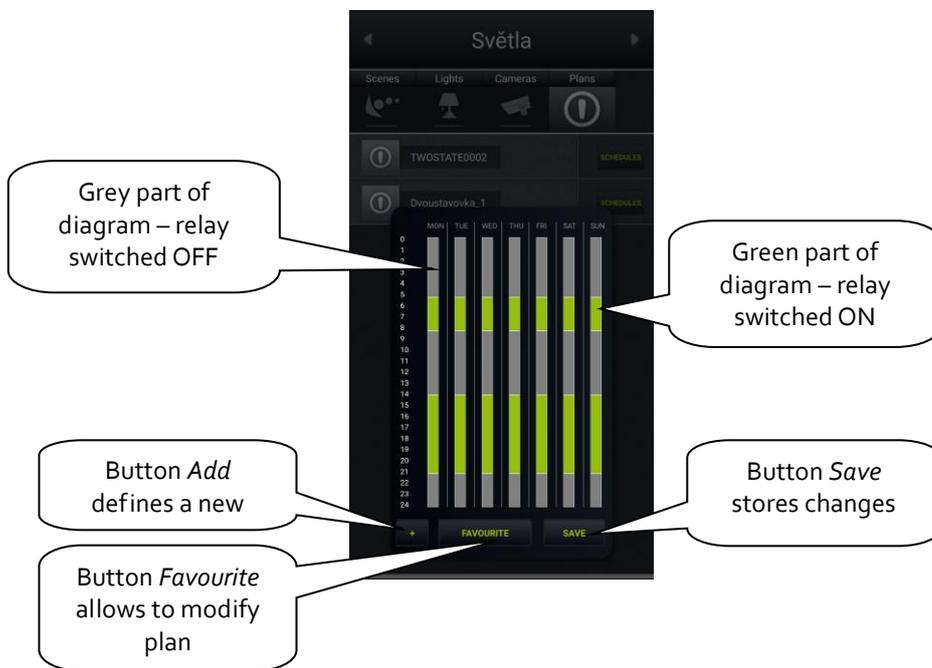
Monitor										
Online simulation of wired events ✓										
Online monitor Unit ✓										
Online monitor Sysbits-Sysints-Timers-Counters-System_Programs-Heat_Cool ✓										
<div style="display: flex; justify-content: space-between;"> <span>Devices</span> <span>EZS</span> <span>GSM</span> <span>System bits</span> <span>System integers</span> <span>Counters</span> <span>Timers</span> <span>System programs</span> <span>Heat/Cool areas</span> </div>										
Name <b>HC</b>										
Current temp	0.00 °C	Temp sum	15.00 °C	Current prog	HU	HSU	CU	CSU	Is running Off/On	Mode Manual/Automat
Required temp	15.00 °C	Temp correction	[0.00]	[Minimum]	[OFF]	---	[OFF]	---	[OFF]	[ON]
Name <b>HC2 (Top.)</b>										
Current temp	28.50 °C	Temp sum	15.00 °C	Current prog	HU	HSU	CU	CSU	Is running Off/On	Mode Manual/Automat
Required temp	15.00 °C	Temp correction	[-6.00]	[Minimum]	[OFF]	---	---	---	[ON]	[OFF]
Name <b>HC2 (Chl.)</b>										
Current temp	0.00 °C	Temp sum	32.00 °C	Current prog	HU	HSU	CU	CSU	Is running Off/On	Mode Manual/Automat
Required temp	32.00 °C	Temp correction	[-6.00]	[Minimum]	---	---	[OFF]	---	[OFF]	[OFF]
Name <b>HC_H3</b>										
Current temp	28.50 °C	Temp sum	15.00 °C	Current prog	HU	HSU	CU	CSU	Is running Off/On	Mode Manual/Automat
Required temp	15.00 °C	Temp correction	[-6.00]	[Minimum]	[OFF]	---	---	---	[ON]	[ON]
Name <b>HC_C3</b>										
Current temp	0.00 °C	Temp sum	32.00 °C	Current prog	HU	HSU	CU	CSU	Is running Off/On	Mode Manual/Automat
Required temp	32.00 °C	Temp correction	[-6.00]	[Minimum]	---	---	[OFF]	---	[OFF]	[ON]

**Two-state time plans**

It allows user to edit time plans related to device state switching online when connected to CU<sub>3</sub>. Plan editing feature can be found in quick menu, more precisely under icon *Plans*. There are all plans defined previously in iDM.

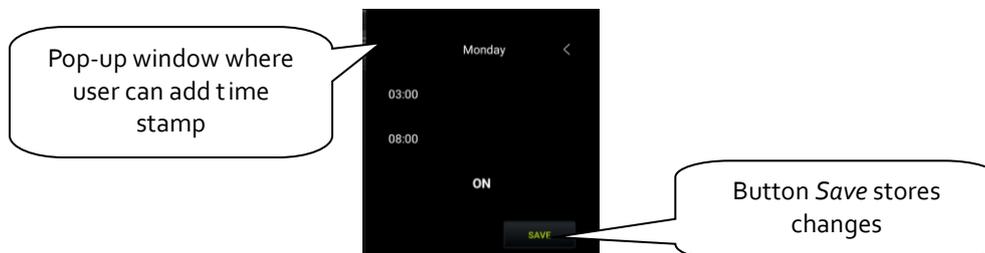


Clicking on particular time plan will open editable diagram overview.



"+" – button *Add* will add time stamp to time plan

Clicking on button "+" opens a pop-up window storing event definition - day, time interval and relay state. Button *Save* stores all applied changes.



"Favourite" – clicking on this button allows user to change original state of relay related to time plan defined in iDM.

Selecting of particular day allows to change time interval of time stamp by drag-and-drop actions (move lower or upper limit to desired position).

More detailed table of selected day will show up after long pressing of area where time stamp is placed.



Each day may include up to 16 time stamps including events when relay state is set to OFF.

In case that other days have to follow the same time schedule as selected (highlighted), select other days by clicking on them and click on button *Copy to*.

Switching relay, matched to two-state plan in iDMS, will start to work after applying all changes within time plan editing in application.

"Save" – store all changes applied to time plan.

Clicking on button *Save* asks user to type password (defined previously in Connection Server, bookmark *System*).

NOTE: application will ask for password even if none was defined – leave password field blank and click on button *OK* anyway.



**Meteostation**

Displaying values from AD converter.

Type	Name	Row	Column	Attributes
meteostation	Wind	2		inels ADC2_40M_A1
Coefficients, calculation below				coef_mult 0.004
				coef_add 0
				max_disp 40
				min_disp 0
Number of decimal places				decimal_digits 1
				units m/s
Add				Displayed units

Maximum displayed value

Minimum displayed value

Calculating coefficients is performed using the equation  $d = a * v + b$ , where

d – is the displayed value.

a – searched multiplier **coef\_mult**.

v – value sent by the central unit (0-10 V) multiplied by one thousand.

b – value **coef\_add**, by which the resulting value is moved.

**General procedure:**

You must determine what the quantity range will be.

You determine the values for the upper limit (max\_disp) and for the lower limit (min\_disp). Place these values into two equations with two unknowns. The result of this equation is a multiplier of the coefficient (coef\_mult) and adding the coefficient (coef\_add). The values are then entered into the table.

Example: If you want to display the value 0 to 10 V sent from the central unit in an interval of 0 to 40 m/s, the procedure is as follows:

In our case, the upper limit will be 40 (max\_disp) and the lower limit is 0 (min\_disp). Place these values into two equations with two unknowns.

**For:**

**The equation applies:**

$$\text{max\_disp} = 40$$

$$\text{max\_disp} = \text{coef\_mult} * 10 * 1000 + \text{coef\_add}$$

$$\text{min\_disp} = 0$$

$$\text{min\_disp} = \text{coef\_mult} * 0 * 1000 + \text{coef\_add}$$

Since there is no requirement to move the displayed values (this requirement may be in case of measuring the outdoor temperature, where negative temperature values also appear), it will be **coef\_add=0**.

**arising from this:**

$$40 = \text{coef\_mult} * 10 * 1000 + 0$$

$$40 = \text{coef\_mult} * 10000$$

$$\text{coef\_mult} = 0.004$$

**Scene**

Using the icon **Scene**, it is possible to control multiple iNELS elements at once. Scenes can be created by adding individual outputs to the list by tapping **Add**. It is appropriate to choose for scenes the output channels marked as ON/OFF/TRIG.

It is more advantageous to create more complex scenes directly in the iDM environment, then only call up the given event here.

Type	Name	Row	Column	Attributes
scene	Lamp	6		da22_rs_dimming_socket_lamp_OFF
				da22_rs_dimming_light_halogen_On
				sa02_rs_doorlock_entrance_OFF

For scenes, chose iNELS elements with extensions \_ON, \_OFF and \_TRIG

Button for adding another element to the

**Shutters**

Icon adjusted for controlling motors, mostly roll shutters or blinds, where there is an option to select separate relays for each direction. The icon then automatically switches direction (relay) when tapping the icon in the format: up-stop-down-stop-up...

Type	Name	Row	Column	Attributes
shutters	Shutters	1		up sa04_rs_1_Shutters_up
				down sa04_rs_1_Shutters_down
				read_only no

Switching element for going up

Switching element for going

**Thermometer**

Icon for displaying temperature. The icon adjusts its appearance based on the selected parameter indoor/outdoor.

Type	Name	Row	Column	Attributes
thermometer	TERM1	1		placement indoor
				inels IDRT2 indoor

Selection of sensor placement. Indoor/outdoor sensor

Selection of temperature input/temperature sensor

## 7. Setting the iHC application without your own Connection Server

On the public virtual server <http://ics.elkoep.cz:8080/>, it is first necessary to read the exported addresses of inputs and outputs from the parameterization software of iDM.

The screenshot shows the 'iHC Configuration Server / Configuration of rooms' interface. The user ID is 945199 and the version is imm-3.217. The 'Uploads' tab is selected in the navigation menu. Three upload sections are visible, each with a 'Browse...' button, a 'No file selected.' status, and an 'Upload' button. Callout boxes provide instructions for each file:

- Upload rooms.cfg**: Upload the file "rooms.cfg", used for backing up already set up Rooms
- Upload export.pub**: Upload the file "export.pub" from the software of iDM2
- Upload export.imm**: Upload the file "export.imm" from the software of iDM3

- The first option **Upload rooms.cfg** is used in later phases of settings to upload the already created file rooms.cfg and perform its subsequent editing. Thanks to the file "rooms.cfg", you can return to previous projects.
- The second option **Upload export.pub** slouží pro nahrání aktuální verze exportovaného souboru vytvořeného v centrální jednotce iNELS druhé generace.
- Třetí možnost **Upload export.imm** slouží pro nahrání aktuální verze exportovaného souboru vytvořeného v centrální jednotce iNELS třetí generace.

For subsequent editing, it is also possible to use the **ID** created upon the first input on a public server, and which reads the last known settings after inserting in the applicable column in the tab **Log in**.

**After signing in for the first time, record your ID for further service from a different PC or in case of erasing cookies from your browser!**

*Note: for work on a public server, receiving cookies must be allowed in your.*

In the tab **Configuration**, you can edit iNELS elements from the file „export.pub“, resp. „export.imm“, changes must be uploaded to the file by pressing **Update** located under the dialog box.

The screenshot shows the 'Configuration' tab in the iNELS interface. It features two main sections for editing export files, each with a list of elements and a confirmation button.

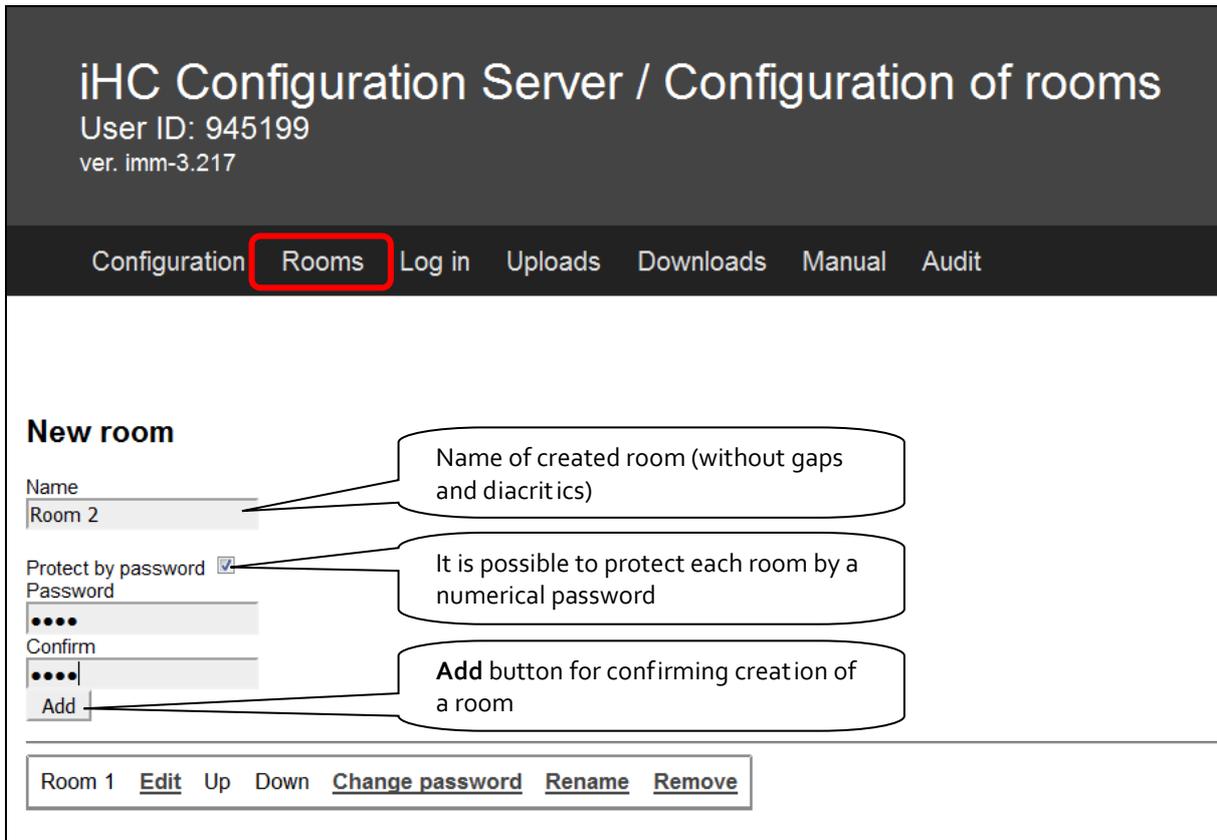
**Edit export.pub**

The first section, titled 'Edit export.pub', contains a list of elements such as WSB3-20\_Green\_0112b2, WSB3-20\_Red\_0112b2, and RE1\_DetskyPokojs. Below the list is an 'Update' button. A callout bubble explains: 'The virtual server then works with the file format "export.pub", to which it also automatically converts the format "export.imm"'. Another callout bubble points to the 'Update' button, stating: 'Manually performed changes (NOT RECOMMENDED!) must be confirmed by pressing Update'.

**Convert iNELS3 export to export.pub**

The second section, titled 'Convert iNELS3 export to export.pub', contains a list of elements with hexadecimal IDs, such as WSB3-20\_Green\_0112b2 0x01020001 and RE1\_DetskyPokojs 0x01020003. Below the list is a 'Convert' button. A callout bubble explains: 'This field is completed only in case of uploading an "export.imm" file'. Another callout bubble points to the 'Convert' button, stating: 'Manually performed changes (NOT RECOMMENDED!) must be confirmed by pressing "Convert"'.

The tab **Rooms** is identical with the tab Rooms from the classic IMM CC (see (chapter 5). The difference is only in entering the password, which is only numeric and multiple asterisks are displayed.

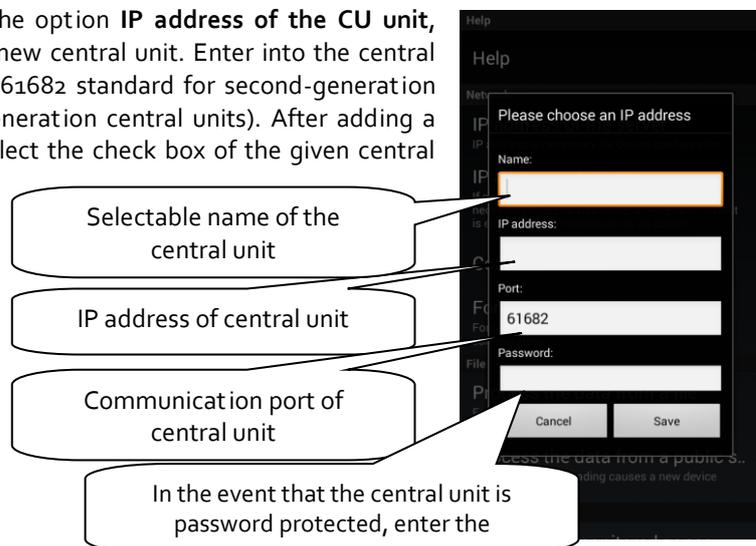


For downloading settings created on a public virtual server into the application in a smart phone or tablet, there are two possible ways:

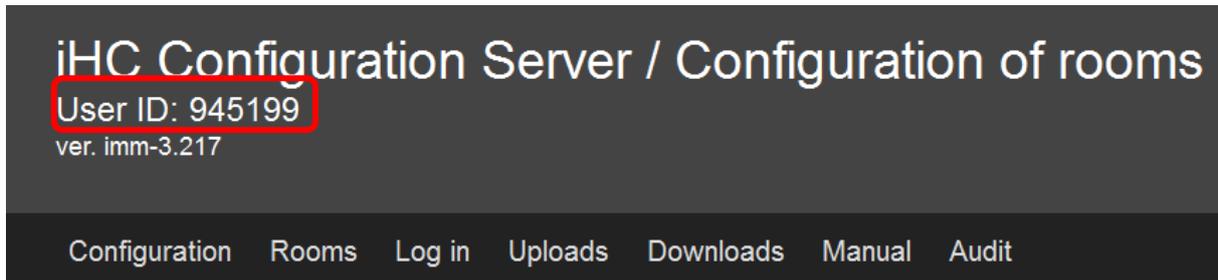
- a) by using "User ID" – **RECOMMENDED**
  - a. simpler, faster method
  - b. requires an Internet connection
- b) by downloading settings via files copied into the smart phone or tablet

For both options, the same method is applied for adding an IP address of the central unit to the iHC application.

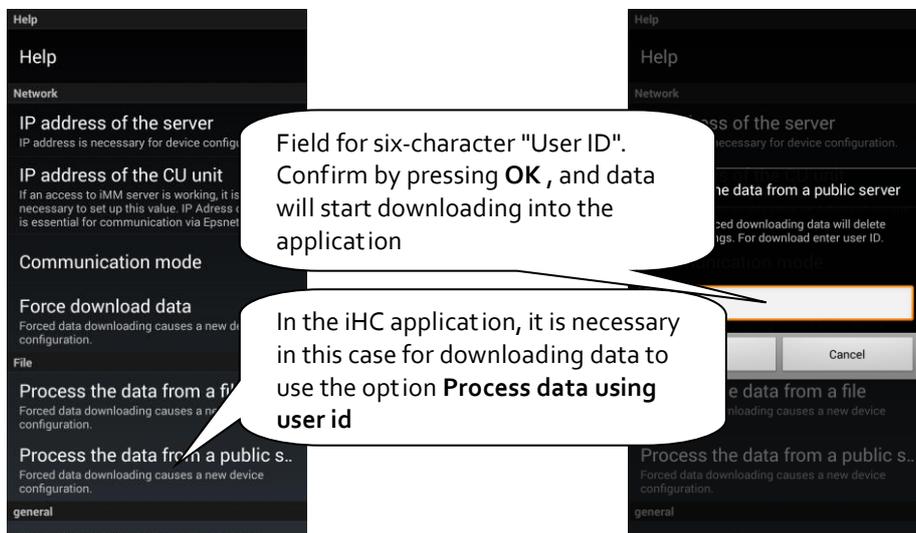
In the iHC application settings, select the option **IP address of the CU unit**, where by pressing "+", you will add the new central unit. Enter into the central unit any name, its IP address and port (61682 standard for second-generation central units, 9999 standard for third-generation central units). After adding a new central unit to the list, you must select the check box of the given central unit and confirm by tapping **OK**.



a. Using the "User ID" for downloading settings into the telephone and tablet

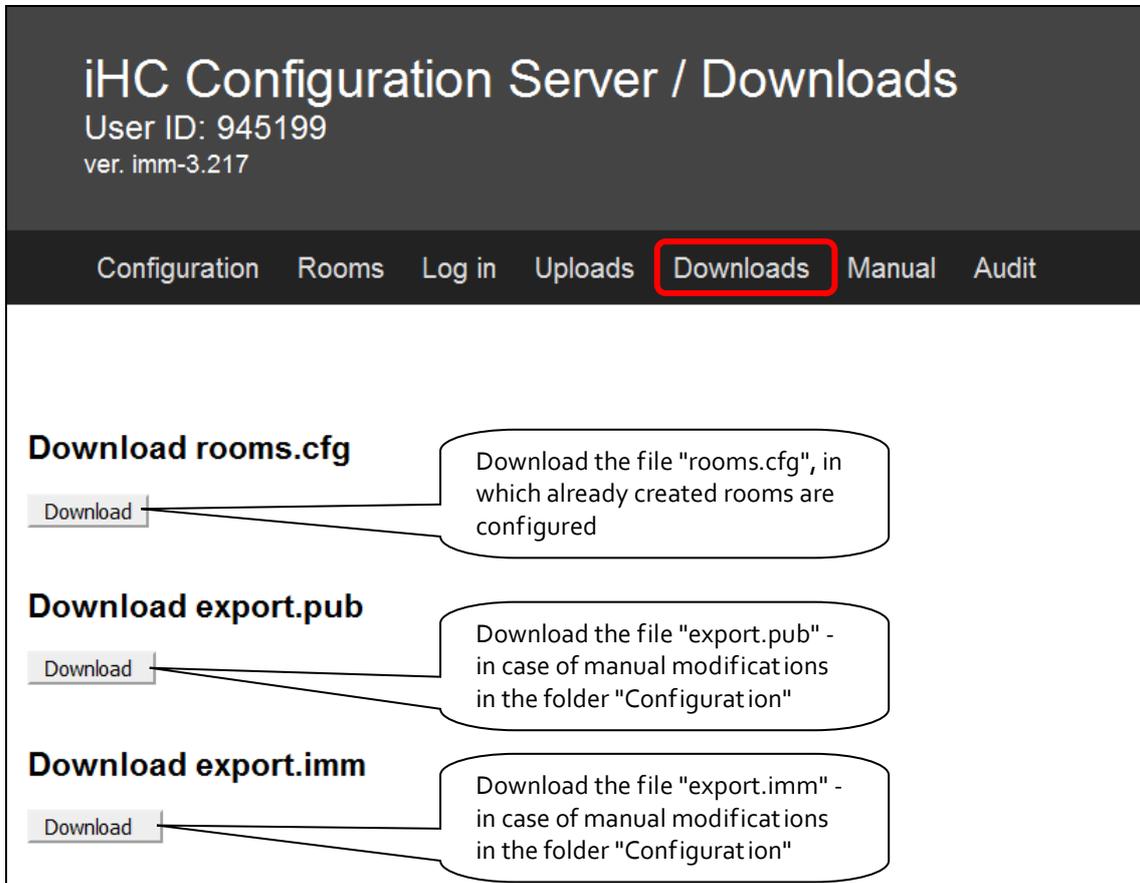


You will find the six-digit "User ID" in the upper part of the screen of the public virtual server. The "User ID" is very important, so make sure you make a note of it somewhere, because by using it you can return to your project anytime, and it serves for downloading your created settings into the iHC application in your smart phone or tablet.

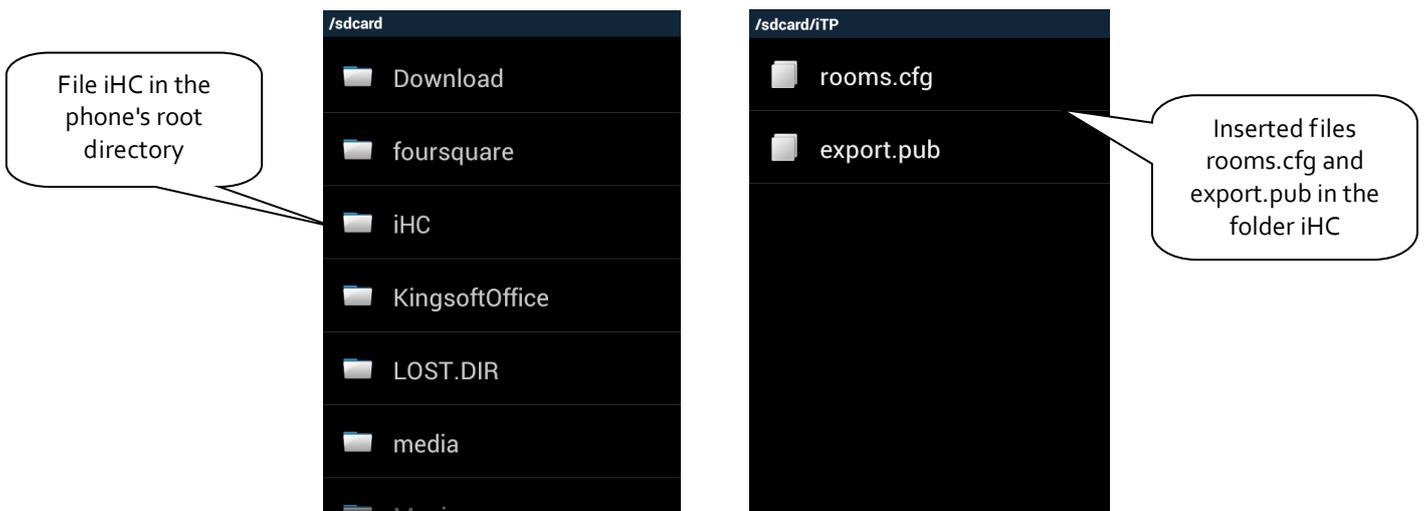


b. Downloading settings using files copied into the telephone and tablet

The tab **Downloads** enables downloading of created or modified files „rooms.cfg“ (already created rooms), „export.pub“ and „export.imm“ to the computer.

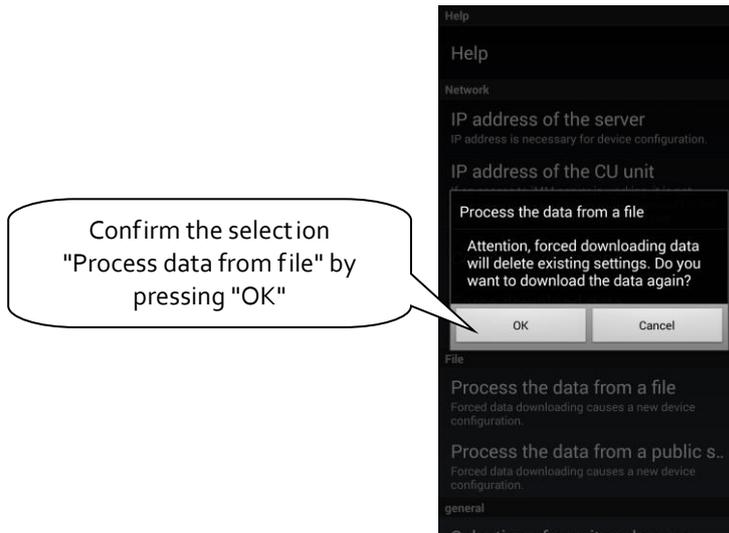


Transfer these files from the PC into the telephone (tablet), where in the root directory, you create the folder **iHC**, into which you will copy files „rooms.cfg“ and „export.pub“..



If files are prepared, it is possible in the iHC application settings to select the option "Process data from file" (provided that you have already added the central unit to which you will be connected - see above in this chapter). The iHC application downloads all necessary data, and if everything is correctly set, the message

appears "Data was successfully downloaded"



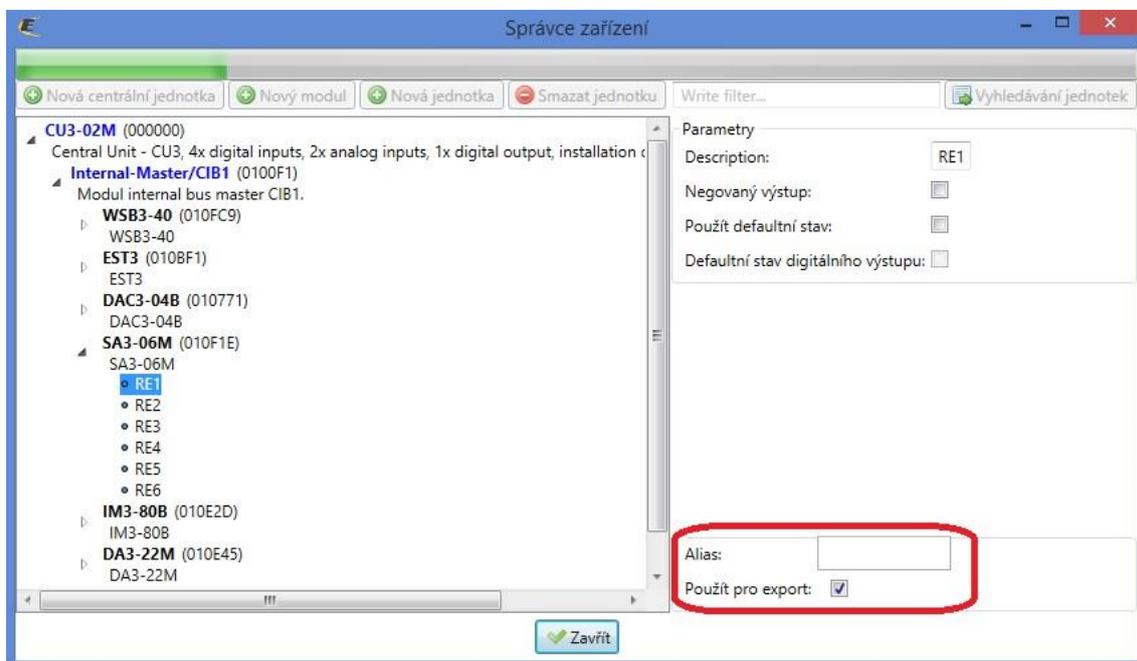
In the version without Connection Server , it is only possible from the iHC application to control bus units. For the option of controlling other devices such as video cameras, air-conditioning, recuperation, door phones, weather station, measuring energy consumption, the presence of a Connection Server is required.

## 8. Export data from iDM3 (iNELS3 Designer & Manager) of the third generation

The iDM3 software enables export of variables (inputs/outputs, time programs, readers and timers), with the help of which you can then create iHC applications for controlling the entire installation. The following text describes how to perform this export.

### Export of inputs/outputs

In the upper part of the iDM software, in the tab "Project", select the option **Device manager**, where you will find a tree structure of the entire system. For each input and output, after giving it a name, you can select the option **Use for export** in the lower right part of the dialog window. In case of checking but leaving clear the field **Alias**, this input/output will be exported under the default name comprised of the unit type, its hardware address and input/output numbers. Here can write in the name under which the given input/output is to be exported – **must not contain diacritical marks or gaps!**



### Export readers

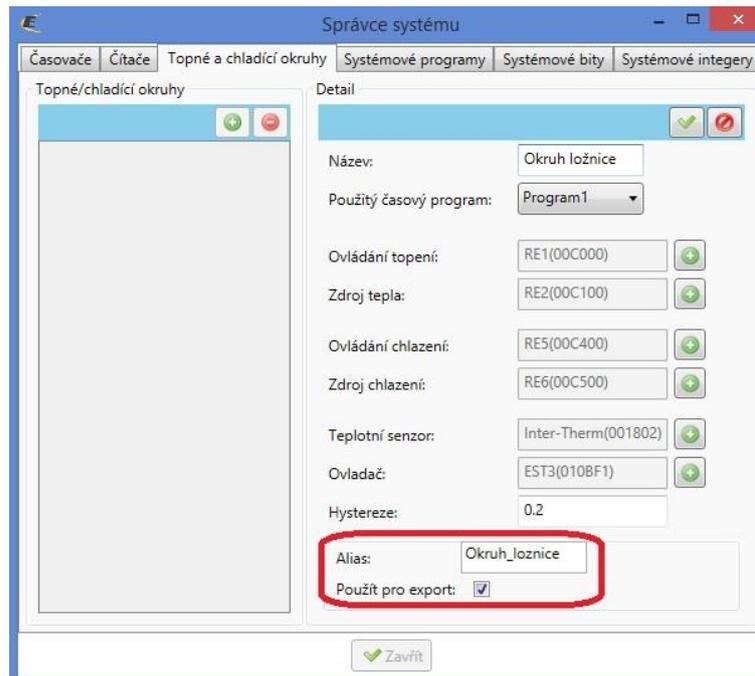
Exporting readers is performed from the tab **Administration**, option **System administrator**. In this dialog window, move to the tab **Readers**. Here, you can export the given reader by checking the option **Use for export**. If you chose your own **Alias**, this may contain neither diacritical marks nor gaps.

Exporting readers is important in case you want to use measuring devices with impulse output to measure and visualize energy consumption. Impulses from these devices are read on binary inputs using these readers.



### Export heating circuits

Exporting heating circuits is performed from the tab **Administration**, option **System Administrator**, tab **Heating and cooling circuits**.



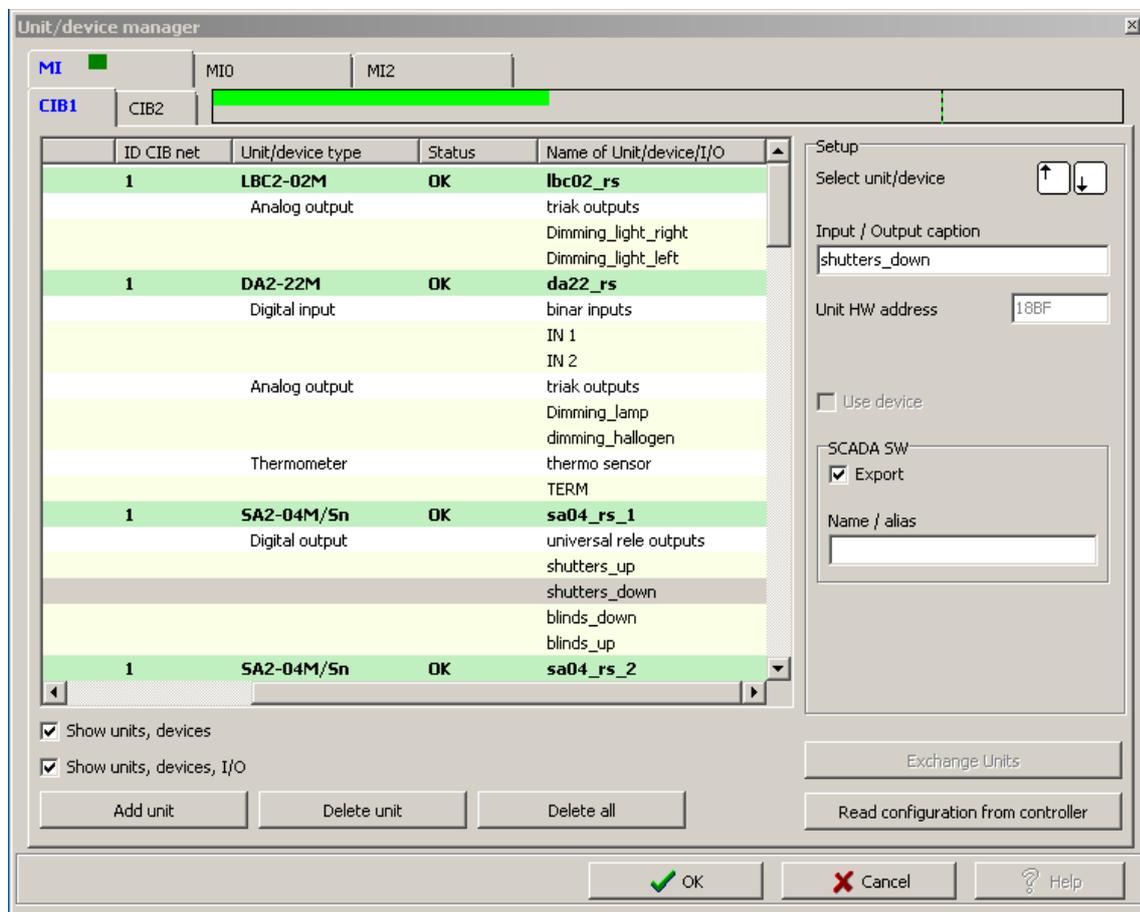
## 9. Exporting data from iDM2 (iNELS2 Designer & Manager) second generation

The iDM2 software enables export of variables (inputs/outputs, time programs, readers and timers), with the help of which you can then create iHC applications for controlling the entire installation. The following text describes how to perform this export.

### Export of inputs/outputs

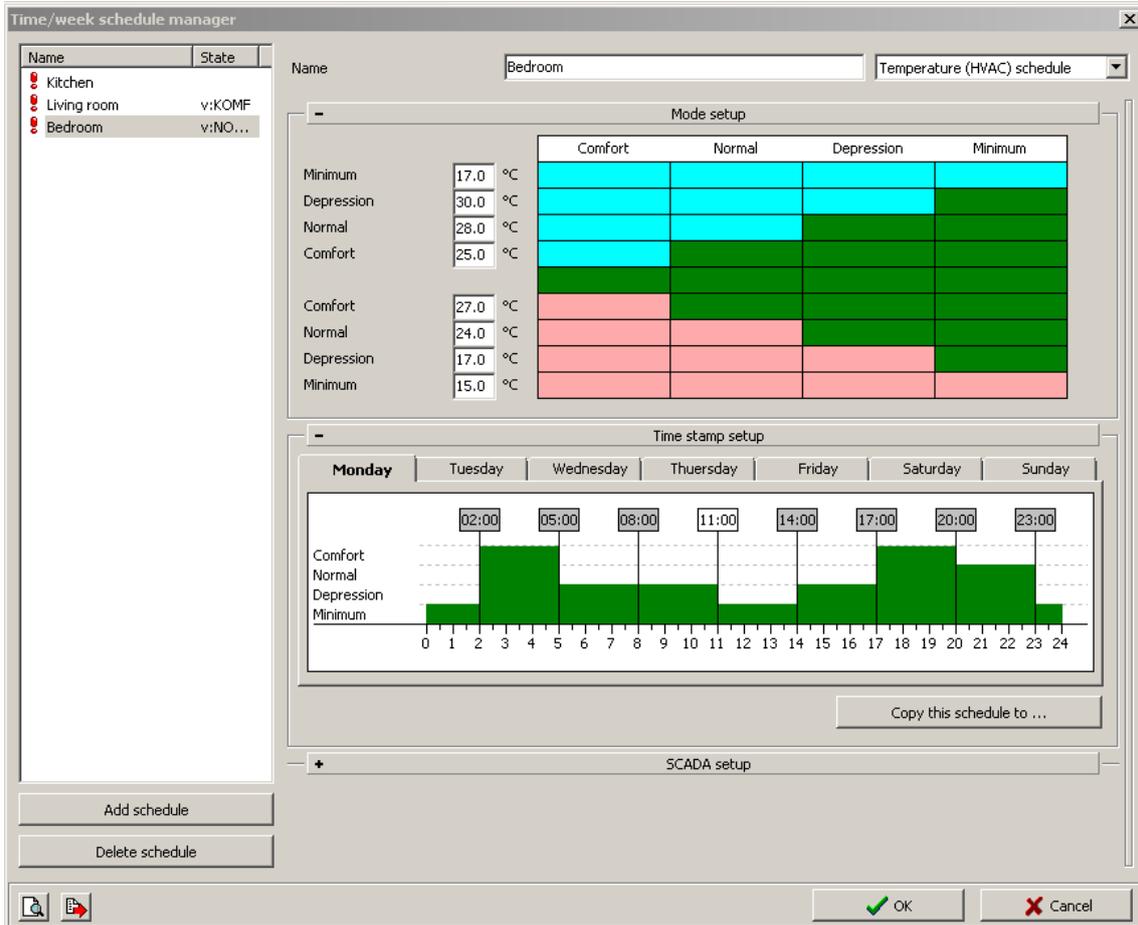
Exporting inputs/outputs is performed from the window **Unit/device manager**, where for the required inputs/outputs, you must check the option **Export for visualization**. In case you want to name the given input/output, use the column **Naming/alias**.

It is not necessary to select the check boxes of these inputs/outputs, which are used in some action. Export of these used inputs/outputs is then performed automatically.



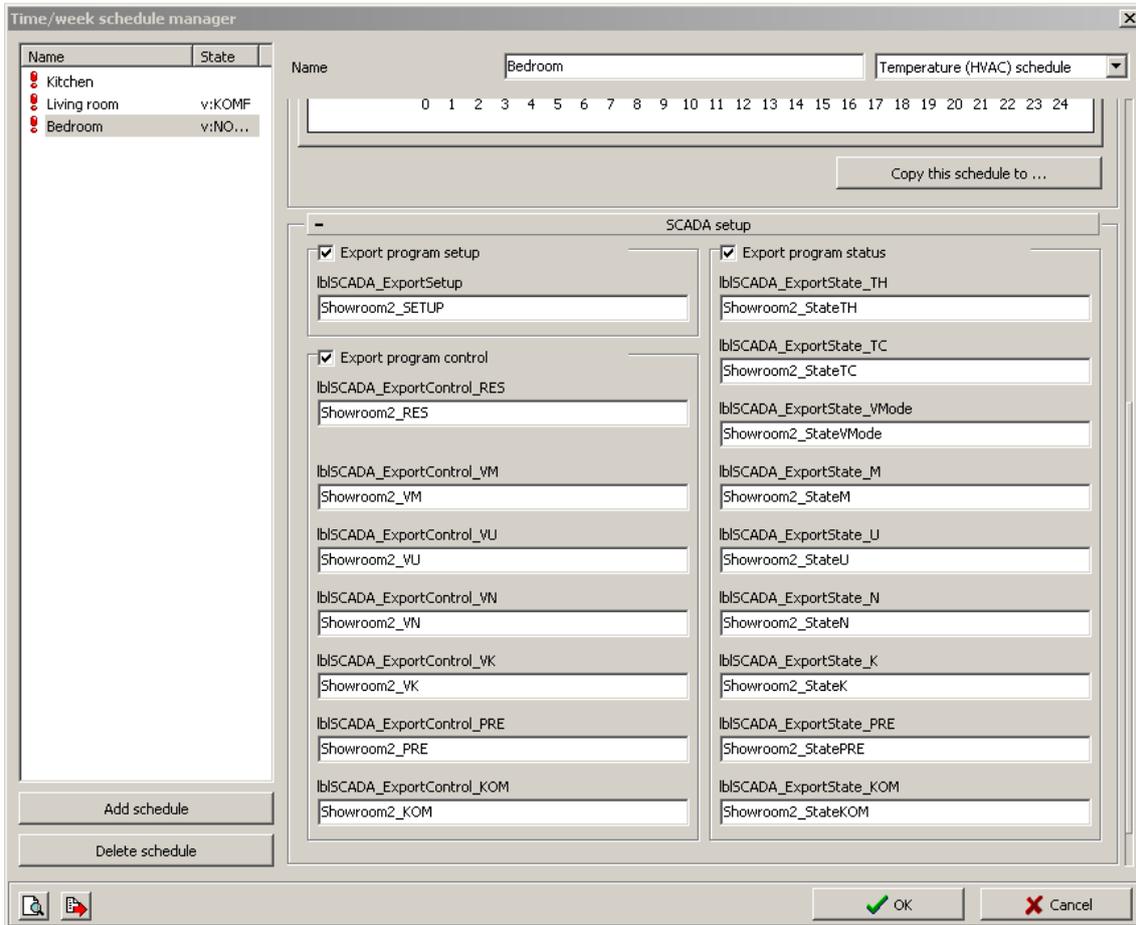
**Export of time programs**

Exporting time programs is performed from the window **Time/weekly schedule manager**, where you must tap and open the menu **Settings of export for visualization**.



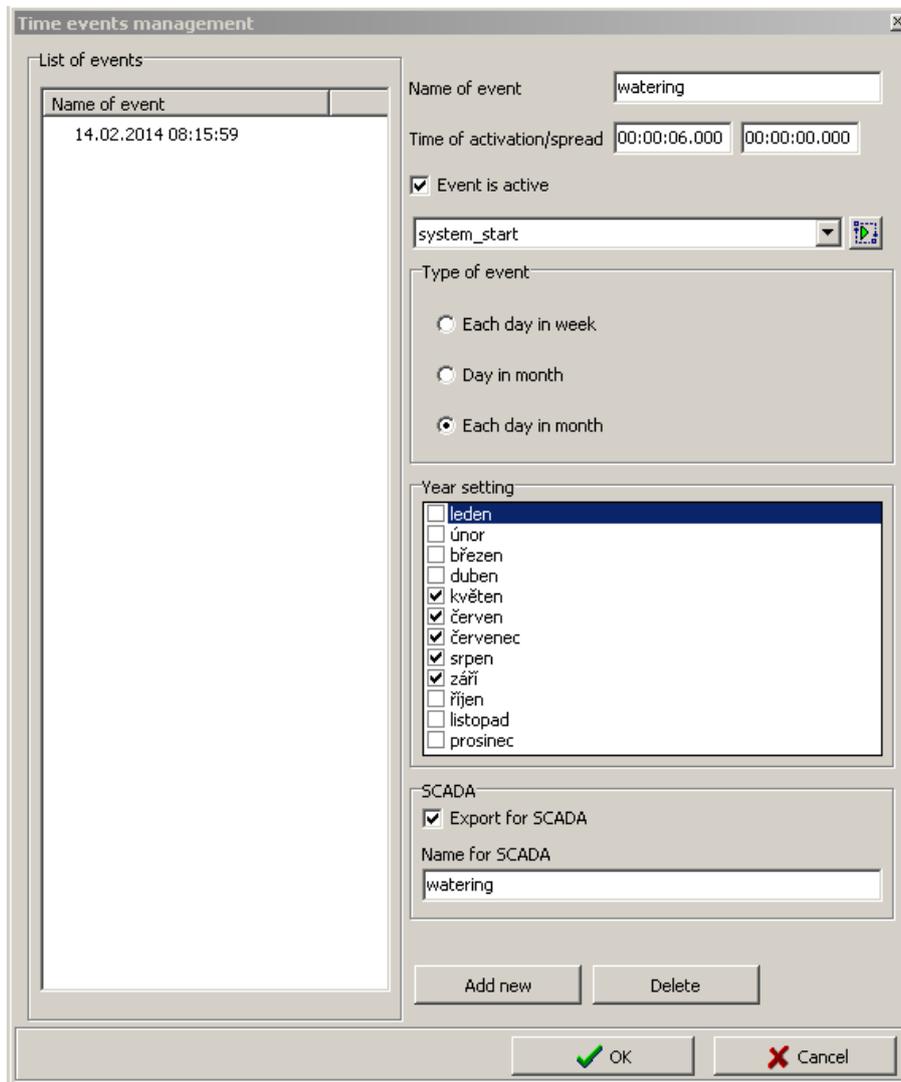
In this menu, you must select the check boxes of all three options, whereas you can export the weekly time program for heating/cooling and a two-status time program.

- **Export program setup**, i.e. timestamps and mode settings.
- **Export program control**, i.e. you can force individual modes (minimum, attenuation, normal, comfort).
- **Export program status**, i.e. preview of program statuses (four modes, required temperature, current temperature).



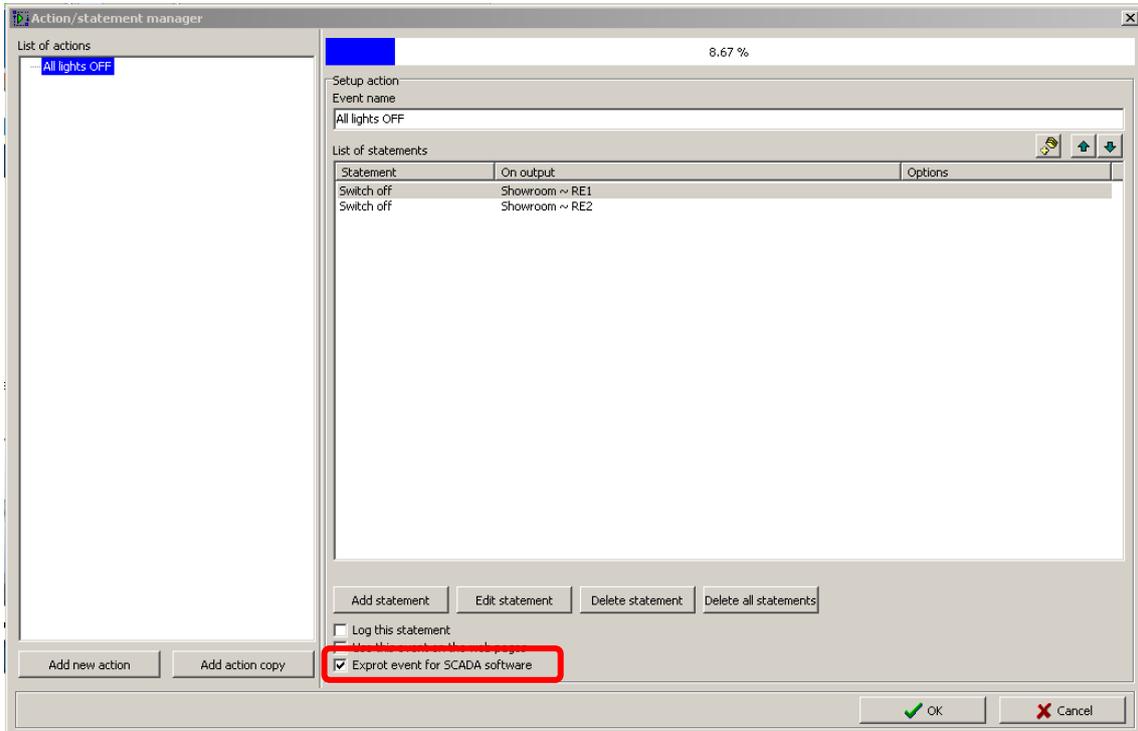
**Export of time events**

Exporting time events is performed from the window **Time events management**, where you must check the option **Export for visualization**. It is once again possible to rename the given time event in order to export.



**Exporting events**

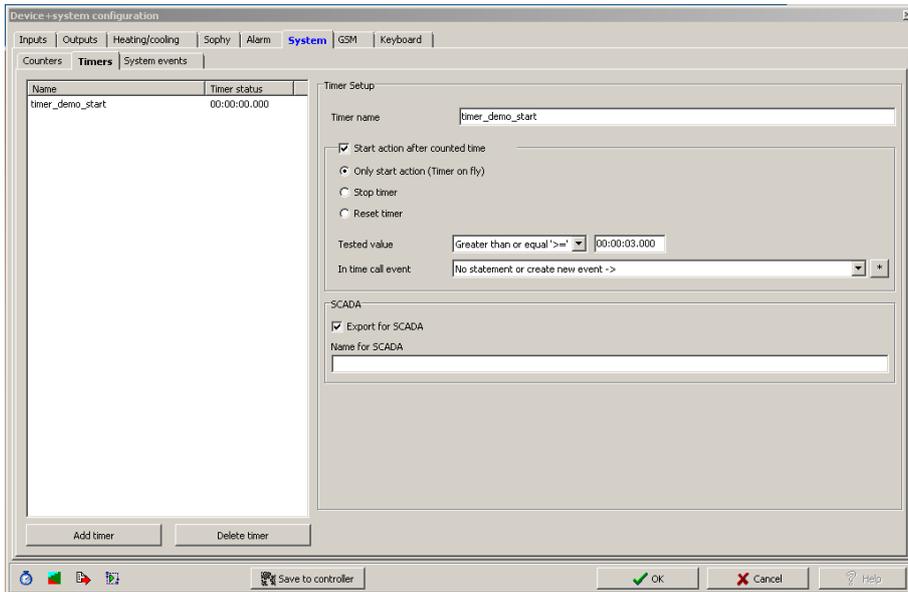
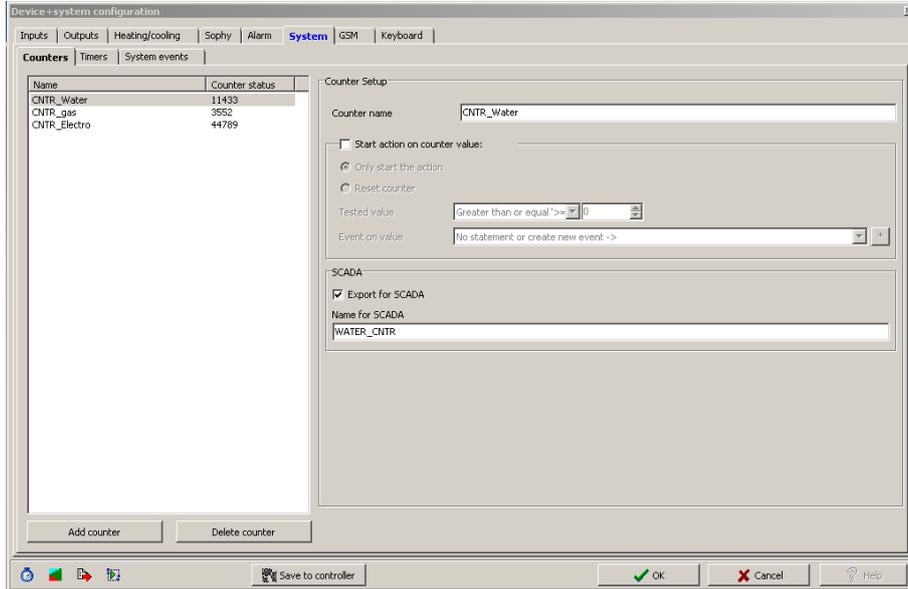
There is a special selection of export for visualization. This concerns direct export of events from the window **Actions/statement manager**. These exported actions can then be called directly from the iHC application. For the required action, you must check **Export event for visualization** in the lower part of the window.



**Export of readers and timers**

Export of readers and timers is performed from the window **Device system configuration**, tab **System**, subfolder **Counters**, or **Timers**. Both options here offer the selection **Export for visualization**.

Exporting readers is important in case you want to use measuring devices with impulse output to measure and visualize energy consumption. Impulses from these devices are read on binary inputs using these readers.



After setting the requirement for exporting all variables, it is necessary to select appropriate settings of the export method and select the path for where to store the \*.pub file. This is performed in **Settings**.

In the part **Settings export** and then **...of SCADA**, check the option **Create export of configuration for visualization**. Then set the path where the \*.pub file will be saved.

If you check **Export only designated IO**, only the i/o will be exported, which you have selected in the window **Unit/device manager** on the previous page.

**Expanded export of binary inputs** represents the export of binary inputs with the reader.

**Report a change in export files** is a selection, which ensures and reports a possible shift of address of variables in memory registries, which can occur upon saving the configuration.

**Export mapping of user actions** is a selection for exporting user actions, e.g. commands for relay groups, for lighting groups, etc.

