

Application Installation Manual

iNELS Home Control Mobile iOS iHC-MI



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1. Introduction

The iHC-MI application is a supplement to the iNELS intelligent electroinstallation system which allows controlling of the entire system from a smart phone with iOS operation system, i.e. from iPhone. The main advantage of the application is the possibility of controlling all integrated technologies from a sole application, whilst you are either connected home in a local network (LAN), or anywhere out of your house with internet access (mobile data, wifi connection, etc.).

Ellegant as it is, iNELS perfectly mingles with any modern household, and thanks to the iHC-MA application, allows permanent supervision over electroinstallation, as well as comfortable central control over the entire house from one place. iHC-MA lets you control the lighting, blinds, shutters, outlets, heating, appliances, watering, cameras, multimedia (audio, video), house appliance Miele, home call boxes, air conditioning units, recuperation, information from meteostation, status of consumed energies, and the like.

The menu is divided in celar section where individual functions are illustrated by icons. You can also find shortcut access to your favourite functions whilst still being aware of what is happening in the other zones of your house.

Now you can also secure individual rooms in the application. By entering a password in IMM Control Centre you will activate security of respective rooms, and prevent any unauthorised person from controlling iNELS via iHC.

The iHC application function is enabled:

- indirectly with the central unit using virtual server when you can control bus iNELS items, i.e. for instance lighting (opening, dimming), blinds, shutters, outlets, security system, scenes, central function, watering or heating system;
- with Connection Server when you can also control cameras, air conditioning, recuperation, home call box, meteostation, or watch the levels of consumed energies;
- with IMM server which additionally allows controlling of multimedia, i.e. Video zones (starting music, video, television, or browsing photographs from the central storage), and Audio zones (starting music from the central storage).

iHC is an abbreviation of iNELS Home Control, and the letters behind the dash define the equipment (T – tablet, M – mobile), and operation system (A – Android, I – iOS/Apple). The iHC-MI application is therefore designed for iPhone. The language of the application corresponds with the language set in iOS.

Download

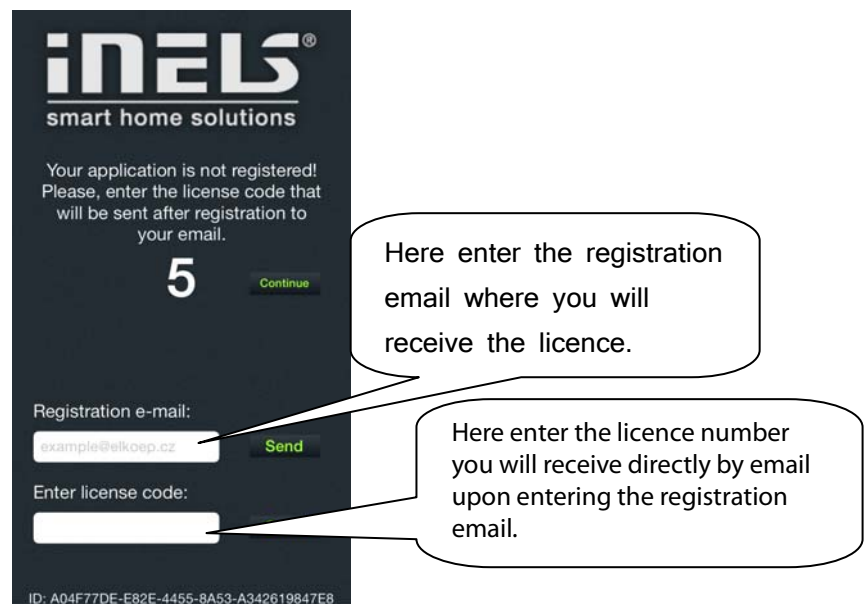
Download the current version here:



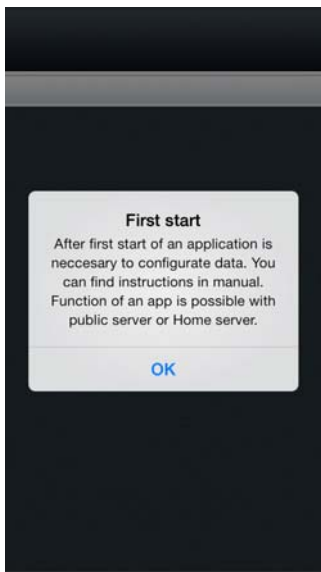
<https://itunes.apple.com/cz/app/inels-home-control-for-iphone/id777582390?mt=8>

2. Application installation on your device

- a) Once the installation is completed, the device will offer an option to open the newly installed application. When the application open, you need to enter registration email and following licence that you will receive directly on the registration email you have entered (Fig. 1). By pressing "Continue", after the elapse of 5 seconds, you can fully run the application without the necessity of entering the licence number.
- b) For sending the registration email and verifying the application licence you need to be connected to the internet.



3. Configuration from own server

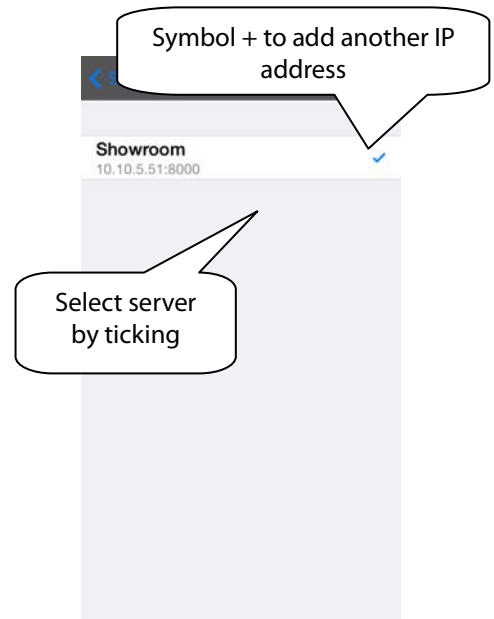
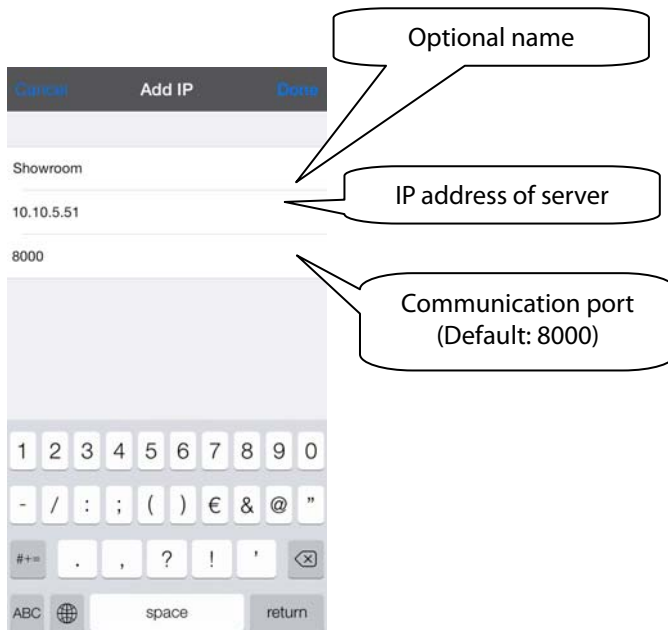


You can call up this dialogue window by clicking the "Setting" option

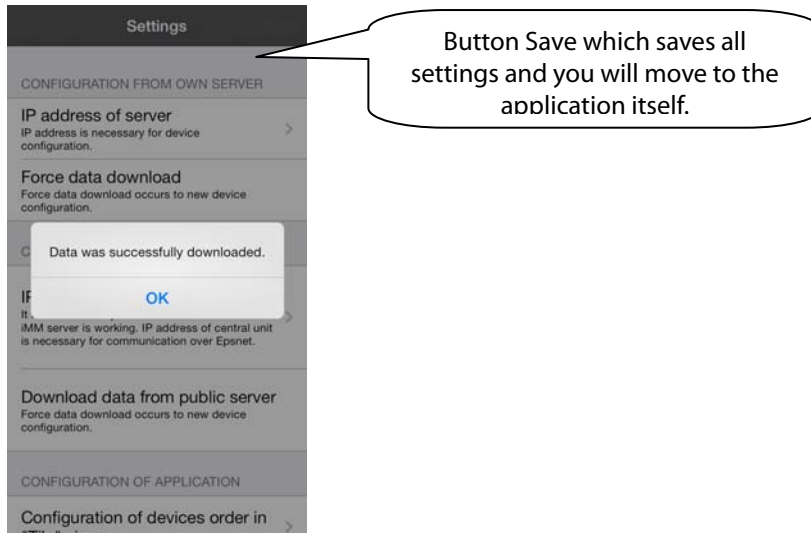


- a) Select the button "server IP address" and a dialogue window for setting IP addresses will display. First add a new server by clicking the button "+" for adding servers. Then add an optional name and the IMM server IP address. Then enter the port – standard is 8000. Click on add and tick this server. "OK" displays; click on it and confirm the changes.

Proceed similarly when working with virtual server but use the „CU unit IP address“ key; as standard, the port is 61682.

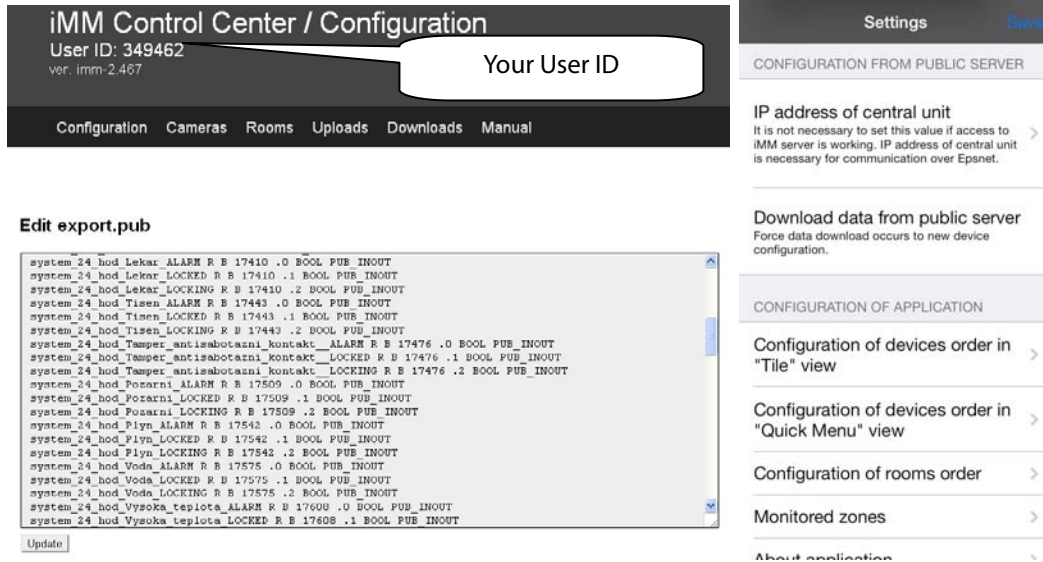


- b) The next step is **Enforce data download**. Successful download of data is confirmed by message “Data downloaded successfully”. Then click on “Save” and the application is functional. If you want, you can configure it as you wish following the next steps.

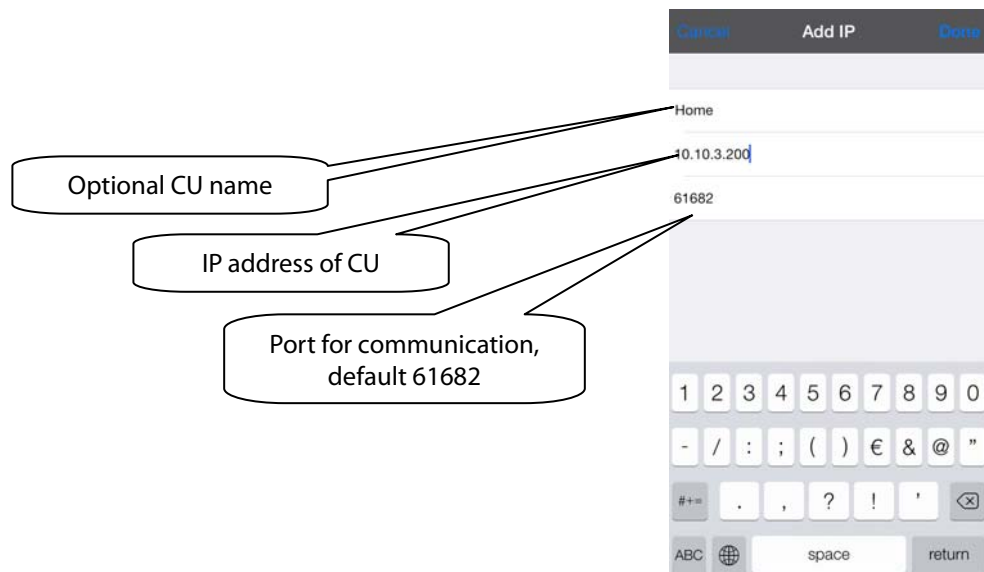


4. Configuration from public server

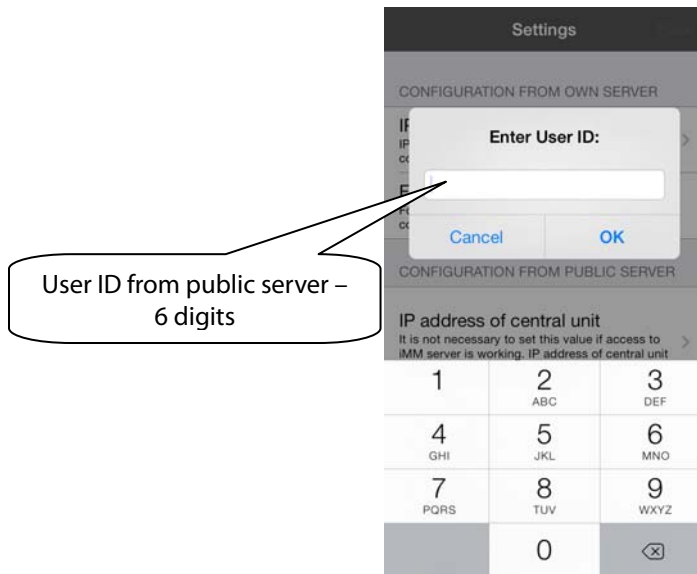
- a) First of all, you need to create configuration on public server. <http://217.197.144.56:8080>



- b) Then enter IP address of CU unit in the iHC application setting. Open the CU unit's IP address and press the plus key to add CU unit. Select the desired CU and go back to the settings.



- c) In the Settings menu select download data from public server. iHC application will ask for ID. ID is displayed in the upper left corner of the public server page. Confirm by OK and the application downloads the files, and is ready for use.

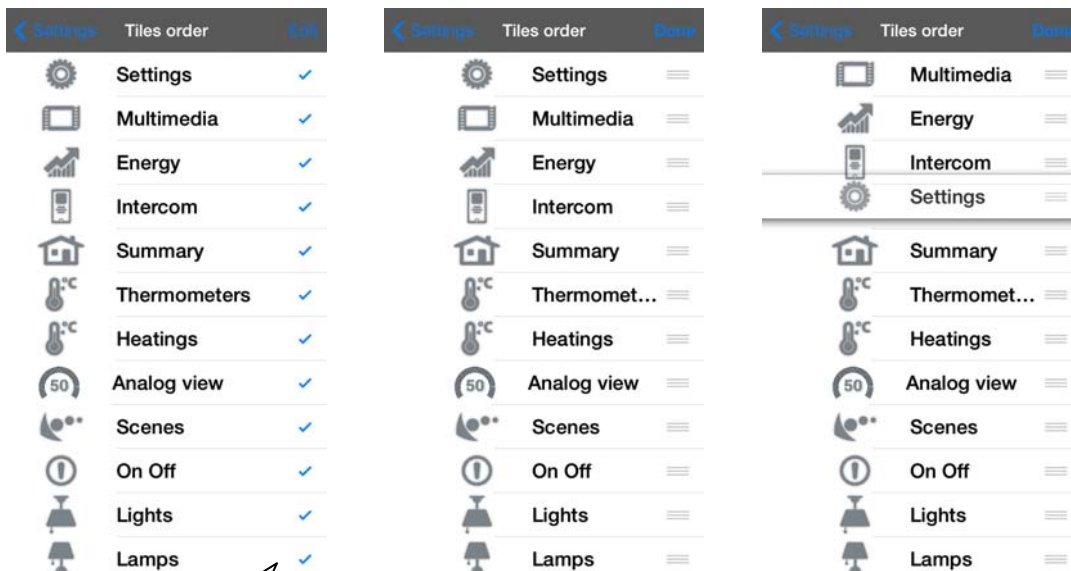


5. Application configuration

It is personalisation of the entire iHC application based on your needs. The entire configuration is in the Settings bookmark. **Setting in the Tiles mode or Fast view mode is very similar.**

Setting the sequence of items is in the „Tiles“ display.

You can affect the sequence of the iHC application items not only by configuration of rooms but also in the application itself. You can choose which items you want to display, and where.



Button Adjust can be used to modify the order in which groups are to be

Here drag the group by finger in order to change the sequence

The displacement system is Drag'n'Drop

6. VoIP setting – setting connection to server of specific device.

SIP name - same as the one you entered on the server

Setting IP address of server where you have already set contacts for VoIP dialling

Password allocated on server to specific contact

Activation button

Button for adding contacts of calling devices

After adding a door call box or iHC contact, as the case may be, click on the “Contacts” key and enter the data, same as you did on the server.

Call box IP address

Log-in name set on server bookmark Intercoms

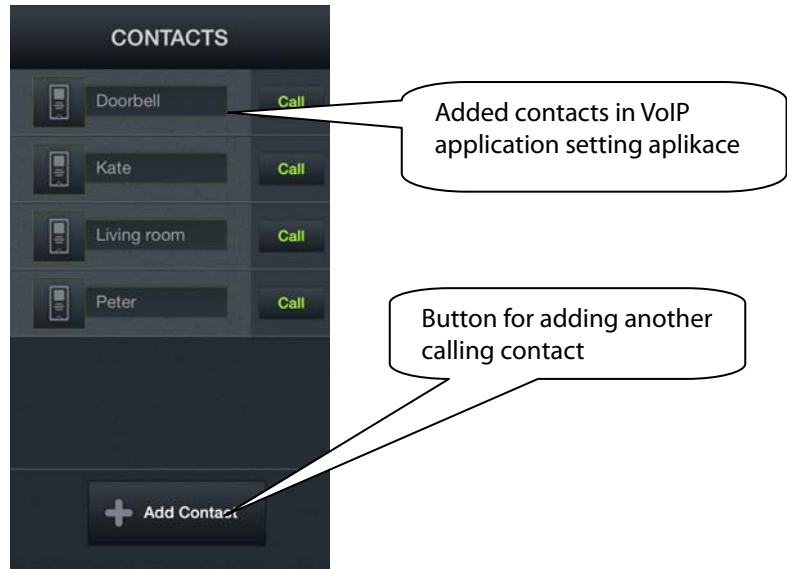
Button for switching to the type of device being added

Login for access to web interface of call box

Password for access to web interface of call box

Call box electronic lock code entered on call box web interface

You can also add dialled contacts directly in the application.



7. Control

Tiles

Fundamental way of displaying the iHC-MA application is the so-called "Tiles". It is a backlit overview of items where we can see at first sight by backlit or non-backlit icons which items of the iNELS bus electroinstallation are active and inactive, as well as other Tiles for controlling integrated devices, e.g. Multimedia, Miele, Intercom, Energy, etc.

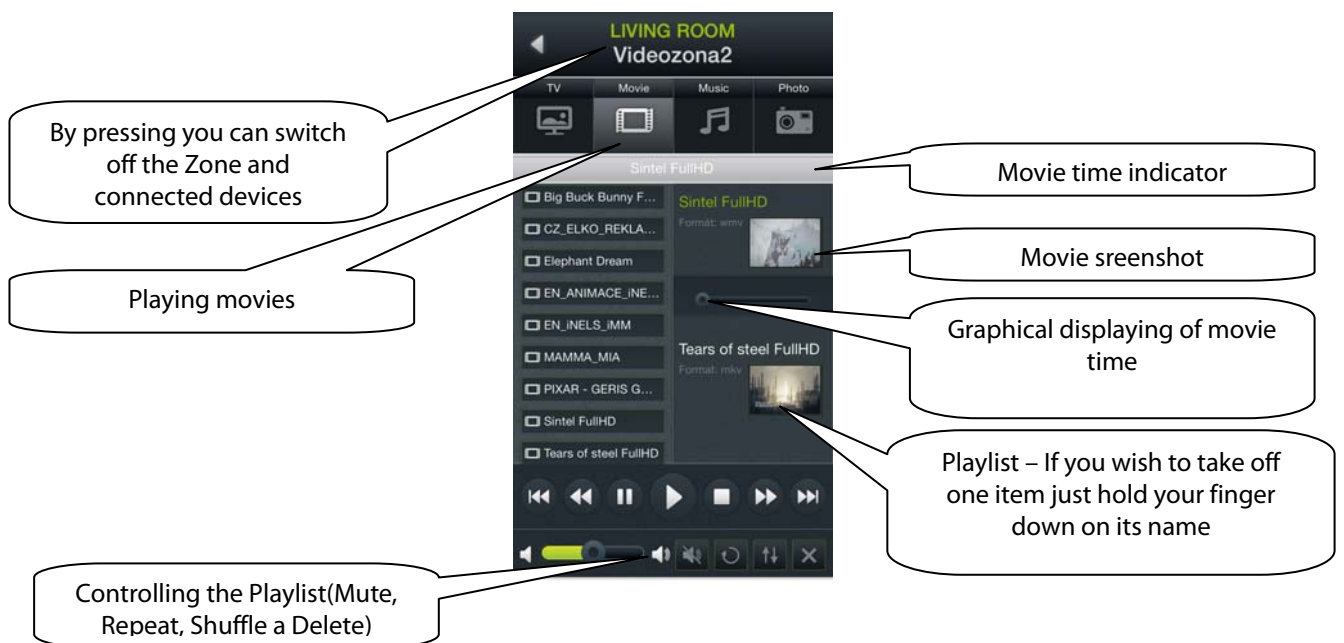
If you wish to go from the Tiles display to the List display, just click on the name of the "Room".

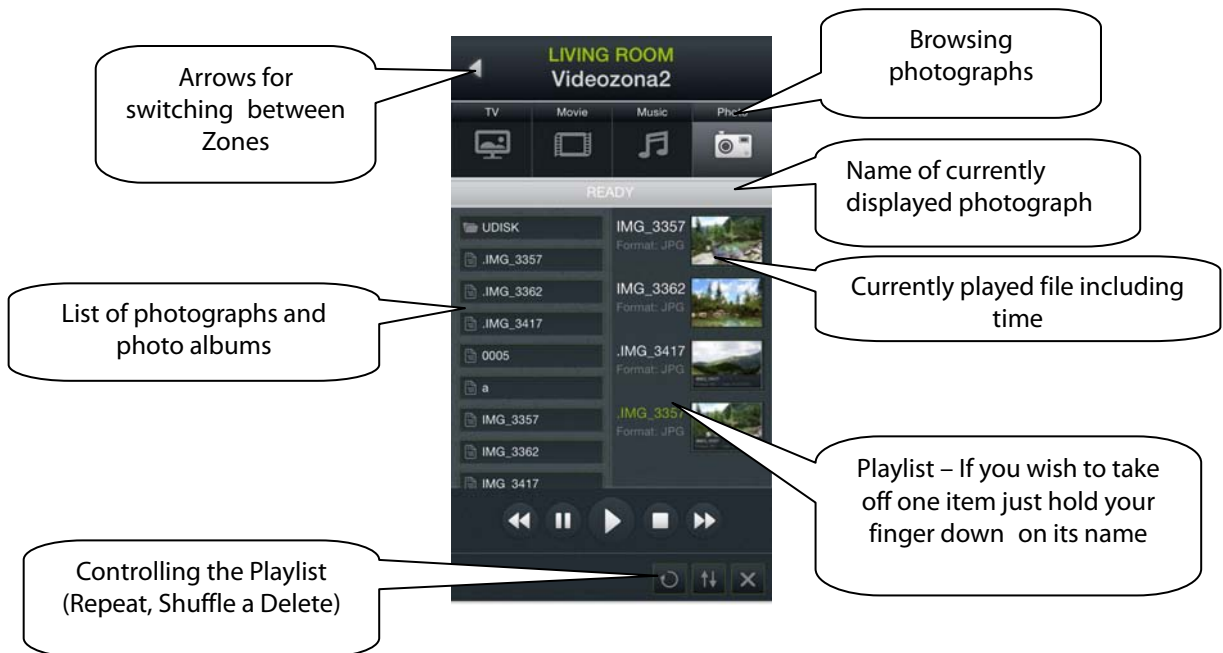
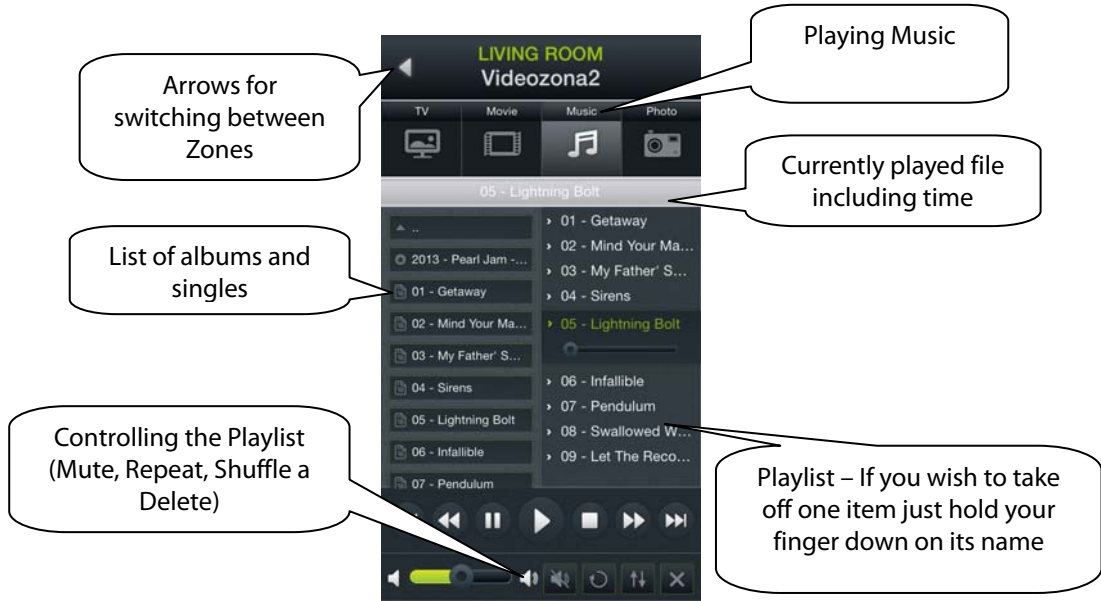


a) Multimedia

Multimedia can only be controlled when IMM Client/Server is incorporated in the system. IMM Client/Server may serve as Video zone (for starting music, movies, viewing photographs or playing television), and further allows the use of Audio zones, e.g. IMM Audio Zone (AZ-R) or LARA INELS Multimedia, the audio of which can be controlled.

You can access the List via the Multimedia tile. The entire Zone and any device connected to it can be switched off/on by clicking on the Zone name. Active Zone is marked in white letters; deactivated Zone is red.



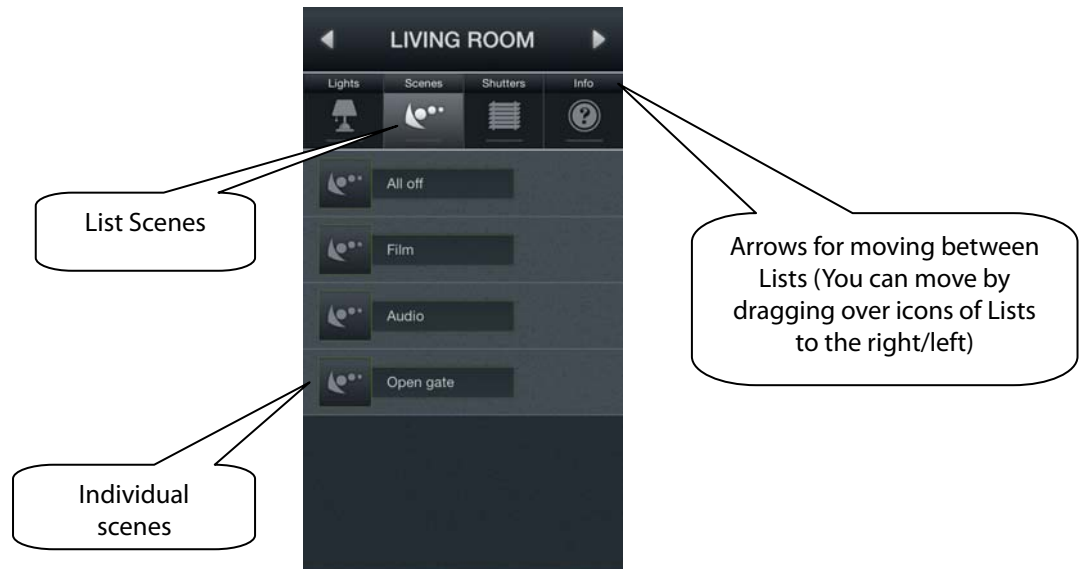


b) Scenes

List "Scenes" is used to activate user pre-defined scenes, such as "All off", "All on", "All shutters up", "All shutters down", etc.

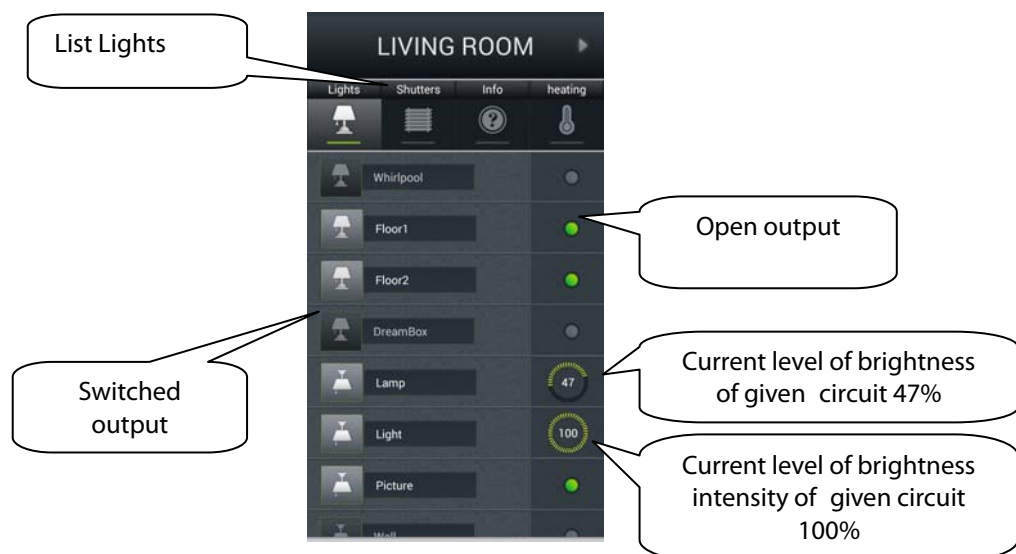
Scenes can be created using iMM CC or also in iDM. Especially for more complex and larger scenes it is suitable to take over in iMM CC an already created scene, exported by means of a *export.pub* file.

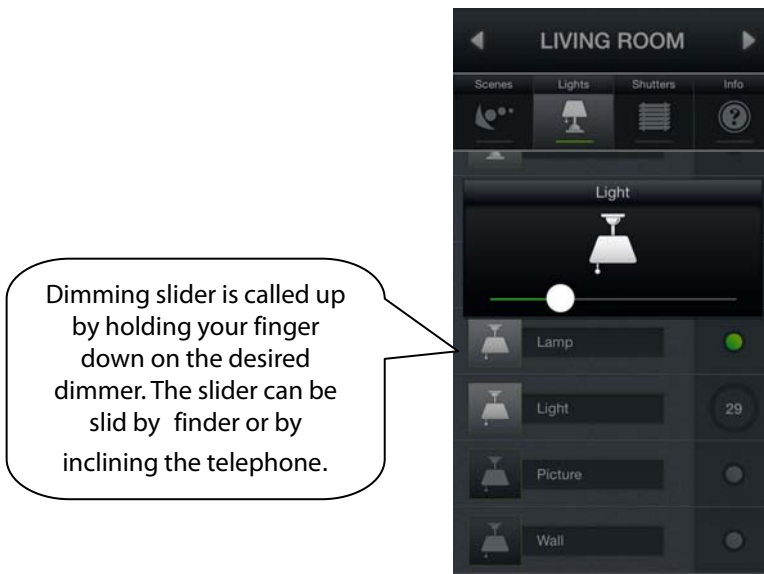
Note: Scenes and central functions can be controlled from the iHC-MI application even without the use of iMM or Connection Server.



c) Lights

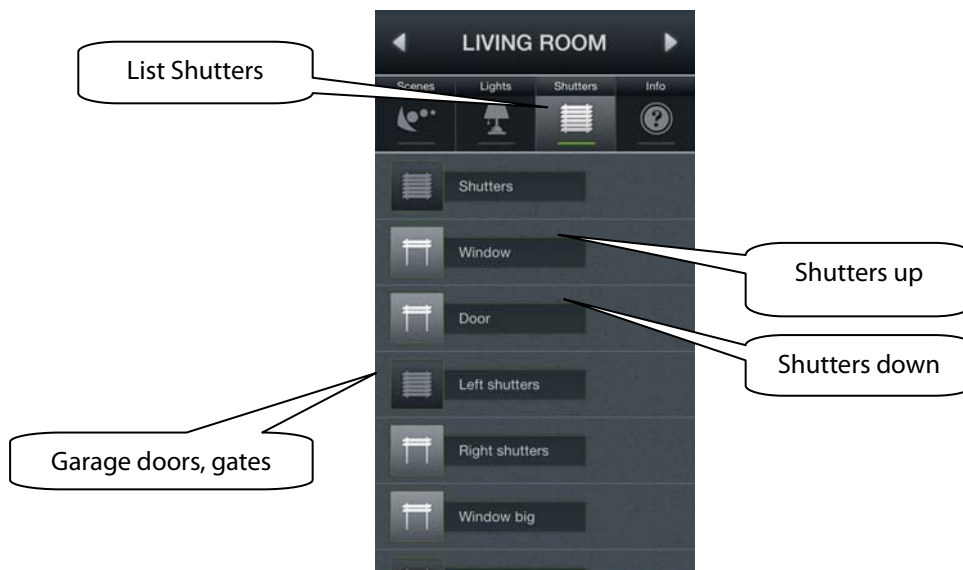
The "Lights" list serves for controlling individual lights or entire lighting installations. There are two general displays of the List. In switched lighting installations controlled in the on/off manner the output status is indicated by an indicator lamp which is either on or off. Dimmed lighting installations where different brightness intensity can be adjusted, this intensity is indicated by means of analogue exciter. Dimming is controlled by a slider that can be slid by finger, or by inclining the telephone (accelerometer function). The slider for dimming displays when you hold your finger down on the desired icon of the dimming lighting installation.





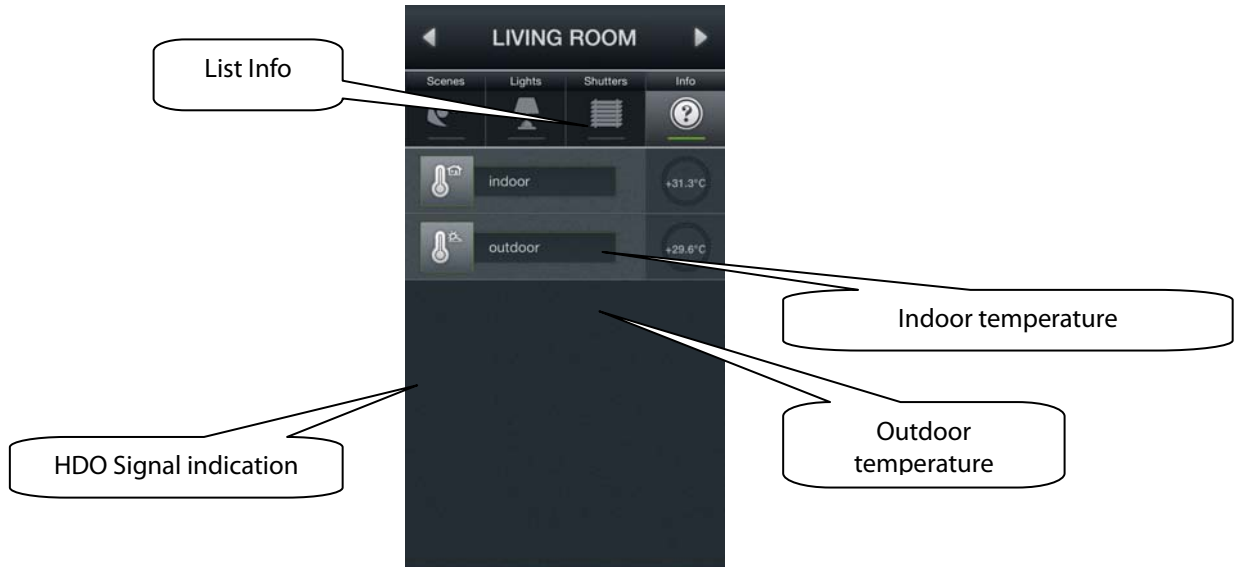
d) Blinds/Shutters/Sunshades

In the "Shutters" list you can easily control blinder, shutters, garage doors, gates and any devices controlled by drives that can turn in two directions.



e) Info

In the "Info" list you can monitor the indoor and outdoor temperatures, as well as other information from the system. You can for instance monitor the status of HDO signal, as well as the status of other sensors.



f) Other

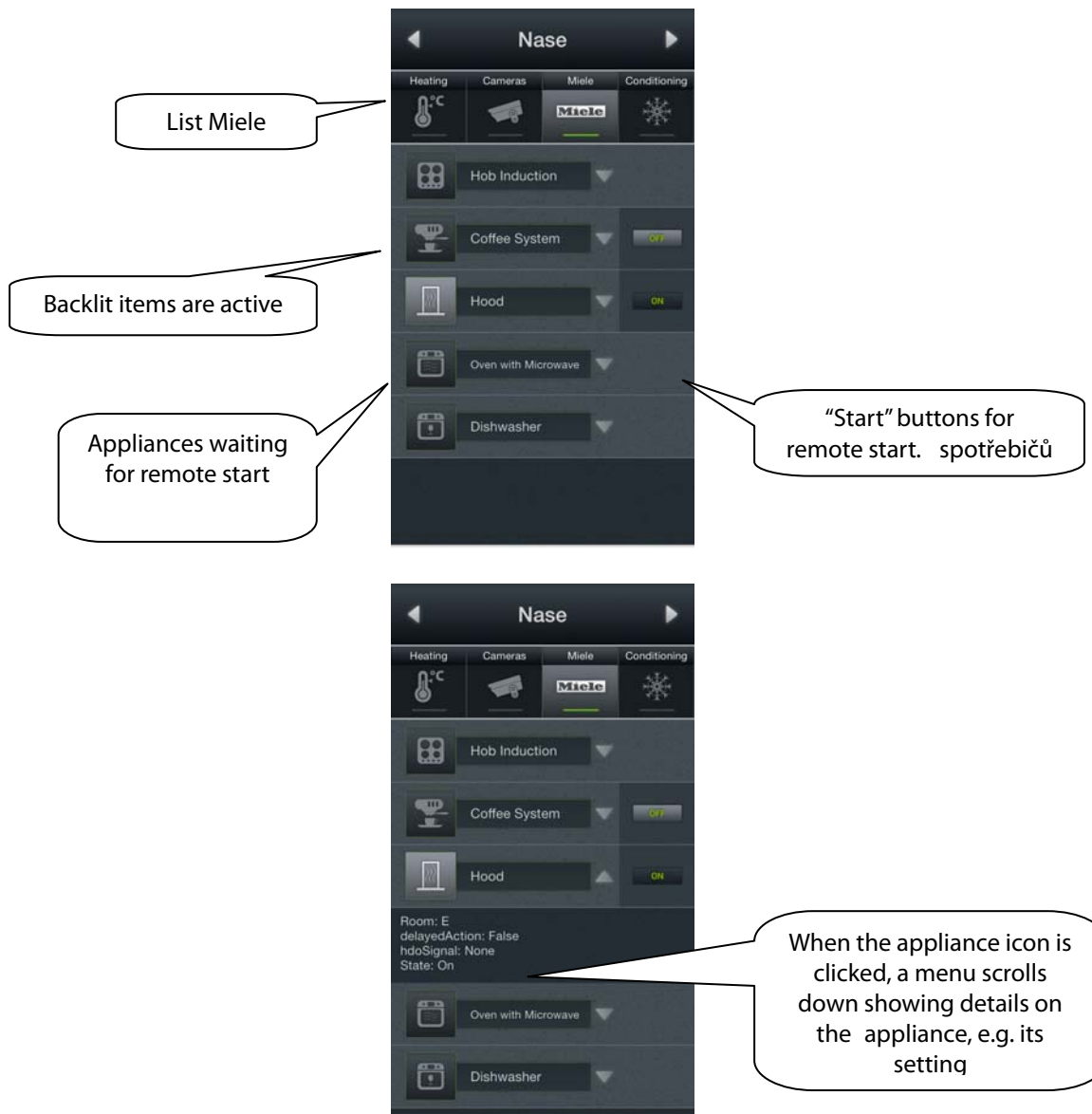
In the "Other" bookmark you can easily see and control individual electronic systems that form a part of the iNELS electroinstallation, e.g. control of the watering system, control of different appliances, and the like.



g) Miele

You can access the Miele List wither via the icon in the Tiles, or sing the arrow for movement between the Lists. This part of the application allows us remote administration of the Miele house appliances which are connected to the Miele@Home network by means of communication modules. The communication between the appliances and the Miele Gateway communication interface runs on powerline. Miele Gateway then transfers this powerline communication to the ethernet network. To translate this protocol you need to use IMM or Connection Server.

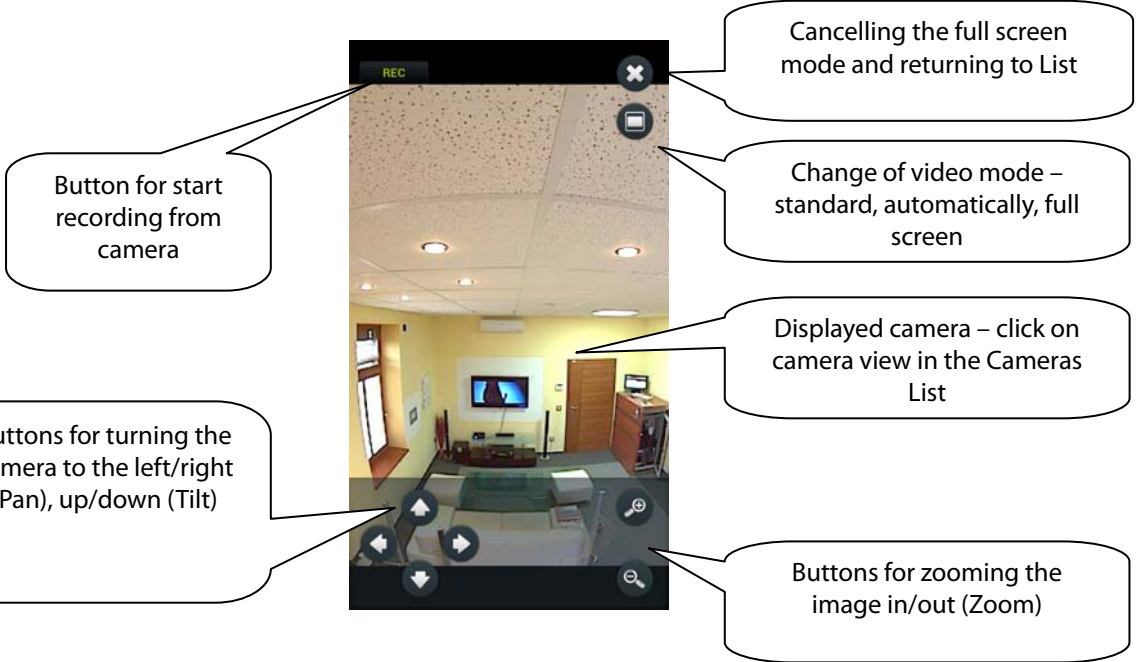
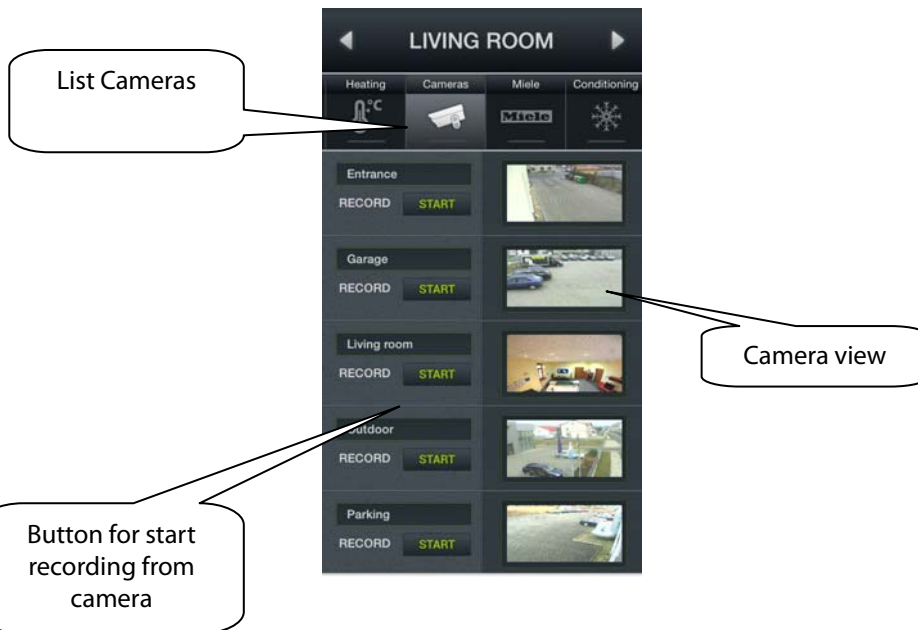
Miele appliances can be monitored in terms of statuses of the appliances and also some of their functions whilst safety is taken into consideration, and therefore you cannot for instance turn on the induction board. An interesting option is activation of remote starts.



h) Cameras

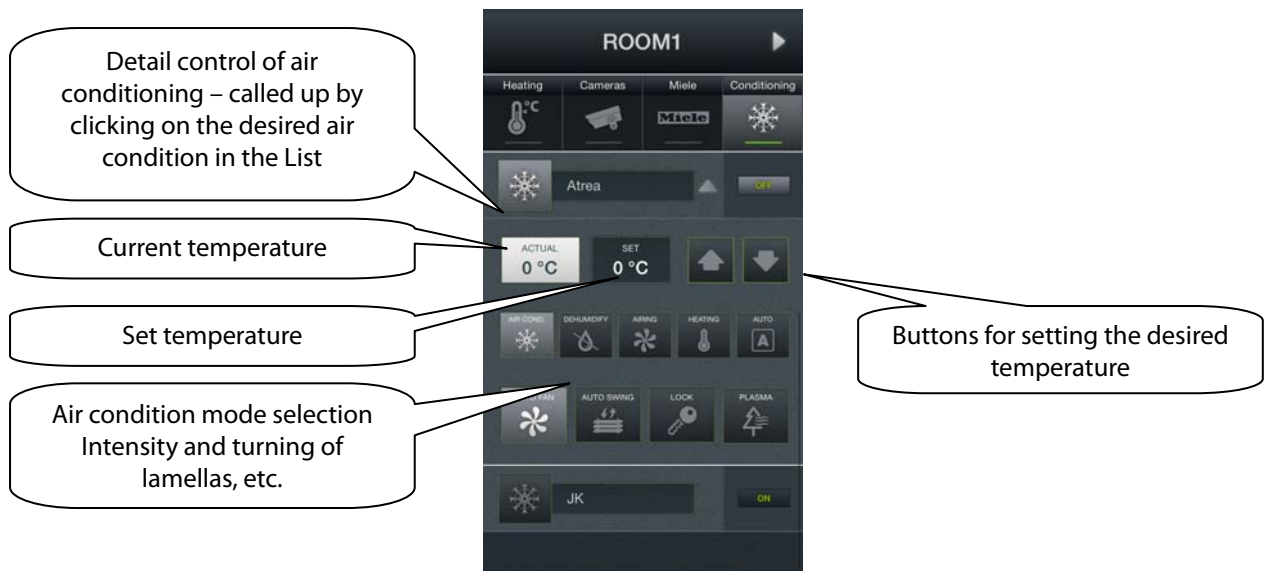
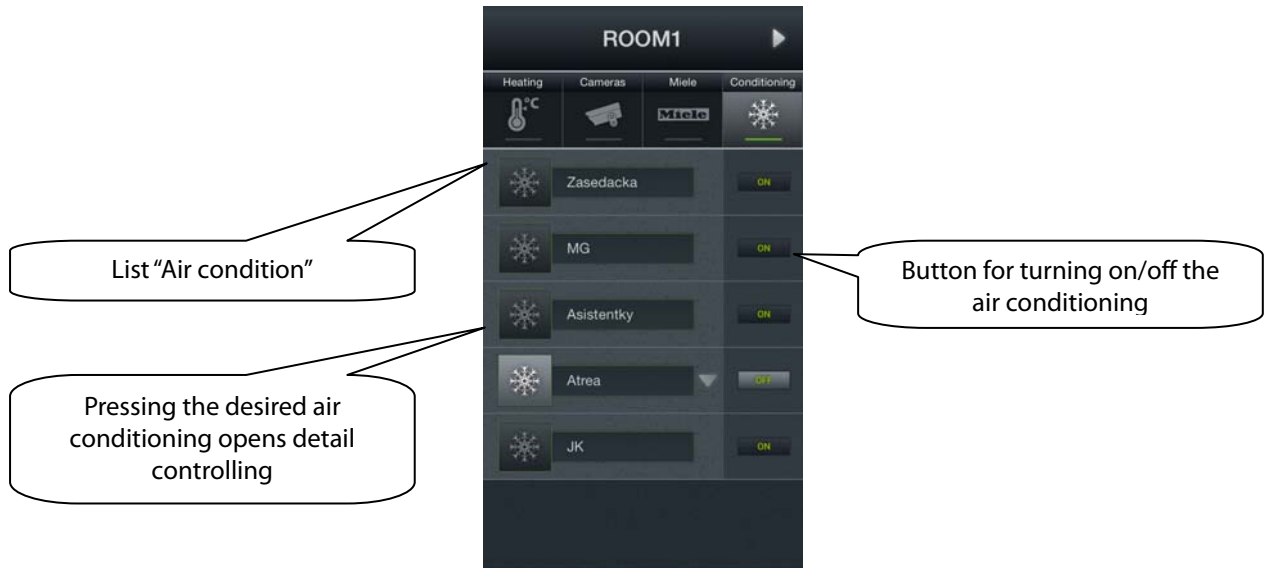
Using the "Cameras" List you can watch the image from IP cameras, control PTZ cameras and record the image from any camera you want. The iNELS system supports connection of up to 9 IP cameras.

Full screen displaying an image from any camera is caused by pressing relevant camera view. Calling up the panel for PZ control (pan, tilt, zoom) is then achieved by pressing the camera image.



i) Air conditioning and recuperation

Controlling the air conditioning units is bi-directional, so you can fully utilise the features of your air conditioning, such as control of blowing speed, movement of lamellas or control of modes, such as plasma. Whilst controlling recuperations, you can select the way of air exchange, rotation speed of ventilators, temperature, or set periodical air exchange.



j) Energy metering

You can access the Energy metering screen by clicking on the “Energy” tile. The iNELS system enables measurement of consumption of gas, electricity or water, whilst you need a meter with impulse output to every energy. These impulses are scanned on binary output units and, by means of counters, the amount of consumed energy is evaluated.

Energy consumption can be displayed in unit, e.g. kWh, or at price value, e.g. CZK. The application facilitates to display a consumption graph for every period that is optionally set by you.

The screenshot shows the 'Energy metering' app interface. 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 includes 'FROM:' and 'TO:' input fields. There are also checkboxes for 'water', 'gas', and 'electricity'. The main display area shows three sections: 'WATER' with consumption of 271145 hl and price of 271145 CZK; 'GAS' with consumption of 265545 m3 and price of 265545 CZK; and 'ELECTRICITY' with consumption of 632177 kWh and price of 632177 CZK. Each section has a small bar chart icon. A 'Data update button' (refresh icon) is located at the top right of the graph area. A legend at the bottom left identifies 'WATER' (red dot), 'ELECTRICITY' (green dot), and 'GAS' (yellow dot). A 'Button for going back to Energy metering' (home icon) is at the bottom right.

Energy metering – called up by clicking on the “Energy”

Display option of desired energy or list of all energies

Selection of time zone

Numerical display – in units of measure, at price value

Graphic display – pressing the icon takes you to a display mode with consumption graphs

Data update button

Legend

Button for going back to Energy metering

8. Configuration of rooms

Items are configured in IMM Control Center (the “iMM CC” hereinafter) in the bookmark Rooms. In Rooms you can create any number of virtual groups (Rooms) where you add optional Items and Zones.

- Items – created on the basis exported file “export.pub” from iDM software (see separate manual)
- Zones – created on the basis of IMM Server configuration

The screenshot shows the 'Configuration of rooms' page in the IMM Control Center. The browser address bar shows '10.10.5.51:8080/rooms'. The page title is 'iMM Control center / Configuration of rooms'. A navigation menu at the top includes 'Server', 'Configuration', 'Zones', 'Clims', 'Rooms' (highlighted with a red box), 'Cameras', 'Energy', 'IR', and 'Audit'.

The main content area is titled 'New room' and contains a form with the following fields and callouts:

- Name:** A text input field containing 'Room3'. Callout: 'Name of new Rooms'.
- Protect by password:** A checkbox that is checked. Callout: 'Tick if you wish to protect the control given by Room password'.
- Password:** A password input field with a single asterisk. Callout: 'Password and confirmation Note: Only one asterisk displays at a time'.
- Confirm:** A confirmation password input field with a single asterisk.
- Add:** A button to submit the form.







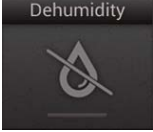


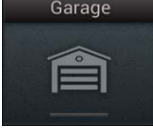





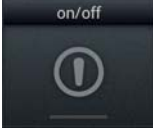
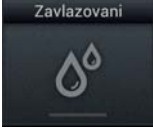
Below the form is a table listing existing rooms:

global	Edit		
ROOM1	Edit	Set password	Remove
ROOM2	Edit	Set password	Remove

Callouts for the table actions:

- Callout pointing to the 'Edit' link for ROOM1: 'Editing of respective Room'.
- Callout pointing to the 'Remove' link for ROOM1: 'Removal of respective Room'.

9. Item description

	Simple 2-status icon		Dimmable icon		Special icon
Airing		Blank		Weather station	
Air-conditioning		Lamp		Scene	
Dehumidify		Light		Shutters	
Garage				Indoor thermometer	
Gate				Outdoor thermometer	
Heating				Heat Control	
On/Off					
Sprinkling					

Air Conditioning

Icon for controlling the air conditioning units. When this icon is selected, only LG. air conditioning icons are filtered out that are defined in the bookmark "Clims".

The screenshot shows the configuration interface for an Air Conditioning icon. It includes a 'Type' dropdown set to 'air conditioning', an 'Add' button, and a table with columns 'Name', 'Row', 'Column', and 'Attributes'. The 'Name' column has a dropdown menu open showing 'LG_Dolni', 'LG_Dolni', and 'LG_horni'. The 'Row' column has a dropdown set to '2'. The 'Attributes' column has 'type' set to 'menu' and 'read_only' set to 'no'. Callouts provide the following information:

- Selected icon type:** Points to the 'air conditioning' dropdown.
- Confirmation of adding an Item:** Points to the 'Add' button.
- Selection of air conditioning defined in bookmark Clims:** Points to the 'Name' dropdown menu.
- Line selection:** Points to the first 'LG_Dolni' entry in the Name dropdown.
- Column selection:** Points to the '2' in the Row dropdown.
- Selection of air conditioning control:** Points to the 'type' dropdown set to 'menu'.
- If you select "yes", the icon will be read-only, i.e. it will display its status but cannot be controlled in any manner whatsoever.** Points to the 'read_only' dropdown set to 'no'.

Heat control

The Heat Control icon enables controlling and switching between preset heating programs from iDM. Long press allows you to switch between MAN and AUTO modes. If the heating circuit is closed, the icon is backlit.

The screenshot shows the configuration interface for a Heat control icon. It includes an 'Icon name' field with the value 'heat control' and a '3' next to it. Below are several dropdown menus: 'stateth' set to 'Showroom_StateTH', 'therm' set to 'SOPHY2_TERM', and 'rele' set to 'sa04_rs_2_Vytapeni'. The 'read_only' dropdown is set to 'no'. Callouts provide the following information:

- Icon name:** Points to the 'heat control' text.
- Variable from iDM that return currently preset heating program:** Points to the 'Showroom_StateTH' dropdown.
- Heating input/Thermal sensor:** Points to the 'SOPHY2_TERM' dropdown.
- Relay controlling given heating circuit:** Points to the 'sa04_rs_2_Vytapeni' dropdown.

Meteostation

Displaying values from AD converter.

Type	Name	Row	Column	Attributes
meteostation	Vitr	2		inels ADC2_40M_AI1
Coefficients, calculation below				koef_mult 0.004
Maximum displayed value				koef_add 0
Minimum displayed value				max_disp 40
				min_disp 0
				decimal_digits 1
				units m/s

Displayed units

Number of decimal places

Add

Calculation of coefficients is based on the equation $d=a*v+b$, where

d – is the displayed value

a – is the sought for multiplier “koef_mult”

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

b – value “koef_add” by which the final value is displaced.

General procedure:

It has to be defined what range the quantity will reach, in our case 40 will be the upper limit (max_disp), and 0 the lower limit (min_disp). Place these values into 2 equations with 2 unknowns. Result of this equation is coefficient multiplier (koef_mult) and also coefficient addition (koef_add). Put the values in the table.

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

For:

The below equation applies:

$$\text{max_disp}=40$$

$$\text{max_disp} = \text{koef_mult} * 10 * 1000 + \text{koef_add}$$

$$\text{min_disp}=0$$

$$\text{min_disp} = \text{koef_mult} * 0 * 1000 + \text{koef_add}$$

Since there is no request for displacement of displayed values (this request might occur in case of outdoor temperature measuring when also negative temperature value occur), the coefficient will be koef_add=0.

It means that:

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

$$40 = \text{koef_mult} * 10000$$

$$\text{koef_mult} = 0,004$$

Scene

By the "Scene" icon you can control multiple iNELS items at once by just a single press. Scenes can be created by addition of individual outputs in the list using the "Add" button. Scenes should contain output channels with ON/OFF/TRIG symptom.

More complex scenes should be created directly in iDM environment, and only given event should be called up there.

Type	Name	Row	Column	Attributes
scene	Lamp	6		da22_rs_stmivana_zasuvka_lampa_OFF
				da22_rs_stmivane_osvetleni_halogeny_ON
				sa02_rs_zamek_vstupni_dvere_OFF

Add

For scenes, select iNELS items with suffixes _ON, _OFF and TRIG

Button for adding another element to the scene

Shutters

Icon adapted to control motors, majority of blinds or shutters where relay can be chosen separately for every direction. The icon then automatically switches the direction (relay) if you click on the icon in the below format: up-stop-down-stop-up...

Type	Name	Row	Column	Attributes
shutters	Shutters	1		up sa04_rs_1_zaluzie_nahoru
				down sa04_rs_1_zaluzie_dolu
				read_only no

Add

Switch element for direction up

Switch element for direction down

Thermometer

Icon for displaying the temperature. The icon adapts its look by selected parameter indoor/outdoor.

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

Add

Selection of placing the sensor Indoor/Outdoor sensor

Selection of thermal input/thermal sensor

Zone

This icon can only be added if IMM superstructure (iNELS Multimedia) is used. All zones you wish to control from a given room on your phone have to be defined underneath this icon.

Type	Name	Row	Column	Attributes
zone	Audiozone1	1		audio <input type="checkbox"/> yes video <input type="checkbox"/> yes
	Audiozone1			
	Audiozone2			
	Meteo			
	Videozona 3			
	Videozone 5			

Add

Selection of Zones defined in the bookmark Zone

Will the zone play music?

Will the zone play video?

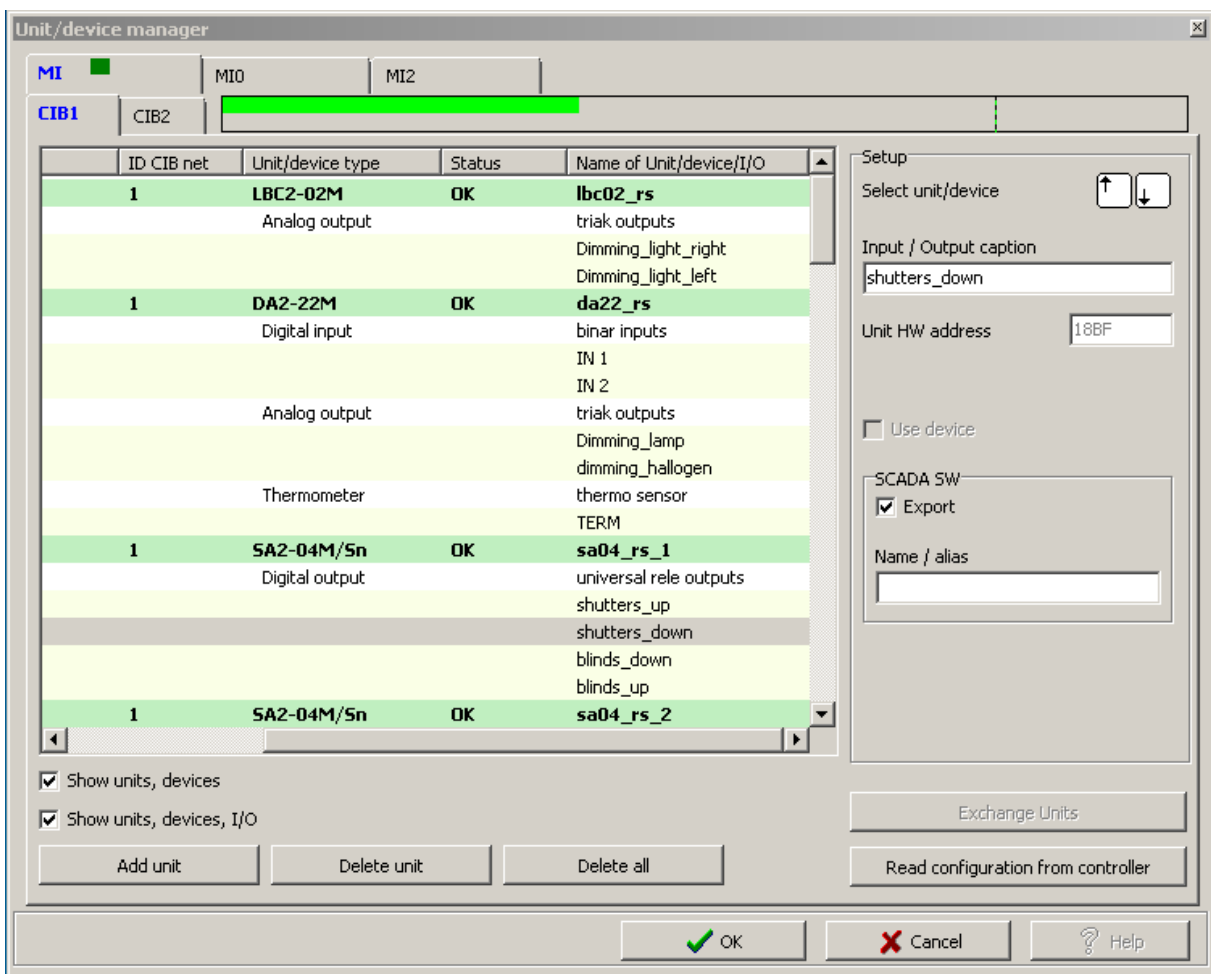
10. Data export from iDM (iNELS Designer&Manager)

IDM Software enables export of variables (input/outputs, time programs, counters and timers) by means of which iHC applications can be created to control the entire installation. The below text describes how this export should be performed.

Export of inputs/outputs

Export of inputs/outputs is performed from the window “Administrator of units/devices” where you need to tick the option “Export for visualisation” at desired inputs/outputs. If you wish to name the given input/output, use the column “Naming/alias”.

Those inputs/outputs that are used in some event need not be ticked. Export of these used inputs/outputs then proceeds automatically.



Export of time programs

Export of time programs is performed from the window "Administrator of time/weekly programs" where you need to click on the menu "Set export for visualisation".

Time/week schedule manager

Name: Temperature (HVAC) schedule:

Mode setup

	Temperature	Comfort	Normal	Depression	Minimum
Minimum	17.0 °C	Light Blue	Light Blue	Light Blue	Light Blue
Depression	30.0 °C	Light Blue	Light Blue	Light Blue	Dark Green
Normal	26.0 °C	Light Blue	Light Blue	Dark Green	Dark Green
Comfort	25.0 °C	Light Blue	Dark Green	Dark Green	Dark Green
Comfort	27.0 °C	Light Blue	Dark Green	Dark Green	Dark Green
Normal	24.0 °C	Light Blue	Light Blue	Dark Green	Dark Green
Depression	17.0 °C	Light Blue	Light Blue	Light Blue	Dark Green
Minimum	15.0 °C	Light Blue	Light Blue	Light Blue	Light Blue

Time stamp setup

Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday

02:00 | 05:00 | 08:00 | 11:00 | 14:00 | 17:00 | 20:00 | 23:00

Comfort
Normal
Depression
Minimum

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Copy this schedule to ...

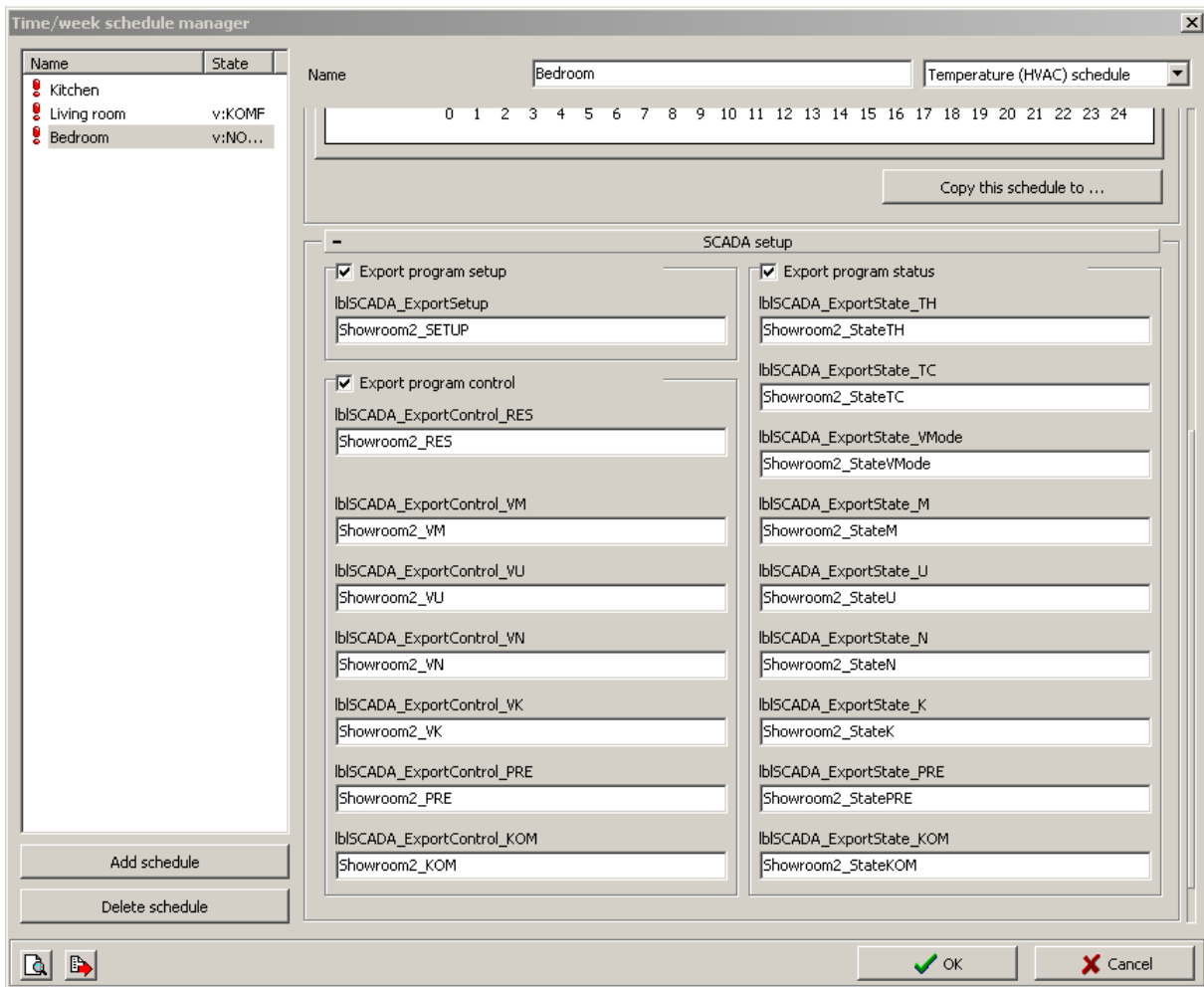
SCADA setup

Add schedule
Delete schedule

OK Cancel

In this menu you need to tick all three options whilst weekly time program for heating/cooling and two-status time program can be exported.

- "Export program setting", i.e. time symbols and mode settings.
- "Export program control", i.e. individual modes (minimum, attenuation, normal, comfort) can be enforced time symbols and mode settings.
- "Export program statuses", i.e. view of program statuses (4 modes, desired temperature, current temperature)



Export of time events

Export of time events is performed from the window "Administrator of time events" where you need to tick the option "Export for visualisation". Again, given time event has to be named for the needs of export.

The screenshot shows the 'Time events management' window with the following configuration:

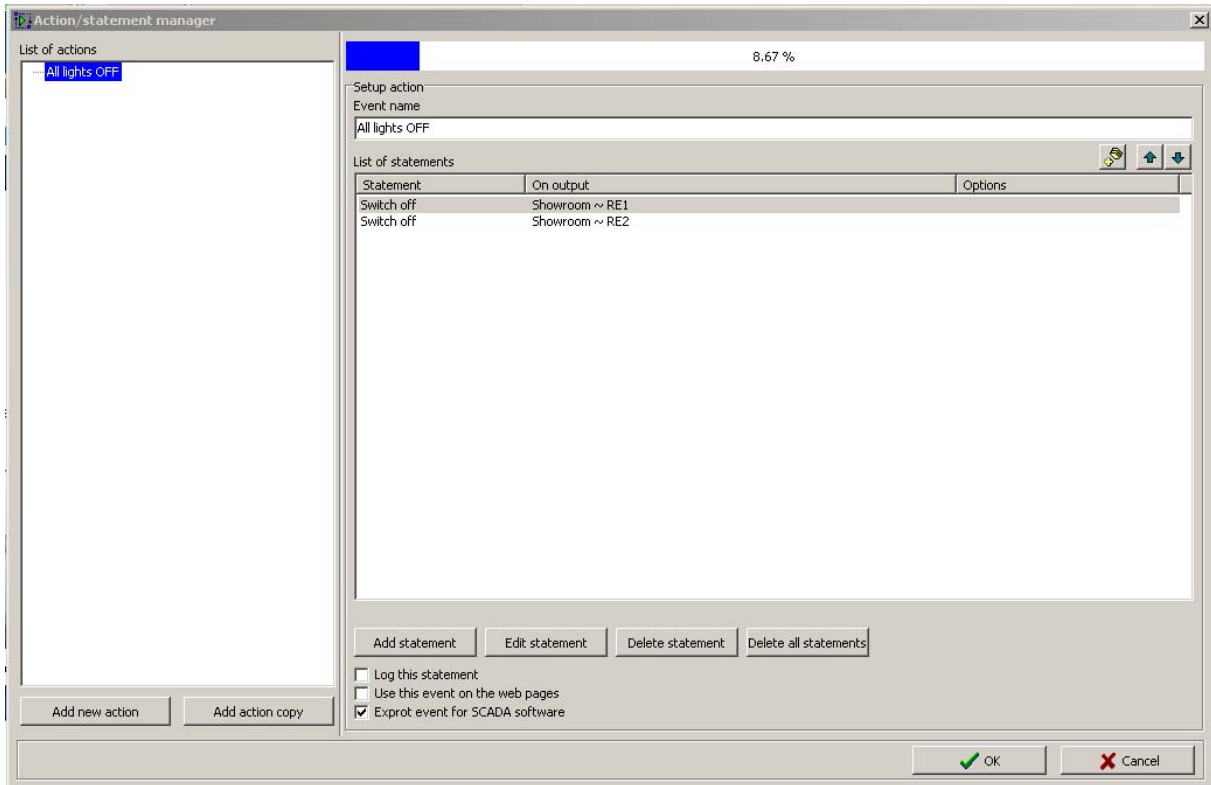
- List of events:** A table with one entry:

Name of event
14.02.2014 08:15:59
- Name of event:** watering
- Time of activation/spread:** 00:00:06.000 (start) and 00:00:00.000 (end)
- Event is active:**
- system_start:** system_start
- Type of event:**
 - Each day in week
 - Day in month
 - Each day in month
- Year setting:**
 - leden
 - únor
 - březen
 - duben
 - květen
 - červen
 - červenec
 - srpen
 - září
 - říjen
 - listopad
 - prosinec
- SCADA:**
 - Export for SCADA
 - Name for SCADA:** watering

Buttons at the bottom: Add new, Delete, OK, Cancel.

Export of events

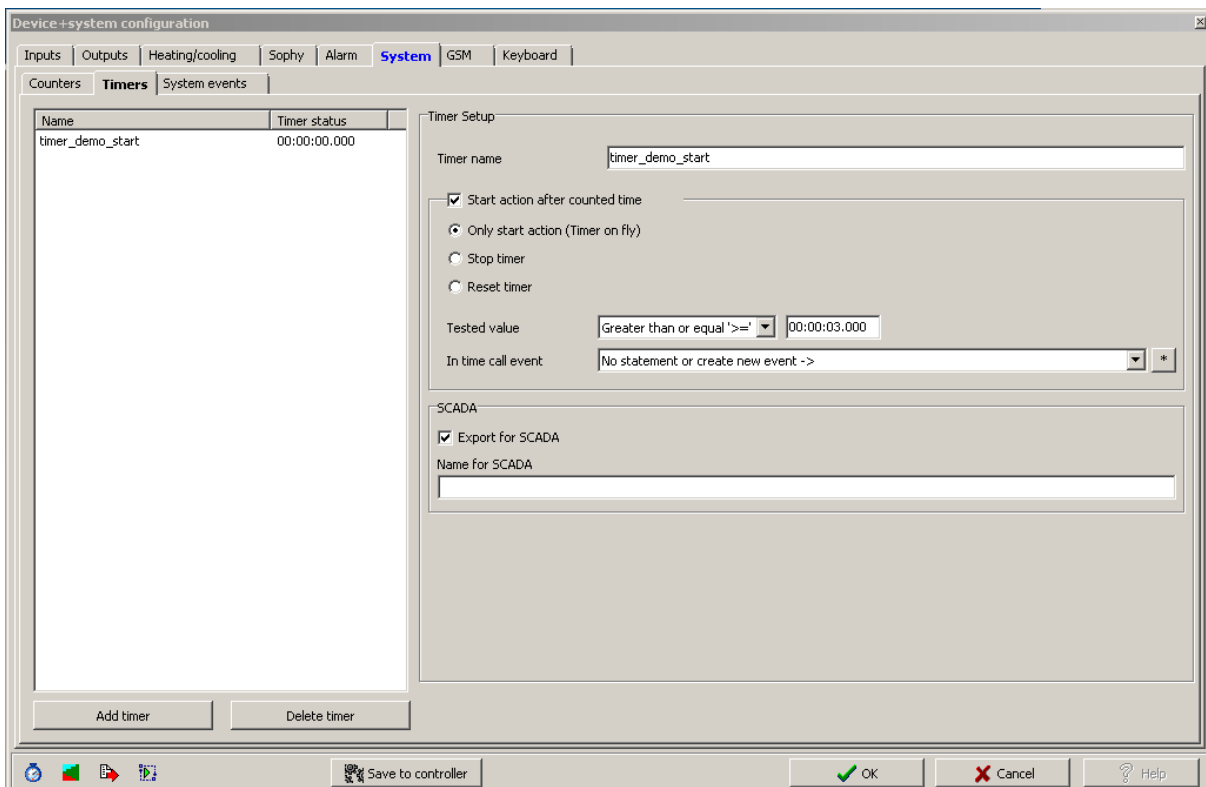
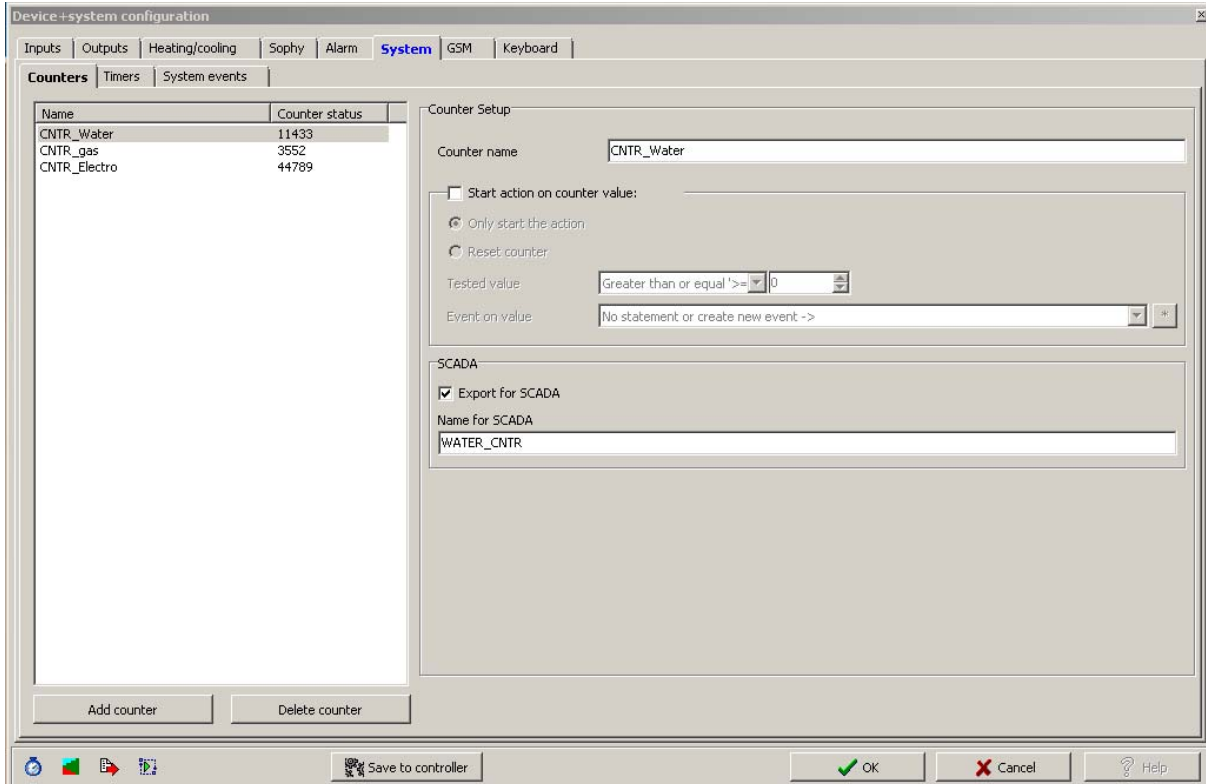
It is a special option of export for visualisation. It is direct export of event from the window “Administrator of actions/commands”. These exported actions can then be called directly from the iHC application. In the bottom part of the window in the desired event you need to tick the option “Export event for visualisation”.



Export of counters and timers

Export of counters and timers is performed from the window "System configuration", bookmark "System", sub-bookmark "Counters" or, more precisely, "Timers". You can for "Export for visualisation" at either option.

Export of counters is important whenever we want to measure and visualise energy consumption using meters with impulse output. Impulses from these instruments are read on binary inputs by means of counters.



Upon placing a request for exporting of all variables, suitable setting of export manner has to be selected, as well as the path where the *.pub file will be saved. This is performed in the "Settings".

Select "Create export of configuration for visualisation" in the "Export setting" section and then "...Visualisation". Then set the path where the *.pub file will be saved.

If you tick "Export only marked IO", only those i/o will be exported that we have selected in the window "Administrator of units/devices" on the previous page. "Extended export of binary inputs" represents export of binary inputs with counter. "Report change in export files " is an option that provides and reports any potential displacement of variable addresses in memory registries that might originate when a configuration is saved. "Export mapping of user actions" is an option for export of user actions, e.g. commands for relay groups, for lighting installation groups, and the like.

