

Roger Access Control System 5 v 2

Application note no. 033

Document version: Rev. A

Hotel applications

Note: This document refers to RACS 5 v2.0.8 or higher

Introduction

RACS 5 system enables hotel automation control mainly in regard of room access and 230VAC power supply and it offers control of such hotel signalizations as Do not disturb, Make up room, Luggage service and others. Additionally hotel signalizations can be monitored in VISO management software with Hotel Rooms Monitor and Maps Monitor.

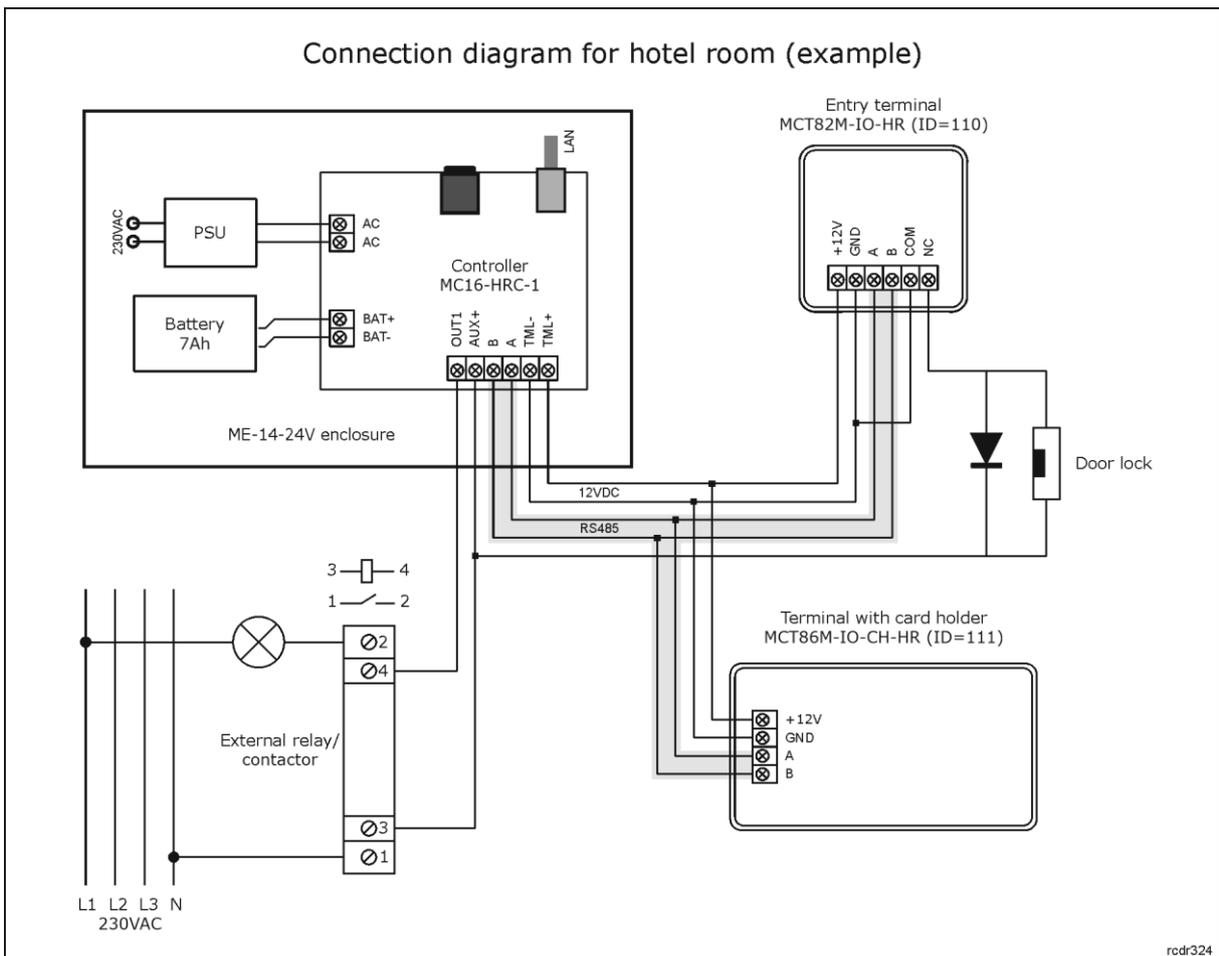
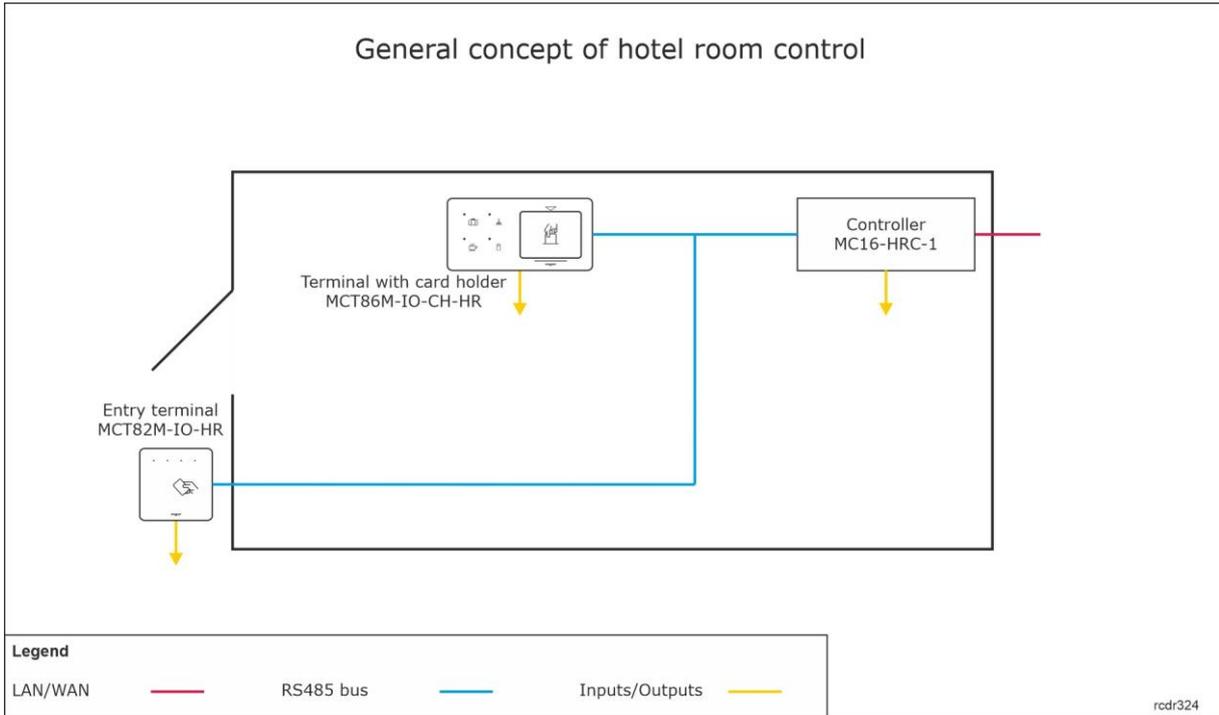
RACS 5 system can be integrated by means of Integration Server with third party systems/software such as for example hotel reservation system, accountancy system, etc. Due to integration capabilities the RACS 5 can actually offer functionalities which are not available as a standard.

Single MC16-HRC controller depending on its license can control from 1 to 4 hotel rooms. RACS 5 system additionally offers MC16-PAC controllers for door access control in a building, MC16-EVC controllers for access control in elevators, MC16-LRC controllers for locker access control, MC16-AZC controllers for car parks and other objects where it is required to control the number of people and their entries to a zone. External devices and systems can be controlled by RACS 5 outputs using MC16-BAC controller and Automation nodes. The example of MC16-BAC application is light scenes control. Terminals for hotel applications operate with encrypted Mifare proximity cards to prevent use of non-native cards and cloning of the original ones.

The AN033 note explains the application of MC16-HRC controllers in hotel rooms. Remaining types of controllers are described in other application notes which are available at www.roger.pl.

General scenario of operation

In the general scenario of operation it is assumed that entry terminal and card holder terminal are connected to MC16-HRC controller. MCT82M-IO-HR is the dedicated entry terminal but any other MCT series terminal can also be applied for such purpose. In case of card holder terminal, MCT82M-IO-CH or MCT86M-IO-CH can be installed. The first one offers only card holder while the second one additionally offers four function keys for hotel signalization control.



Notes:

- The connection diagram is exemplary. Alternatively, MC16-HRC controllers for 2, 3 and 4 rooms can be applied. In such case it is recommended to use MC16-PAC-KITs with MC16-HRC controllers instead of MC16-PAC controllers.
- The system can be further extended in regard of controlled rooms by installation of more MC16-HRC controller with their terminals.
- According to the diagram the 230VAC power supply is controlled by external relay/contactor connected to OUT1 output of MC16 controller but any other transistor or relay output on controller board or any other device on RS485 bus can be used for such purpose e.g. REL1 relay output of MCT86M-IO-CH-HR terminal.
- According to the diagram, door lock is controlled by MCT82M-IO-HR relay but any other output of any device within particular RS485 bus can be used for such purpose e.g. REL1 relay output of MC16 controller.
- The total number of MCT/MCX devices on RS485 bus of particular access controller cannot exceed 16 available addresses in ID=100-115 range. Addresses of devices in the diagram are exemplary.
- Maximal distance for RS485 bus equals to 1200m and all devices on the bus should have common GND.

Note: The latest versions of MCT82M-IO-HR terminal are no longer equipped with bell touch button on their front panels.

Hotel room access control

The configuration of hotel room access control is similar to read-in door access control in RACS 5 system. In order to configure the system and access to a room:

- Install VISO software and create database according to AN006 application note.
- Configure read-in door with Add Access Door wizard in VISO software indicating MCT82M-IO-HR as *Read-in Access Terminal* and its REL1 relay as *Door Lock Output*.

Power supply control in hotel room (without Authorisations)

Power supply in hotel room can be controlled by means of terminal with card holder using external relay or contactor according to the diagram. In the scenario below, the 230VAC power supply is activated by proximity cards of users enrolled in the system regardless of their Authorisations. The disadvantages of this approach are such that access to card holder cannot be limited to selected users of the system and power supply switch off delay after card is removed cannot be implemented. In order to configure power supply control according to this scenario:

- In the navigation tree of VISO software within particular MC16 access controller double click *Access Points* command and select *Add* button in order to create point with exemplary name *Room 101_holder*. Close the window with OK button.
- In the bottom select *Access Terminals* tab and then *Add* button.
- In the opened window in the *Object* field of *Details* area select the terminal MCT86M-IO-CH-HR (ID=111) from the diagram. Close the window with OK button.

Add Access Terminal

General

Name: C1_111_READER

Description:

Details

Object: MCT86M-IOCHHR v1.x_192.168.10.75_111_READER

Device: MCT86M-IOCHHR v1.x

Name: READER

Comment: Mifare reader

IP Address: 192.168.10.75

RS Address: 111

Hardware Version: 1.x

Firmware Version: 1.1.18.212

OK Cancel

- In the bottom select *Outputs* tab and then *Add* button.
- In the opened window select the button  to indicate the location of output.

Add Output

General

Name: C1_000_OUT1

Description:

Object

Name: MC16 v1.x_192.168.10.75_0_OUT1

Device: MC16 v1.x

Label: OUT1

Comment: OUT1 on MC16 access controller

Type: OUT 1/[5]: ON | Normal Polarity | Binary With Modulation

IP Address: 192.168.10.75

RS Address: 0

Additional Options

OK Cancel

- In the next window in the field *Name* select the output. According to the diagram that will be OUT1 on MC16 controller board. Close the window with *OK* button.

- In the opened window in the *Function* field assign the function [073]: *Card in Holder Status*. Close the window with *OK* button.
- For the same Access point in the top of the screen select *Edit* button.
- In the opened window select *Advanced Options* tab and then in *Card Holder Location* assign previously created Access Terminal with card holder. Close the window with *OK* button.
- Upload settings to controller.

The screenshot shows the 'Edit Access Point' dialog box with the 'Advanced Options' tab selected. The 'Card Holder Location' field is highlighted with a red box and contains the value 'C1_111_READER'. Other fields include ID (2), Name (Room 101_holder), LCD Message, Keypad Shortcut (No shortcut), Description, Thread Level (1), Cancel Door Open Too Long Alarm after access is granted (checked), Cancel Door Forced Alarm after access is granted (checked), Access must be followed by door opening (unchecked), Two Users Mode (unchecked), Deny access on random personal check (unchecked), Access Direction (None), and Buzzer Signalization Priority (1). The dialog has OK and Cancel buttons at the bottom.

Power supply control in hotel room (with Authorisations)

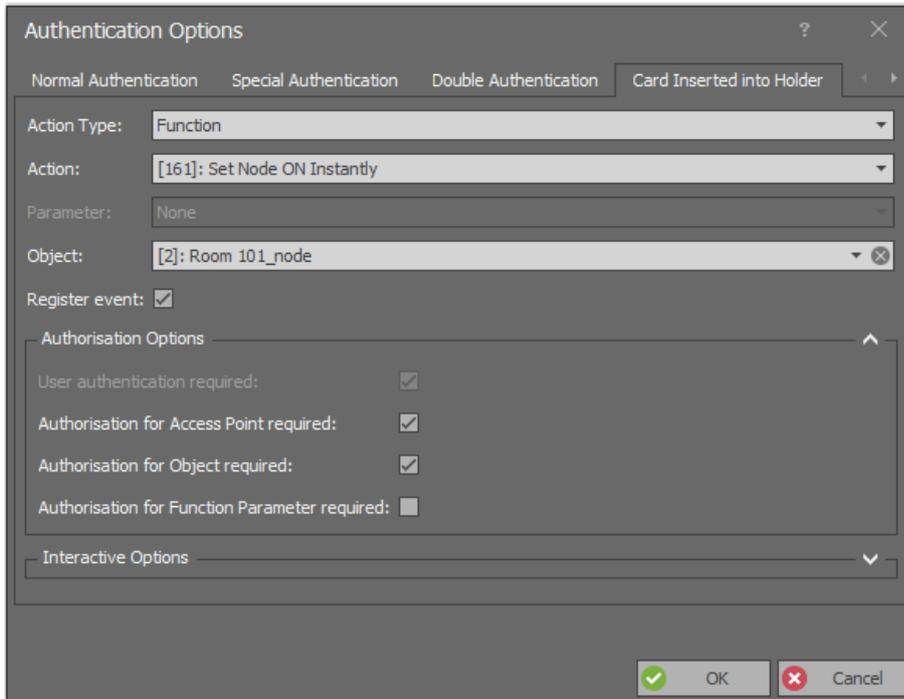
Power supply in hotel room can be controlled by means of terminal with card holder using external relay or contactor according to the diagram. In the scenario below, the 230VAC power supply is activated only by user with adequate Authorisation and it is possible to configure supply switch off delay after card is removed. In order to configure power supply control according to this scenario:

- In the navigation tree of VISO software within particular MC16 access controller double click *Automation Nodes* command and select *Add* button in order to create node with exemplary name *Room 101_node*. Close the window with *OK* button.
- For the created node select *Outputs* tab in the bottom and then *Add* button.
- In the opened window select the button  to indicate the location of output.
- In the next window in the field *Name* select the output. According to the diagram that will be OUT1 on MC16 controller board. Close the window with *OK* button.

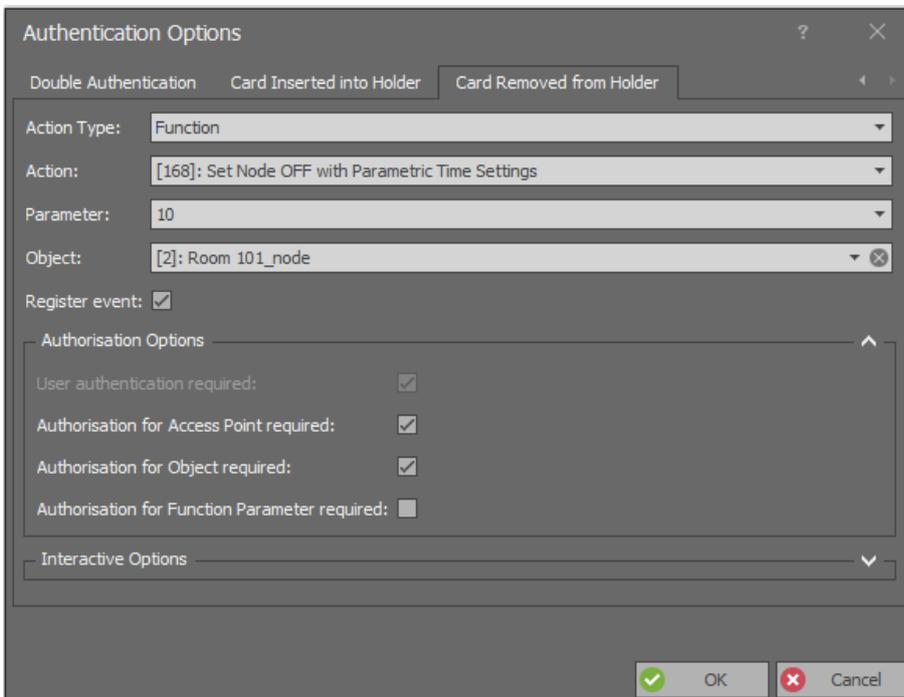
The screenshot shows the 'Add Output' dialog box with the following fields and values:

- General**
 - Name: C1_000_OUT1
 - Description: (empty)
- Object**
 - Name: MC16 v1.x_192.168.10.75_0_OUT1 (highlighted with a red box)
 - Device: MC16 v1.x
 - Label: OUT1
 - Comment: OUT 1 on MC16 access controller
 - Type: OUT 1/[5]: ON | Normal Polarity | Binary With Modulation
 - IP Address: 192.168.10.75
 - RS Address: 0
- Additional Options**: (collapsed)
- Buttons: OK, Cancel

- In the opened window in the *Function* field assign the function [021]: *Node Status*. Close the window with *OK* button.
- In the navigation tree of VISO software within particular MC16 access controller double click *Access Points* command and *Add* button in order to create new point with exemplary name *Room 101_holder*. Close the window with *OK* button.
- In the bottom select *Access Terminals* tab and then *Add* button.
- In the opened window in the *Object* field of *Details* area select the terminal MCT86M-IO-CH-HR (ID=111) from the diagram. Close the window with *OK* button.
- For the same Access point in the top of the screen select *Edit* button.
- In the opened window select *Advanced Options* tab and then in *Card Holder Location* assign previously created Access Terminal with card holder. Close the window with *OK* button.
- In the bottom select *Authentication Options* tab and then *Edit* button.
- In the opened window select *Card Inserted into Holder* tab and for *Action Type* select *Function* while for *Action* select the function [161]: *Set Node ON Instantly*. Select previously created *Room 101_node* as *Object*. In order to simplify further configuration of Authorisations unselect the option *Authorisation for Function Parameter Required*.



- In the same window select *Card Removed from Holder* tab and for *Action Type* select *Function* while for *Action* select the function *[168]: Set Node OFF with Parametric Time Settings*. Select previously created *Room 101_node* as *Object*. Additionally select a value in *Parameter* field to define delay in seconds for deactivation of Automation node and associated OUT1 output on MC16 board. Due to this parameter, the power supply in room will be switched off with delay and not instantly when card is removed from holder. In order to simplify further configuration of Authorisations unselect the option *Authorisation for Function Parameter required*.



- Upload settings to controller.

To complete the configuration of power supply control it is necessary to define Authorisations for *[161]* and *[168]* functions and selected nodes and then to assign such Authorisations to users. The configuration of necessary Authorisations is explained below in the section 'Users management'.

Hotel signalizations

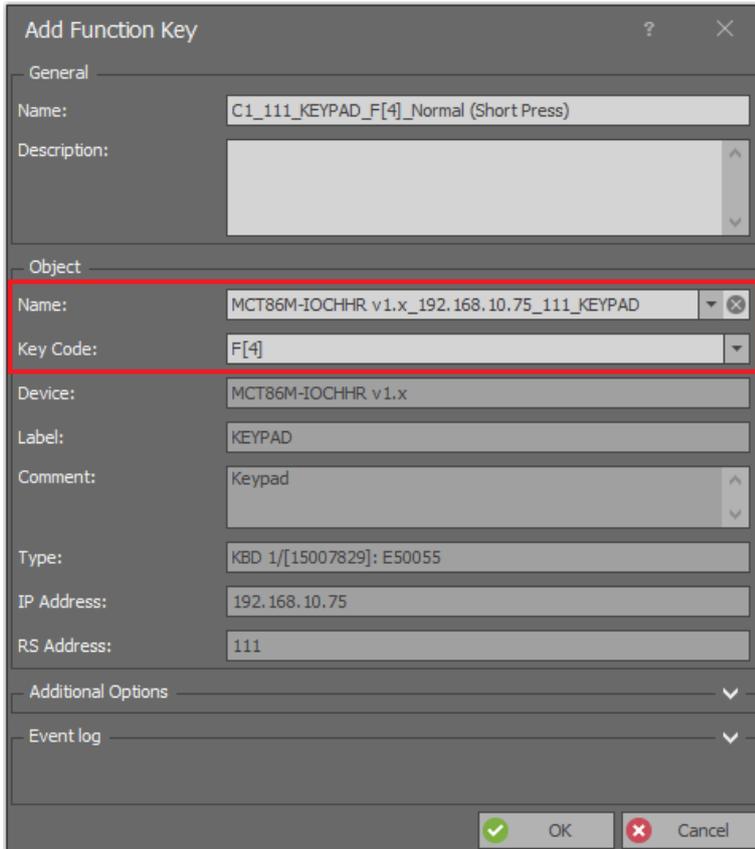
User can switch such hotel signalizations as Do not disturb, Make up room and others with buttons. For that purpose, touch keys of MCT86M-IO-CH-HR terminal, touch keys of MCT82-FK panel or external buttons connected to controller, expander(s) or terminal(s) can be used.

Additionally, statuses of hotel signalizations can be visible in monitors on the level of VISO management software and on LED indicators and output lines of MC16 controller and its peripheral devices. Hotel signalizations can also invoke automatic reactions of the systems e.g. alerts displayed in VISO software.

Switching the signalization Do not disturb

In order to enable switching the signalization Do not disturb with  (F4) function key at MCT86M-IO-CH-HR terminal:

- Assuming that Access point with MCT86M-IO-CH-HR has already been defined within previous configuration of power supply control, double click *Access Points* command in the navigation tree of VISO software, select the Access point and in the bottom select *Function keys* tab and then select *Add* button.
- In the opened window select the button  to indicate the location of function key.
- In the next window in the field *Name* of *Object* area select the terminal i.e. MCT86M-IO-CH-HR (ID=111) from the diagram and then select *F[4]* as *Key Code*. Close the window with *OK* button.



The screenshot shows the 'Add Function Key' dialog box with the following fields:

- General:** Name: C1_111_KEYPAD_F[4] Normal (Short Press); Description: (empty)
- Object:** Name: MCT86M-IOCHHR v1.x_192.168.10.75_111_KEYPAD; Key Code: F[4]
- Device:** MCT86M-IOCHHR v1.x
- Label:** KEYPAD
- Comment:** Keypad
- Type:** KBD 1/[15007829]: E50055
- IP Address:** 192.168.10.75
- RS Address:** 111
- Additional Options:** (dropdown arrow)
- Event log:** (dropdown arrow)

Buttons at the bottom: OK (green checkmark), Cancel (red X).

- In the opened window in the *Function* field assign the function [189]: Set Alternately Do Not Disturb Flag ON/OFF. Close the window with *OK* button.
- Upload settings to controller.

Do not disturb signalization on LED indicators

In order to configure Do not disturb status on LED indicators:

- On the list of Access points select the point with previously configured  (F4) function key of MCT86M-IO-CH-HR terminal, in the bottom select the tab *Outputs* and then *Add* button.
- In the opened window select the button  to indicate the location of output.
- In the next window in the field *Name* of *Object* area select the LED indicator located on the panel near the  function key. According to the diagram it is LED DO NOT DISTURB at MCT86M-IO-CH-HR terminal. Close the window with *OK* button.

The screenshot shows the 'Add Output' dialog box. The 'Object' section is highlighted with a red border. The 'Name' field in the 'Object' section contains the text 'MCT86M-IOCHHR v1.x_192.168.10.75_111_LED DO NOT DISTURB'. Other fields in the dialog include 'Name' (C1_111_LED DO NOT DISTURB), 'Description', 'Device' (MCT86M-IOCHHR v1.x), 'Label' (LED DO NOT DISTURB), 'Comment', 'Type' (OUT 7/[7]: ON | Reverse polarity | Binary With Modulation), 'IP Address' (192.168.10.75), and 'RS Address' (111). At the bottom, there are 'OK' and 'Cancel' buttons.

- In the opened window in the *Function* field assign the function *[227]: Do not Disturb Flag Status*. Close the window with *OK* button.
- As a result, every time Do not disturb signalization is activated with the  function key then near red LED indicator is also switched on to confirm that the button was pressed.
- In similar way within the same Access Point with MCT86M-IO-CH-HR terminal define another output but this time select LED DO NOT DISTURB at MCT82M-IO-HR entry terminal and assign the same *[227]* function.
- As a result, every time Do not disturb signalization is activated with the  function key then LED indicator is also switched on at entry terminal which can be used to inform hotel staff.
- Upload settings to the controller.

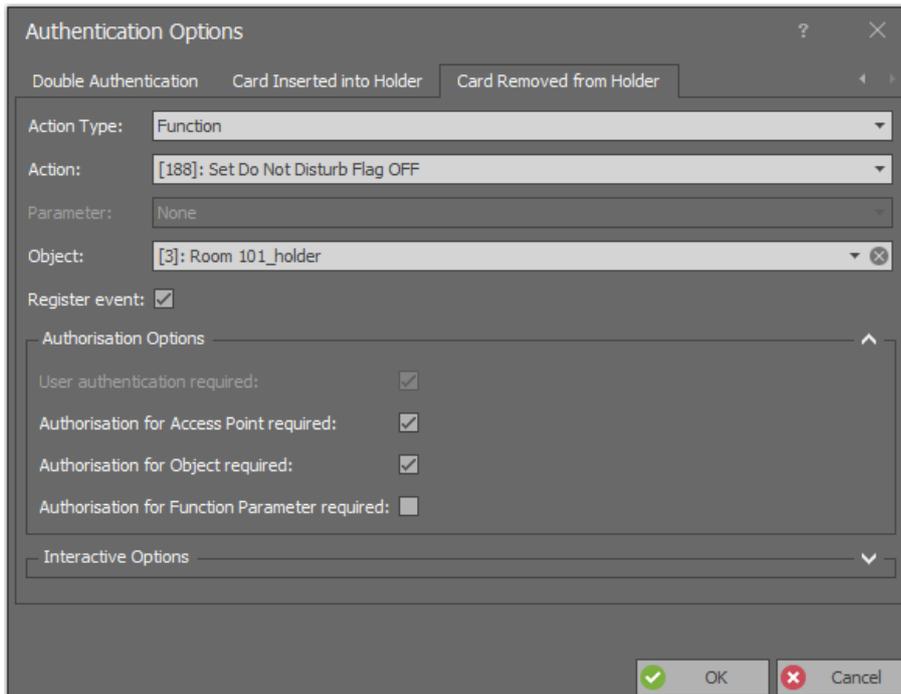
In the same way all other hotel signalizations can be configured by selection of adequate LED indicators and output functions. In order to view hotel signalizations on the level of VISO monitors it is only enough to configure methods to switch these signalizations i.e. mainly function keys.

Additional control of hotel signalizations

In RACS 5 system it is possible to define various logic connections between hotel signalizations and other statuses in the system. For example, in case of power supply control without Authorisations you can configure that when card is removed from the holder then not only 230VAC power supply is switched off but also Do not disturb signalization is switched off.

- On the list of Access points select previously created point with the name *Room 101_holder* (i.e. point with MCT86M-IO-CH-HR terminal), in the bottom select *Authentication Options* tab and then *Edit* button.
- In the opened window select *Card Removed from Holder* tab and for *Action Type* select *Function* while for *Action* select the function *[188]: Set Do Not Disturb Flag OFF*. Select previously created *Room 101_holder* as *Object*. Close the window with *OK* button.
- Upload settings to the controller.

In such scenario a user must be assigned with Authorisation for the function *[188]* at the Access point so card removing could cancel Do not disturb signalization. Authorisations are explained in the section 'Users management'.



In case of power supply control with Authorisations you can also configure that when card is removed from the holder then not only 230VAC power supply is switched off but also Do not disturb signalization is switched off.

- In the navigation tree of VISO software within particular MC16 access controller double click *Automation Nodes* command and select previously created node with the name *Room 101_holder*.
- In the bottom select *Local Commands* tab and then *Add* button.
- In the opened window select the button  to create the command.
- In the next window in the *Name* field of *General* area enter exemplary name *C1_Local Command_Room 101* and select the option *Multifunction* with *Function Limit = 2* so two individual functions could be included within the command i.e. switch power supply off function and do not disturb status switch off function. Close the window with *OK* button.

- In the opened window in the *Function* field assign the function [168]: Set Node OFF with Parametric Time Settings. Define *Parametric Time* which will act as delay in deactivation of the node and deactivation of associated OUT1 output of MC16 controller. Additionally select options *Authorisation for Access Point required* and *Authorisation for Object required*. Close the window with *OK* button.

- In the navigation tree of VISO software within particular controller double click *Access Points* command and select previously created point with the name *Room 101_holder*.
- In the bottom select *Local Commands* tab and then *Add* button.
- In the opened window select *C1_Local Command_Room 101* from the list and in the *Function* field assign the function [188]: Set Do Not Disturb Flag OFF. Additionally select such options as *Authorisation for Access Point Required* and *Authorisation for Object required*. Close the window with *OK* button.

- In the bottom select *Authentication Options* tab and then *Edit* button.
- In the opened window select *Card Removed from Holder* tab and for *Action Type* select *Local Command* while for *Action* select already created command with the name *C1_Local Command_Room 101*. Close the window with *OK* button.
- Upload settings to the controller.

According to the logic of RACS 5 system where Authorisations are created for functions, user will have to be assigned with Authorisations for both functions included in the Local Command and for both associated objects i.e. Automation node and Access point. More information on Authorisations is given in the section 'Users management'.

Users management

It is recommended to manage users by means of Person wizards which are available by selection of *Wizards* command in the top menu of VISO software and by means of Add Person Quickly wizard which can be started by selection of *Configuration->Access User Persons->Add*. Wizards are intuitive and they are also described in AN006 Application note.

Authorisation for room access

Authorisation for room access is created when Add Access Door wizard is used. It can also be configured manually by selection of *Authorisations* command and then *Basic Authorisations* in the navigation tree of VISO software. Authorisations can be assigned to Users, Access Credentials and User Groups manually or by means of available wizards.

Authorisations for power supply control

Authorisations for power supply control are necessary when the scenario described in the section 'Power supply control in hotel room (with Authorisations)' is applied. In RACS 5 system Authorisations are created for functions with additional indication of time frames and objects. In case of power supply control by means of previously described Automation nodes it is necessary to create Advanced Authorisations for functions [161]: *Set Node ON Instantly* and [168]: *Set Node OFF with Parametric Time Settings*. If the logic described in the section 'Additional control of hotel signalizations' is applied then Authorisation for function [188]: *Set Do Not Disturb Flag OFF* is also necessary. In order to create Authorisation for function [161] that would be in accordance with previous scenarios:

- In the navigation tree of VISO software expand *Authorisations* command and double click *Advanced Authorisations* command. In the opened window select *Add* button.
- In the newly opened window name the Authorisation and select the function [161] from the list. Close the window with *OK* button.

The screenshot shows the 'Add Advanced Authorisation' dialog box. The 'General' tab is active, showing the following fields:

- Enabled:**
- Name:** Auth_Room 101_supply on
- Type:** Main
- Valid from:** [Not limited] (Time: 12:00 AM)
- Valid to:** [Not limited] (Time: 12:00 AM)
- Description:** (Empty text area)

The **Details** section shows:

- Refers to:** Function
- Action:** [161]: Set Node ON Instantly (highlighted with a red box)

The **Advanced Options** section shows:

- Includes authorisations for all rules:**
- Includes authorisation for all Access Points:**
- Includes authorisation for all Function Parameters:**

At the bottom, there are **OK** and **Cancel** buttons.

- In the bottom select *Positive Rules* tab and then *Add* button.
- In the opened window in the field *Range* select *Specified* and indicate node with the name *Room 101_node*. Close the window with *OK* button.

If the Positive rule which limits the Authorisation to selected node is not defined and the option *Include authorisation for all rules* is enabled then the Authorisation is valid for all nodes. If the option *Include authorisation for all Access Points* is enabled then the Authorisation is valid for all Access points. Such Authorisation with both options enabled would be then valid for all hotel rooms. Positive rules on the other hand enable configuration of individual Authorisations for each hotel room.

Authorisation can be grouped. This is especially useful when user has to be assigned with multiple Authorisations when checked-in (e.g. for access, power supply on, power supply off, etc.). In such case instead of assignment of individual Authorisations, Authorisation Group(s) can be assigned at once. Such groups can include not only Authorisation for hotel room but also Authorisation for hotel secondary entrance, gym, etc. In order to create Authorisation Group:

- In the navigation tree of VISO software expand *Authorisations* command, double click *Authorisation Groups* command and in the opened window select *Add* button.
- Name the group and close the window with *OK* button.
- In the bottom select *Authorisations* tab and *Assign* button to select previously created Basic and Advanced Authorisations. Authorisation Group can be assigned to user when *Add Person Online* or *Edit Person Online* wizards are used.

Hotel Rooms Monitor

Hotel Rooms Monitor is available in VISO software and it is dedicated to monitoring of such hotel signalizations as *Do not disturb*, *Make up room* and other by system operator. The monitor does not require configuration but it is necessary to start adequate system process for the monitor. In order to start the process:

- In the navigation tree of VISO software double click your *Communication Server*.
- In the opened window select *Processes* tab.
- On the list right click *Hotel Rooms monitoring process*, select *Edit*.
- In the opened window select *Enabled*. Close the window with *OK* button.

Additionally in case of the monitor it is necessary to give users methods to switch hotel signalizations. This is possible by means of function keys of MCT86M-IO-CH-HR terminal or MCT82-FK panel.

The monitor is started by selection of *Monitoring* in the top menu of VISO software and then *Hotel Rooms Monitor*. The example of monitor is given in figure below. The list of monitored Access points can be filtered.

Name	Do Not Disturb	Do Not Disturb Activation Time	Call	Call Assistance Activation Time	Make Up Room	Make Up Room Activation Time	Call Service	Call Service Activation Time	Checked In	Checked In Activation Time	Cafeteria	Cafeteria Activation Time	Luggage Service	Luggage Service Activation Time
[2]: Room 101_IN	Inactive	11/20/2018 1...	Inactive	11/20/2018 1...	Inactive	11/20/2018 1...	Inactive	11/20/2018 1...	Inactive	11/20/2018 1...	Inactive	11/20/2018 ...	Inactive	11/20/2018 11:...
[3]: Room 101_holder	Active	11/20/2018 1...	Inactive	11/20/2018 1...	Inactive	11/20/2018 1...	Inactive	11/20/2018 1...	Inactive	11/20/2018 1...	Inactive	11/20/2018 ...	Inactive	11/20/2018 11:...

Maps Monitor

Maps Monitor is available in VISO software and it is dedicated to monitoring of objects in RACS 5 system. It can be applied in similar way as Hotel Rooms Monitor but it enables monitoring of hotel signalizations on the map instead of a list. The same as in case Hotel Rooms Monitor it requires the activation of Hotel Rooms monitoring process. In order to configure and start the map:

- In the top menu of VISO software select *Maps* command and then *Maps* icon.
- In the opened window select *Add* button.
- In the next window name the map and use *Load Background* button to load picture in bmp, gif, jpg, svg, dwg, etc. format. Close the window with *OK* button.
- In the bottom select *Run Designer* button.
- In the opened window drag and drop required objects on the map. In case of hotel applications that would be mainly Access points. Close the window with *OK* button.
- In the top menu select *Monitoring* and then *Maps Monitor*. The example of map is shown below.

Additionally in case of the monitor it is necessary to give users methods to switch hotel signalizations. This is possible by means of function keys of MCT86M-IO-CH-HR terminal and MCT82-FK panel.

More information in Maps is given in AN055 application note.



Automatic alerts

RACS 5 system can generate actions in response to events generated in the system e.g. it can send email when the signalization Make up room is activated by guest. The action could be email sending, mobile text (SMS) sending, HTTP and TCP redirecting, etc. More information on such actions is given in AN041 application note.

Integrations

RACS 5 system offers hotel automation control. It is possible to make software integration of RACS 5 system with third party systems used in a hotel. For that purpose the Integration Server is offered for RACS 5 system. The server is based on WCF technology and it enables to gather information on RACS 5 statuses, to configure users and to upload various remote commands. The Integration Server is part of RogerSVC software pack which in its installation folder includes the documentation and software example for the integration.

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