

# Roger Access Control System 5 v 2

Application note no. 056

Document version: Rev. A

## Integration with Clex wireless locks

Note: This document refers to RACS 5 v2.0.6 or higher

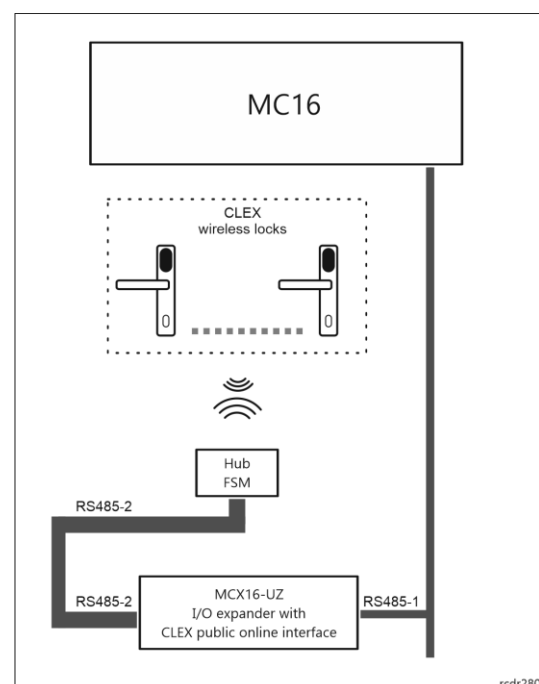
### *Introduction*

Clex public online (UHLMANN&ZACHER) wireless locks are battery supplied devices with internal locking mechanism and built-in reader for MIFARE® or other proximity cards. These devices can be installed on doors and connected to RACS 5 system to offer access control. In order to connect them to MC16 type (e.g. MC16-PAC) access controller it is necessary to use MCX16-UZ expander as an intermediary device.

### *Integration principles*

MC16 access controller can operate with multiple MCX16-UZ expanders on RS485 bus (ID=100-115) in parallel with other MCT/MCX series devices. The expander can operate with single FSM hub, which can communicate wirelessly with up to 16 locks. However the MC16 type controller depending on its version can control up to 16 doors (locks). Additionally the number of locks which can be operated by MCX16-UZ depends on its license file stored on memory card.

The integration enables the use of Clex locks as Access Terminals in RACS 5 access control system. It is possible to define users with their proximity cards and to assign them with Authorizations. Additionally MC16 controller can block particular locks or open them permanently using Door Modes. The state of batteries can be reported in RACS 5 system.

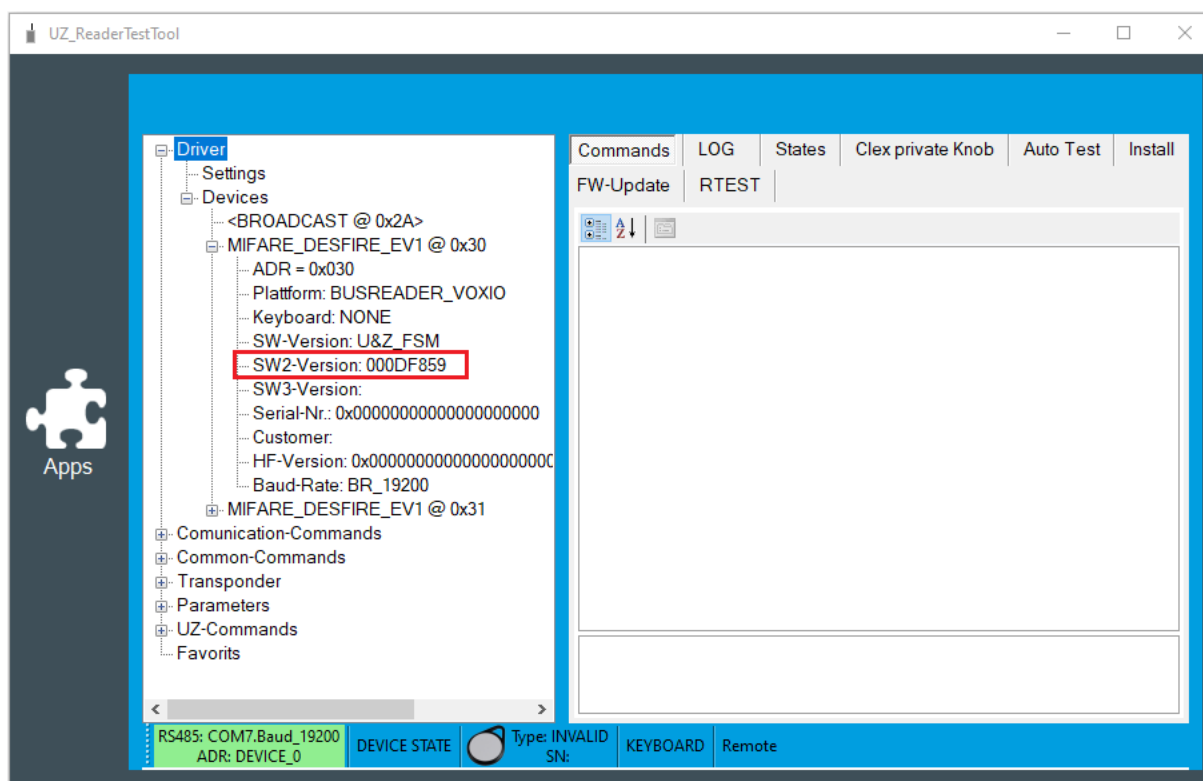


### *Clex public online installation and configuration.*

Install Clex devices according to UHLMANN@ZACHER guidelines. Locks and hubs as well as their logical connections can be configured with Clex proximity cards and software. More information on Clex devices is given in manuals offered by their manufacturer.

## Notes:

- Write down serial numbers (8 ASCII characters) of coupled locks. It is necessary to enter them later when MC16-UZ expander is configured with RogerVDM software.



## RACS 5 preliminary configuration

### Low level configuration (RogerVDM)

It is necessary to make low level configuration of MC16 controller and MCX16-UZ expander before RACS 5 system is started. Low level configuration of MC16 controller is explained in AN006 application note which is available at [www.roger.pl](http://www.roger.pl). Such configuration mainly concerns IP address and communication key.

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Note: Low level configuration of MCX16-UZ expander cannot be conducted in VISO v2 program as it may be made only with RogerVDM program.

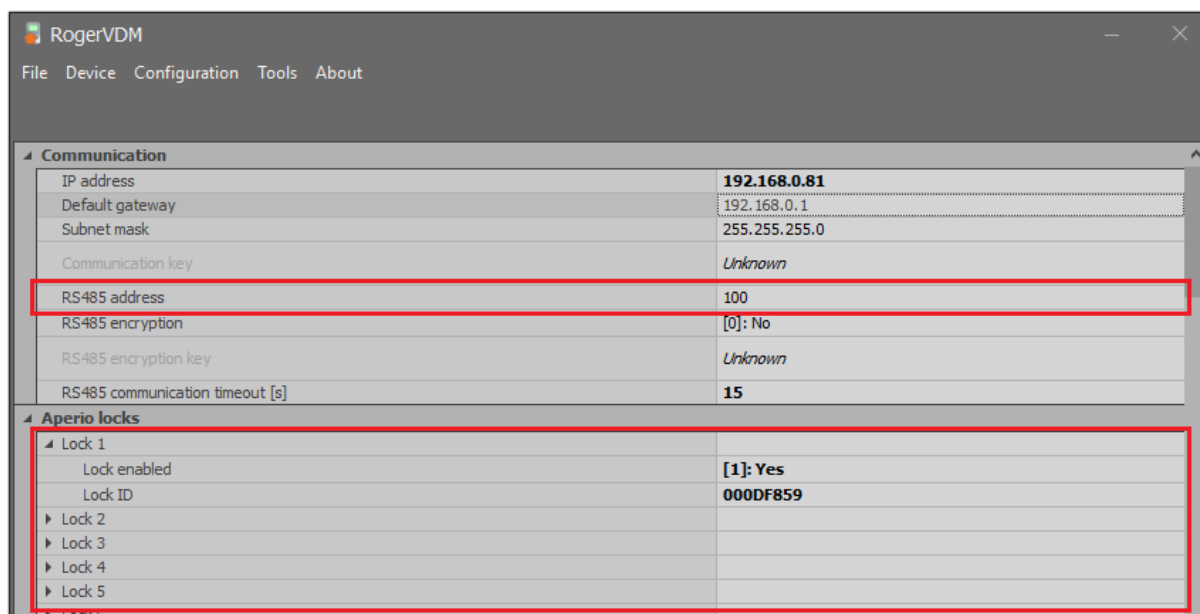
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In case of expander low level configuration it is necessary to define:

- Expander address on RS485 bus in range of 100-115.
- 8 character identifiers of locks operated by expander.

Optionally you can:

- Change default 192.168.0.81 IP address and default 'admin' communication key of the expander.
- Add comments to such lock objects as *CDI*, *OUT* and *PWR* in order to facilitate the identification of these object in VISO software.



### High level configuration (VISO)

Make preliminary configuration of RACS 5 system according to AN006 Application note in regard of connection with database, configuration of RogerSVC servers and detection of controller and its peripheral devices. The expander does not require specific configuration in VISO software. It is enough to detect it along with its MC16 controller.

### Access Doors and Authorizations

The logical connections of outputs, Access Terminals, Access Points and Access Doors can be done step by step in VISO software in the same way as in case of MC16 access controller and MCT readers. Nevertheless the most simple and convenient method is to use Add Access Door wizard by selecting *Wizards* command in the top menu of VISO software. This wizard enables also to configure access Authorizations in RACS 5 system and such Authorizations can be assigned to users. If the Authorization is supposed to enable access in defined periods (e.g. 8:00 AM till 4:00 PM) then it is necessary to define schedule(s) in advance by selection of *Schedules* command in the navigation tree of VISO software.

Add Access Door wizard is described in AN006 application note which is available at [www.roger.pl](http://www.roger.pl). Following guidelines must be considered when Access Door with Clex lock is configured:

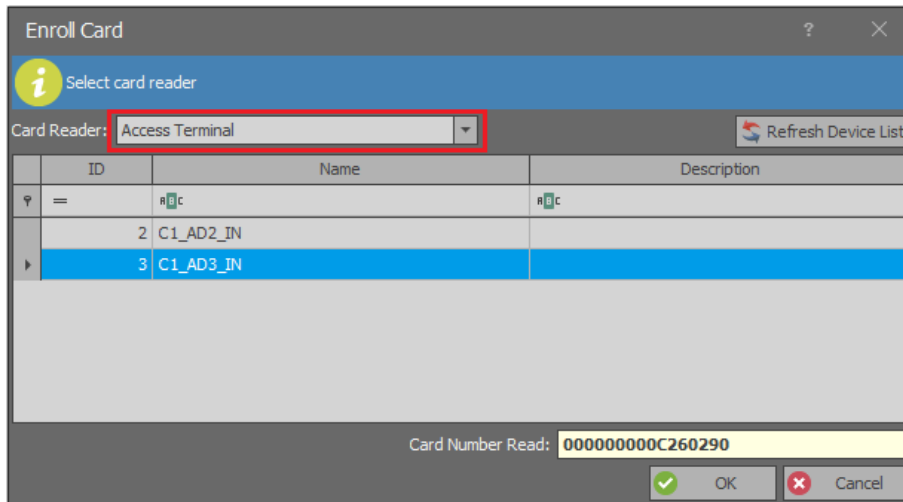
- Doors with Clex locks are read-in doors.
- *Read-in Access Terminal* and *Door Lock Output* are located within SDV objects.
- Lock opening time after access granting is by default set to 4s. The time configured with parameter *Lock Pulse* is ineffective.

When the configuration with Add Access Door wizard is completed then it is necessary to manually modify function of Access Door output used for door opening.

- In the navigation tree of VISO software within particular MC16 access controller double click *Access Doors*.
- In the opened window select recently created door with Clex lock.
- In the bottom select *Outputs* tab and then *Edit*.
- Change the function [31]: *Door lock*, which was applied by wizard into the function [39]: *Wireless Door Lock*.
- Upload settings to controller.

## Users management

The most convenient method to enrol Users and assign them with Authorization(s) is to use Add Person Online wizard which is available after selection of *Wizards* command in the top menu of VISO software. More wizards such as Edit Person Online and Delete Person Online are available in the same location. If Access Point with Clex lock is already defined in the system then such lock can be used to read and add card for a user.



## Door Modes

Door Modes can be used for additional control of doors with Clex locks. Following modes are available in RACS 5 system:

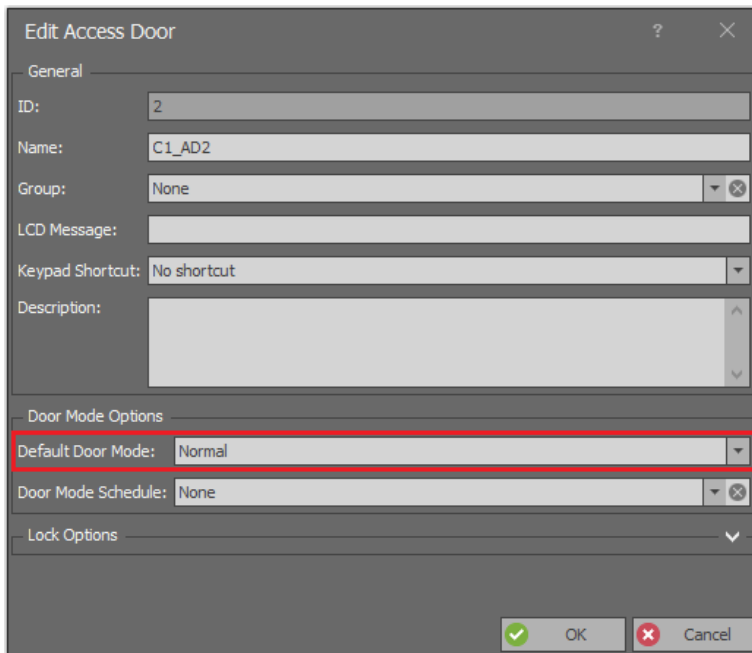
- Normal – default Door mode for which Authorization is required to open the door
- Unlocked –door is completely opened so it is enough to use handle as no user identification is required
- Conditional Unlocked –door is in Normal mode and when access is granted for user with access Authorization then it switches to Unlocked mode
- Locked –door is completely locked for all users regardless of their Authorizations

Door Mode can be controlled by schedule, input, function key or Authentication Factor (card) and Remote command. Default Door Mode is assigned within Access Door properties with respective parameter.

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Note: The actual switching of Door Mode occurs after lock is awakened. It may take several minutes before lock awakes by itself but it possible to speed it up manually by reading any card or pressing lock's handle. It is also possible to configure more frequent automatic awakening of lock but the greater is the responsiveness of a lock the quicker its battery is discharged.

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The screenshot shows the 'Edit Access Door' dialog box with the following fields:

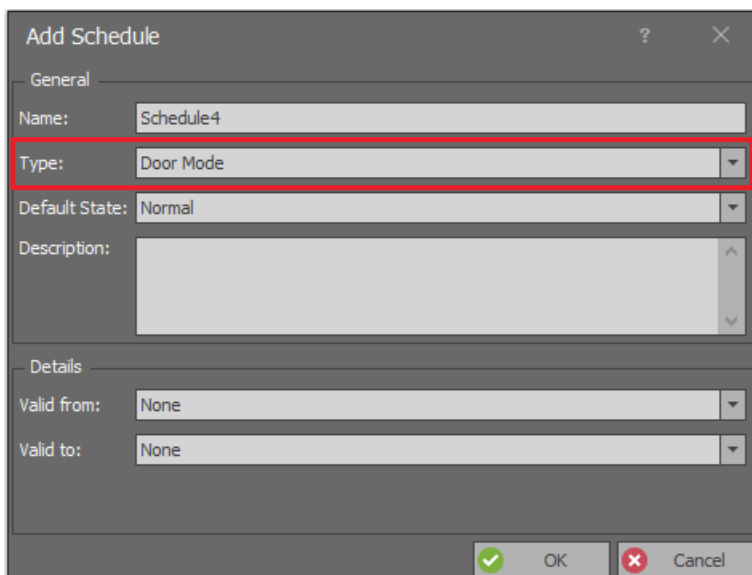
- General
  - ID: 2
  - Name: C1\_AD2
  - Group: None
  - LCD Message:
  - Keypad Shortcut: No shortcut
  - Description:
- Door Mode Options
  - Default Door Mode: Normal (highlighted with a red box)
  - Door Mode Schedule: None
- Lock Options

Buttons: OK, Cancel

### Door Mode control by schedule

Door Modes can be controlled by schedule defined as below:

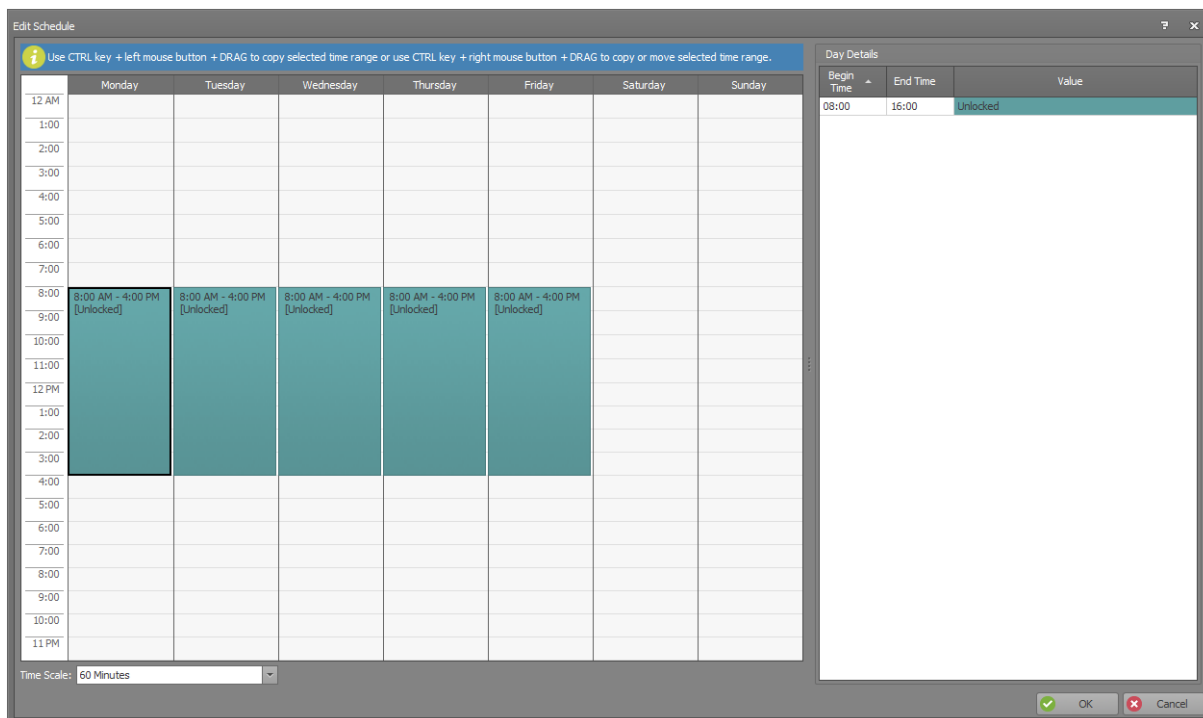
- In the navigation tree of VISO software double click *Schedules* command and select *Add* button.
- In the opened window name the schedule and select *Door Mode* in *Type* field.
- In the bottom select *Calendar Days* tab and *Edit* button to define periods with required Door Modes.
- Assign the schedule within Access Door properties in the field *Door Mode Schedule*.



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

- General
  - Name: Schedule4
  - Type: Door Mode (highlighted with a red box)
  - Default State: Normal
  - Description:
- Details
  - Valid from: None
  - Valid to: None

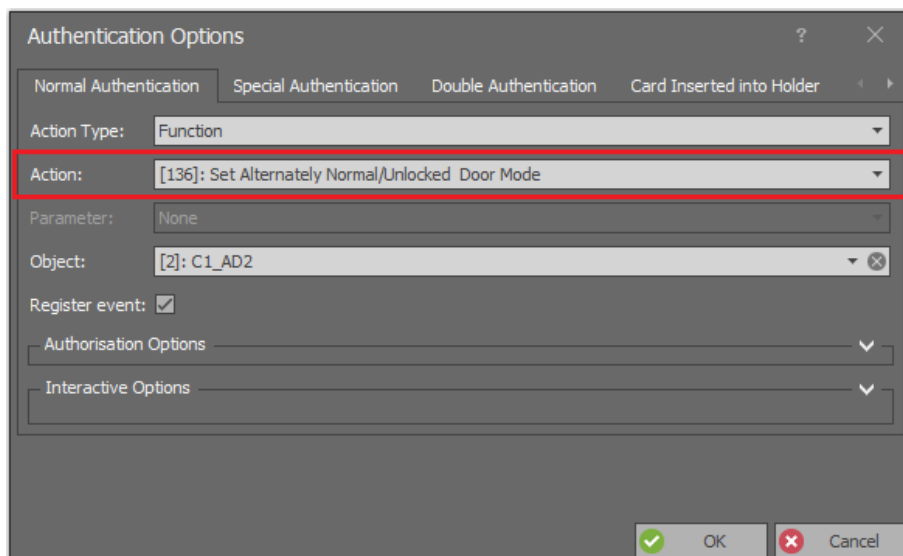
Buttons: OK, Cancel



### Door Mode switching with card

Door Mode can be switched by user identification with Authentication Factor (e.g. card). In such case it is necessary to assign adequate function for Normal Authentication. In order to enable switching of Clex lock from Normal Door Mode to Unlocked Door Mode (office mode) and vice versa:

- In the navigation tree of VISO software within particular MC16 access controller double click *Access Points* command and select the point with Clex lock from the list.
- In the bottom select *Authentication Options* tab and then *Edit* button.
- Select *Normal Authentication* tab and assign the function *[136]: Set Alternately Normal/Unlocked Door Mode*.




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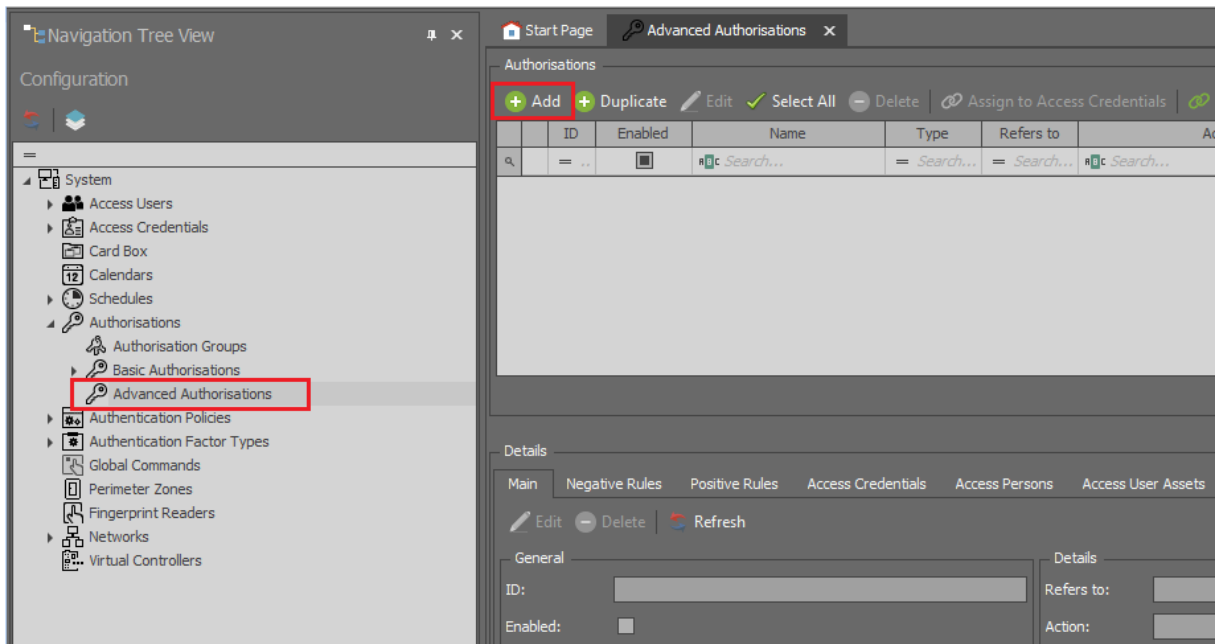
Note: In case of Clex locks, only Normal Authentication is supported.

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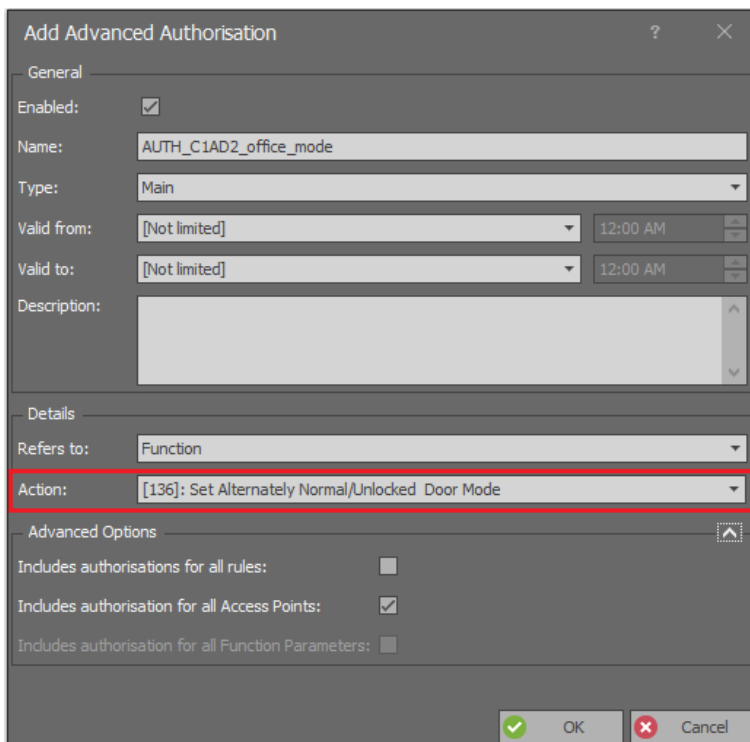
In order to use the function *[136]* it is necessary to create adequate Authorisation and assign it to a user. The Authorisation which is automatically created with Add Access Door wizard concerns the

function [151]: *Grant Door Access with Normal Lock Pulse*. In order to create Authorisation for function [136]:

- In the navigation tree of VISO software expand *Authorisations* command, double click *Advanced Authorisations* command and in the opened window select *Add* button.



- In the opened window name the Authorisation and assign the function [136]. Close the window with *OK* button.



- In the bottom select *Positive Rules* tab and then *Add* button.
- In the opened window in *Range* field select *Specified* and in indicate Access Door with the exemplary name *C1\_AD2*. If the Authorisation is supposed to be limited in time then in *Time*




*Range* field select *Specified* and in *Schedule* field assign any previously created General Purpose Maintained schedule. Close the window with *OK* button.

- Upload settings to controller.
- Assign the Authorisation to user(s) with Add Person Online wizard or with any other method.

### Composite control of Access Door

In RACS 5 system it is possible to assign more than one function for particular Authentication Option. Therefore card reading may start a series of functions or only selected functions depending on Authorisations assigned to particular user. In order to define Local command that would enable normal access granting based on the function [151] and switching to Unlocked Door mode based on the function [136]:

- In the navigation tree of VISO software within particular MC16 access controller double click Access Door command and select C1\_AD2 door.
- 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 Command1\_C1AD2* and select the option *Multifunction* with *Function Limit* = 2 so two individual functions could be included within the command i.e. temporary door opening and permanent door opening. Close the window with *OK* button.
- In the opened window assign the function [136]: *Set Alternately Normal/Unlocked Door Mode*. Additionally select options *Authorisation for Access Point required* and *Authorisation for Object required*. Close the window with *OK* button.

**Add Local Command**

General

Name: C1\_Local Command1\_C1AD2

Description:

Additional Options

Activity Schedule: Always

Multifunction:

Function Limit: 2

Events

Register event when command is used:

Local Command Event: None

OK Cancel

**Add Local Command**

General

Local Command: C1\_Local Command1\_C1AD2

Function: [136]: Set Alternately Normal/Unlocked Door Mode

Parameter: None

Register event:

Logic Function: None

Authorisation Options

User authentication required:

Authorisation for Access Point required:

Authorisation for Object required:

Authorisation for Function Parameter required:

OK Cancel

- In the navigation tree of VISO software within particular MC16 access controller double click *Access Points* command and select point with default name *C1\_AD2\_IN*.
- In the bottom select *Local Commands* tab and then *Add* button.
- In the opened window select previously created *C1\_Local\_Command1\_C1AD2*, assign the function *[151]* and select options *Authorisation for Access Point required* and *Authorisation for Object required*. Close the window with *OK* button.

The screenshot shows the 'Add Local Command' dialog box. The 'Local Command' field is set to 'C1\_Local Command1\_C1AD2'. The 'Function' dropdown is set to '[151]: Grant Door Access with Normal Lock Pulse (detailed)'. The 'Parameter' is set to 'All'. The 'Register event' checkbox is checked. The 'Logic Function' is set to 'None'. In the 'Authorisation Options' section, the following options are checked: 'User authentication required', 'Authorisation for Access Point required', and 'Authorisation for Object required'. The 'Authorisation for Function Parameter required' checkbox is unchecked. The dialog has 'OK' and 'Cancel' buttons at the bottom.

- In the bottom select *Authentication Options* tab and then *Edit* button.
- In the opened window select *Normal Authentication* tab and for *Action Type* select *Local Command* while for *Action* select already created command with the name *C1\_Local\_Command1\_C1AD2*. Close the window with *OK* button.
- Upload settings to controller.

The screenshot shows the 'Authentication Options' dialog box. The 'Normal Authentication' tab is selected. The 'Action Type' dropdown is set to 'Local Command' and the 'Action' dropdown is set to 'C1\_Local Command1\_C1AD2'. The 'Parameter' is set to 'None' and the 'Object' is set to 'None'. The 'Register event' checkbox is unchecked. The 'Authorisation Options' and 'Interactive Options' sections are collapsed. The dialog has 'OK' and 'Cancel' buttons at the bottom.

To use both function of Local command it is necessary define Authorisations for each function. The Authorisation for function [151] is created automatically when Add Access Door wizard is used but it can also be created manually in VISO navigation tree. Authorisation for function [136] is created in accordance with description given in section 'Door Mode switching with card'. In case of Local command created as above it is not practical to assign both Authorisation to single user but it can be arranged in such way that one user is assigned with the first Authorisation while the other user is assigned with the second Authorisation. In such case both user can start the Local command but only in such extent as it is enabled by their Authorisations. The other approach could be such that one user is assigned with two Access Credentials, one with card and Authorisation for function [151] and the other with card and Authorisation for function [136]. In this scenario the card 1 opens door temporary while card 2 opens door permanently.

## Remote control of Door Mode

Remote control of Door Mode is available from the level of VISO software. Remote commands can be started from the navigation tree, from the list of such objects as Access Doors, Access Points, etc. as well as from the level of map.

Remote command can be used only by VISO operator with proper rights. Such rights are defined by assignment of operator to user with Credential(s) including proper Authorisation(s) (e.g. for function [136]) at particular Access Door. Such association of user and operator is done in the properties of Person in the tab *Remote Management* in the field *Operator*. The most simple method to grant all Authorisations to operator is to assign such operator to user with Access Credentials with enabled *Master exemption* option. More information on this subject is given in AN040 application note.

## Battery status reporting

RACS 5 system enables centralized monitoring of Clex locks batteries. Battery status is reported with such events as:

- [713]: Low battery
- [715]: Low battery returned
- [717]: Battery failure
- [719]: Battery failure returned

In order to configure logic object in RACS 5 system to enable battery monitoring:

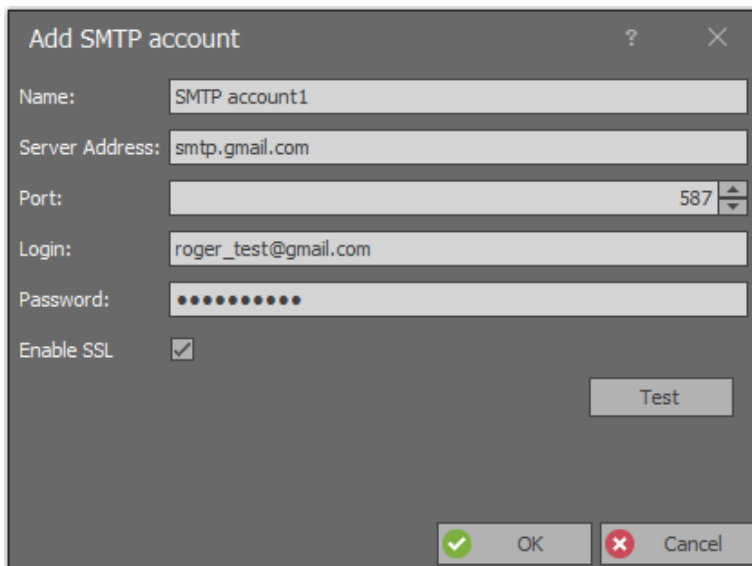
- In the navigation tree of VISO software within particular MC16 access controller double click *Power Supplies* command and then *Add* button.
- In the opened window select battery of particular Clex lock. Close the window with *OK* button.

The screenshot shows the 'Add Power Supply' dialog box. The 'General' tab is active. The 'Name' field is filled with 'K1\_100\_BATTERY T1'. The 'Description' field is empty. The 'Device Group' section is highlighted with a red box and contains 'Object: SDV\_1\_192.168.21.161\_100\_BATTERY T1'. Below this, the 'Device' field contains 'SDV 1/UZ 1', 'Name' contains 'BATTERY T1', 'Comment' is empty, 'Type' contains 'PWR 1/Unknown', 'IP Address' contains '192.168.21.161', and 'RS Address' contains '100'. At the bottom, there are 'OK' and 'Cancel' buttons.

- Create similar objects for remaining Clex locks.
- Upload settings to controller.

When objects are created then battery statuses are signalled not only locally but also by events in RACS 5 database. Such events can be viewed after selection of *Event log* command and icon in the top menu of VISO software. Additionally it is possible to define alerts for selected events in RACS 5 system. The alert can be manifested among others by email automatically sent by RogerSVC Communication Server. In order to define email sending when the event [713]: *Low battery* occurs:

- In the top menu of VISO software select *Tools* command and then *SMTP Accounts* icon. In the opened window select *Add* button.
- In the next window define parameters of SMTP account which can be used by RACS 5 system for email sending (example below). Account settings can be verified with *Test* button. Close the window with *OK* button.



The screenshot shows a dialog box titled "Add SMTP account". It has the following fields and controls:

- Name: SMTP account1
- Server Address: smtp.gmail.com
- Port: 587
- Login: roger\_test@gmail.com
- Password: [masked with 10 dots]
- Enable SSL:
- Test button
- OK button (with a green checkmark icon)
- Cancel button (with a red X icon)

- In the top menu of VISO software select *Event Log* command and then *Event Types* icon.
- In the opened window select on the list event type for which action is to be generated i.e. [713]: *Low battery*.
- In the bottom select *Actions* tab and then *Add* button.
- In the opened window select *Send email as Type*, indicate previously created SMTP account, enter email recipient and other parameters. Close the window with *OK* button.

It is not necessary to start VISO software for the purpose of automatic email sending when specific event(s) occurs. This functionality is ensured by Communication Server from RogerSVC software package.

**Add Action**

Action

Active:

Type: Send email

Execution Site: Server Site Action

Description: Send email when event occurs. In subject and body you can use one of variables:  
\$EventID, \$EventCode, \$CategoryID, \$LocationType, \$LocationID, \$SourceType, \$SourceID, \$AccessCredentialID, \$OptionType, \$Option, \$Function, \$ActionStatus, \$LoggedOn, \$Details, \$Comment, \$ControllerID, \$PersonID, \$GroupID, \$AssetID, \$UserExternalIdentifier

Filter: None

Event validity time: (none)

Parameters

SMTP Settings

Server: SMTP account1

Message Settings

From: roger\_test@gmail.com

To: administrator@company.com

Title: Low battery in lock ID=\$LocationID

Text: Event [713]: Low battery occurred on \$LoggedOn at lock ID=\$LocationID  
ID 1 - Lock 1 - Main entrance  
ID 2 - Lock 2 - Meeting room  
etc.

OK Cancel

### ***Emergency door opening***

Emergency door opening is used when the communication of lock(s) with master devices (hub, expander, controller) is lost. Cards for emergency door opening are defined with software for configuration of Clex locks.

**Contact:**  
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**Web: [www.roger.pl](http://www.roger.pl)**