

Roger Access Control System 5

Application note no. 026

Document version: Rev. B

Assets monitoring and management

Note: This document refers to RACS 5 v1.6.6 or higher

Introduction

RACS 5 enables assets monitoring and management including:

- control of assets relocation (e.g. cars, trucks, containers)
- verification of user authorisations for asset dispensing (e.g. keys, tools, cars, weapons)
- tracking of asset current status (available, dispensed, reserved)

The asset tracking functionality offered by the RACS 5 system is mainly intended for the management of keys and other items with significant material value or impact on the safety of the facility's operation. In addition to the main purpose, asset tracking functionality can also be used to manage the flow of assets in warehouses. The solution supports person who manages assets as it records both dispensing and returning by means of asset tracking terminals.

Asset tracking functionality requires installation of MCT88M-IO terminals which are connected via LAN to virtual controller which operates on a server with RogerSVC software. The functionality requires VISO EX management software with purchased license for asset tracking controller.

Preliminary configuration of RACS 5

In order to conduct preliminary configuration of RACS 5:

- Install VISO software and create local database according to AN006 application note or create recommended centralized database according to AN017 application note.
- Install RogerSVC software and select not only communication service but also license service and virtual controller service. If services are supposed to be operated on individual servers then install RogerSVC on each computer selecting required services. In RACS 5 system only single communication service can be operated.

Note: If license service and virtual controller service are supposed to be operated on individual servers then during installation of virtual controller the license service must be deselected. Only in such case it will be possible to indicate external license service when virtual controller service will be configured.

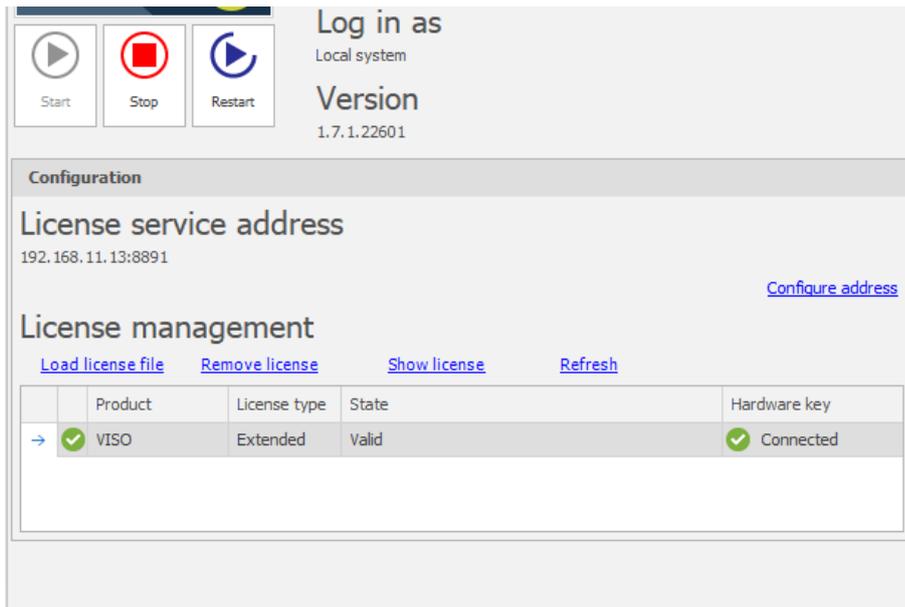
- Start RACS Services Manager selecting *Start->ROGER->RogerSVC* in Windows menu.
- Click the icon in Windows tray.



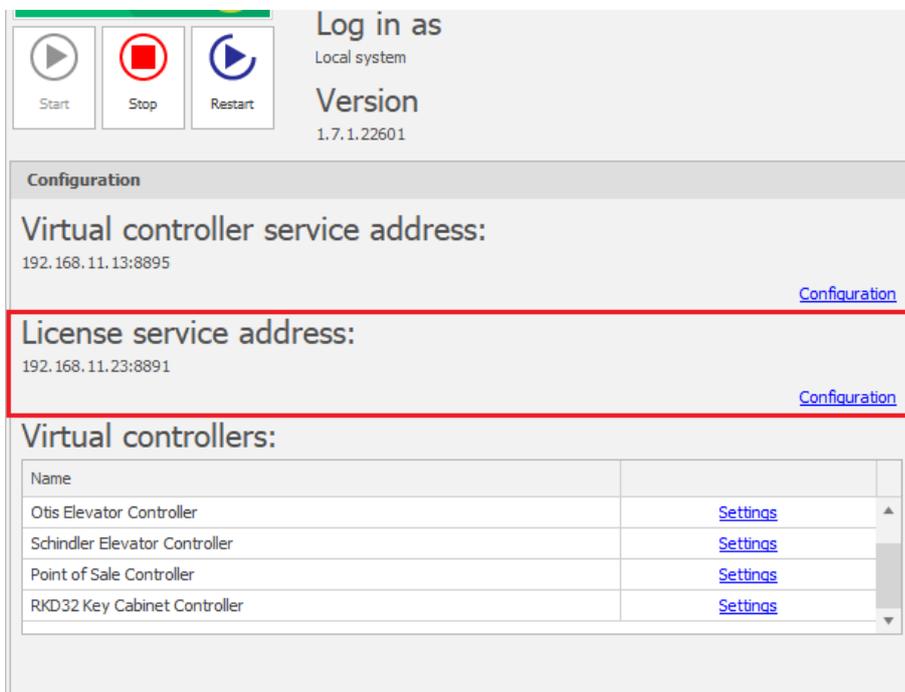
- In the manager window select *Database connection* tile and then *Configure connection* to indicate previously created RACS 5 database. Return to the main window.



- In the manager window select *Communication service* tile and then start the service. Return to the main window.
- Connect RUD-6-LKY hardware key to USB port of server with license service installed.
- In the manager window select *License service* tile, click *Configure address*, enter IP address of the computer with license service installed (e.g. 192.168.11.13) and define port (8891 by default).



- Select *Load license file* and indicate purchased license file for RUD-6-LKY hardware key.
- Select *Start* and return to the main window. The service will be started and operated in the background whenever the computer is switched on even if the manager is closed.
- In the manager window select *Virtual controller service* tile, click *Configuration*, enter IP address of the computer with virtual controller service installed (e.g. 192.168.11.13) and define port (8895 by default).
- If contrary to previously presented configuration steps, the license service is installed on a server with exemplary 192.168.11.23 address while virtual controller service is installed on server with exemplary 192.168.11.13 address then it is possible to indicate external license service for virtual controller service as below.



Note: If there are two network adapters on the server with virtual controller installed e.g. one for communication with VISO software and MC16 controllers and another one for communication with Asset Terminals then two communication channels can be applied. In such case the IP address specified with *Configuration* command defines the IP address of network adapter used for

communication of service with VISO while selecting *Settings* command in Asset Tracking Controller line it is possible to select network adapter for communication of virtual controller with MCT88M-IO terminals.

- Select *Start* and return to the main window. The service will be started and operated in the background whenever the computer is switched on even if the manager is closed.
- Start VISO software, in the top menu select *System*, then *Select Licensing Server* and indicate previously defined license service from RogerSVC software in order to start the program in VISO EX version.

Virtual controller

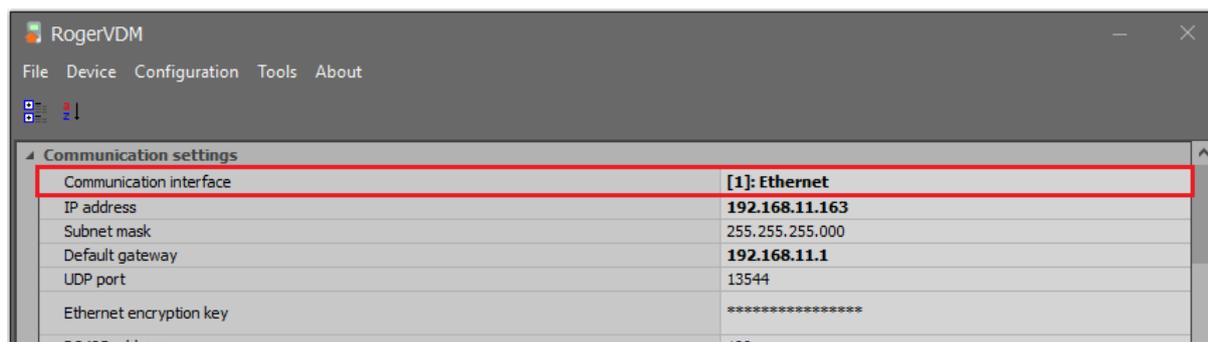
In order to configure the virtual controller:

- In the navigation tree of VISO software right click *Virtual Controllers* command and select *Add Virtual Controller*.
- In the opened window enter IP address and port of previously defined virtual controller service.
- Select *Connect* button.
- Select *Asset Tracking Controller* and close the window with *OK* button.

Terminals

MCT88M-IO low level configuration

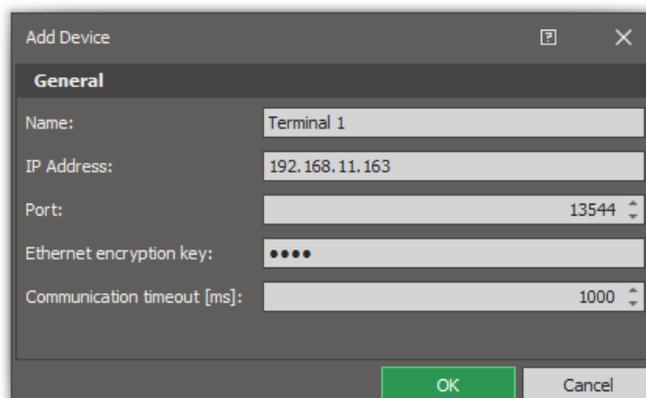
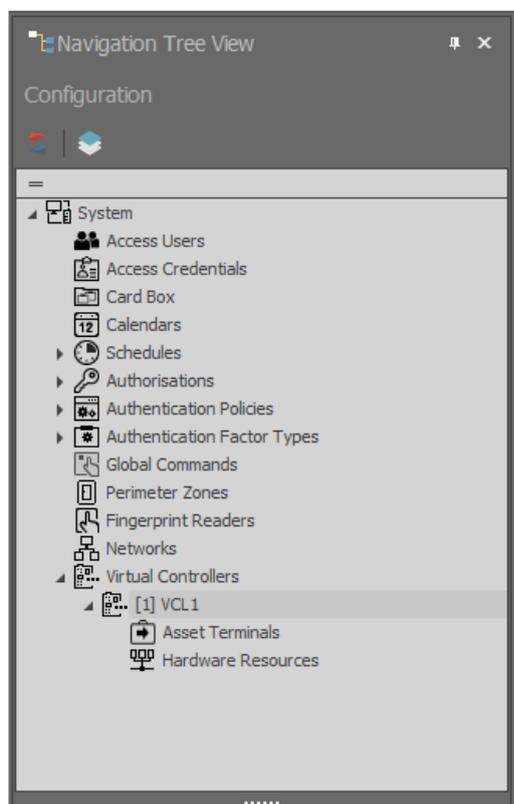
According to installation manual, the low level configuration of MCT88M-IO terminals is conducted with RogerVDM software after connection of the terminal to computer via RUD-1 interface. If device is to be operated as Asset Terminal then Ethernet interface instead of default RS485 interface must be selected. Additionally such parameters as *IP address*, *Subnet mask*, *UDP port* and *Ethernet encryption key* must be defined.



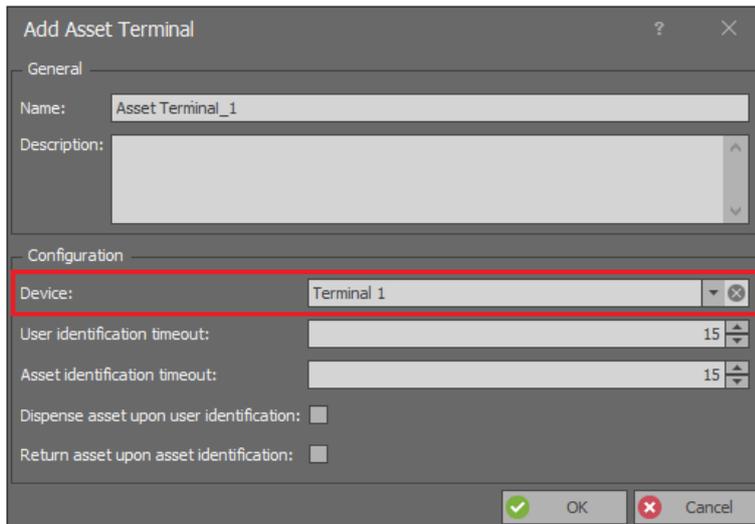
Asset Terminals

In order to configure Asset Terminal:

- In the navigation tree of VISO software expand previously created virtual controller and double click *Hardware Resources* command.
- In the opened window select *Add* and in the next window enter network parameters of MCT88M-IO terminal.
- Close the window with *OK* button.



- In the top menu select *Device Discovery* command and in the opened window select *Run*. Close the window.
- In the navigation tree double click *Asset Terminals* command and in the opened window select *Add*.
- In the next window select previously created *Terminal 1* and define other parameters as needed.

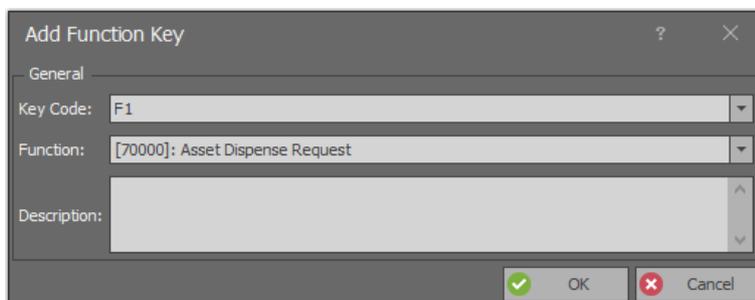


Note: In case of MCT88M-IO terminals connected to Asset Tracking Controller there is no need to synchronise settings manually as all settings are uploaded automatically in the background.

Function keys and inputs

Asset dispense and return functions can be initiated with function keys on terminal panel or with inputs of the terminal. Such inputs can be for example connected to external buttons. In order to define F1 function key for dispense function:

- In the navigation tree of VISO software double click *Asset Terminals* command and for selected terminal in the bottom select *Function keys* tab and then *Add* button.
- In the opened window select F1 key and then the function *[70000]: Asset Dispense Request*.



Input are configured similarly in *Inputs* tab.

Input functions

| No. | Name | Description |
|-------|----------------------------------|--|
| 70000 | Asset Dispense Request | The function initiates asset dispensing. |
| 70001 | Asset Emergency Dispense Request | The function initiates asset emergency dispensing. In such case, user Authorisations and asset status (dispensed, reserved) are not verified at the terminal and asset is dispensed unconditionally. |
| 70002 | Asset Return Request | The function initiates asset returning. |

Outputs

Outputs of the terminal can be used for various signalizations related to asset tracking including asset dispense granting. Output with such function can be connected to lock mechanism, which will be released when dispense is granted for authorised user. In order to define REL 1 relay output to signal asset dispense granting:

- In the navigation tree of VISO software double click *Asset Terminals* and for selected terminal in the bottom select *Outputs* tab and *Add* button.
- In the opened window select REL1 output and then the function [65537]: *Asset Dispense Request Granted*.

Output functions

| No. | Name | Description |
|-------|--|---|
| 65537 | Asset Dispense Request Granted | The output is activated when asset dispense is granted at the terminal after verification of user Authorisation and asset status. |
| 65538 | Asset Dispense Request Denied | The output is activated when asset dispense is denied at the terminal after verification of user Authorisation and asset status. |
| 65539 | Asset Emergency Dispense Request Granted | The output is activated when asset emergency dispense is granted at the terminal. |
| 65540 | Asset Return Request Granted | The output is activated when asset return is granted at the terminal after verification of user Authorisations. |
| 65541 | Asset Return Request Denied | The output is activated when asset return is denied at the terminal after verification of user Authorisations. |
| 65542 | Asset Identification | The output is activated when asset identification is requested at the terminal both for asset dispense and return. |
| 65543 | User Identification | The output is activated when user identification is requested at the terminal both for asset dispense and return. |

Many functions can be assigned to the same output at the same time. When the function is assigned then it is possible to define priority and modulation of output signal. This can be used to distinguish individual functions when activated at the output. Output lines of the terminal include transistor outputs, relay, LED indicators and internal buzzer.

Assets

In order to apply asset tracking functionality it is necessary to define Assets i.e. objects which will be dispensed and returned. Assets are identified in the system by means of assigned Authentication Factors which are usually Mifare proximity cards or fobs. In order to define an Asset:

- In the navigation tree of VISO software double click *Access Credentials* command and then select *Add* button.
- In the opened window name the credential and close the window with *OK* button.
- In the bottom select *Authentication Factors* tab and then *Add* button.
- In the opened window define card number. It can be read with *Read from Reader* button if RUD series administrator reader is connected to computer's USB port. Close the window with *OK* button.
- In the top menu select *Configuration* command and then *Assets* icon.
- In the opened window select *Add* button, name the asset select *Virtual Controller Asset* type and close the window with *OK* button.
- In the bottom select *Access Credentials* tab and assign previously created credential with proximity card.
- Repeat the same steps for remaining assets.

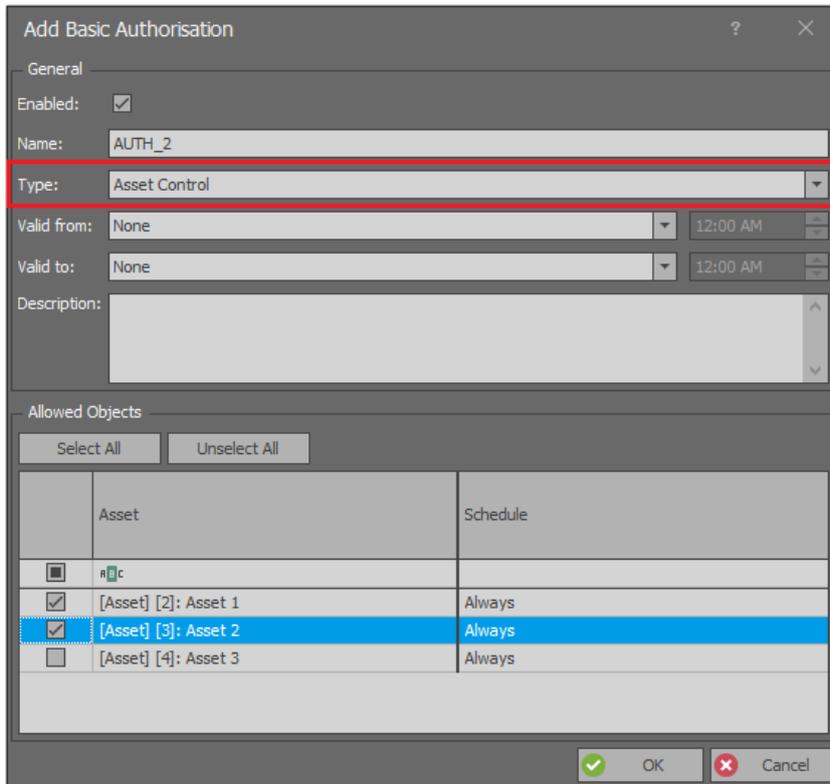
Optionally, Asset Types can be defined in the VISO software and particular Assets can be assigned to them. This may be useful in filtering, sorting and grouping of all Assets in the system.

Authorisations

RACS 5 system enables to define Authorisations related to asset dispensing and returning. Authorisations are assigned to users equipped with Authentication Factors (cards, PINs). In order to define Basic Authorisation for both input functions ([70000] and [70002]) at once:

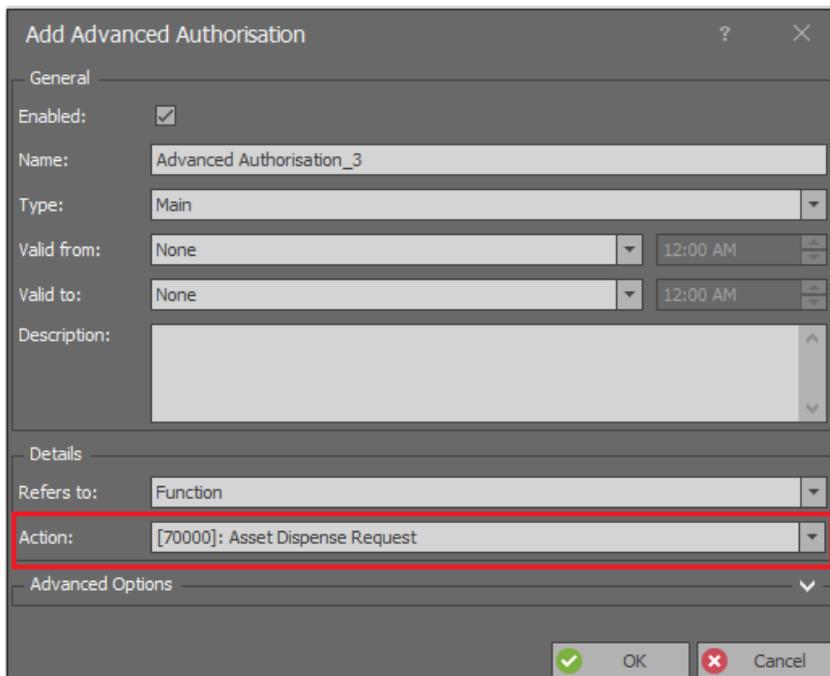
- In the navigation tree of VISO software expand *Authorisations* command, double click *Basic Authorisations* command and in the opened window select *Add* button.
- In the next window select *Asset Control* in *Type* field. In the bottom select Assets which can be dispensed and returned by user with this Authorisation. If the Authorisation is to be limited in

time then create schedule(s) selecting *Schedules* command in the navigation tree and such schedules will be displayed on the list. Close the window with *OK* button.

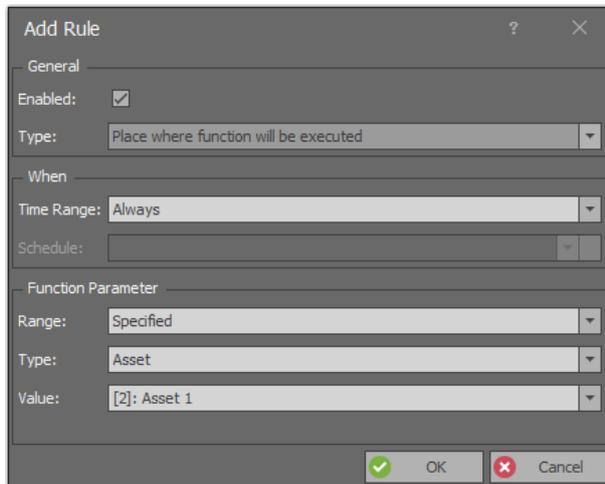


In order to define Advanced Authorisation for the input function [70000]:

- 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 next window name the Authorisation, select the function [70000] and close the window with *OK* button.



- In the bottom select *Positive Rules* tab and then *Add* button.
- In the opened window it is possible to select Asset for the Authorisation and limit the Authorisation in time with a schedule which can be created with *Schedules* command in the navigation tree of VISO software. Authorisation may include multiple Positive and Negative Rules.



The screenshot shows the 'Add Rule' dialog box with the following configuration:

- General:** Enabled (checked), Type: Place where function will be executed
- When:** Time Range: Always, Schedule: (empty)
- Function Parameter:** Range: Specified, Type: Asset, Value: [2]: Asset 1

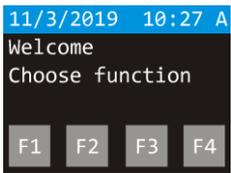
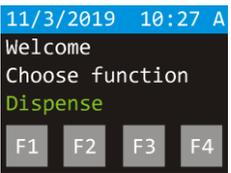
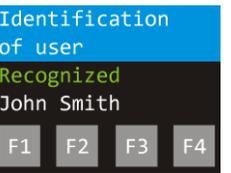
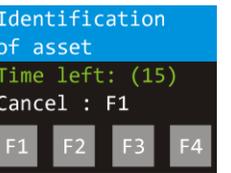
Users

Users can be enrolled in the system with wizard which is available after selection of *Wizards* command in the top menu of VISO software. New user can be defined with *Add Person Online* wizard which is described in AN006 Application note. The wizard enables assignment of Basic and Advanced Authorisations as well as assignment of such Authentication factors as cards and PINs to enable user identification in the system.

Asset tracking

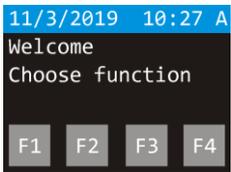
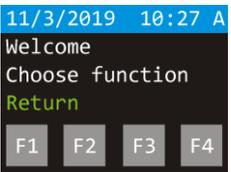
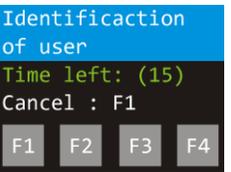
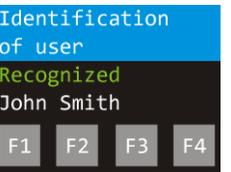
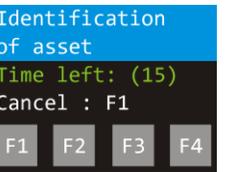
Dispense

Asset dispensing is possible at MCT88M-IO Asset Terminals. When dispense is granted then the output with function [65537] is activated and when dispense is denied due to insufficient Authorisation(s) or due to asset status (dispensed, reserved) then the output with function [65538] is activated.

| Step | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|------------------|---|---|--|---|---|---|---|
| Terminal display |  |  |  |  |  |  |  |
| Description | Start screen. | Selection of dispense function e.g. with F1 key. | User identification with card or PIN. | | Asset identification with card or fob. | | Verification of user authorisations and asset status. |

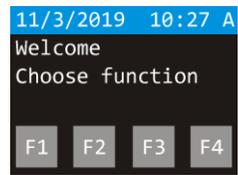
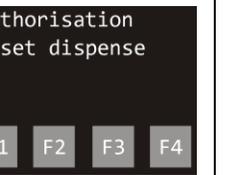
Return

Asset returning is possible at MCT88M-IO Asset Terminals. When dispense is granted then the output with function [65540] is activated and when dispense is denied due to insufficient Authorisation(s) then the output with function [65541] is activated.

| Step | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|------------------|--|--|---|--|--|--|--|
| Terminal display |  |  |  |  |  |  |  |
| Description | Start screen. | Selection of return function e.g. with F2 key. | User identification with card or PIN. | | Asset identification with card or fob. | | Verification of user authorisations. |

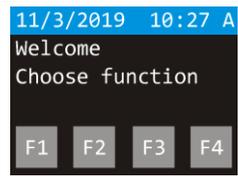
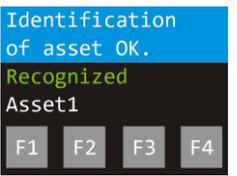
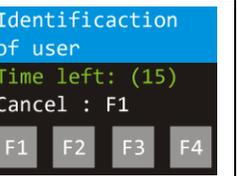
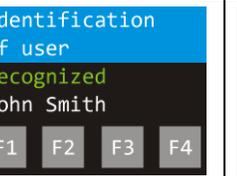
Quick dispense

Quick dispense of assets can be used if the option *Dispense asset upon user identification* is enabled when Asset Terminal is configured. In such case a user does not have to select the function with function key or input. The user can identify with card or PIN in the first step and then proceed as in case of regular dispense.

| Step | 1 | 2 | 3 | 4 | 5 |
|------------------|---|---|--|---|---|
| Terminal display |  |  |  |  |  |
| Description | Start screen. | User identification with card or PIN. | Asset identification with card or fob. | | Verification of user authorisations. |

Quick return

Quick return of assets can be used if the option *Return asset upon asset identification* is enabled when Asset Terminal is configured. Similarly as in case of quick return it is not necessary to select any function with function key or input.

| Step | 1 | 2 | 3 | 4 | 5 |
|------------------|---|---|--|---|---|
| Terminal display |  |  |  |  |  |
| Description | Start screen. | Asset identification with card or fob. | User identification with card or PIN. | | Verification of user authorisations. |

Emergency dispense

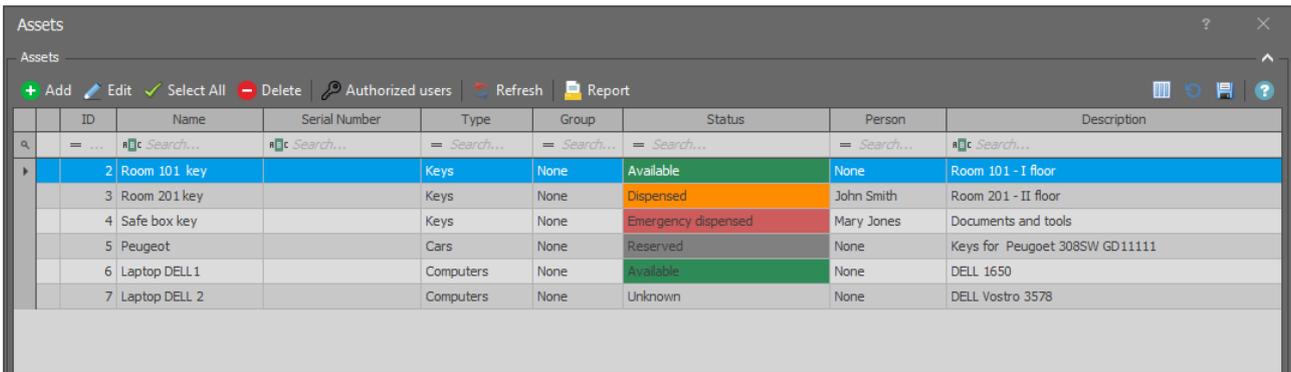
Emergency dispense is started with input function [70001]. In case of emergency dispense, user Authorisation(s) and asset status (i.e. dispensed, reserved) are not verified at the terminal. When dispense is granted then the output with function [65539] is activated.

Asset tracking monitor

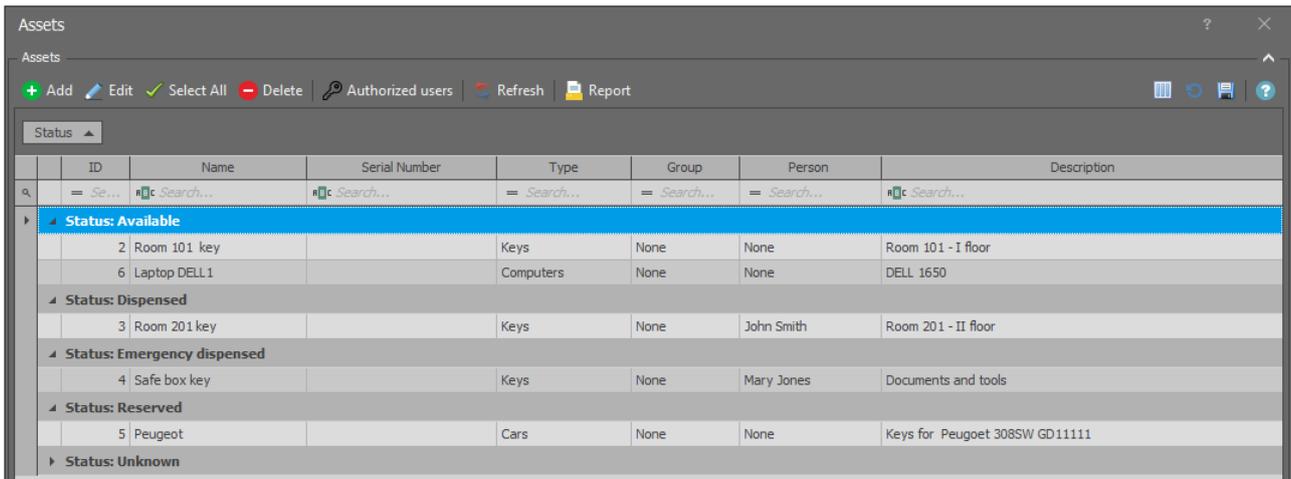
Asset tracking monitor is operated within the list of assets displayed after selection of *Configuration* command in the top menu of VISO software and then *Assets* icon. The monitor enables to get information on current status of assets. The status is updated automatically when asset is dispensed or returned by a user at any terminal.

The status can also be changed manually by VISO operator by right clicking *Status* column and then selecting *Set status* command. All operator actions are registered and they can be viewed selecting *Administration* command in the top menu of VISO software and then *Log* icon.

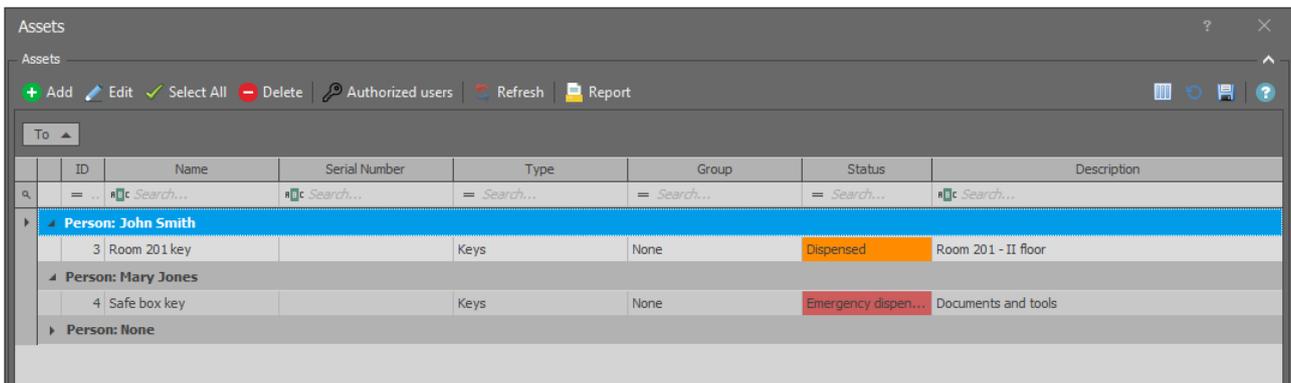
Assets can be sorted, filtered and grouped as in examples below by right clicking column label and selecting required command. Custom layout of the window can be saved with the button  for automatic display whenever assets window is started in VISO. Default layout can be restored with the button .



| ID | Name | Serial Number | Type | Group | Status | Person | Description |
|----|---------------|---------------|-----------|-------|---------------------|------------|--------------------------------|
| 2 | Room 101 key | | Keys | None | Available | None | Room 101 - I floor |
| 3 | Room 201 key | | Keys | None | Dispensed | John Smith | Room 201 - II floor |
| 4 | Safe box key | | Keys | None | Emergency dispensed | Mary Jones | Documents and tools |
| 5 | Peugeot | | Cars | None | Reserved | None | Keys for Peugeot 308SW GD11111 |
| 6 | Laptop DELL 1 | | Computers | None | Available | None | DELL 1650 |
| 7 | Laptop DELL 2 | | Computers | None | Unknown | None | DELL Vostro 3578 |



| ID | Name | Serial Number | Type | Group | Person | Description |
|------------------------------------|---------------|---------------|-----------|-------|------------|--------------------------------|
| Status: Available | | | | | | |
| 2 | Room 101 key | | Keys | None | None | Room 101 - I floor |
| 6 | Laptop DELL 1 | | Computers | None | None | DELL 1650 |
| Status: Dispensed | | | | | | |
| 3 | Room 201 key | | Keys | None | John Smith | Room 201 - II floor |
| Status: Emergency dispensed | | | | | | |
| 4 | Safe box key | | Keys | None | Mary Jones | Documents and tools |
| Status: Reserved | | | | | | |
| 5 | Peugeot | | Cars | None | None | Keys for Peugeot 308SW GD11111 |
| Status: Unknown | | | | | | |



| ID | Name | Serial Number | Type | Group | Status | Description |
|---------------------------|--------------|---------------|------|-------|---------------------|---------------------|
| Person: John Smith | | | | | | |
| 3 | Room 201 key | | Keys | None | Dispensed | Room 201 - II floor |
| Person: Mary Jones | | | | | | |
| 4 | Safe box key | | Keys | None | Emergency dispen... | Documents and tools |
| Person: None | | | | | | |

| ID | Name | Serial Number | Group | Status | Person | Description |
|------------------------|---------------|---------------|-------|---------------------|------------|--------------------------------|
| Type: Cars | | | | | | |
| 5 | Peugeot | | None | Reserved | None | Keys for Peugeot 308SW GD11111 |
| Type: Computers | | | | | | |
| 6 | Laptop DELL 1 | | None | Available | None | DELL 1650 |
| 7 | Laptop DELL 2 | | None | Unknown | None | DELL Vostro 3578 |
| Type: Keys | | | | | | |
| 2 | Room 101 key | | None | Available | None | Room 101 - I floor |
| 3 | Room 201 key | | None | Dispensed | John Smith | Room 201 - II floor |
| 4 | Safe box key | | None | Emergency dispensed | Mary Jones | Documents and tools |

| ID | Name | Serial Number | Group | Status | Person | Description |
|------------------------------------|---------------|---------------|-------|---------------------|------------|--------------------------------|
| Type: Keys | | | | | | |
| Status: Available | | | | | | |
| Person: None | | | | | | |
| 2 | Room 101 key | | None | Available | None | Room 101 - I floor |
| Status: Dispensed | | | | | | |
| Person: John Smith | | | | | | |
| 3 | Room 201 key | | None | Dispensed | John Smith | Room 201 - II floor |
| Status: Emergency dispensed | | | | | | |
| Person: Mary Jones | | | | | | |
| 4 | Safe box key | | None | Emergency dispensed | Mary Jones | Documents and tools |
| Type: Computers | | | | | | |
| Status: Available | | | | | | |
| Person: None | | | | | | |
| 6 | Laptop DELL 1 | | None | Available | None | DELL 1650 |
| Status: Unknown | | | | | | |
| Person: None | | | | | | |
| 7 | Laptop DELL 2 | | None | Unknown | None | DELL Vostro 3578 |
| Type: Cars | | | | | | |
| Status: Reserved | | | | | | |
| Person: None | | | | | | |
| 5 | Peugeot | | None | Reserved | None | Keys for Peugeot 308SW GD11111 |

Asset reservation

VISO operator can set Reserved status for any asset. Dispensing of reserved asset is denied at every terminal.

Contact:
Roger sp. z o.o. sp.k.
82-400 Sztum
Gościszewo 59
Tel.: +48 55 272 0132
Fax: +48 55 272 0133
Tech. support: +48 55 267 0126
E-mail: support@roger.pl
Web: www.roger.pl