

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.

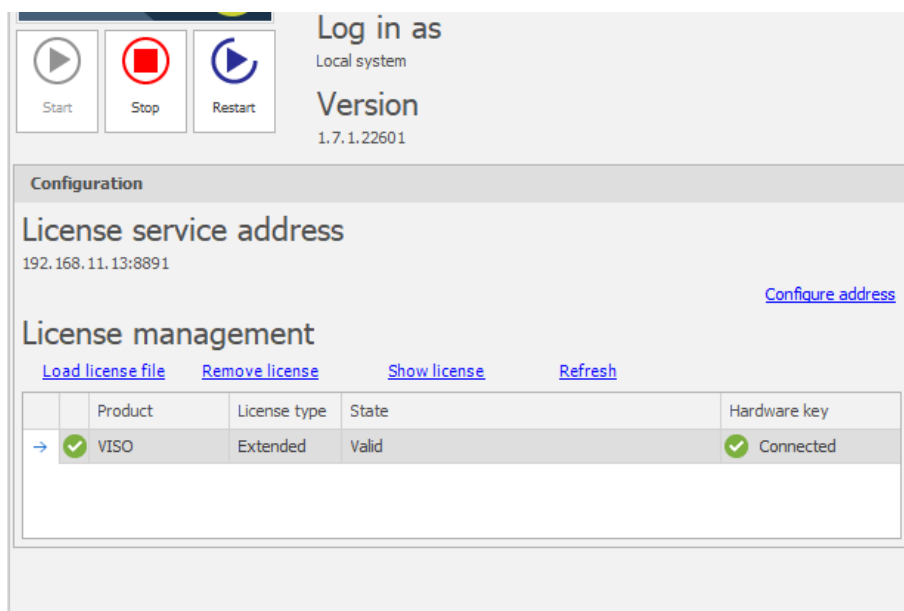
- Start RACS Services Manager selecting *Start->ROGER->RogerSVC* in Windows menu.
- Click the icon in Windows tray.



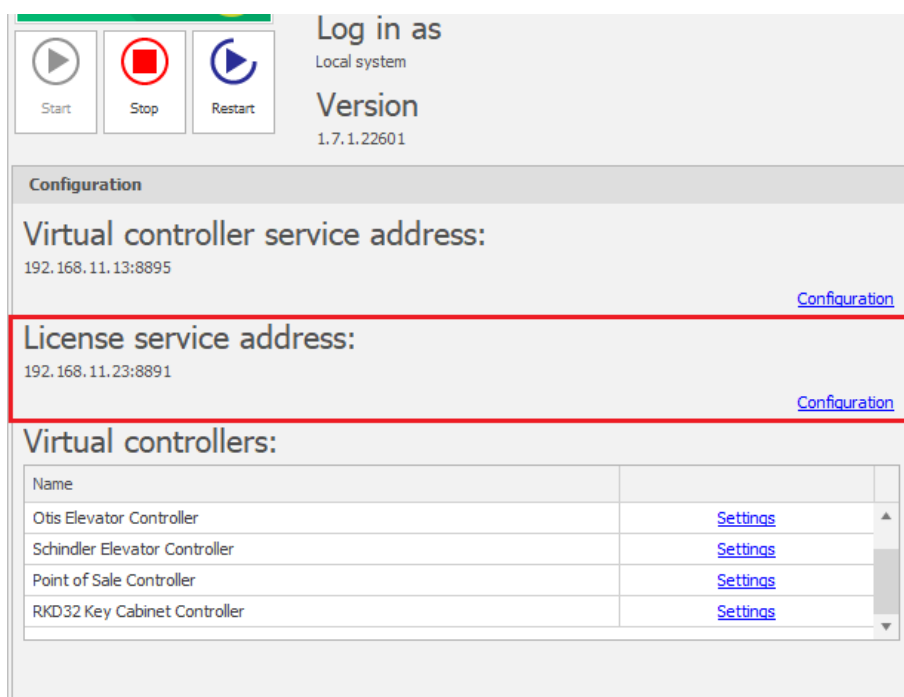
- In the manager window select *Database connection* tile and then *Configure connection* to indicate previously created RACS 5 database. Return to the main window.



- 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

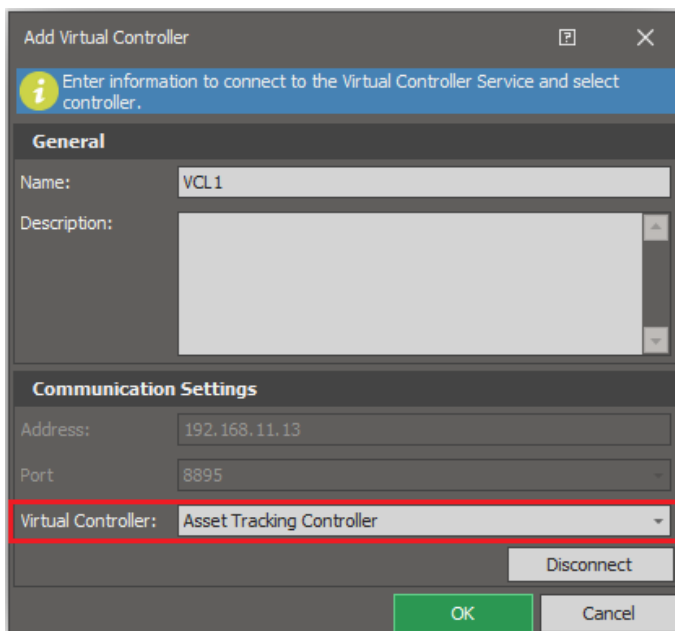
communication of service with VISO while selecting *Settings* command in Asset Tracking Controller line it is possible to select network adapter for communication of virtual controller with MCT88M-IO terminals.

- 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:

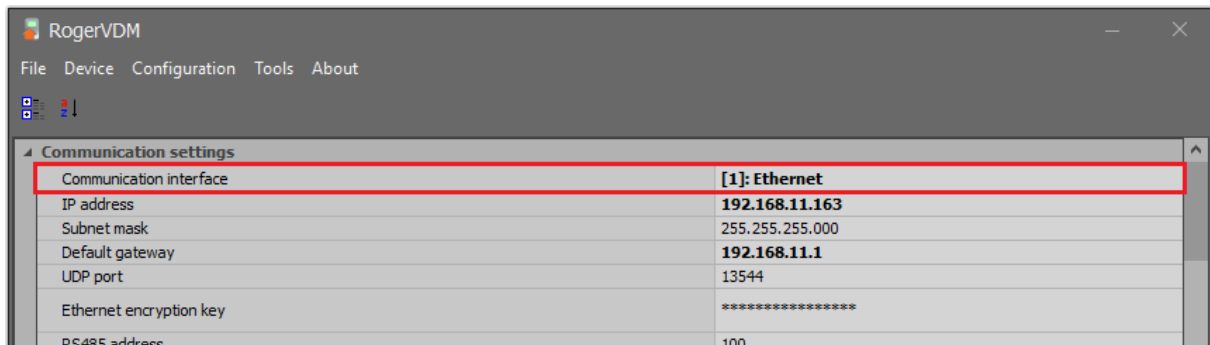
- In the navigation tree of VISO software right click *Virtual Controllers* command and select *Add Virtual Controller*.
- In the opened window enter IP address and port of previously defined virtual controller service.
- Select *Connect* button.
- Select *Asset Tracking Controller* and close the window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



Terminals

MCT88M-IO low level configuration

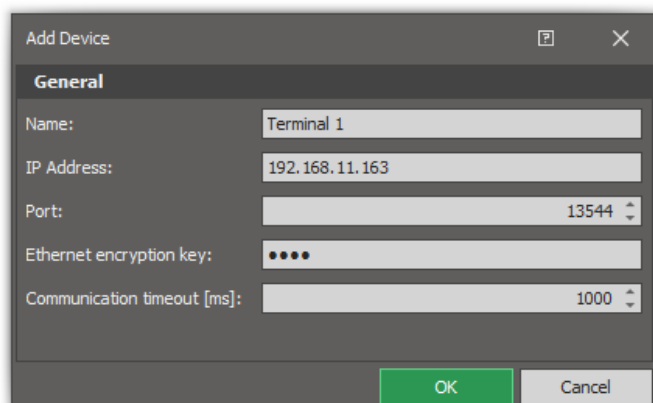
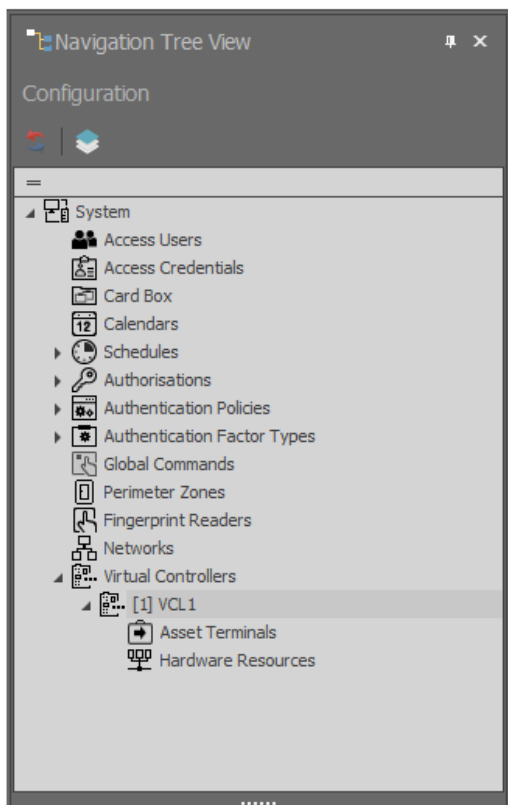
According to installation manual, the low level configuration of MCT88M-IO terminals is conducted with RogerVDM software after connection of the terminal to computer via RUD-1 interface. If device is to be operated as Asset Terminal then Ethernet interface instead of default RS485 interface must be selected. 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

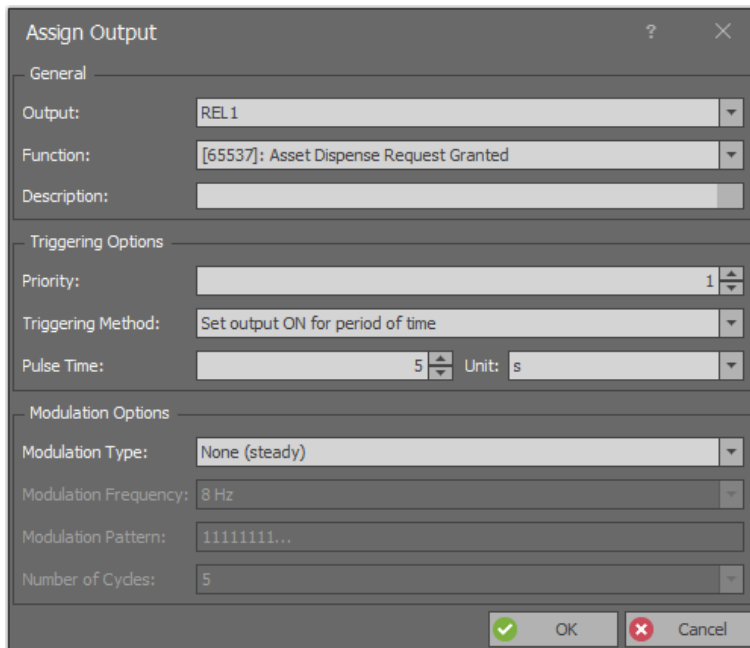
Outputs of the terminal can be used for various signalizations related to asset tracking including asset dispense granting. Output with such function can be connected to lock mechanism, which will be released when dispense is granted for authorised user. In order to define REL 1 relay output to signal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



The image shows a software dialog box titled "Assign Output". It has a standard Windows-style title bar with a question mark icon and a close button (X). The dialog is divided into three main sections: "General", "Triggering Options", and "Modulation Options".

- General:** Contains three fields: "Output:" with a dropdown menu showing "REL1", "Function:" with a dropdown menu showing "[65537]: Asset Dispense Request Granted", and "Description:" with an empty text box.
- Triggering Options:** Contains three fields: "Priority:" with a numeric input field showing "1", "Triggering Method:" with a dropdown menu showing "Set output ON for period of time", and "Pulse Time:" with a numeric input field showing "5" and a "Unit:" dropdown menu showing "s".
- Modulation Options:** Contains four fields: "Modulation Type:" with a dropdown menu showing "None (steady)", "Modulation Frequency:" with a dropdown menu showing "8 Hz", "Modulation Pattern:" with a text box showing "11111111...", and "Number of Cycles:" with a dropdown menu showing "5".

At the bottom right of the dialog, there are two buttons: a green checkmark icon followed by "OK" and a red X icon followed by "Cancel".

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.

Add Basic Authorisation

General

Enabled: ☒

Name: AUTH_2

Type: Asset Control

Valid from: None 12:00 AM

Valid to: None 12:00 AM

Description:

Allowed Objects

Select All Unselect All

	Asset	Schedule
<input type="checkbox"/>	Asset	
<input checked="" type="checkbox"/>	[Asset] [2]: Asset 1	Always
<input checked="" type="checkbox"/>	[Asset] [3]: Asset 2	Always
<input type="checkbox"/>	[Asset] [4]: Asset 3	Always

OK Cancel

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.

Add Advanced Authorisation

General

Enabled: ☒

Name: Advanced Authorisation_3

Type: Main

Valid from: None 12:00 AM

Valid to: None 12:00 AM

Description:

Details

Refers to: Function

Action: [70000]: Asset Dispense Request

Advanced Options

OK Cancel

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

Buttons: OK, Cancel

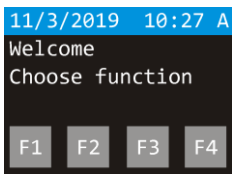
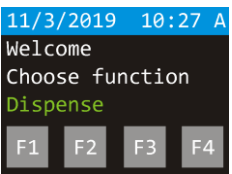
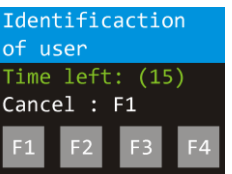
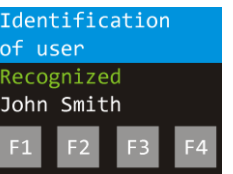
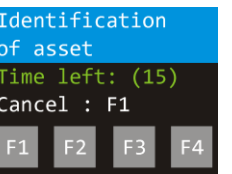
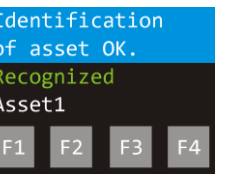
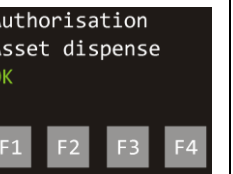
Users

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

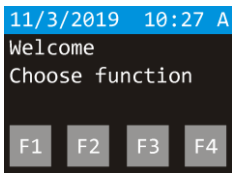
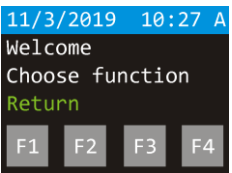
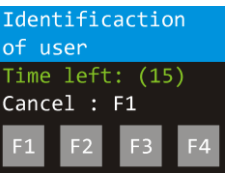
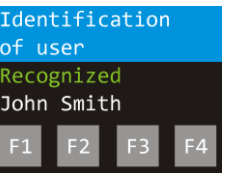
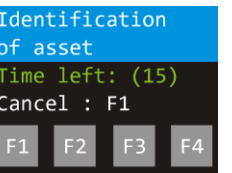
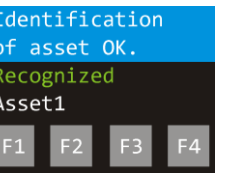
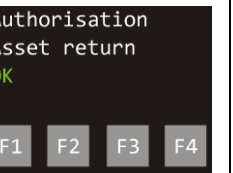
Dispense

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.

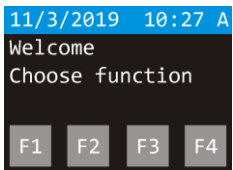
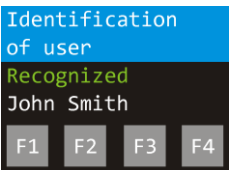
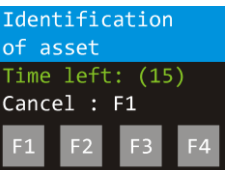
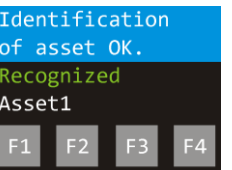
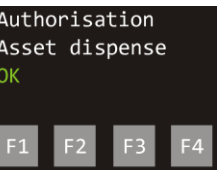
Return

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.

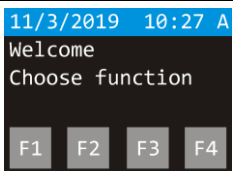
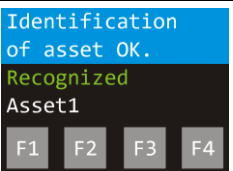
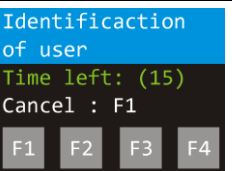
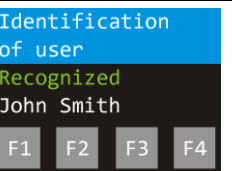
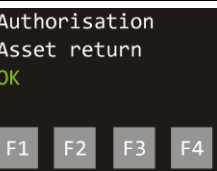
Quick dispense

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 .

Assets

Assets

+ Add Edit Select All Delete Authorized users Refresh Report

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

Assets

Assets

+ Add Edit Select All Delete Authorized users Refresh Report

Status

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						

Assets

Assets

+ Add Edit Select All Delete Authorized users Refresh Report

To

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 dispensed	Documents and tools
Person: None						

Assets

Assets

+ Add Edit Select All Delete Authorized users Refresh Report

Type

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

Assets

Assets

+ Add Edit Select All Delete Authorized users Refresh Report

Type Status Person

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