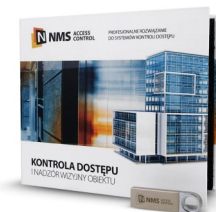




# Installation and operation manual

**SUPERVISORY SOFTWARE**

**NMS ADVANCED CONTROL**



Version 4.02.XX Update: 14-03-2022



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### **What is it for and for whom this manual is intended.**

This manual is intended for installers and individuals who want to familiarize themselves with the process of installing NMS ADVANCED CONTROL, programming the system and verifying the correctness of its operation in terms of communication and utility. Therefore, it describes the next steps to follow to accomplish this. The manual is limited in its content to the most important steps needed to do this. The following steps are described in the recommended order of execution. This should make it much easier for people who need to perform only basic tasks related to the configuration of the devices included in the system, the addition of cards and users, together with privileges in terms of access to premises, checking the system status and generating basic reports.

A full description of all the options in the program is included in the *NMS ADVANCED CONTROL Program description*.

The development of the NMS ADVANCED CONTROL program is planned with new, advanced functions: integration with advanced AC controllers, alarm control panels and key depositories, which will be successively appearing in subsequent versions.

### **New features in version 4.02.XX**

1. Cooperation with RCP terminals, which offer registration of various types of I / O (normal, private, business and for a break (paid license, trial 30 days).
2. Defining a multi-level company structure and assigning employees to it.
3. Generating individual and group T&A reports based on events from T&A terminals and filtered by the company's structure.
4. Export of video recordings Save screenshots of the currently viewed video images
5. Possibility of switching to playback of recordings from the level of the current event stack.
6. Support for elevator controllers

## Section 1. Introduction

### 1.1 Basic information

NMS ADVANCED CONTROL is a software designed to small and medium physical access control systems and video surveillance. It works with standard controllers KDH-KS3012-IP, KDH-KS3024-IP, biometric KDH-KZ3000FP-IP-U, KDH-KZ3000FP-IP-M and integrated KDH-KZ3000-IP-U, KDH-KZ3000-IP-M. Version 4.02.XX and higher also works with RCP terminals KDH-TA500C-IP-UMD and KDH-TA500CFP-IP-UMD. Thanks to the client-server type structure, it is possible to operate it from multiple workstations (2 stations under a free license, additional after purchasing expansion licenses). The system is easy to install and has operator friendly graphical interface. Thanks to implementation several server advanced functions, it can also be used in systems with multiple locations.

The operator interface allows:

- defining system parameters (permissions for operators, licenses, backup)
- configuration of parameters of physical system components (controllers, doors, readers)
- configuration and visualization systems from many local servers in the same time
- defining logical elements (schedules, access levels, cards)
- define scenarios that automatically react to events in the system
- monitoring the status of the "on-line" system using the icons of system elements located on the site maps (with hierarchical structure), on the synoptic array and through the messages displayed on the event stack
- displaying user pictures after using the card
- displaying of cameras located in controlled passages automatically after an event or by clicking on the icon
- playback of archival recordings from the recorder disk or computer with NMS1
- access control to floors through the reader located in the elevator cabin (with the option to unlock all or selected floors by the operator or schedule; \* option available soon)
- access control to locker cabinets - up to 69 with one set of controller, modules and reader
- generating filtered event reports (automatically or on demand) and save in CSV or HTML format (with print to PDF option)
- generating RCP reports based on time and attendance schedules and displaying the attendance list

The NMS ADVANCED CONTROL software also offers a number of features described in detail further that allow to meet the requirements often posed by the system administrator, such as: access after using 2, 3 or 4 cards, the first unlock of the controlled passage using the so-called "first card" with special privileges, multi-read, access after confirmation by operator, interlock and anti-passback (one controller), global zones visualization and T&A report generator. The program will be gradually expanded with new features.

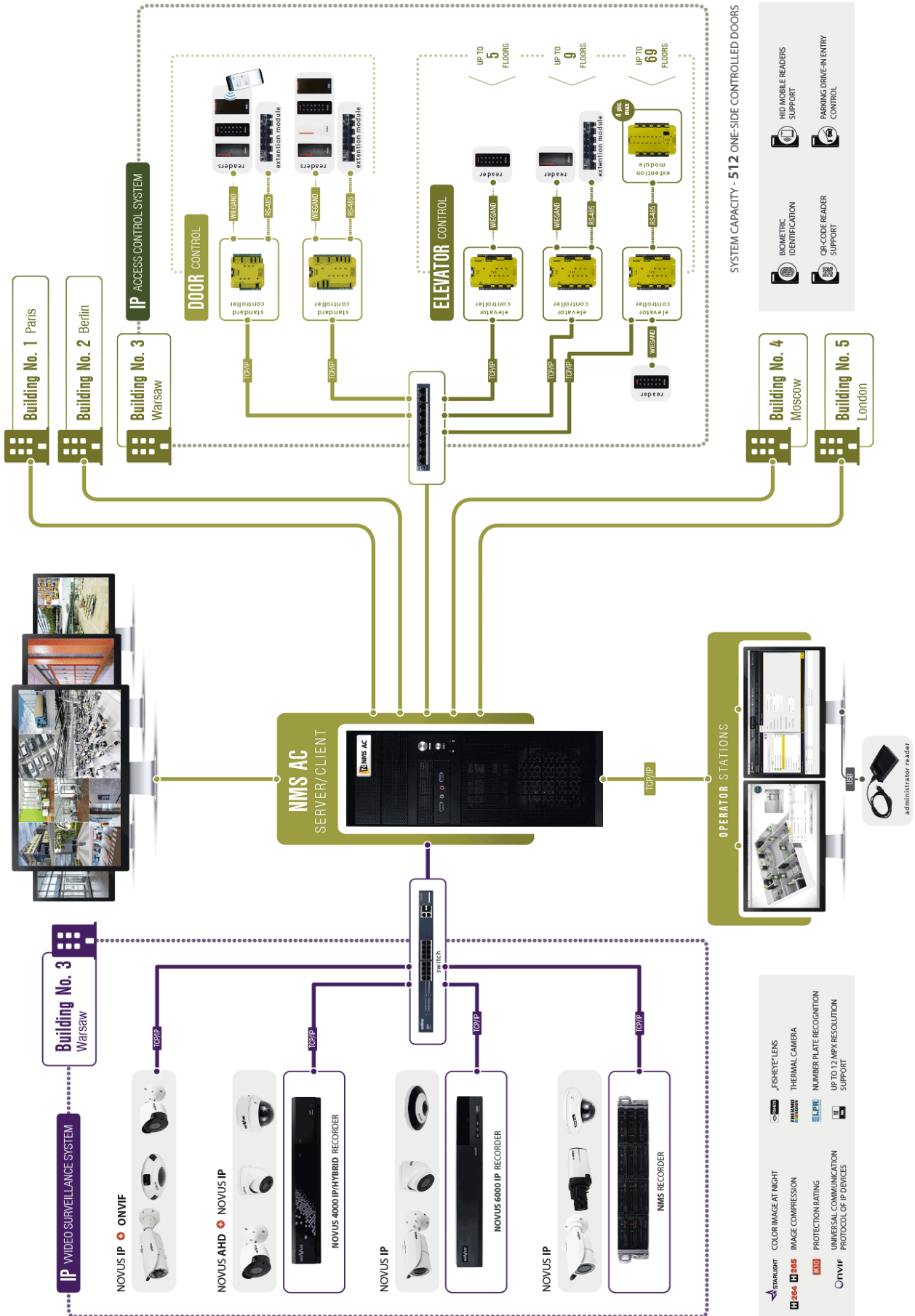
The list of key functions and parameters of the system is presented in the attached table and the structure of the system is shown in the enclosed scheme. Controllers with IP ports communicate with the server service over Ethernet. In the current version of the program, the system can support up to 128 controllers (8 under the free license, additional after the purchase of expansion licenses), so with 4-door controllers - 512 single-sided controlled doors or 256 double-sided. The capacity of card users is 35 000 or 20 000 cards depending on the controllers.

The basic license version is available free of charge for download from the website [www.nmsac.aat.pl](http://www.nmsac.aat.pl) in the download section or you can obtain it by contacting the AC Department and the description of the licenses tab is located in 'System settings' chapter of this manual. Paid licenses extending the capacity of the system can be found in the price list in the NMS ADVANCED CONTROL section.

**1.2 NMS ADVANCED CONTROL functions and parameters**

<b>Parameter or function name</b>	<b>Parameter or function value</b>
<b>PC operating system</b>	Windows 10 Pro
<b>Database</b>	Microsoft SQL
<b>'On-line' monitoring</b>	YES
<b>Integrated with VSS NOVUS devices</b>	YES
<b>Multi-servers</b>	YES
<b>Panels with system elements icons</b>	YES
<b>User photos displaying</b>	YES
<b>Access related functions</b>	
- user identification mode	Card, PIN, card or PIN, card + PIN, fingerprint and combinations with card or PIN
- local anti-passback	YES
- global anti-passback, global interlock	YES
- „first opening card”	YES
- supervisor mode	YES
- multiple access (2 - 4)	YES
- latch mode	YES
- schedule based with first opening card or automatic unlocking	YES
<b>Alarm functions</b>	
- threaten code	YES
<b>Users import from file</b>	YES
<b>Controllers</b>	KDH-KS3012-IP, KDH-KS3024-IP. KDH-KS3000-IP-ELV KDH-KZ3000-IP-U/M, KDH-KZ3000FP-IP-U/M
<b>KaDe controller's memory capacity</b>	
- card memory	35 000 (standard)/20 000 (integrated)
- event memory	50 000
<b>Communication</b>	
Built in IP ports	- Ethernet network
<b>Readers and cards</b>	
- card format	26-40 bit Wiegand format compatible
- card type	any reader compatible technology
<b>Access related parameters</b>	
- access levels quantity	200
- schedules quantity	200
- holidays quantity	80 (32 days)
<b>Event reports</b>	Filtered, save in CSV, HTML (PDF) format
<b>T&amp;A reports (terminals or KD readers)</b>	Based on a schedule
<b>LPR - license plate recognition system</b>	YES

### 1.3 System block diagram



## Section 2 Software installation and running

In this chapter, issues related to the installation, first start-up and elements of the NMS ADVANCED CONTROL program window will be discussed.

### 2.1 PC minimal requirements

NVSO AC-T-II is a unit designed to operate the system with the size specified in the free license. NMS AC STATION STD T / R is intended for larger systems after adding paid licenses. The selection of appropriate computers for the server and client stations should be strictly dependent on the amount of equipment installed for AC and VSS systems. This is especially true for VSS systems with a large number of cameras. In the case of VSS systems, the selection of computers should also take into account how many cameras will be displayed simultaneously with video streams. The number of connected cameras is of less importance in this case.

For the correct operation of the system, the installation of .NET Framework V 4.7 and MS SQL Server is required. If they are not on the disk, they will be automatically installed before starting the application installation because they are included in the installation file. Monitor resolution should be set to Full HD (1920x 1200) or higher. Setting a lower resolution may result in some descriptions not being displayed.

The best solution is to buy a computer from our offer with installed software and licenses. The units are designed for continuous operation.

#### ATTENTION!

**Controllers with NMS AC should work in separate physical network (switch, network card) or separate VLAN. This will help to avoid interference between access control system and other devices operate in network. If the program supports only access control system and television surveillance, we are recommend to use separate network cards to communicate with access control system and television surveillance devices.**

### 2.2 Capacity (without extension licenses)

<b>Basic license , free</b>	
<b>Client station licenses</b>	2
<b>Controllers licenses</b>	8
<b>Video channels NOVUS licenses</b>	16
<b>Video channels ONVIF licenses</b>	1
<b>Video channels RTSP licenses</b>	1
<b>Panels licenses</b>	4
<b>Scenarios licenses</b>	8
<b>Trial licenses</b>	
<b>Global zone visualization</b>	Trial 30 days
<b>Multiple servers group</b>	Trial 30 days
<b>Time &amp; Attendance</b>	Trial 30 days
<b>LPR - license plate recognition</b>	Trial 30 days
<b>LPR global zones</b>	Trial 30 days

Zones	Yes(26)
Global zone	4
Interlock zones	4
Multiple servers	Yes
Time and attendance	Yes(26)
Zones LPR ON	Yes
LPR Zones	4
Details	<input type="button" value="SHOW"/>
End of time	14.10.2021 18:24

After registering the system, it is possible to add additional paid increasing licenses system capacity.

The list of licenses is available on the product website and in the price list.

New advanced functionalities are available for testing for 30 days as trial versions.

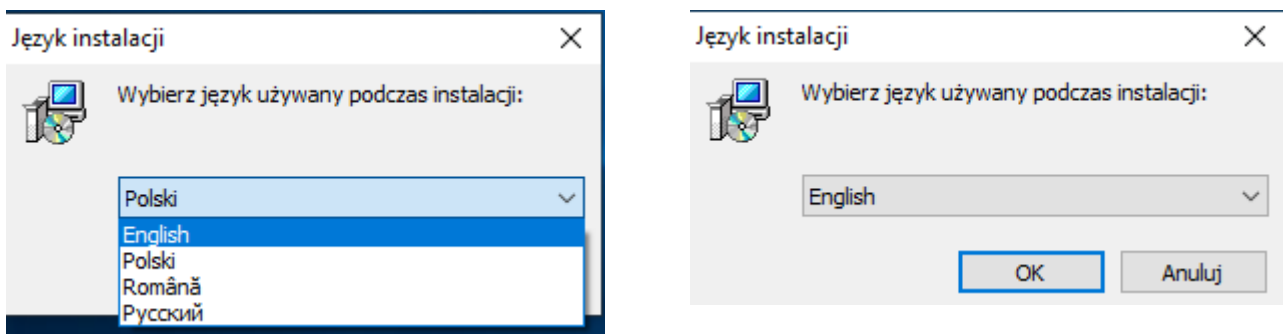
## 2.3 Software installation

To start installation process click on the NMS AC\_full\_X.X.XX.exe file or *Run* command from the context menu. The installation file containing free license can be downloaded from the website:

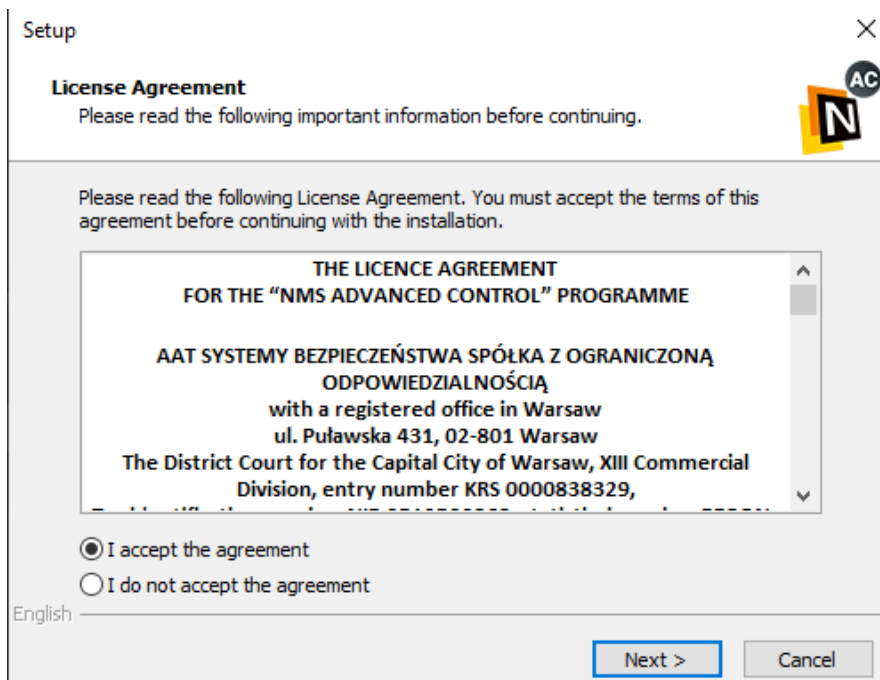
<https://www.nmsac.aat.pl/en> —Download Center (after logging in) or by contacting Access Control Department. For customers, who need physical media, we offer USB version.

Additional licenses to increase the capacity of the system are available in the price list and can be purchased in the commercial departments, and then we can add to the system in accordance with the procedure described later in this instructions (System tab). File that update to newer version have names: NMS AC\_update\_X.X.XX.exe.

When you run the NMS ADVANCED CONTROL installer, the window shown below appears on the screen. Select the installer language from the drop-down list and confirm with **OK**.

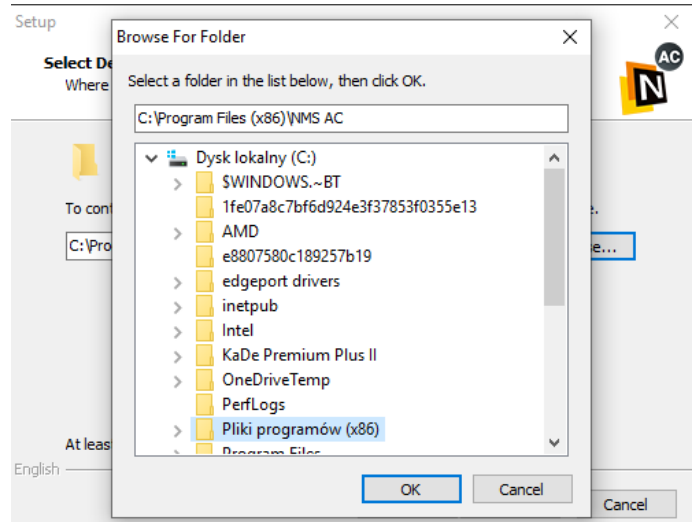
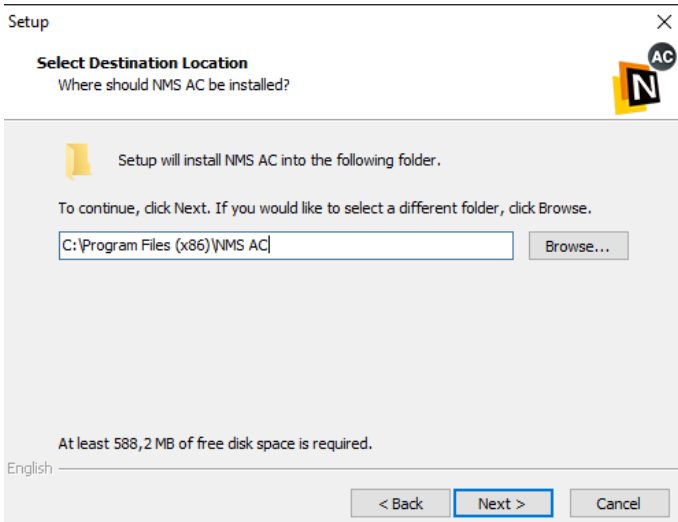


User License will be displayed, which need confirmation after reading to pass to the next installation step. After checking **I accept the agreement** checkbox click **Next**.





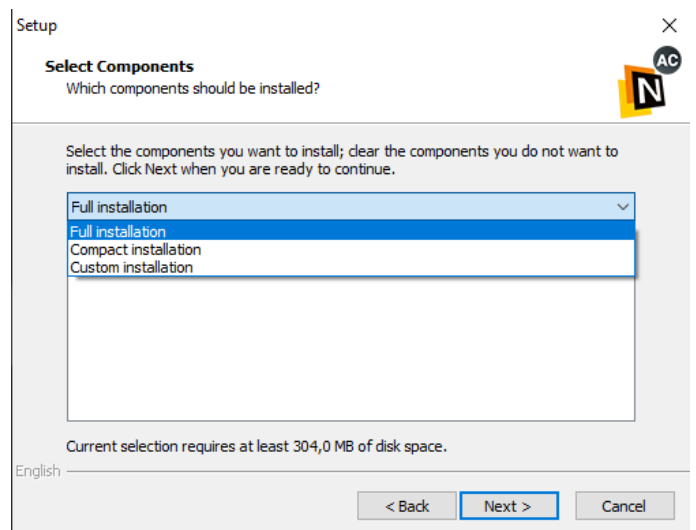
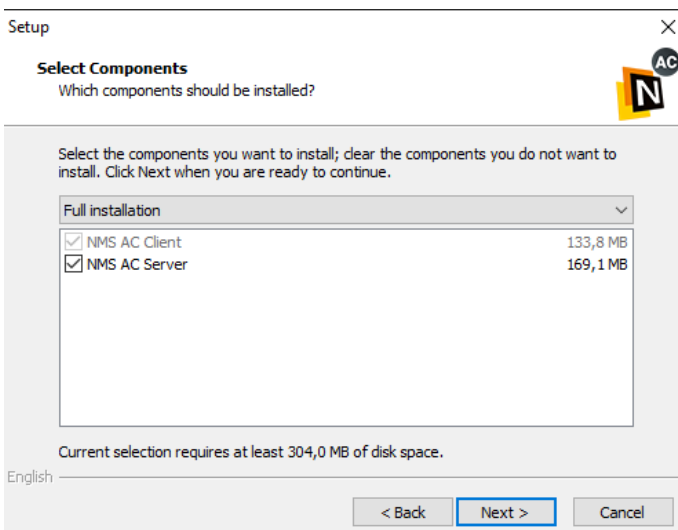
In the following windows, select the installation path of the program. You can edit the default path in the text box or select from the directory tree when you click **Browse...** and confirm with **OK**. After selecting NMS ADVANCED CONTROL installation path, click the **Next** to proceed to the next installation step.



At this stage of the software installation, select its range. There are three options available in the drop-down list:

- **Full installation** - installs both NMS ADVANCED CONTROL server and the client application
- **Basic installation** - installs only the client application which must be connected to the NMS ADVANCED CONTROL server on another computer
- **User installation** - installs the components selected by the user by checking the appropriate check-boxes

After selecting the installation range, click **Next**.



At the stage of the database configuration select one of three options from the drop-down list as below.

The screenshot shows the 'Database configuration' dialog box with the following fields:

- Option: **New local installation** (selected)
- Authentication: Existing local installation
- Existing remote installation
- Address/Name: 127.0.0.1
- SQL instance name: NMS\_DB
- Database name: NmsAC

Buttons: < Back, Next >, Cancel

The screenshot shows the 'Database configuration' dialog box with the following fields:

- Option: New local installation
- Authentication: **Windows authentication** (selected)
- Address/Name: 127.0.0.1
- SQL instance name: NMS\_DB
- Database name: NmsAC

Buttons: < Back, Next >, Cancel

The screenshot shows the 'Database configuration' dialog box with the following fields:

- Option: **Existing local installation** (selected)
- Authentication: New local installation
- Existing local installation
- Existing remote installation
- Address/Name: 127.0.0.1
- SQL instance name: NMS\_DB
- Database name: NmsAC

Buttons: < Back, Next >, Cancel

The screenshot shows the 'Database configuration' dialog box with the following fields:

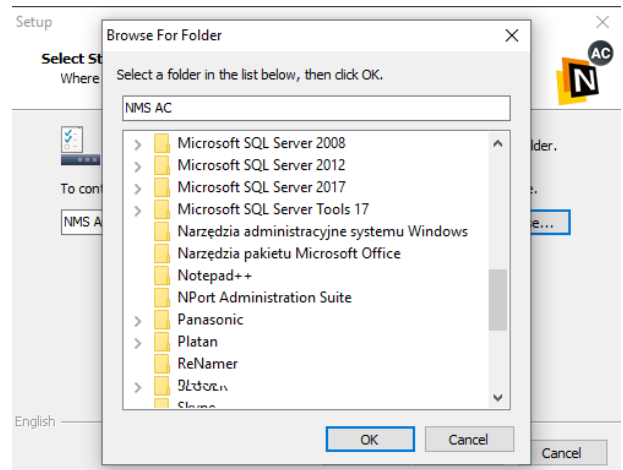
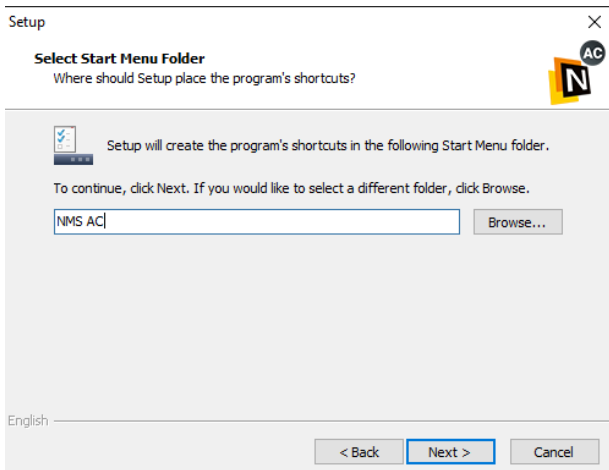
- Option: Existing local installation
- Authentication: **SQL Server authentication** (selected)
- Address/Name: 127.0.0.1
- SQL instance name: NMS\_DB
- Database name: NmsAC

Buttons: < Back, Next >, Cancel

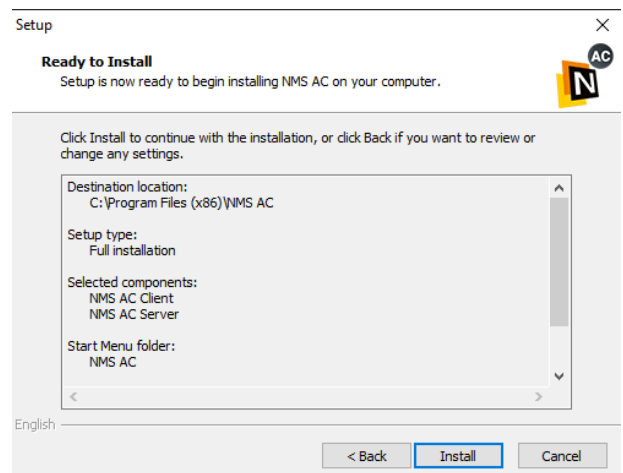
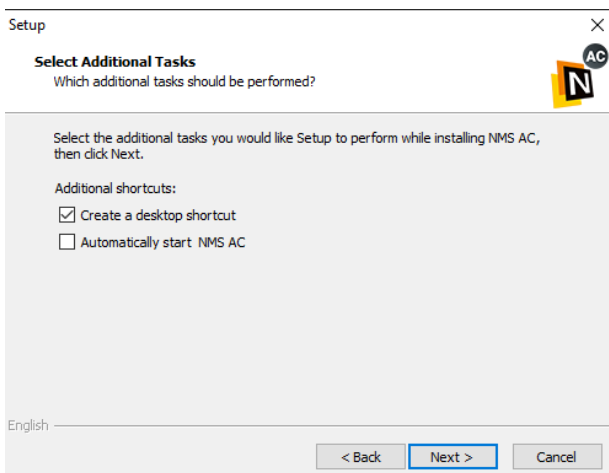
**The new local installation** - installs the SQL Server on the computer, creates a new SQL instance and database with the names specified in the text boxes.

**Existing local installation** - this option can be selected if SQL Server is already installed on the computer; creates a new SQL instance and database with the names specified in the text boxes; if you choose to authenticate through SQL server, you must provide the login information used to confirm access to the SQL server.

**Existing remote installation** - allows you to connect NMS ADVANCED CONTROL server to the SQL Server installed on another computer on the network; creates a new SQL instance and database with the name specified in the text boxes on the SQL Server with specified in *Address/name* field IP address; for the applicable SQL Server authentication you must provide the login information used to confirm access to the remote SQL Server



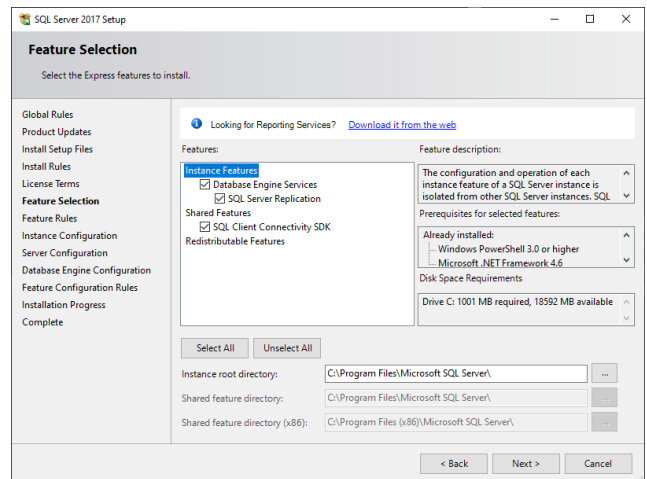
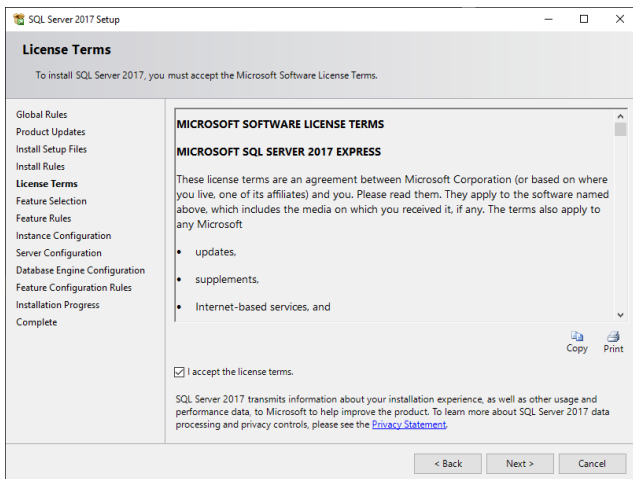
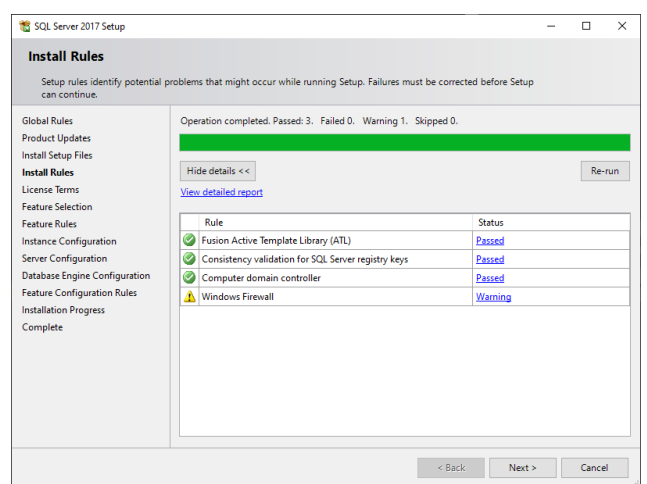
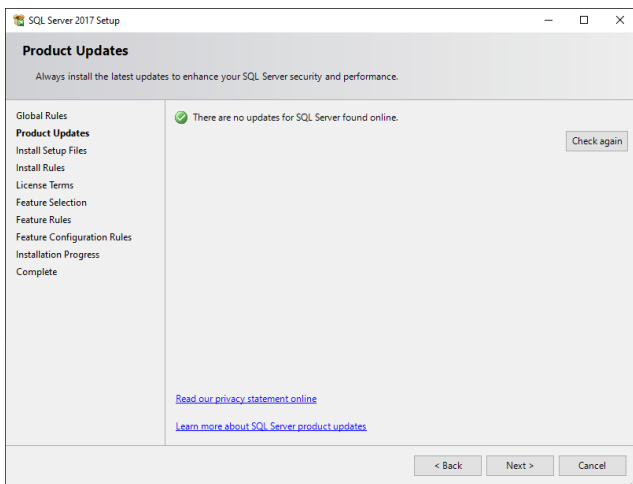
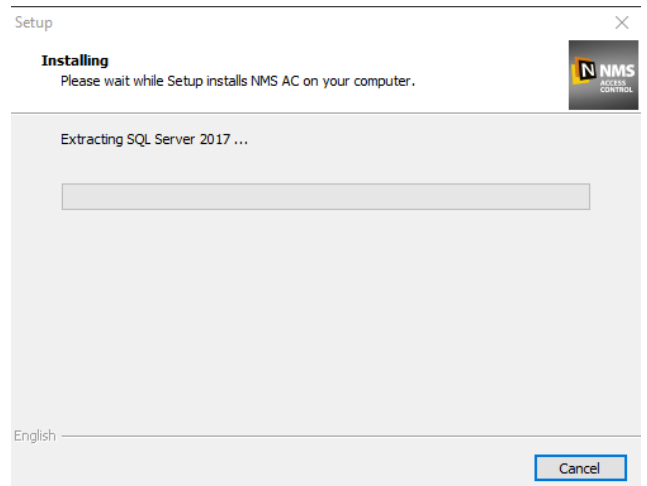
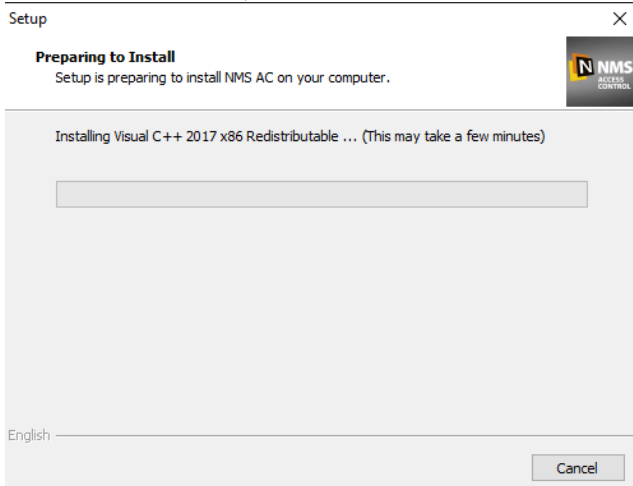
After you have configured the database, click **OK** to move to the next step where you should decide on the name of the shortcut folder on the Start menu, and when you click **Next**, decide to create NMS ADVANCED CONTROL application shortcut and automatic startup when the system is started by selecting or clearing the appropriate check boxes.



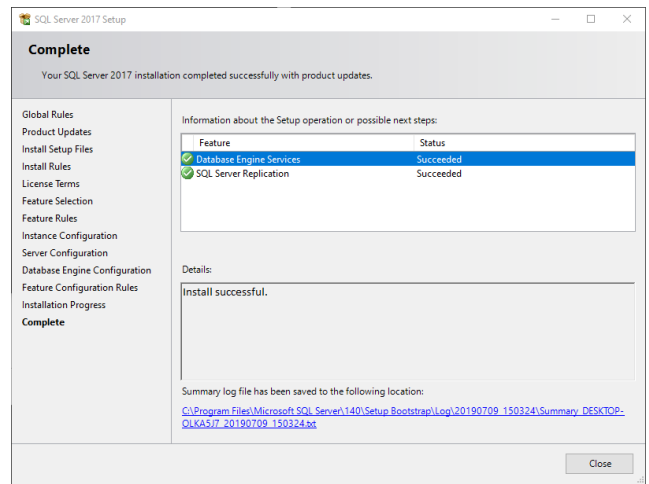
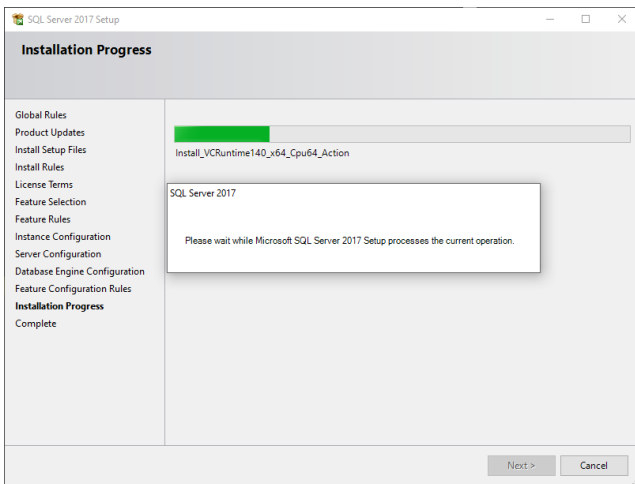
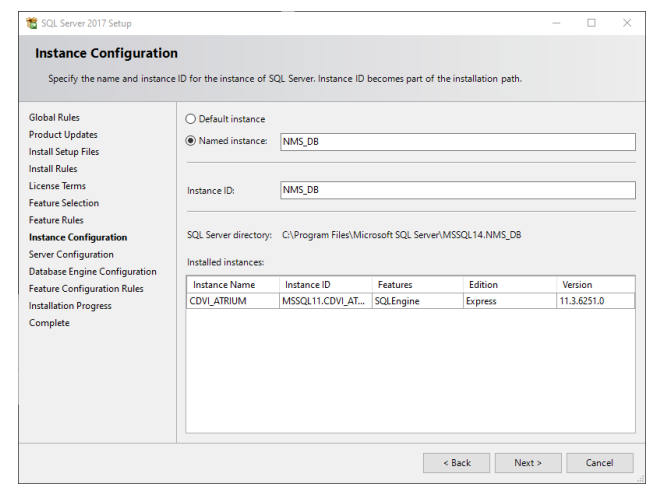
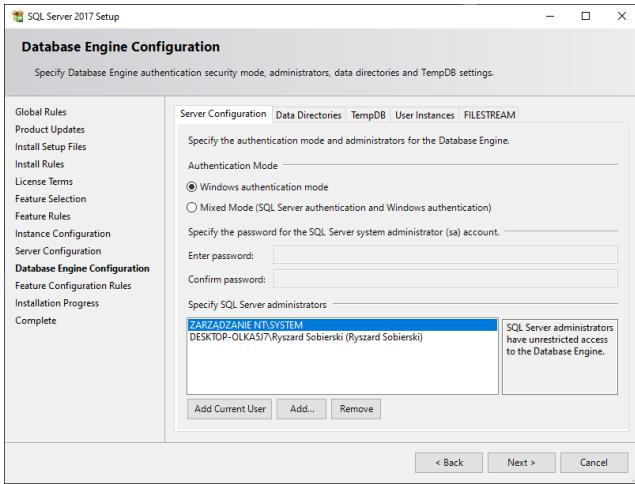
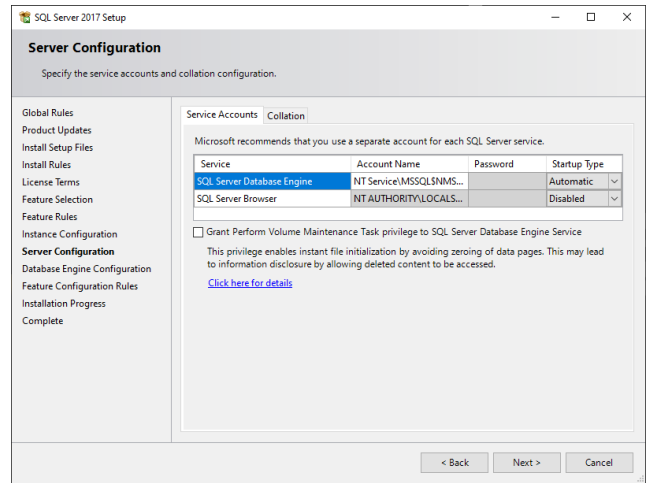
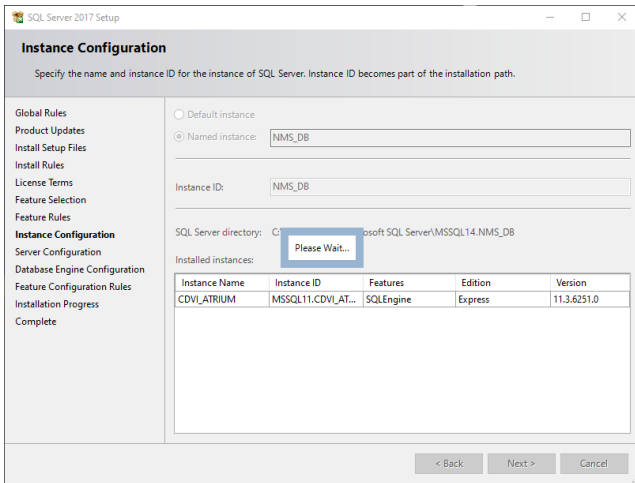
After pressing **Next** button, you will see the installation summary window with previously selected settings. Until this step you can go back to the previous steps of configuring the installation using **Back** button. If the summary settings are correct, click **Install**.

At this point, after selecting the location and names, the proper software installation process begins.

At the beginning, the SQL database will be installed according to the option you chose, and then the NMS AC application. If your computer is not connected to the Internet, you may be prompted to check for available updates during the installation of the SQL database, and then you must ignore it and click **Next**.

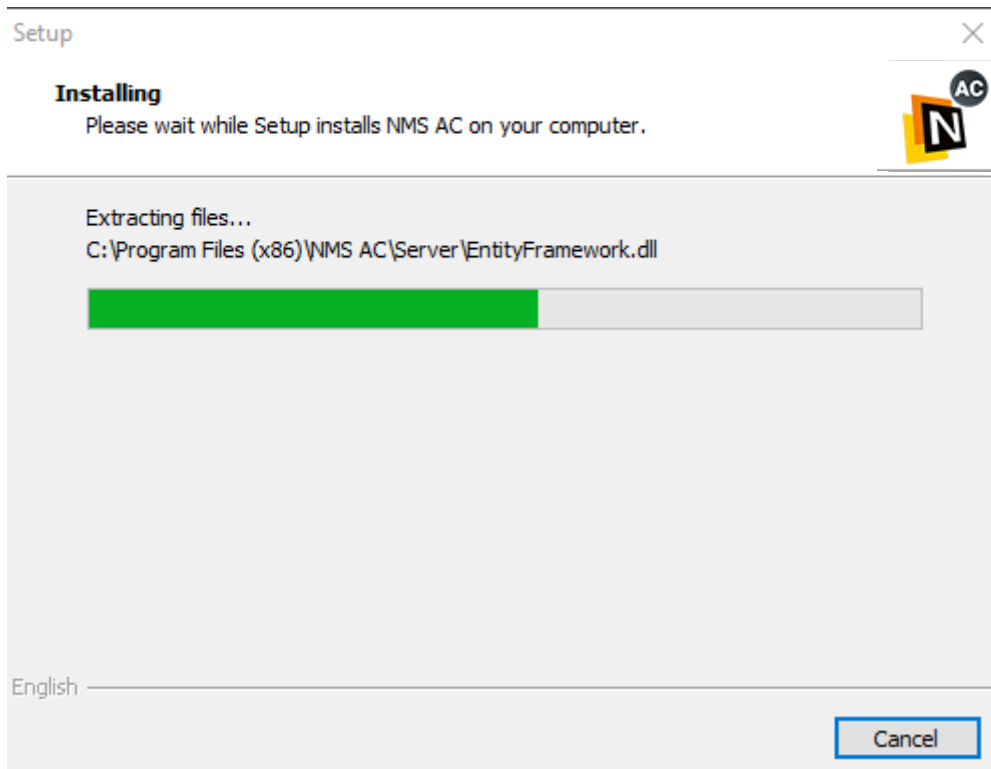


At this point, click **Next** in the following windows and select **I accept the license terms** box in the *License Terms* window.

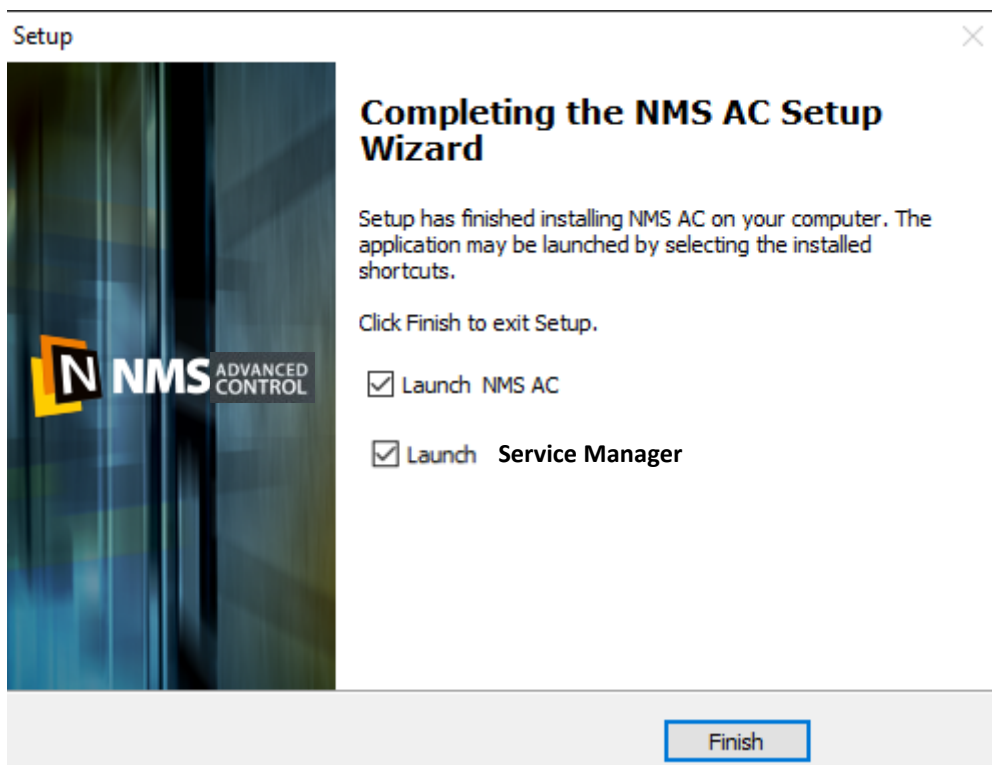


In the next steps of the installation, actions according to the list on the left side of the window are performed. Upon successful installation of the SQL database, the *Complete* window will display information about successful completion of this part of the installation. Then click **Close**.

The installer will then perform the installation process of the relevant NMS ADVANCED CONTROL system components, which takes a few moments.



After the application is installed, the information window appears as below. You can start NMS ADVANCED CONTROL software immediately by clicking the **Finish** button while the **Start NMS AC application** check-box is selected. Uncheck this box and click the button to exit the installer without starting the application.



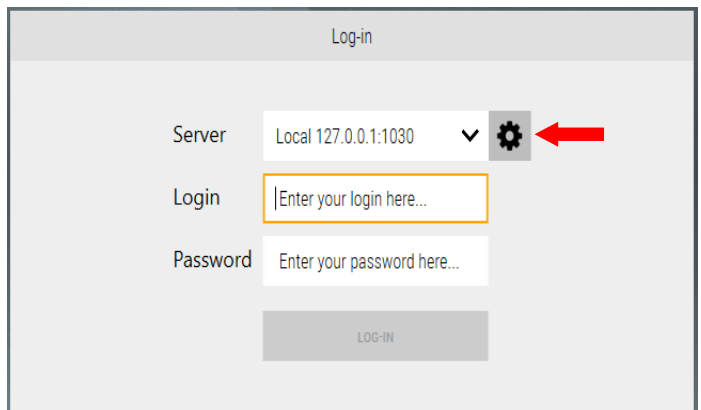
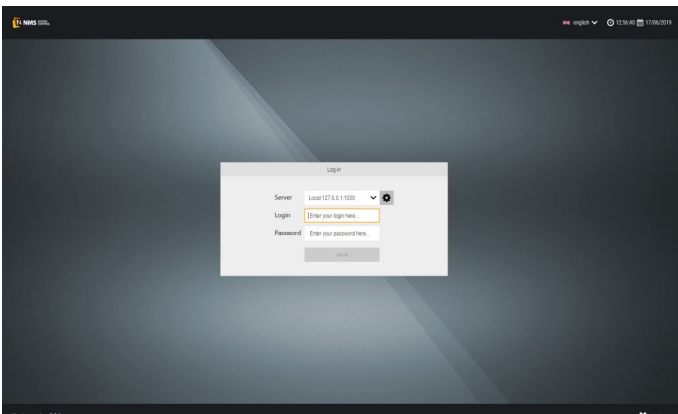
## 2.4 Software starting

After NMS AC installation icon shown below appears on the desktop by default and NMS ADVANCED CONTROL group is created in Windows start menu. You can run the software using them.

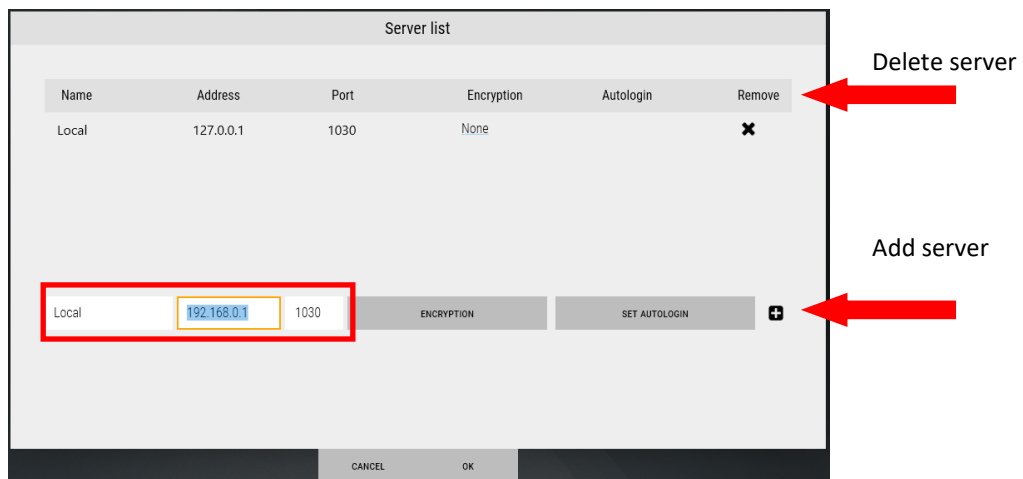


Starting the program results in the logon screen. There is a login window in its central part. In the **Server** section, you can select NMS ADVANCED CONTROL server that you want to connect to. The installed NMS AC client application allows you to connect to one any server. The server application runs as a service and starts by default when Windows starts. This allows you to connect to and log in from any client station within the network. The server service connects to the system SQL database. The icon next to the check box selected in the following drawing opens the **server list**. Enter the operator's login details in the **login** and **password** fields. The default operator's Login is **root**, but the password is **pass**. To prevent unauthorized access to the system, we recommend that you change this password during setup. This step will be described later in this manual. The **exit** button in the bottom right corner closes the program.

**ATTENTION! Controllers should be connected to separated physical network (switch, network card etc.) or separated VLAN.**

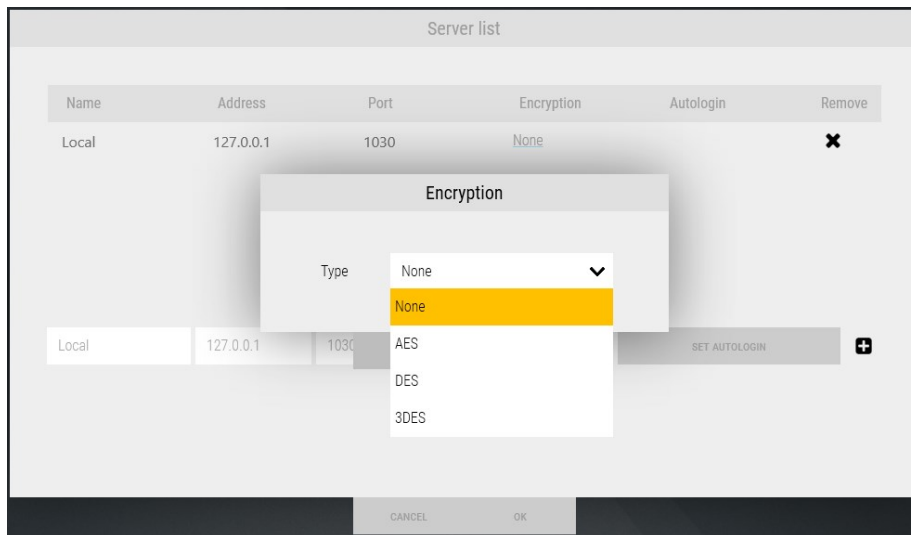


The server list window allows you to add, remove and configure NMS ADVANCED CONTROL servers which you can connect an operator station to. The server settings that can be performed in this window are: name, IP address, port, type of communication encryption, autologin and alarms and messages sounds.

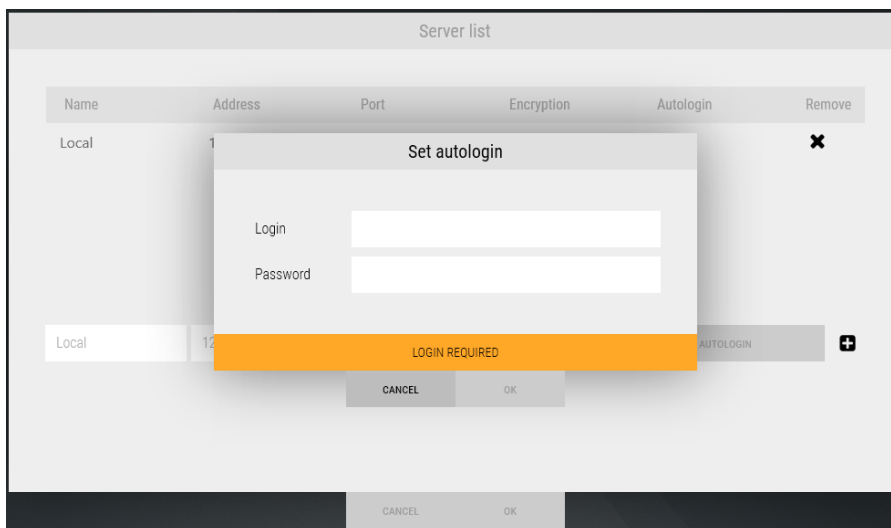


When you select a server on the list, its network parameters are configured in the fields marked in the previous drawing.

When you click the **Encryption** button in the dialog box that appears, you can select from a list of several available encryption types between server and client applications. **None** means that there will be no encryption.



After clicking on the **Autologin** button there is possibility to set automatic operator login directly after software start.



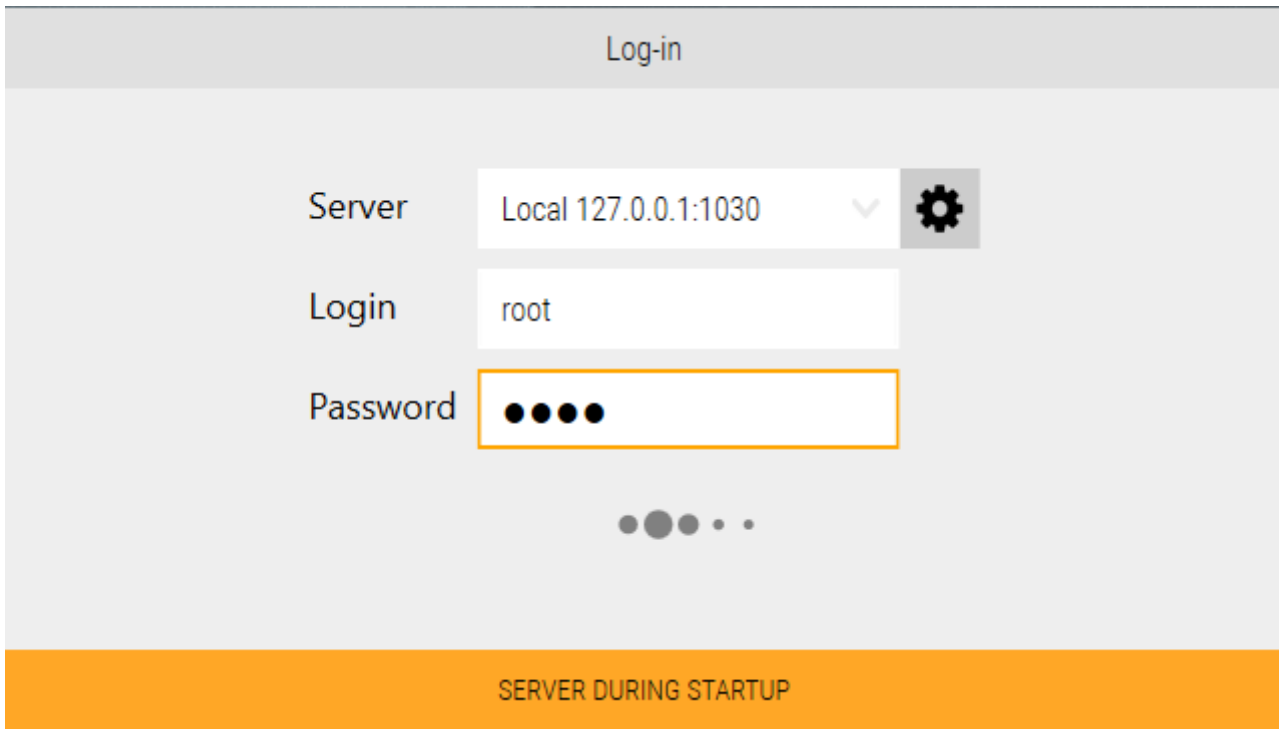
From **Alert sound** and **Message sound** drop-down lists event sound can be selected .

You must approve any of the options you have entered or selected by clicking **OK**. Clicking **Cancel** discards changes to the settings.

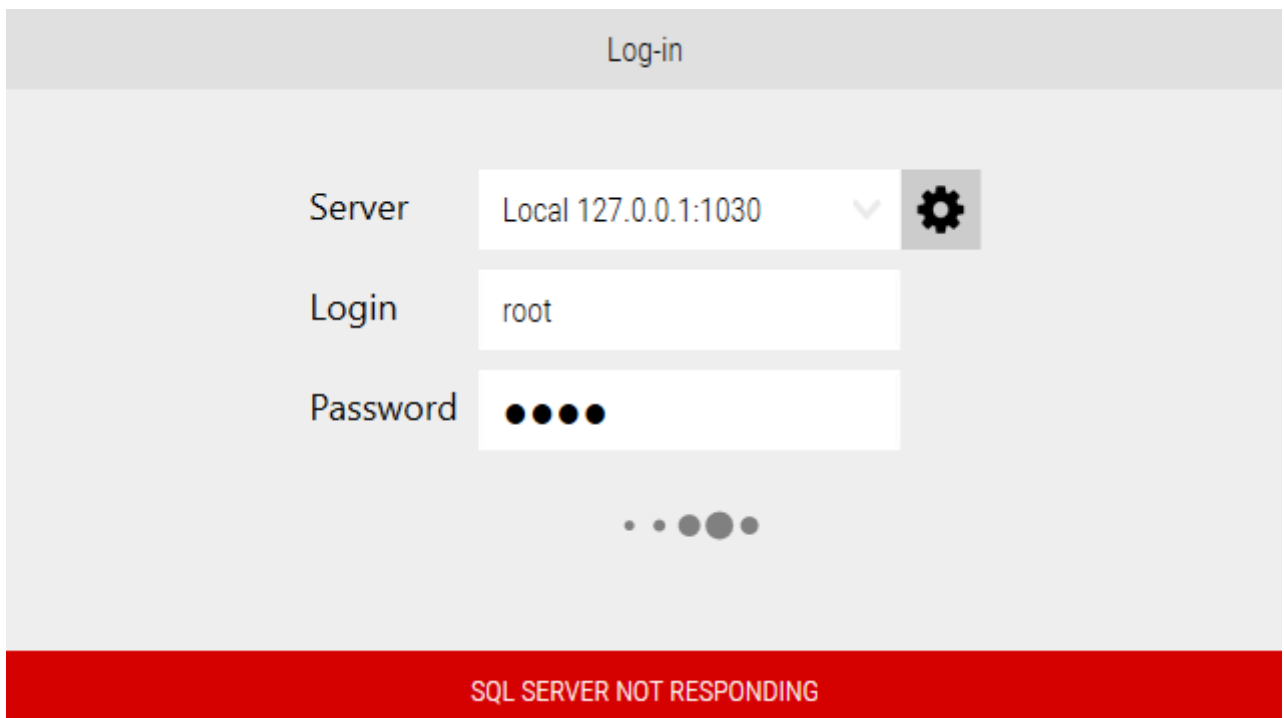
After you enter the correct login information, the **Quick Start** window appears as in the drawing on the next page.

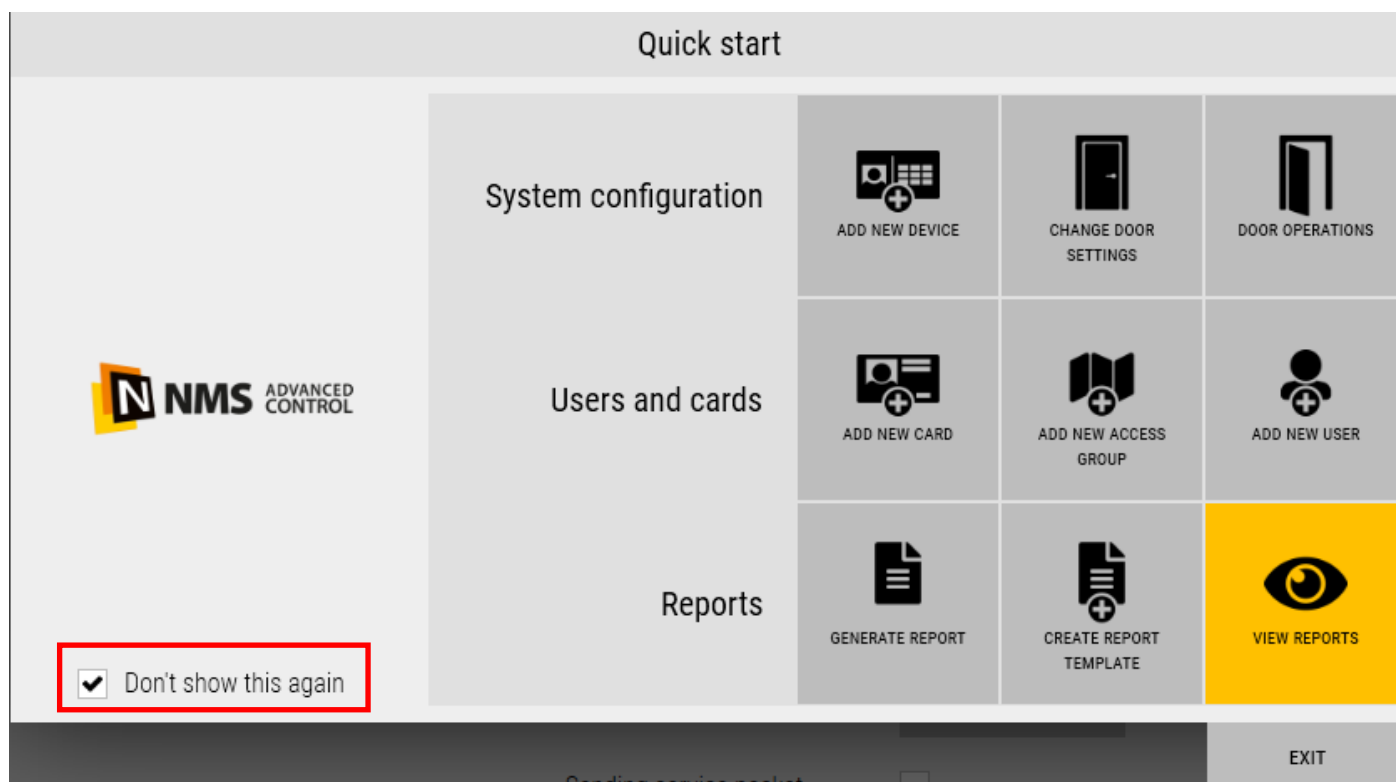


After you type the login and password and click **Log-in** button, *Server starting* information may appear at the bottom of the window. This means that you must wait because the server service starts (e.g., after reboot).



In the same situation, the lower part of the window may display a message that the *Server is not responding*. This means that the server service was stopped for some reason. You must then run the service manually using the Task/Service Manager window in Windows.





The **Quick Start** window contains nine shortcut icons for the most commonly used system options from three thematic groups:

### 1. System Configuration

- **Add new device** - opens the *Add AC or VSS device* window
- **Change door settings** - quickly opens the Door Settings Details tab in the controllers added to the system
- **Door Operations** - quickly opens operations that can be performed on the doors added to the system tab

### 2. Users and Cards

- **Add new Card** - opens the window for adding cards to the system
- **Add new Access group** - quickly opens the *Access Group* tab and adds a new access group
- **Add new User** - quickly opens the *Users* tab and adds a new user

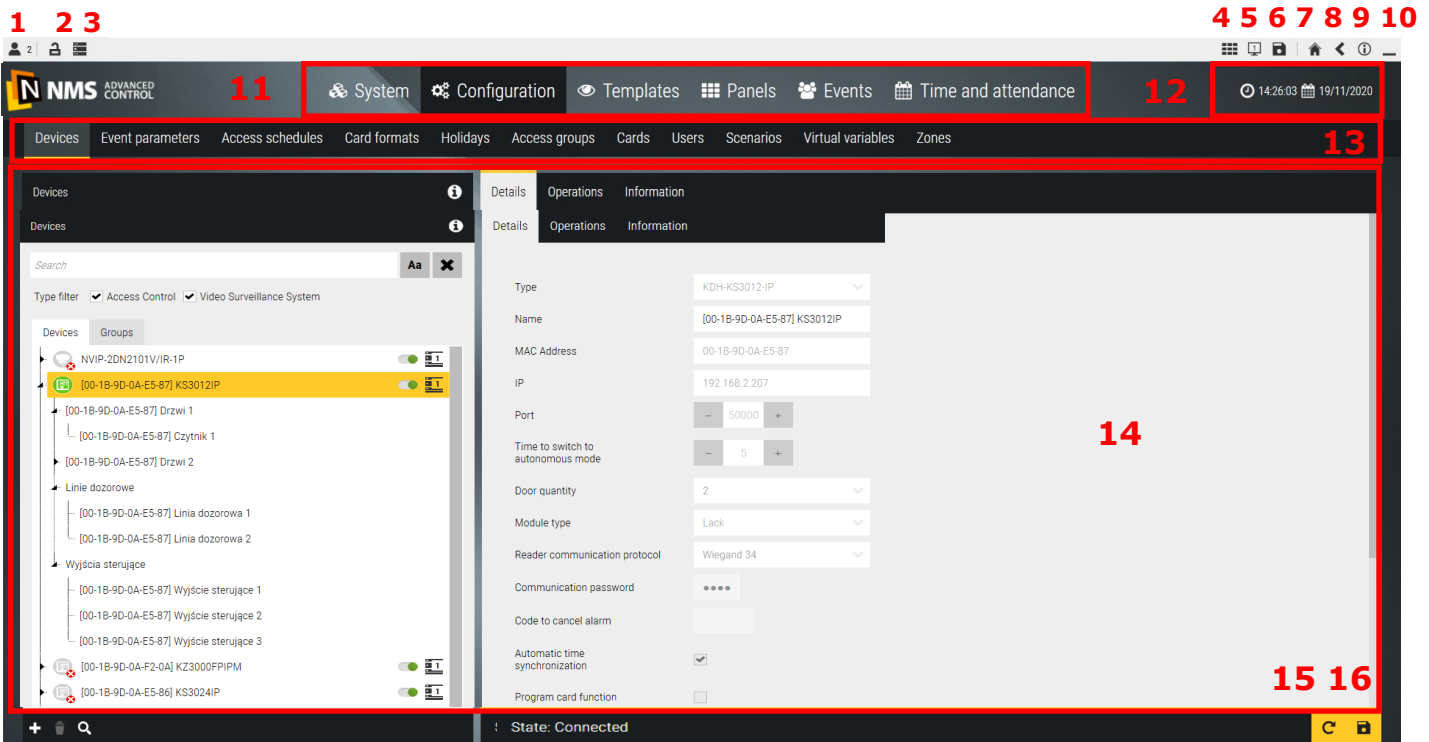
### 3. Reports

- **Generate report** - opens a window for generating an automatic report
- **Create a report template** - opens the *List of events* tab in the *Events* section
- **View reports** - opens *Files on server* tab in the *Events* section

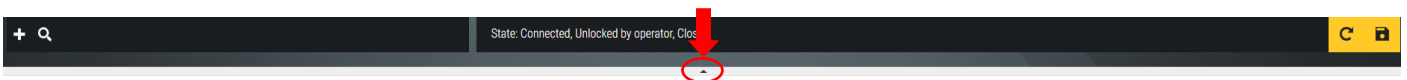
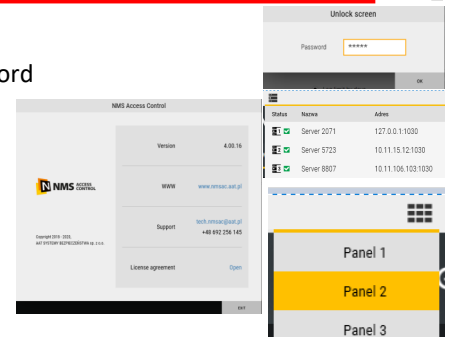
If you select **Don't show this again** checkbox shown in the image above, the **Quick Start** window is not automatically displayed when you run NMS AC. The **Exit** button closes the **Quick Start** window.

## 2.5 Operator screen and navigation in the program window

Operator screen is graphic user interface allowing interaction with NMS AC system. Its view is shown in the picture below.



1. **Log out** button - logs off the current operator and open login window
2. **Screen lock** button - lock access to the program menu, unlocking requires password
3. Displays current server or list of servers in the group (if it was created)
4. Displays a list of panels with the ability to open the selected
5. Displays the number of the current monitor
6. Saves the current layout of the windows displayed on each monitor
7. **Quick Start** button - opens the **Quick Start** window.
8. **Back** button - displays the previous window
9. **About** button - opens a window with the software version and a link to the license content
10. **Minimize** button - minimizes NMS AC window.
11. Select section bar - clicking on the appropriate section allows you to configure or preview the options.
12. The current time and date of the server.
13. Bookmark bar - allows you to move between individual tabs of the selected section.
14. Workspace - property of the item selected in the left window
15. Refresh button- refreshes the displayed data
16. Save button- saves changes made to the system configuration
17. System Logs Window- displays logs about system configuration changes and other events in the system.
18. Log window pin button (pin) - allows you to change the display of the log window - permanently visible in the screen area or in the form of a rolled up beam at the bottom of the screen, thereby increasing the workspace (14). When you click on this button, you can roll up the beam. To expand it again, click on:

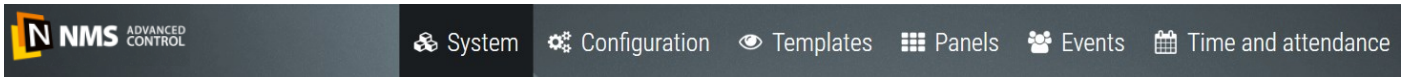


The beam expands automatically when new events appear in this window, and rolled up when clicked in the workspace.

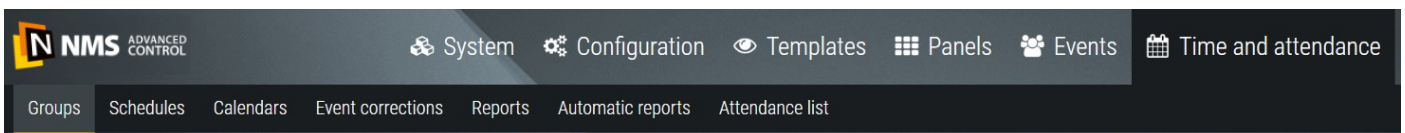
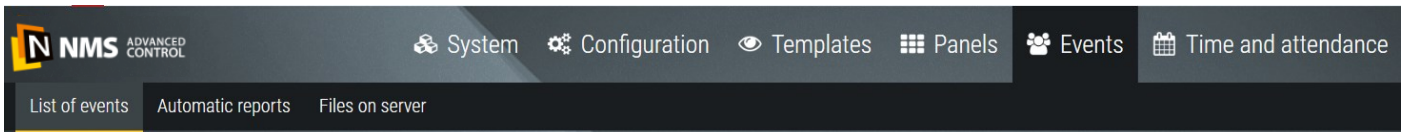
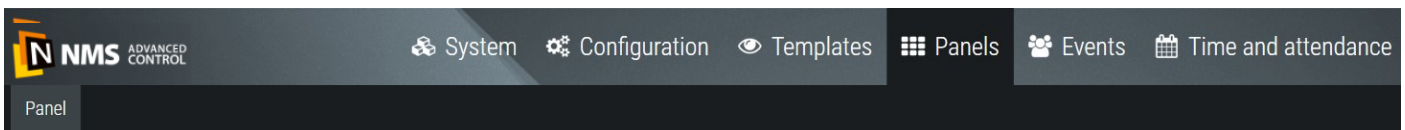
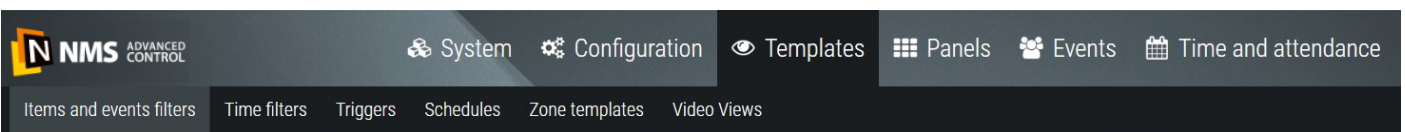
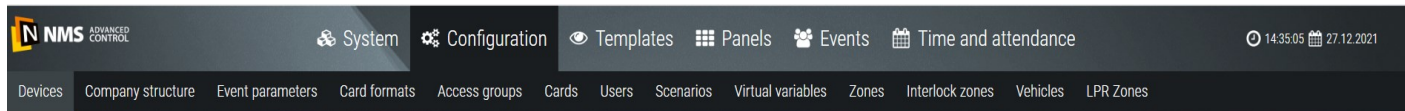
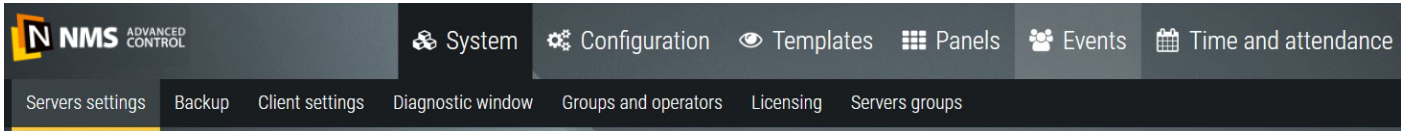
## 2.6 Program Menu

The program menu contains two bars.

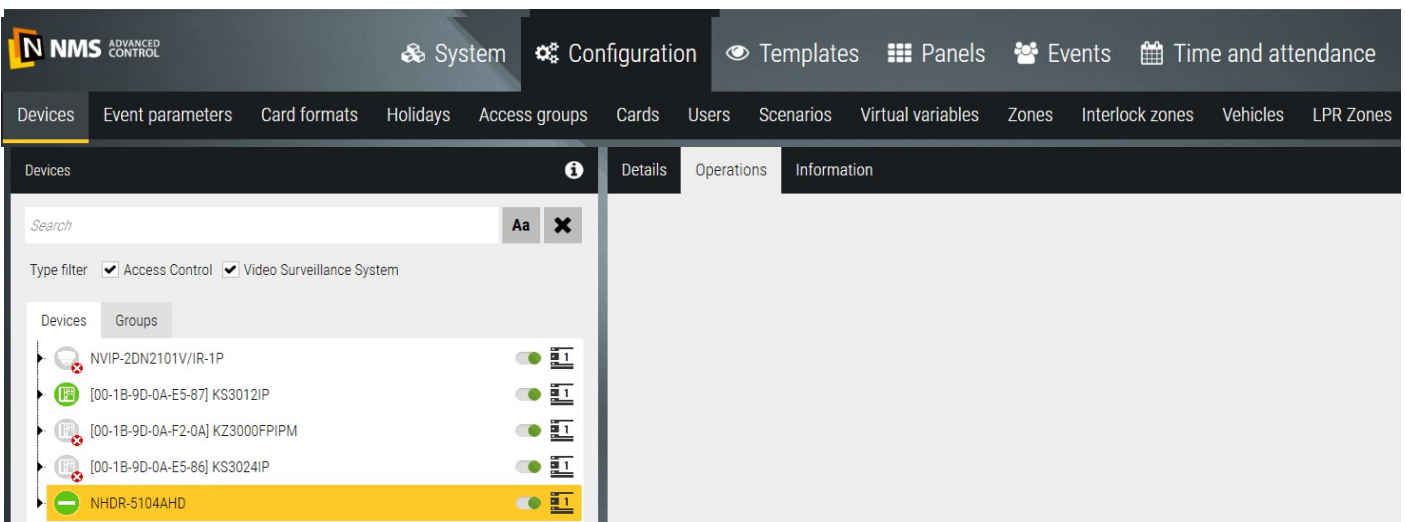
Main bar:









































It has 6 tabs. Each contains the following items:



Each tab on the second bar contains further tabs and two windows: the left one with the list of the elements and the right one with the settings of the item selected in the left window. E.g. in the Configuration / Devices window it looks like this.



## 2.7 Icons and their meaning

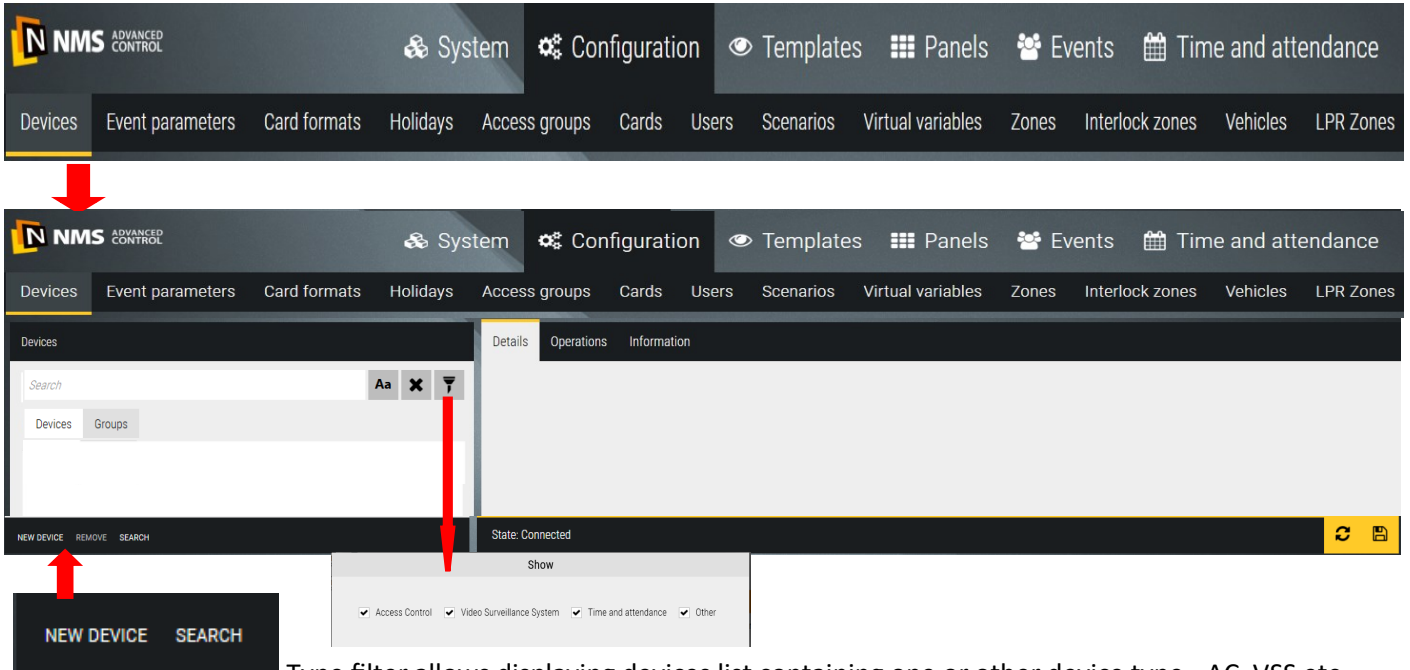
Icon symbol	Description	Location	Icon symbol	Description	Location
	Back	Top bar		Report in CSV	Events
	Logout	Top bar		Report in HTML	Events
	About	Top bar		Raport autom.	Events
	Quick start	Top bar		Delete alarms	-
	Choose monitor	Top bar		Alarm	-
	Minimize	Top bar		Letter size	
	Edit panel	Top bar		Error / information	
	Back to configuration	Top bar		Refresh	Configuration
	Lock screen	Top bar		Save	Configuration
	Server list	Top bar		Add	Configuration
	Panels list	Top bar		Delete	Configuration
	Save windows to monitors	Top bar		Import list	Configuration
	Search	Top bar		Export list	Configuration
	Go to panel	Top bar		Search	Configuration
	Data	Top bar		Copy to	Configuration
	Time	Top bar		Reset to default	Configuration
	Pin cosnole			Set as default	Configuration
	Server number			Swipe up	Configuration
	Complete setup			Swipe down	Configuration

## Section 3 System configuration

This chapter will discuss the subject of NMS ADVANCED CONTROL system configuration. These are the actions performed by the system installer. *Configuration* tab is used to do this. It includes a number of windows to add devices to your system, schedules, access levels, cards and users. You can also use this tab to define scenarios and virtual variables.

### 3.1 Devices - Access Control - Controllers

The configuration process begins with the *Device* tab.

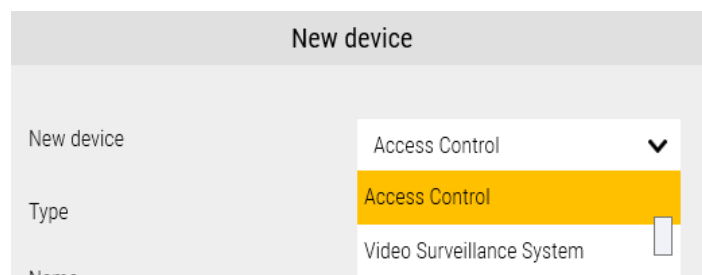


Type filter allows displaying devices list containing one or other device type - AC, VSS etc.

The system can be set up in off-line mode before connecting to the system on the facility, but much faster the configuration process goes in on-line mode when the devices are already installed, connected to power and Ethernet network. We can then use the search engine, which will display a list of available devices and address parameters after searching the network. This procedure will be described in the next step.

#### *New device*

This option allows you to add a new device in off-line mode, when you can not use the search engine. When you click on this button you will see a window like one below where you can select the type of device you want to add:



After selecting access control system device, a window will be displayed as below:

**Type** - the controller model can be selected from the drop-down list:

- KDH-KS3012-IP
- KDH-KS3024-IP
- KDH-KZ3000-IP-U or M
- KDH-KZ3000FP-IP-U or M

**Name** - editable field to type the name of the controller

**MAC** - editable field to enter the MAC address of the controller (it is on the sticker on the device).

If you do not know this address at this stage, please leave the default.

After communicating with the device with the IP address as below, this field will be updated.

**IP** - editable field to type the static IP address of the controller

(Default 192.168.0.245 - should be changed to target)

**Port** - editable field to enter port number (it is recommended to leave the default value)

**Number of doors** - from the drop down list you can select 1, 2 or 4 doors depending on the controller model

**Module type** - from the drop-down list type can be selected depending on the controller model:

- KDH-MOD2000INOUT (for KDH-KS30XX-IP controllers)
- KDH-MOD2000-ELV (for KDH-KS2000-IP-ELV controller)
- KDH-MOD2016-ELV (for KDH-KS2000-ELV controller) - 1 to 4 modules

**Wiegand format** - from the drop-down list format can be selected depending on the reader and card model: 26, 32, 34, 37, 39 or custom

**Communication Password** - editable field for typing 4-digit communication password (0000-9999)

**Automatic time synchronization** - when this field is selected, the time in the controller will be synchronized from the server every 4 hours

**Program card function** - option to select, allows to enable adding cards to the controller without communicating with the program (the description is in the instructions to the controller)

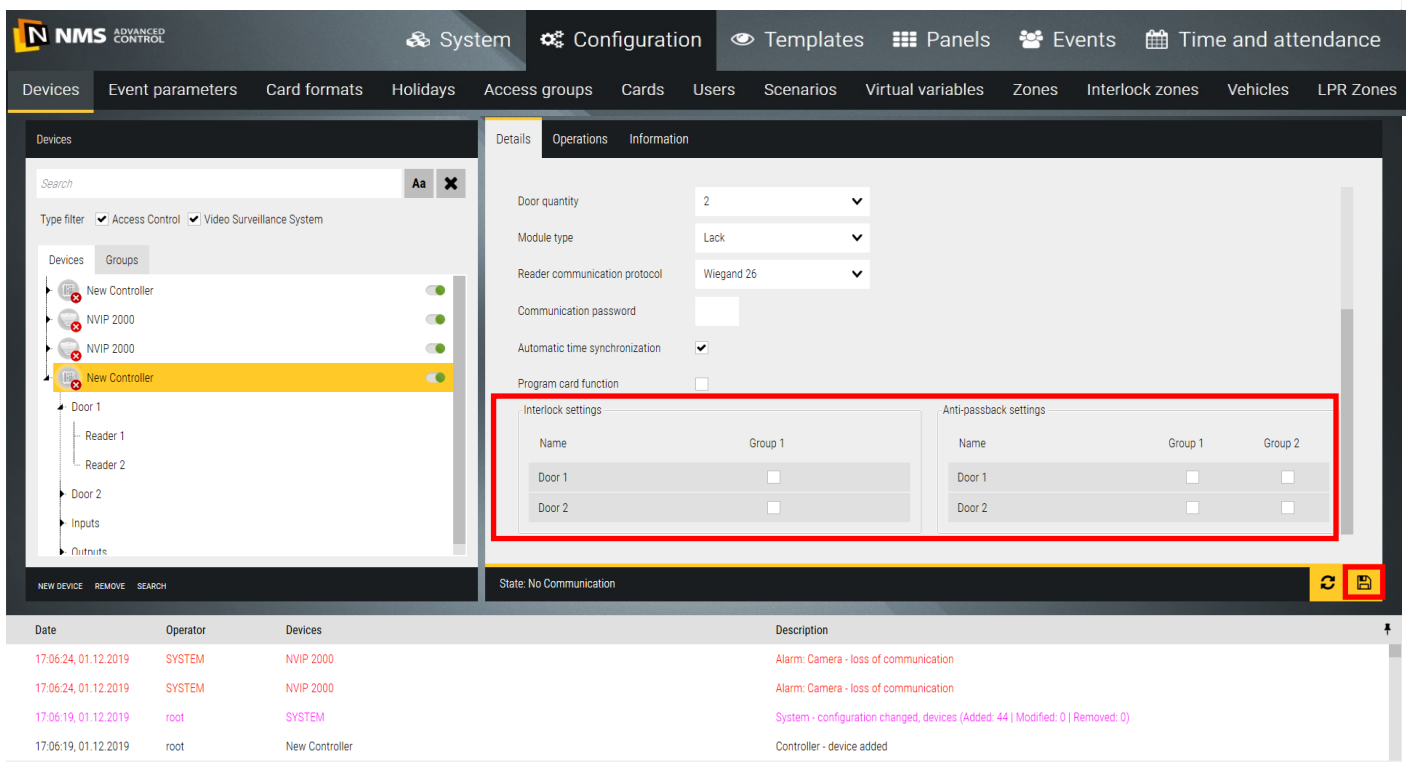
Options for integrated controllers:

**Administrator password** - entering keyboard programming mode (concern KDH-KZ3000-IP-U or M)

**Cover sabotage alarm** - enable/disable sabotage alarm (concern KDH-KZ3000-IP-U or M)

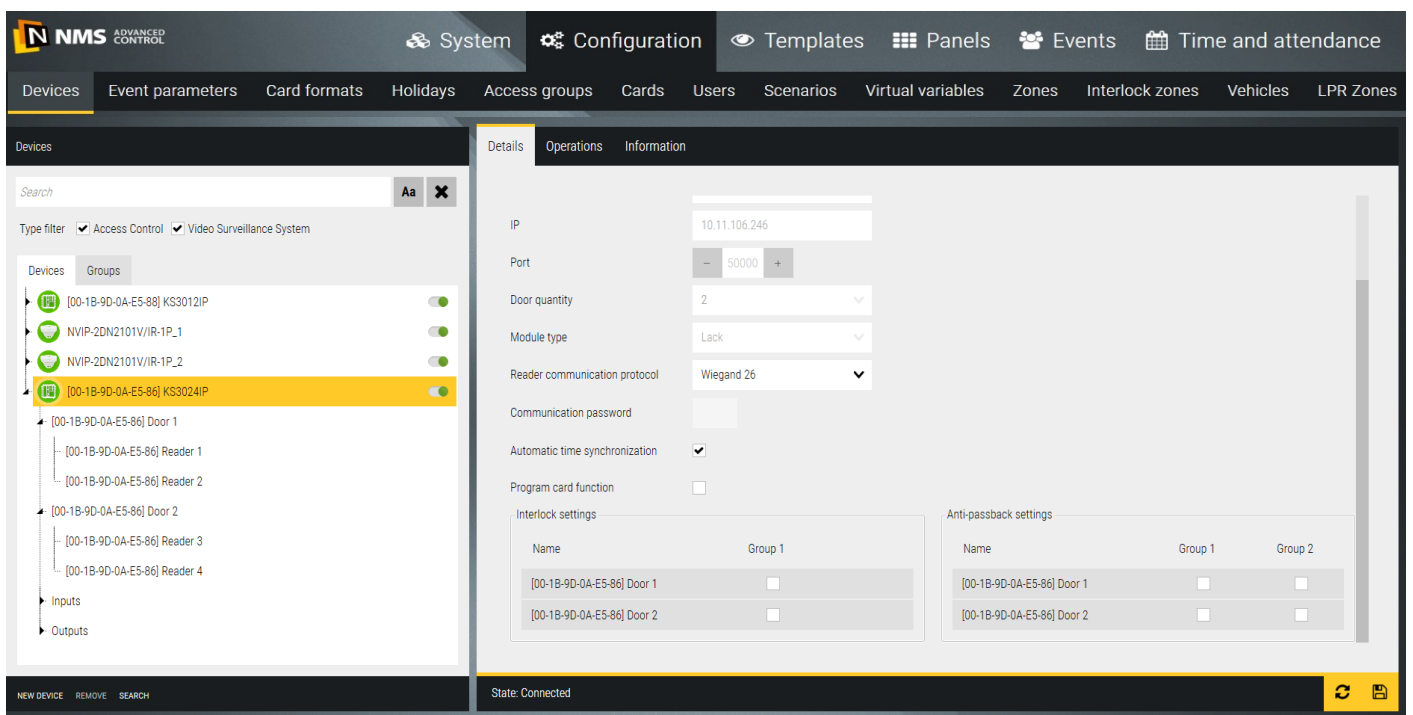
**Door breach alarm** - enable/disable door breach alarm (concern KDH-KZ3000-IP-U or M)

After you have made the settings, click **OK**. The program will return to the main configuration window and the added device appears on the list in the left window.



For KDH-KS3012/24-IP controllers, additional fields appear in the lower right window to add controller doors and readers to one or two groups. This applies independently of the man-trap function (the reciprocal control of the state of the door leaf) and the anti-passback (control the order of reading the card on the entry and exit readers). These fields do not exist for the elevator controller.

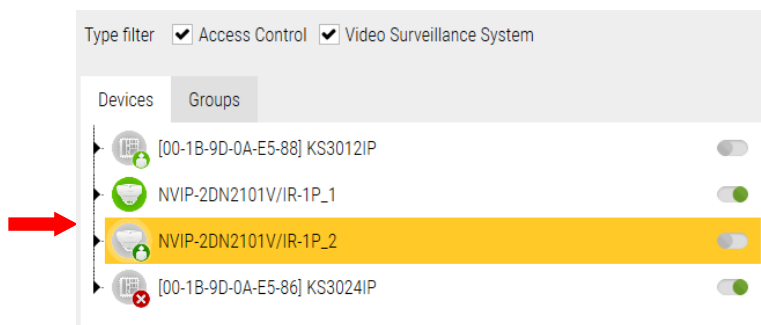
Once all settings have been made, save them by clicking on the floppy disk icon in the bottom right corner. A series of messages about this operation appears in the System Log window, and the controller icons change to



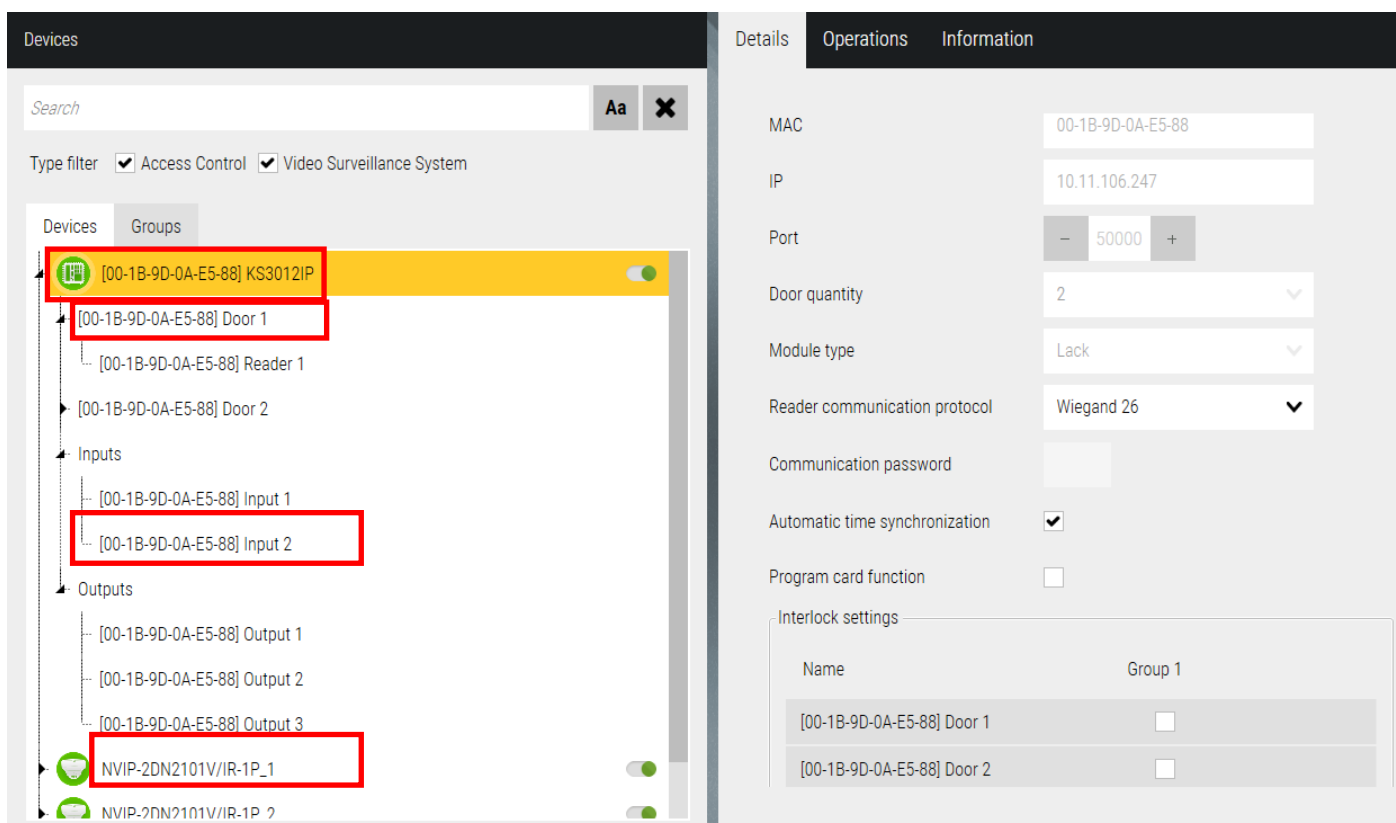


When you save the settings, the icon status can show one of three situations:

- No communication with the device - gray icon with red box (check address settings or network connection and power supply)
- Device disconnected by operator - grey icon with green box (disable monitoring by moving left slider to the right to edit settings or perform maintenance operations)
- Correct Communication - green icon



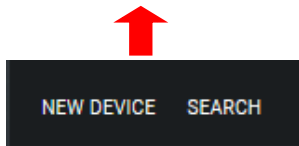
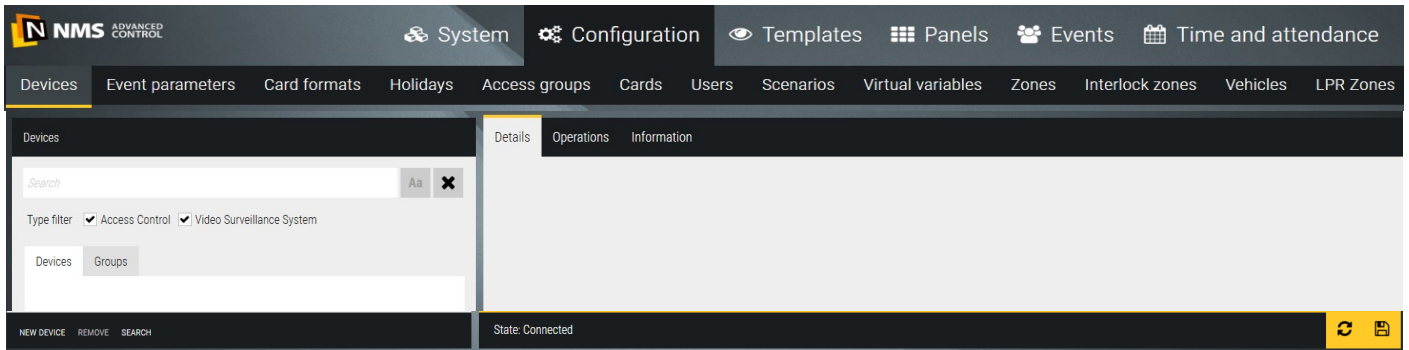
You can expand controller icon by clicking the black triangle on the main tree line and display linked elements. You can edit element's settings by selecting it on the list.



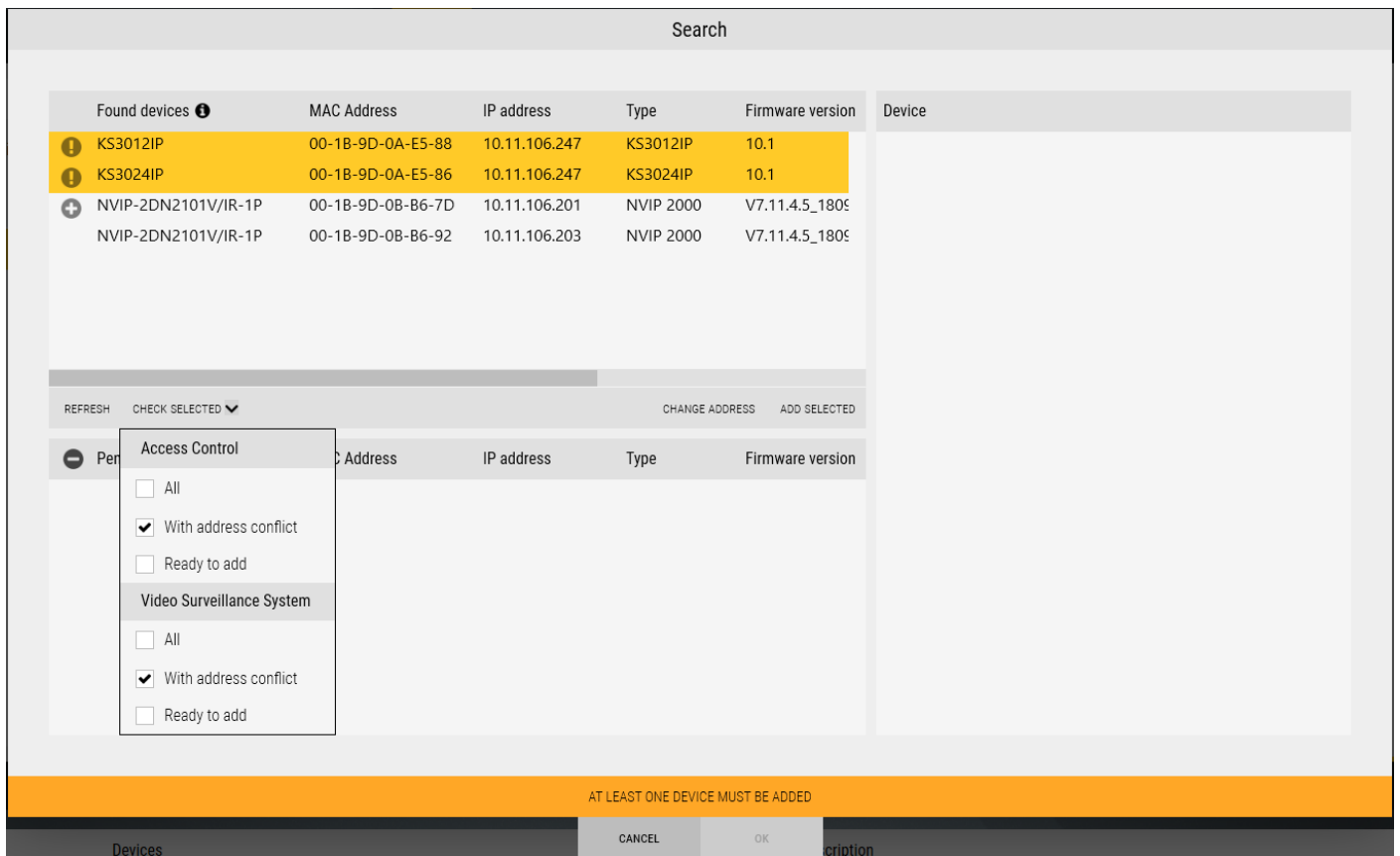
This includes components such as doors, readers, inputs and control outputs. When you select an item, the right window displays its settings, which you can edit. The selected item is highlighted in yellow. After changing the settings, save them by clicking on the floppy disk in the lower right corner of the configuration window. To edit the controller settings, disconnect it by sliding the green slider to the left. When you are finished editing, move the slider to the right again and click on the **Save** icon.

The defined controller can be edited or deleted by selecting it on the list and clicking the **Delete** button in the lower left corner of the window. All system-wide components are deleted with the controller.

Search



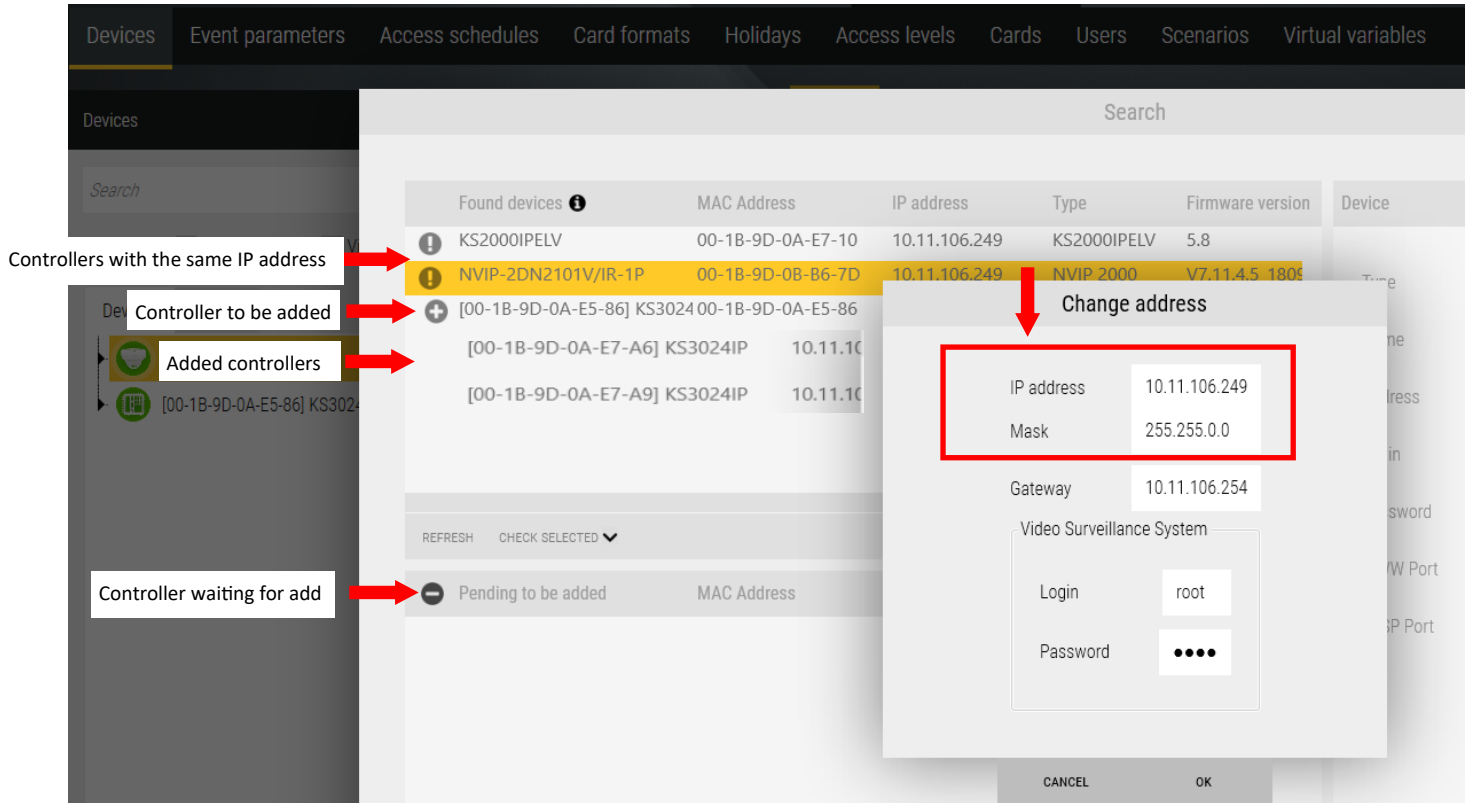
When controllers and VSS devices are installed in facility, connected to Ethernet and power, it is recommended to use the search engine to add them to your system base. This greatly accelerates this process. To run the search engine you need to click on the *Search* button at the bottom of the window as above. The program displays a window in which you will see a list of controllers and VSS devices searched in the network.



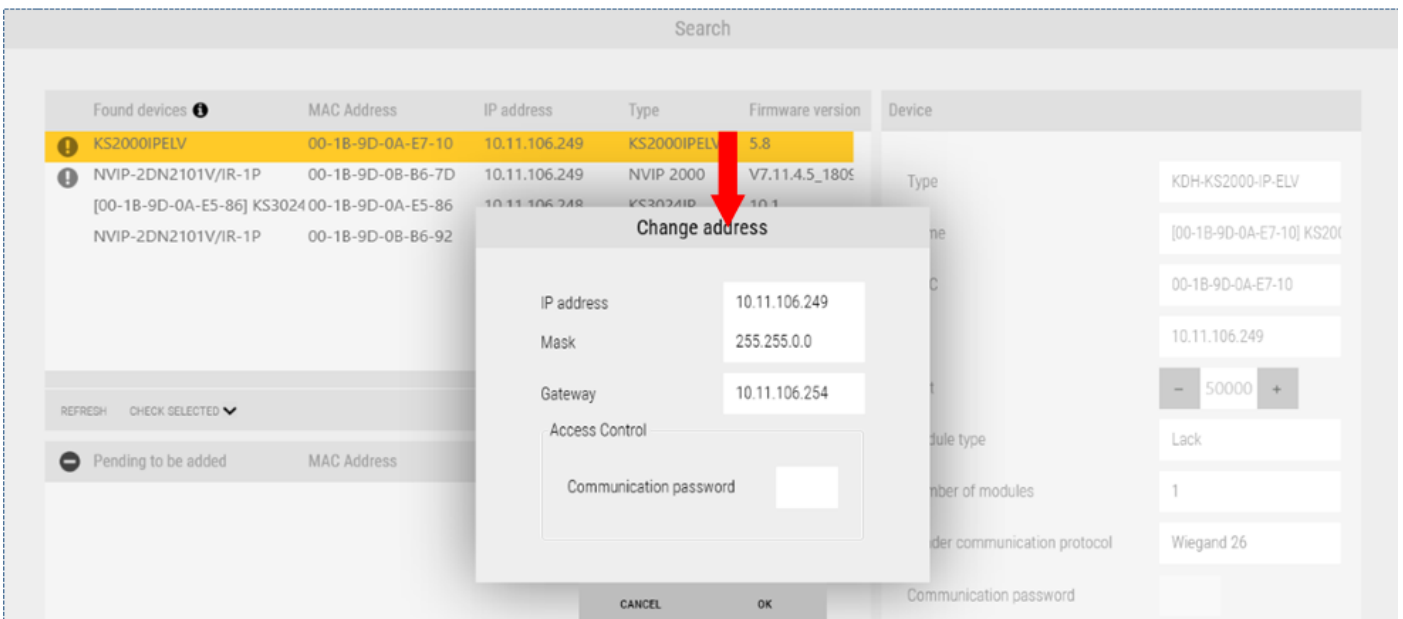
Controllers searched in the network are displayed in upper left side of the window with status icons:

- ! - controllers with the same IP address - displayed on the top of the list
- + - controllers possible to add to the system
- - controllers transferred from upper window, waiting to add; you can transfer back to upper list
- - controllers searched, already added to the system - no status icon

Each new controller has the same default IP address - 192.168.0.245. This group of controllers is displayed at the beginning of the list with **i** icon - you can select them all (using *Check selected* list) and group change their IP to addresses according to the target administrator assigned pool by clicking on the **Change Address** button. After entering the starting address, the end address of the scope will be generated automatically depending on the number of selected controllers with the same IP address. The icons will **+** change to and controllers can then be added to the bottom window by clicking on the icon.



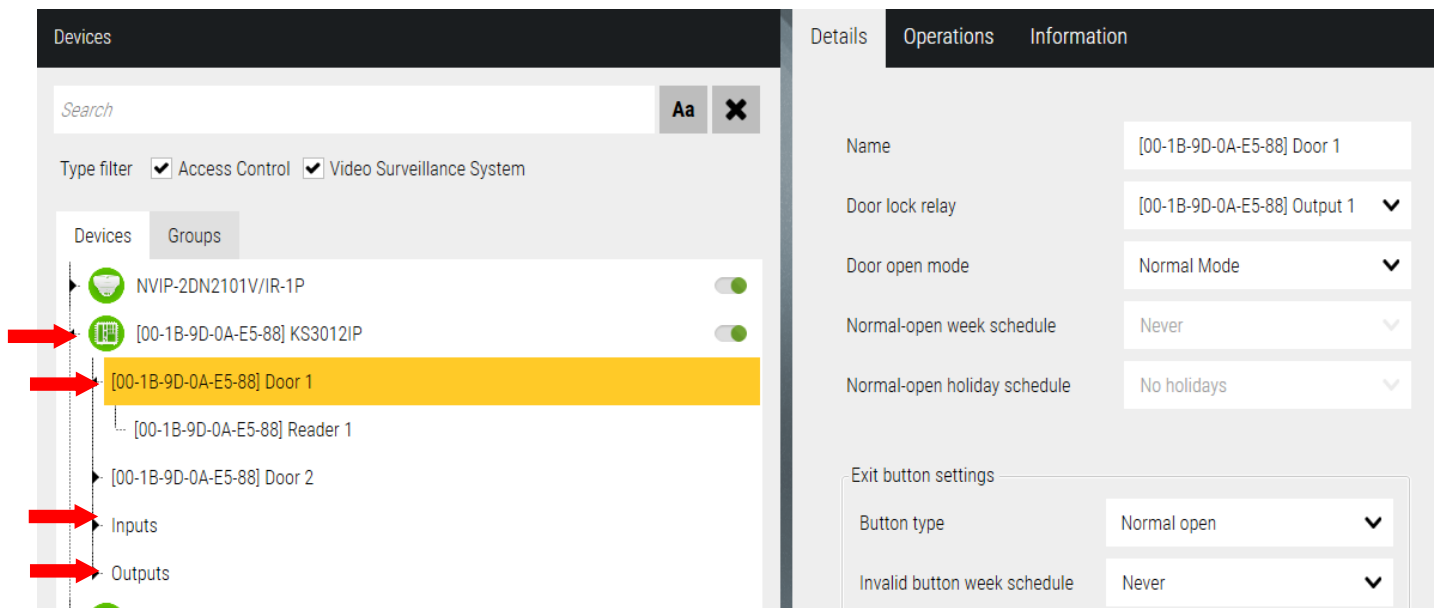
In case you want to change one controller address select it on the list in upper window and click *Change address* button.



After address settings and adding all controllers to the list in bottom window click **OK** button. Added controllers appear in *Devices* window.

### 3.2 Devices - Access Control - Controller - Doors

In the process of adding controllers, the program automatically adds the cooperating elements in quantities dependent on the controller type. This includes doors, inputs, control outputs and expansion modules. These elements appear under each of the added controllers and can be viewed by clicking on the black triangles in each of the branches of the device tree.



#### Door settings

**Name** - editable field to type the name of the door instead of the default name.

**Door lock relay** - from the drop-down list you can select the control output (relay), which will control the lock, 1-2 relays or 1-4 are assigned by default and relay 3 or 5 is the relay to connect the alarm beacon.

**Door Unlocking Mode** - one of four modes to choose from:

Normal Mode	Normal mode unlocks the door for the time set in the field below.
Latch Mode	The latch mode unlocks and locks the door alternately after subsequent readings of the card.
Present Card Normal Open	Mode 3 and 4 require a schedule setting at the beginning of which the door is unlocked permanently after reading a valid card or automatically.
Normal open automatically	

**Normal-open week schedule** - from the drop-down list you can select a schedule defined earlier, according to which the door will be unlocked permanently after reading a valid card or automatically depending on the option chosen above.

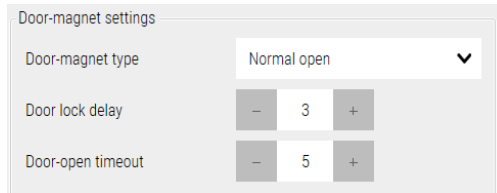
**Normal-open holiday schedule** - refers to the holidays, is the parent of normal-open week schedule and blocks its operation. If there is a holiday during the week, door will not be unlocked automatically.

#### Exit button settings

**Button type** - from the drop down list you can select NO or NC type - NC recommended.

**Invalid button week schedule** - from the drop-down list you can select a schedule defined earlier, during the period of its activity the door can not be unlocked by pressing the button.

Door-magnet settings

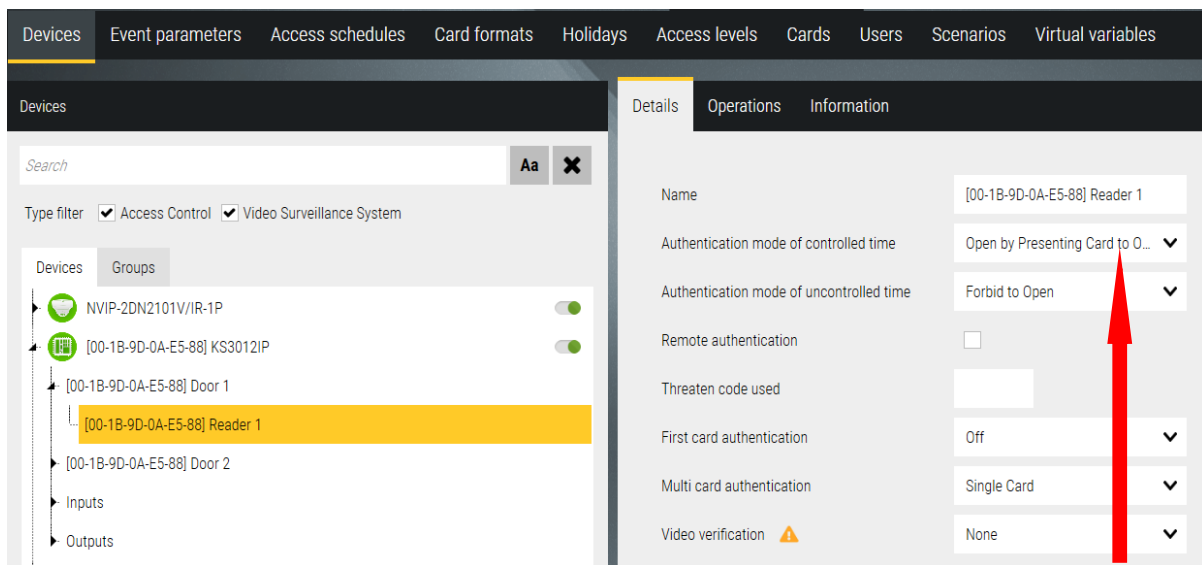


Door-magnet type - from the drop-down list you can select NO or NC type

Door lock delay - editable field to enter the time (s) of unlocking the lock after reading a valid card or pressing the exit button. You can also set the time by clicking the - or + buttons. Maximum value - 50 s.

Door open timeout - editable field to enter the time (s) for closing the door leaf. After the time that is the sum of the door lock delay and door open timeout *Door - door open too long* alarm will be generated - by default 8 s (3 + 5). You can also set the time by clicking the - or + buttons. Maximum value - 50 s.

3.3 Devices - Access Control - Controller - Door - Readers



Name - editable field to type the name of the reader in place of the default name.

Authentication mode of controlled time - from the drop-down list you can select:

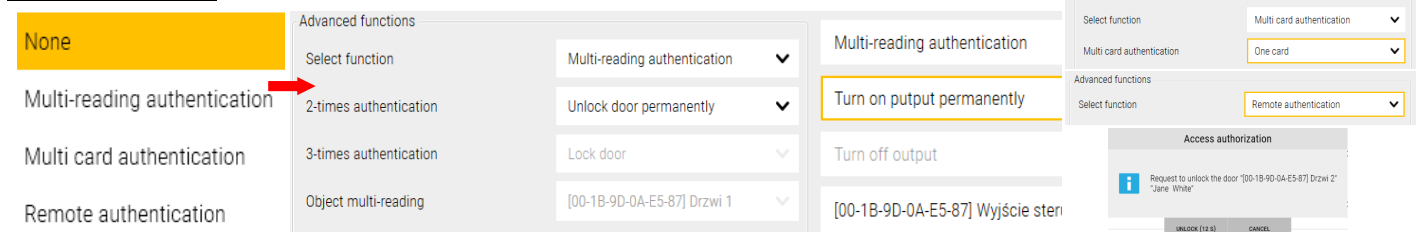
Authentication mode of controlled time - you can select from the drop-down list: (This mode applies to the off-hours period, weekends and public holidays)

Threaten code used - a field for entering the passcode to be used on the reader's keyboard in case of a forced entry. It generates a discrete alarm on the operator station.

First card authentication - access requires the use of a card in each day with the option set to Yes (field is in the users settings).

Video-verification - allows you to assign the camera installed above or built-in camera to reader for registration snapshots at the time of reading the card. Spanshots is added to event stack and in report on the screen.

Advanced features: - choice as in the windows below:



Multi-read - allows you to extend the function of the card. By reading the eligible card 2 or 3 times, it is possible to unlock/lock the door permanently or enable/disable output control. Applies to selected doors and authorized card.

Multi card authentication - access requires the use of one to four valid cards to unlock. Special option for rooms requiring greater security (so-called "commission entry").

Remote authentication - when checked, access from this reader will require a valid card to be read and confirmation by the operator in a special pop-up window. Select this option only when the system is in online mode and the operator or security guard is present at the station.

### 3.4 Devices - Access Control - Controller - Inputs

The screenshot displays the 'Devices' configuration window. On the left, a tree view shows the hierarchy: Devices > Groups > [00-1B-9D-0A-E5-88] KS3012IP > Inputs > [00-1B-9D-0A-E5-88] Input 1. The right pane shows the configuration for the selected input:

- Name: [00-1B-9D-0A-E5-88] Input 1
- Type: Normal open
- Week Schedule: Never
- Holiday Schedule: No holidays

The input lines located on the controller allow you to connect and monitor various types of detectors.

To activate the monitoring mode, you need to set the week and holiday schedule. If monitoring is disabled, this input activation only results in a change in the state of the panel icon. Depending on the controller model, we have 2 or 4 input lines and 4 on the KDH-MOD2000INOUT expansion module.

**Name** - editable field to enter the name of the input line in place of the default name.

**Type** - from the drop-down list you can select NO or NC type - recommended NC.

**Week schedule** - in the drop-down list you can select a predefined schedule according to which the input will be monitored and then the alarms will be generated.

**Holiday schedule** - refers to holidays, is the parent of a weekly schedule and changes its effect if there is a holiday day during the week in which the input should have a different monitoring schedule.

Input lines on the extension module look similarly if implemented.

The settings for the input lines for the door sensors and exit buttons status are available in the Door configuration window.

The screenshot shows two configuration windows:

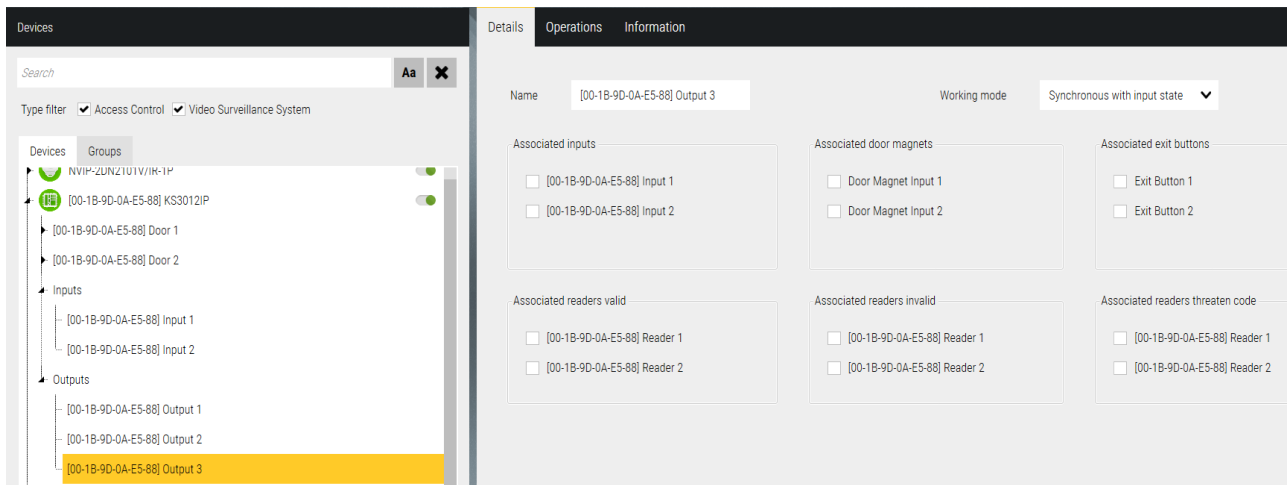
**Exit button settings**

- Button type: Normal open
- Invalid button week schedule: Never

**Door-magnet settings**

- Door-magnet type: Normal open

### 3.5 Devices - Access Control - Controller - Outputs



Control outputs located on the controller allow you to connect and control various types of devices. In terms of functionality and settings, they are divided into two groups:

- Door outputs and control of the electric lock
- General purpose control outputs

The control outputs of the electric lock in the settings have only a name change and you can not put their icon on the panel because their state illustrates a padlock in the door icon.

The other outputs have settings as in the image above. You can assign them to the status of system items located on the same controller or selected events. Changing the status of the assigned item or occurrence of the selected event causes the relay switch.

Depending on the controller model, there are 3 or 5 control outputs and 4 on the KDH-MOD2000INOUT expansion module.

**Name** - editable field to enter the name of the control output in place of the default name.

**Working mode** - from the drop down list you can select the operating mode:

Synchronously with input state - switches when the assigned input line enters or exits the alarm status

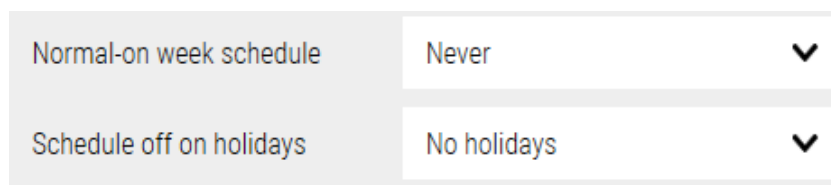
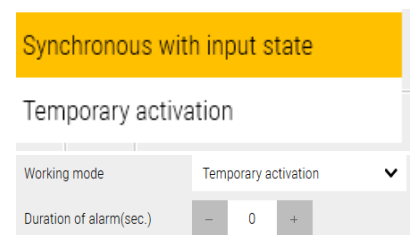
Temporary activation - switches to the time set in the field below

You have the choice of:

- states of three elements: input lines, door magnets and exit button
- events regarding to access granted, denied and threaten code

The sync assignment becomes active when you select checkbox.

Sliders let you display the remaining checkboxes.

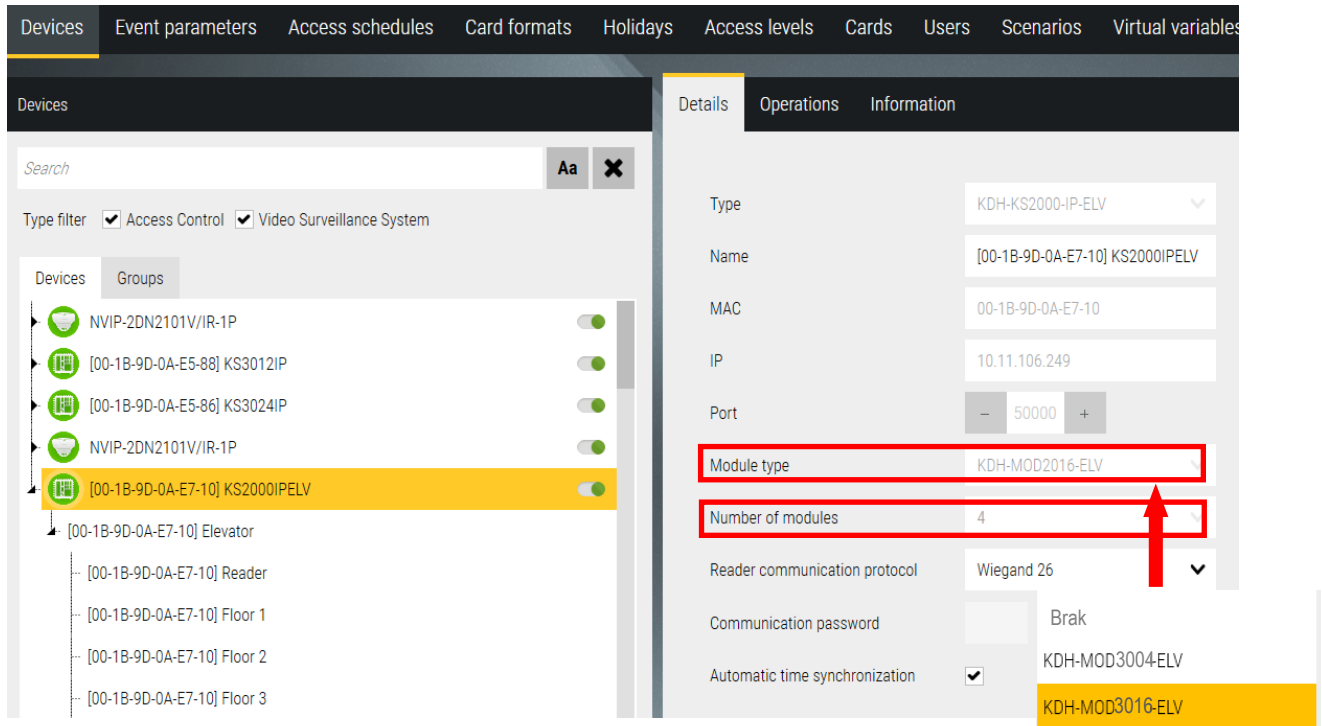


**Week Schedule** - from the drop-down list you can select an earlier defined schedule according to which output will be automatically switched.

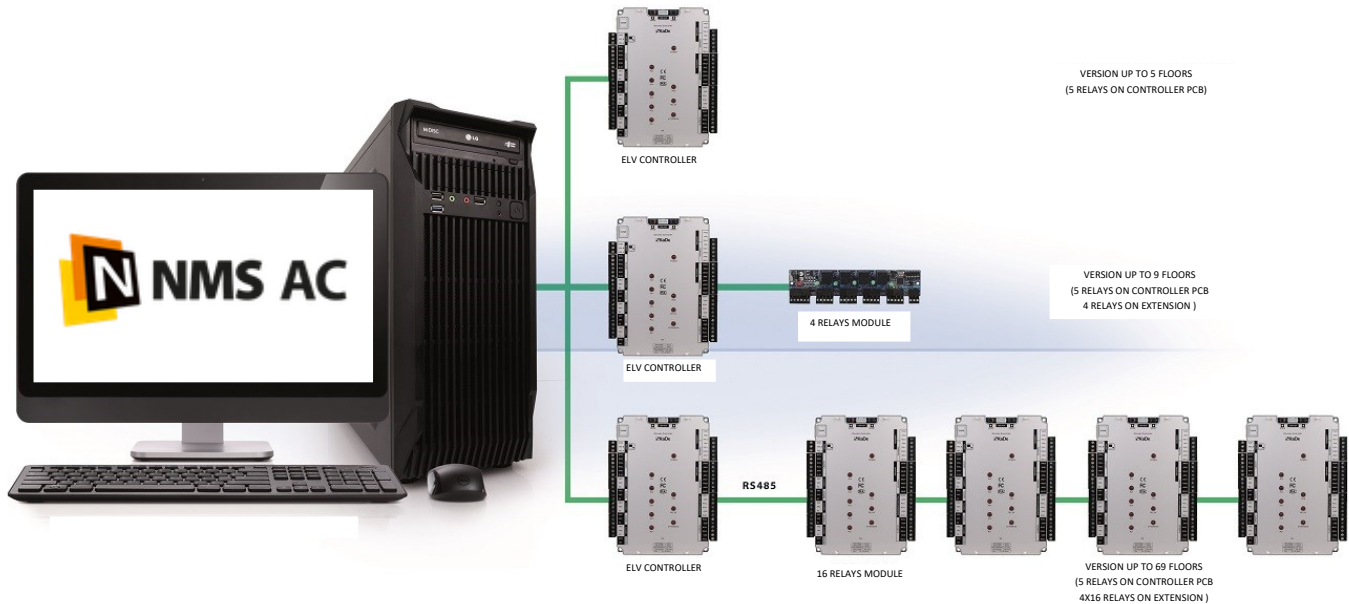
**Holiday Schedule** - refers to the holidays, is the parent of week schedule and blocks its operation. If there is a holiday during the week, output will not be switched automatically.

Settings for control outputs on the expansion module are similar if implemented.

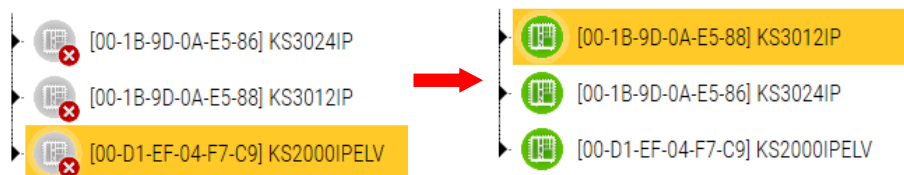
### 3.6 Devices - Access Control - Elevator controllers



To KDH-KS2000-IP-ELV you can add expansion modules also. There are two types of modules. Depending on floors quantity operated by elevator there are some combinations as following.

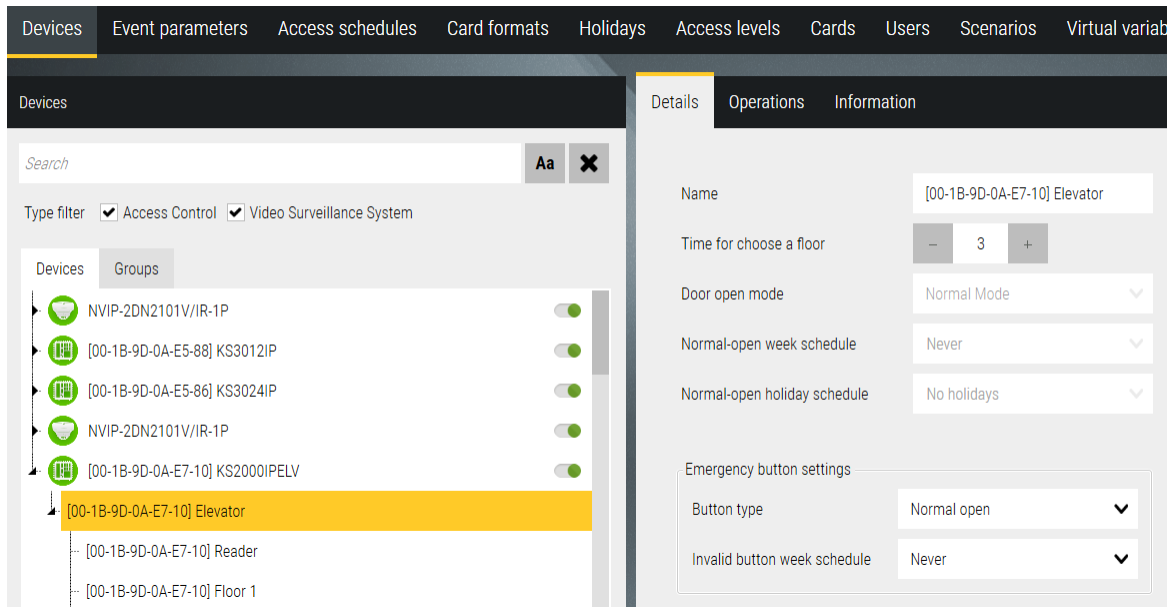


After you have completed all the settings for each controller (analogical to adding controllers in off-line mode), click on the floppy disk icon in the lower right corner of the *Configuration* window to save to the database. During this process, a series of messages informing the successful completion of the data save will appear in the System Log window. The controller icons will change to green, which shows the correct communication:





### 3.7 Devices - Access Control - Elevator controller - Elevator



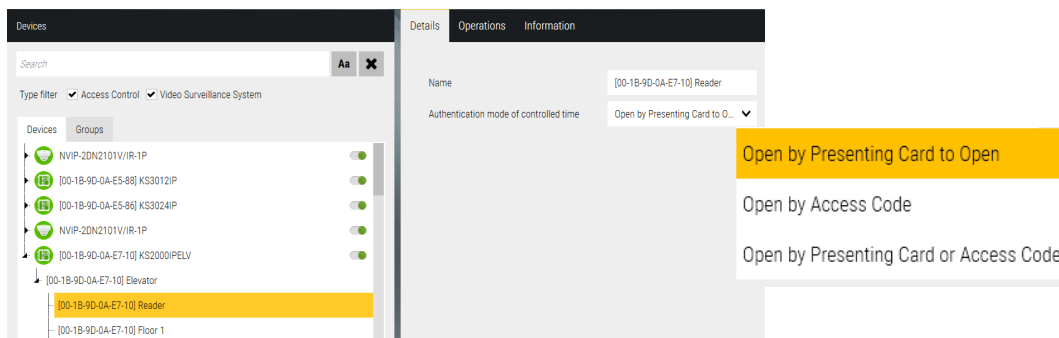
Name - editable field to type the name of the elevator in place of the default name.

Time for choose a floor - editable field to enter or set the time to select the floor after reading a valid card

Emergency button settings - used to unlock all floors permanently, so it should be a two-state button. Recommended model KDH-EXIT1030-P - with push-in plastic plate (as for emergency door unlocking).

- Button type - select NO or NC
- Invalid button week schedule - select from the drop-down list. During the period when the schedule is active the button will not work.

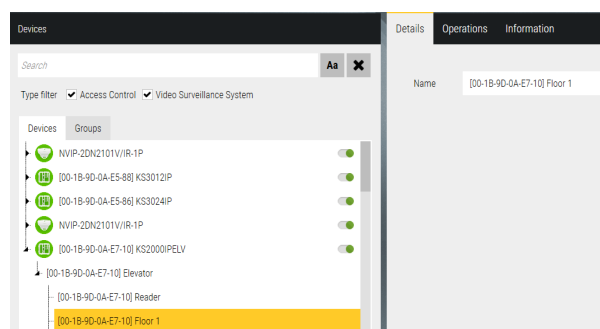
### 3.8 Devices - Access Control - Elevator controller - Elevator - Reader



Name - editable field to type the name of the reader in place of the default name.

### 3.9 Devices - Access Control - Elevator controller - Elevator - Reader - Floor

Name - editable field to type the name of the floor in place of the default name.

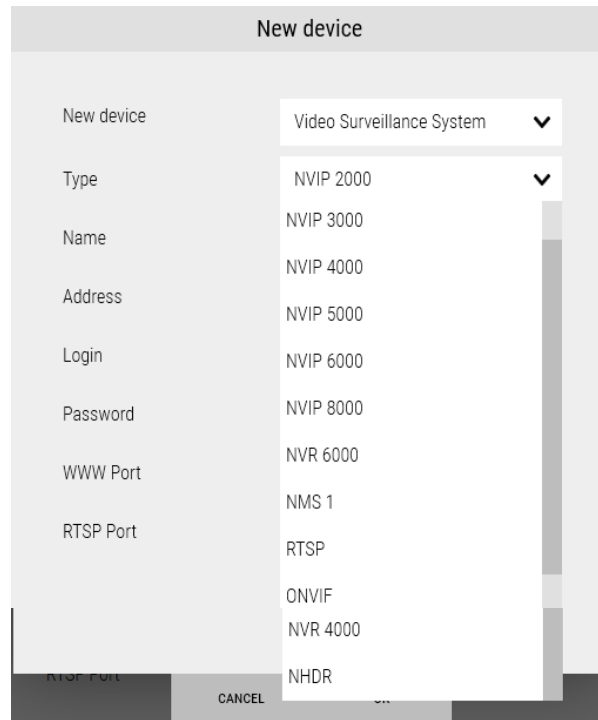


### 3.10 Devices - Video Surveillance System

In addition to the functions associated with access control, NMS ADVANCED CONTROL also integrates the video surveillance system. At this stage, this functionality is limited to:

- displaying the live image from the selected camera by clicking on the icon on the panel
- automatic display of such an image after a specific event (e.g. door forced, card reading) as a result of the execution of a scenario
- playback of archival recordings from a recorder disc or computer with NMS1
- assigning the camera to the reader- video-verification
- place on the panel video window, displaying predefined views

List of VSS devices that can be connected with NMS ADVANCED CONTROL:



The main items on the list are NOVUS devices (DVR and IP Camera series), but it is also possible to integrate with RTSP and ONVIF compliant video stream devices. A free license allows you to connect:

<b>NOVUS video channels</b>	<b>16</b>
<b>ONVIF video channels</b>	<b>1</b>
<b>RTSP video channels</b>	<b>1</b>

In the current version of the software, you can only add VSS devices manually using the *New device - Video surveillance system* option. A window will be displayed as on the next page.

Type - first select the type of video device as on the list as above.

Name - editable field to type the name of the video device in place of the default name if you want. This field will be filled automatically when camera is connected.

Description - editable field for description, e.g. location of the camera.

IP Address - field for entering IP address that matches the settings of the camera

WWW Port - field for entering the port number that matches the settings of the camera

RTSP Port - field for entering the port number that matches the settings of the video device

Data Port - field to type the port number that matches the settings on the video device

**New device**

New device: Video Surveillance System

Type: NVIP 2000

Name: NVIP 2000

Address: 192.168.1.200

Login: root

Password: ●●●●

WWW Port: 80

RTSP Port: 554

CANCEL OK

User - editable field to type a user name that matches the settings of the video device.

Password - editable field for typing a user password that matches the settings of the video device.

After setting the required parameters click on the **OK** button, and when returning to the *Device* window save by clicking on the floppy disk icon in the lower right corner of the configuration window. A series of messages informing you that the settings have been saved to the database will appear in the System Log window. Then, when connected to the device, the icon turns green.

For panel operations, we use the Channel X position, which is displayed in the tree when expanded.



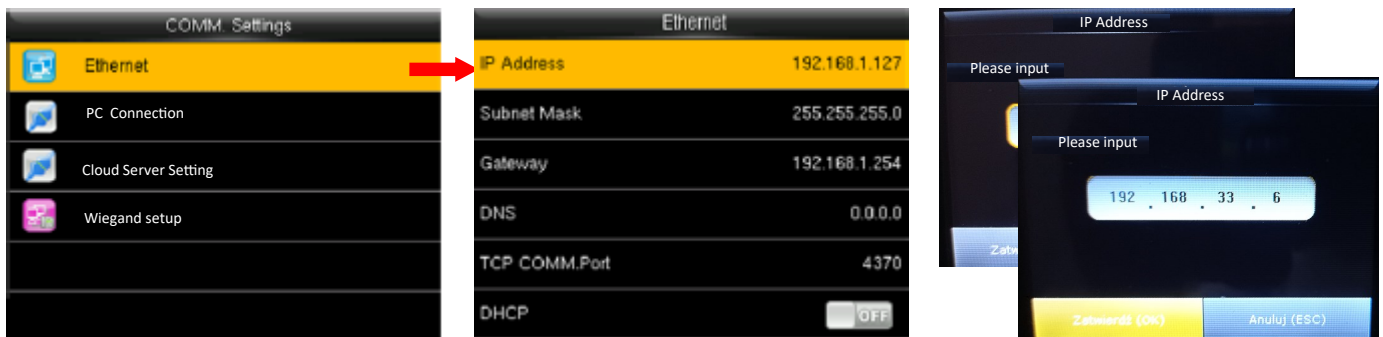
### 3.11 Devices- Time & Attendance terminals

The NMS ADVANCED CONTROL program also enables, in addition to the functions related to access control, integration with the work time and attendance recording system. From version 4.02.XX and higher, these functions can be implemented in co-operation with T&A terminals type KDH-TA500C-IP-UMD and KDH-TA500CFP-IP-UMD, which offer registration of various types of I / O (normal, private, business and break (paid license, trial 30 days). Before connecting the program to the terminal, set the IP address, language and date format in its menu. Entering the menu via the M key on the keyboard. It does not require a password at this stage. It does not require a password at this stage.



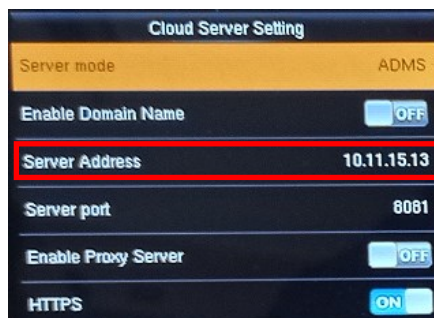
#### Setting the IP address

Selection of position with cursors. (upper right corner of the terminal)



After clicking on the Communication icon, select the item. Ethernet and click OK in the cursor field - upper right corner of the terminal. Fill in the first 4 fields - after selecting the field, click OK and enter the address values - port without changes. If you are using the DHCP network, you only need to select the last item at the bottom of the window and click OK. After restarting the terminal power supply, re-enter this window and read the assigned address in order to enter it in the NMS AC configuration window.

Then go to *Cloud Settings* and in the same way set the address of the NMS AC server to which the terminal will connect. Only this item is needed to work with NMS AC.



Exit the menu with the ESC button on the keyboard.

Language selection



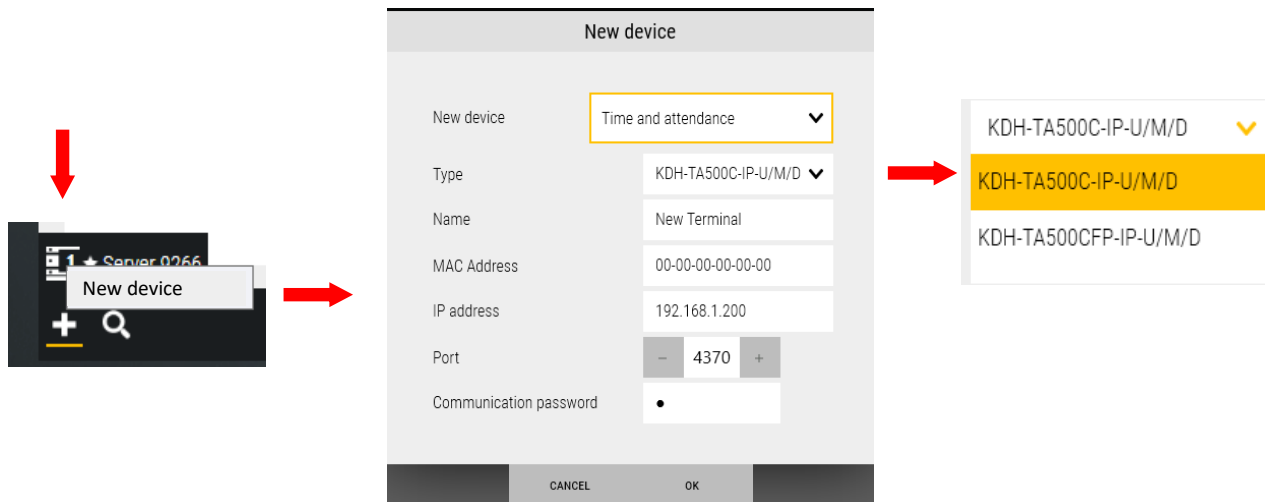
After clicking on the Personalization icon, select the item. User interface, and in the next window the Language. Set the Polish language and exit the menu with the ESC button.

Date format



After clicking on the System icon, select the item. *Date Time*, and in the next window the Date Format. Set the DD-MM-YYYY format and exit the menu by pressing ESC.

## T&amp;A terminal - configuration in the software



The terminal should be added manually using the option New device - Work time recording, the above window will be displayed.

**Type** - first select the device type from the drop-down list as above. Optional: model: KDH-TA500C-IP-UMD or KDH-TA500CFP-IP-UMD with a biometric scanner.

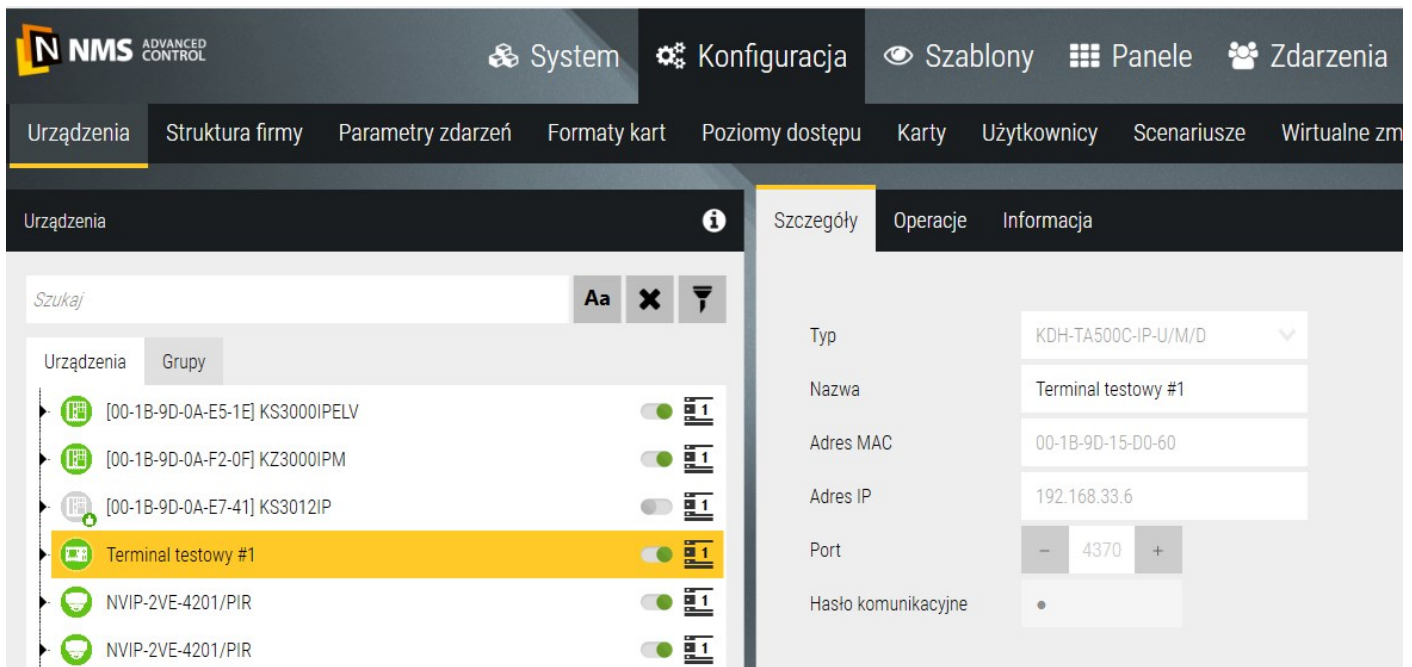
**Name** - an editable field for entering the device name in place of the default if you want to have your own name.

**MAC address** - the field will be automatically filled in after connecting to the terminal.

**IP address** - a field for entering the IP address of the terminal in accordance with the settings in the terminal menu

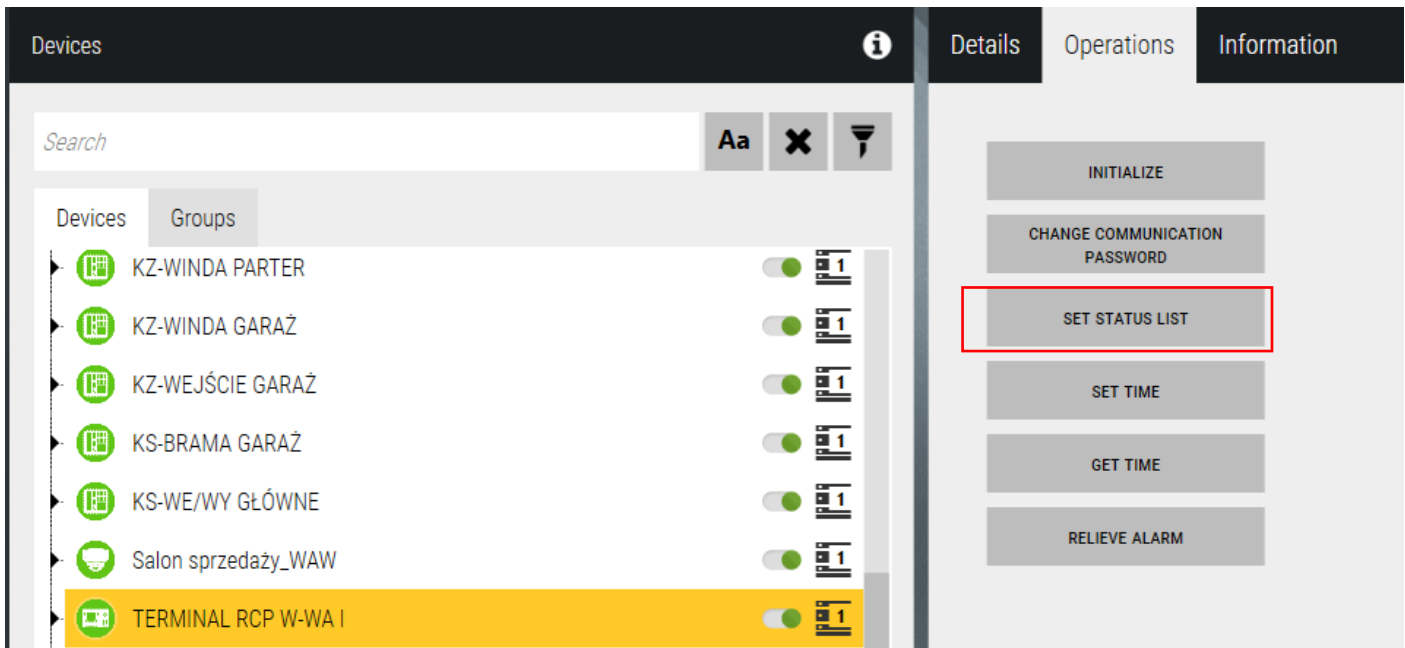
**Port** - field for entering port number, the settings in the terminal, it is recommended to leave the number 4370

**Communication password** - a field for entering the communication password. After clicking OK and Save (in the lower right corner of the Configuration window), the terminal will appear on the list of devices.



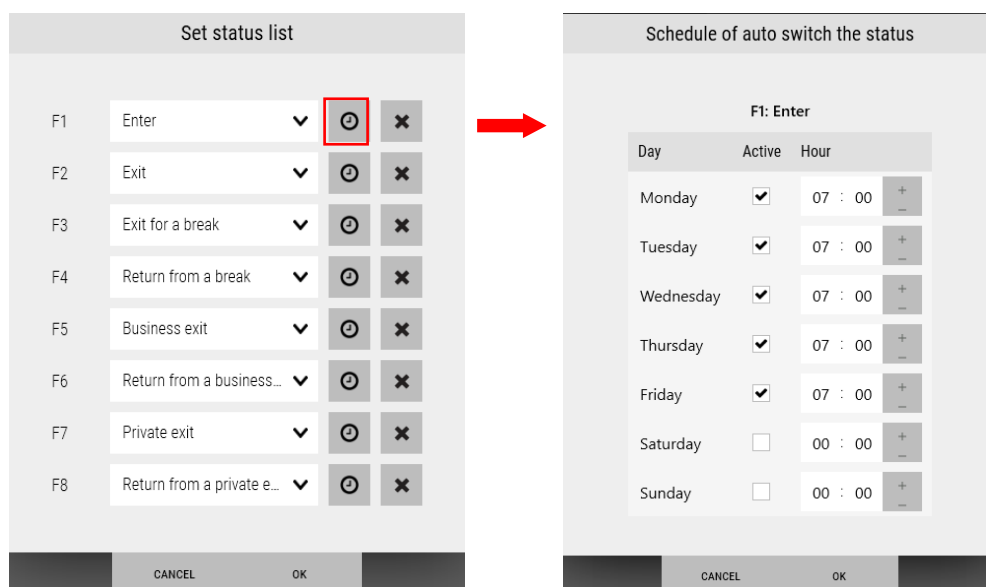
Confirmation of establishing communication is the green color of the terminal icon in the left window. From that moment on, the administrator password is required to enter the terminal menu. Default login: Enter admin ID - 1 and OK, Verify password: 1 2 3 4 5 6 7 8 and OK

The default password should be changed after logging in in the Manage menu. user by editing the Admin user. Adding fingerprints to the FP terminal via the USB scanner is described in the *Users* tab.

Settings entry/exit status register

In the Operations tab, click on the Set status list button. You can leave the default settings or set your own order by selecting a status from the drop-down list next to each button.

By clicking on the clock icon next to each button, you can set the schedule of automatic switching of the recording



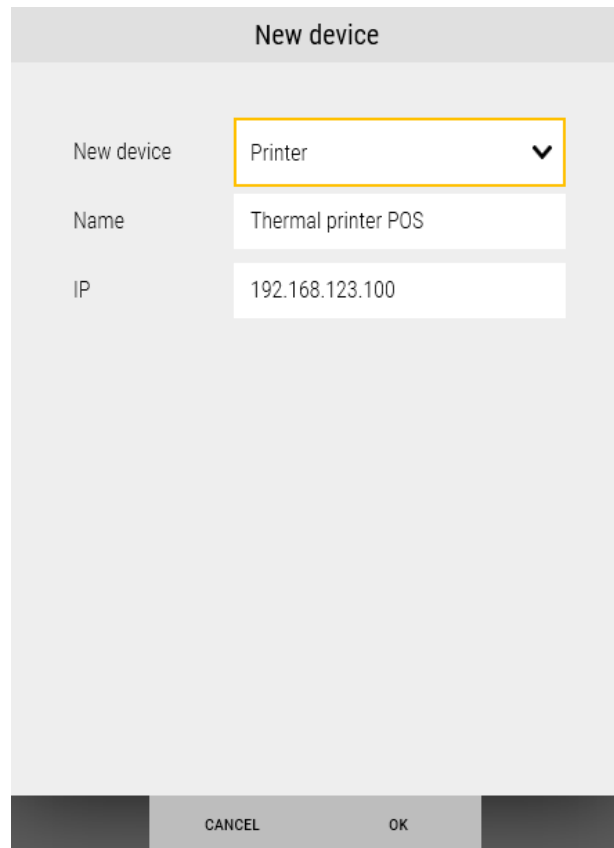
After making the settings, confirm with OK and then click the Save button in the lower right corner of the configuration window. This will send the correct descriptions of the registration statuses. This process may take up to several minutes. During this process, the following will appear on the terminal display in the button description fields: F1- Processing. Only after completing the entire process will all real status descriptions appear. Descriptions are displayed in the language of the logged-in operator.

The *Operations* tab also offers other options as described on the buttons.

The *Disable alarm* button is used to cancel the alarm generated after the violation of the terminal anti-tampering sensor. You can also cancel the alarm from the terminal icon on the panel.

### 3.13 Devices - Tickets printer

The NMS ADVANCED CONTROL software allows you to add a printer dedicated to printing tickets with QR-codes for the LPR option. To add a printer, enter its IP address and click *Save*.



The screenshot shows a dialog box titled "New device" with a light gray background. It contains three input fields: "New device" with a dropdown menu showing "Printer" and a downward arrow; "Name" with the text "Thermal printer POS"; and "IP" with the text "192.168.123.100". The "New device" dropdown is highlighted with a yellow border. At the bottom of the dialog, there are two buttons: "CANCEL" and "OK".

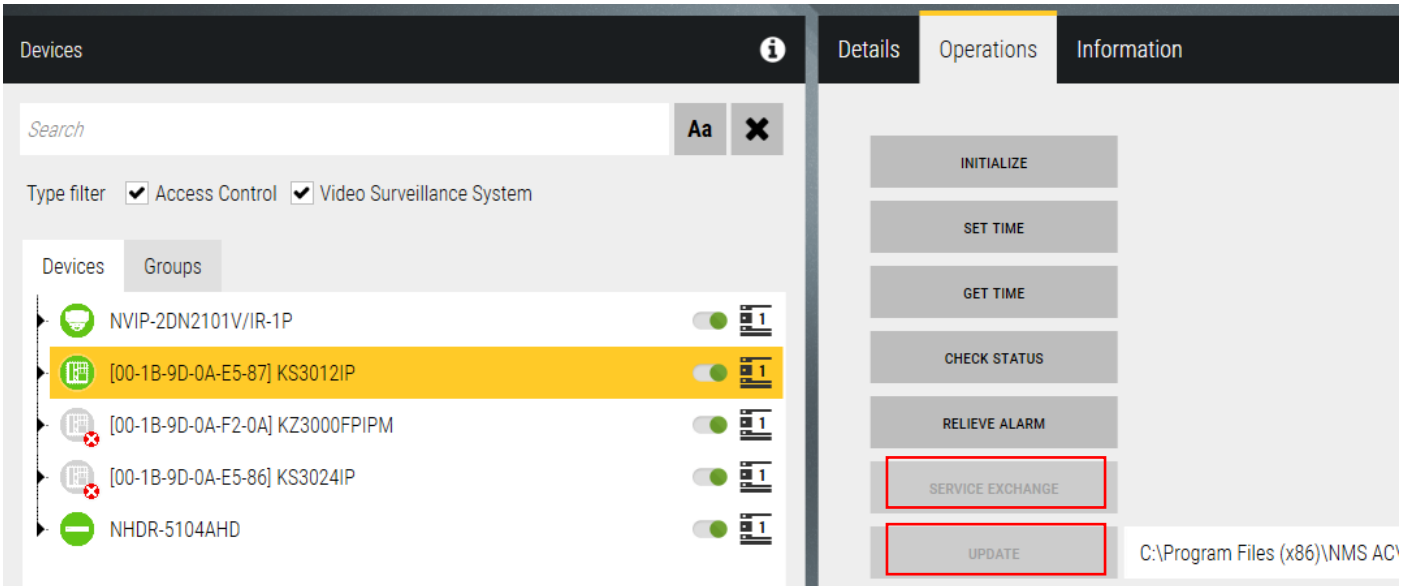
Field	Value
New device	Printer
Name	Thermal printer POS
IP	192.168.123.100



### 3.14 Devices - Operations

System items shown below have operators commands in Operations tab, which allow to perform certain operations as on the lists below.

#### Controller

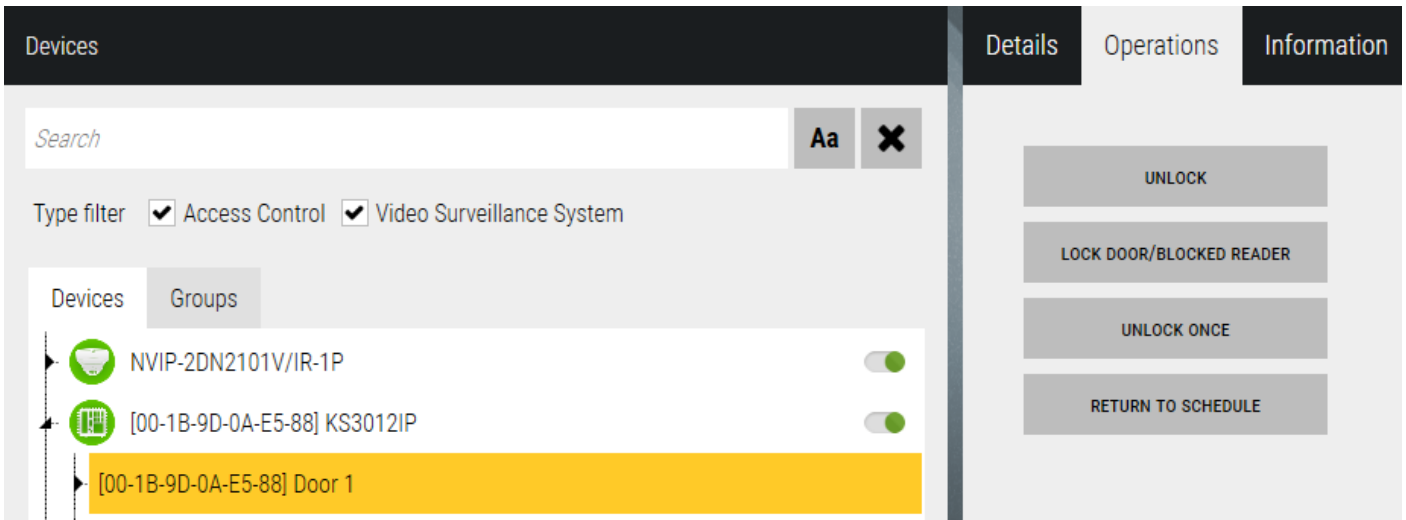


New buttons:

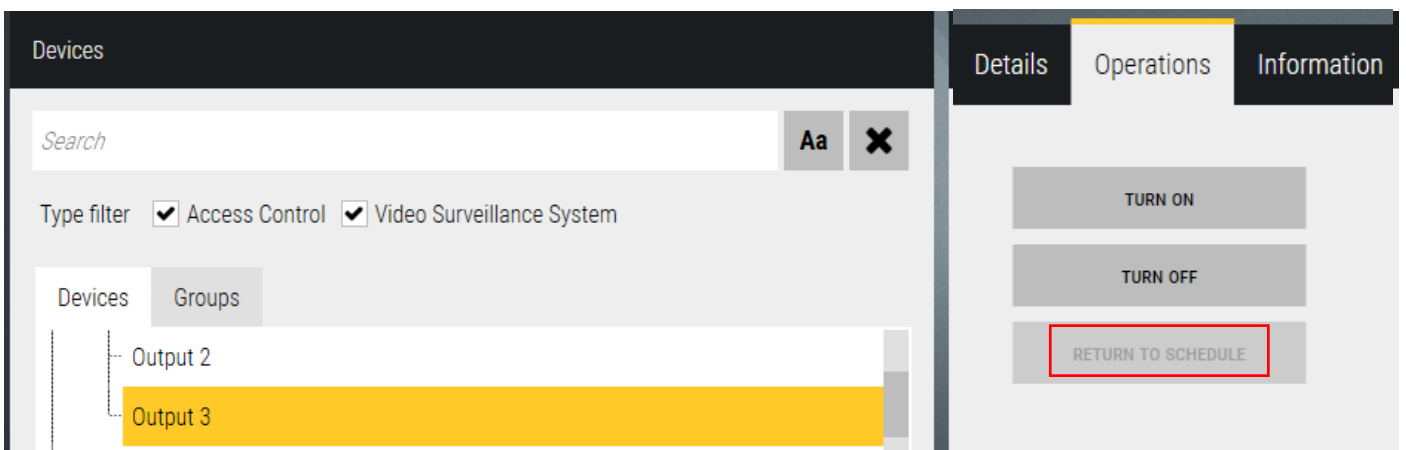
„Service exchange” - allows to replace the controller with new one, which must be connected with the same IP address.

„Update” - allows to upload new firmware from program to controller, is active when the version is incompatible.

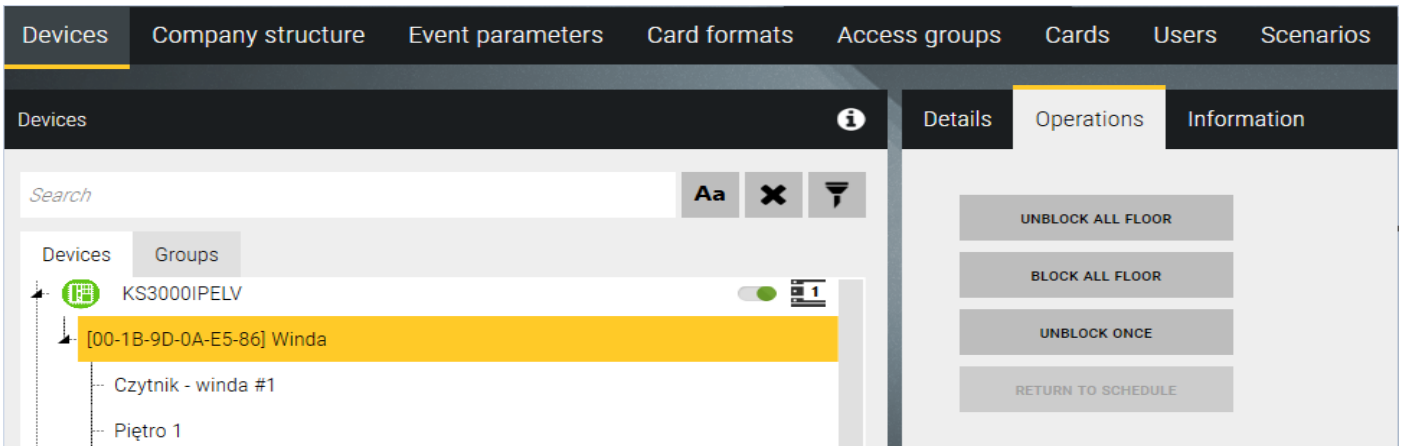
#### Door



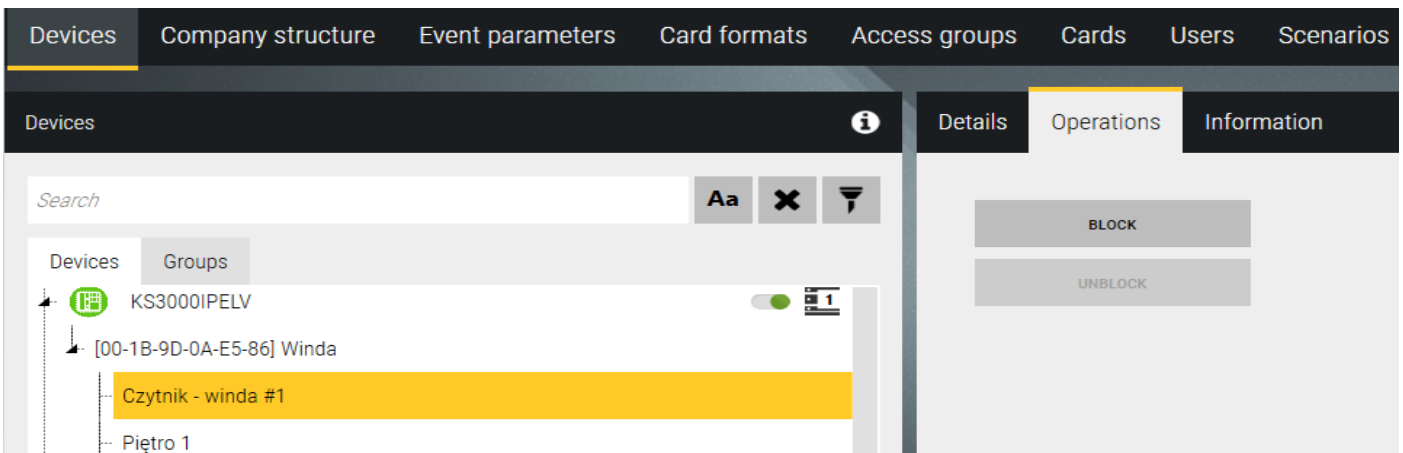
Output (not linked with lock only) - new option - RETURN TO SCHEDULE



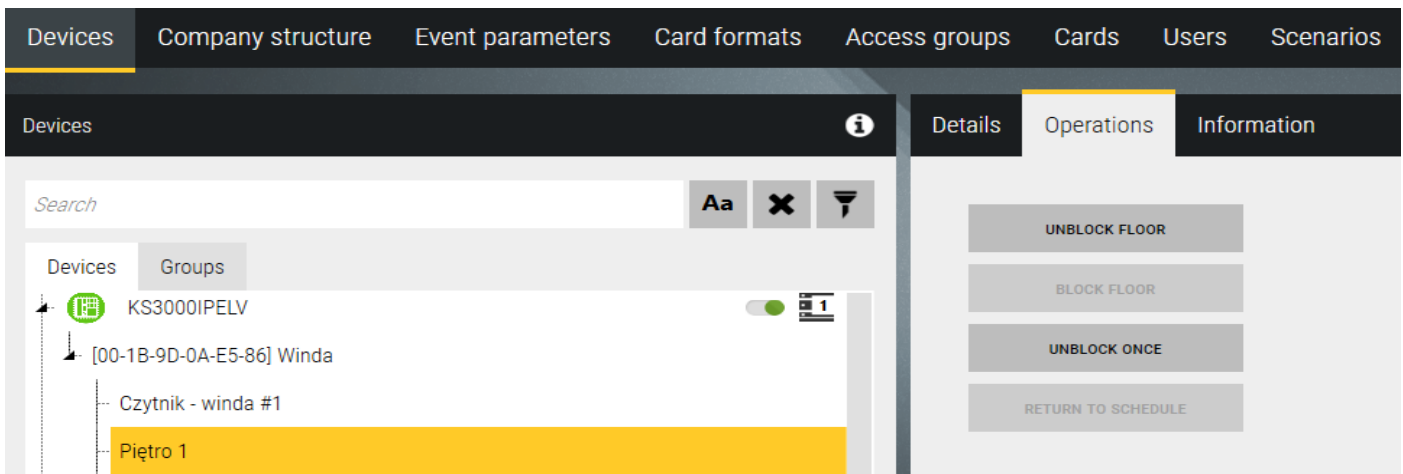
## Elevator



## Reader

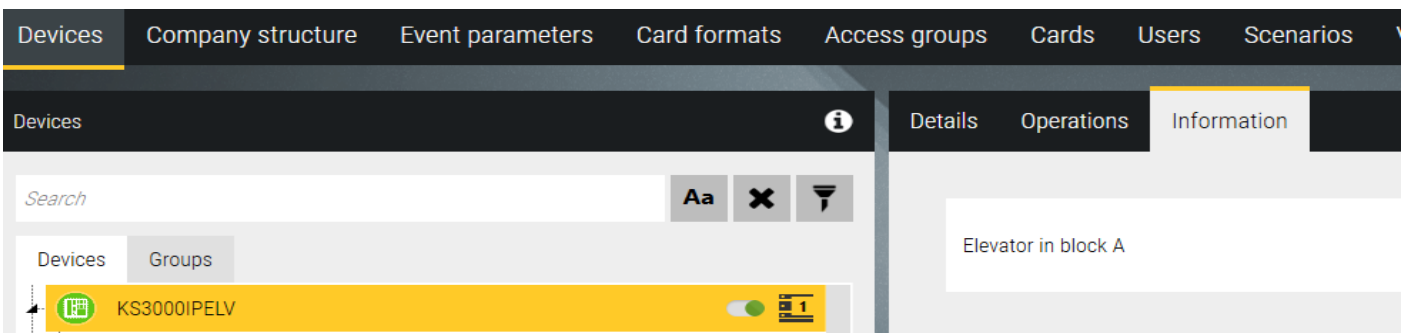


## Floor



### 3.15 Devices - Information

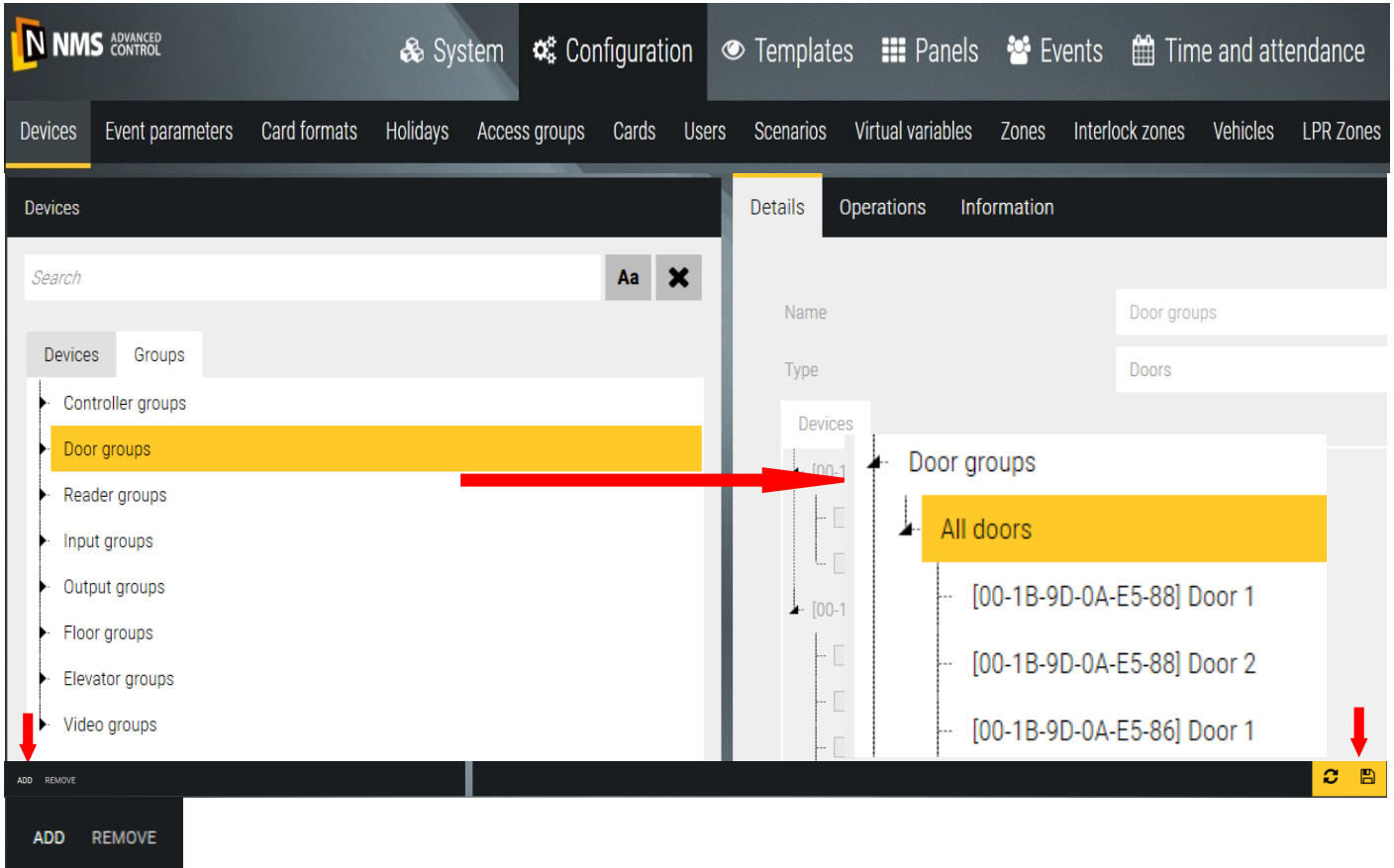
Every item has *Information* tab, which you can place optional information in.



### 3.16 Devices - Groups

Use the *Groups* tab to define groups of system elements. The list of default main groups is displayed in the left window. Each default group has a defined group that contains all the elements of that type (see *Door groups*) and is automatically updated when a new element of the type is added.

Groups are used to perform collective operations on elements of the system e.g. unlocking the door group, which greatly accelerates this process with a large number of doors. You can perform group operations from the black group icon context menu on the panel or by navigating to the *Operations* tab in this window.



In addition to the default groups that contain all elements of a given type, you can define subgroups that contain only selected elements of that type. To do this, select the default group of the type and click *Add* at the bottom of the window. A new subgroup appears in the group tree, and a list of all elements of the type is displayed in the right window. Select the items that you want to add to the new group.

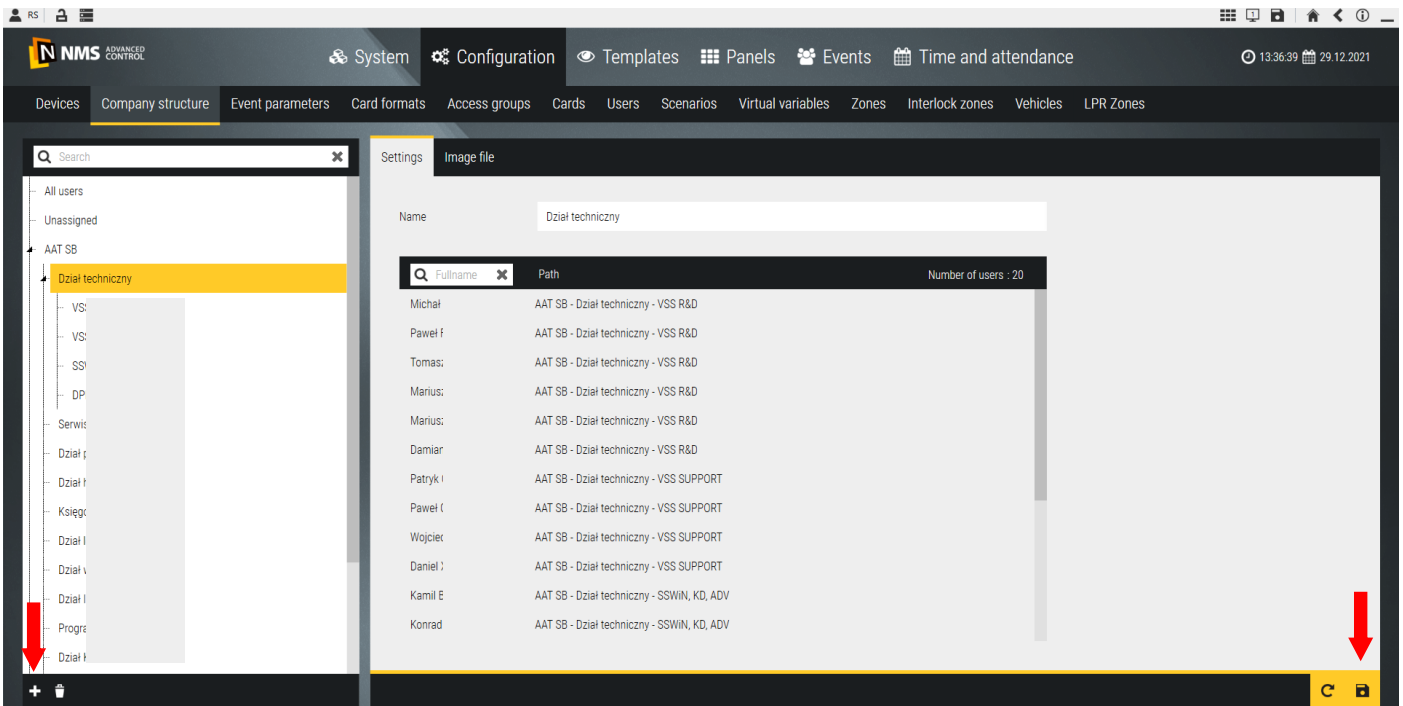
To add a new group in the main tree, no groups can be selected. If there is a selection (yellow bar) then click on it while holding down the CTRL button. A group added in the main tree can contain elements of different types. This can be used to create a system structure in multiple locations.

You can edit or delete a defined group by selecting it on the list and clicking the *Delete* button in the lower left corner of the window.

### 3.17 Configuration - Company structure

The tab allows you to define the company's organizational structure and then assign employees to it. This allows you to generate event reports and T&A reports for the selected department.

By default, there are two items in the left window:



Everyone - displays a list of all users added to the database in the right window

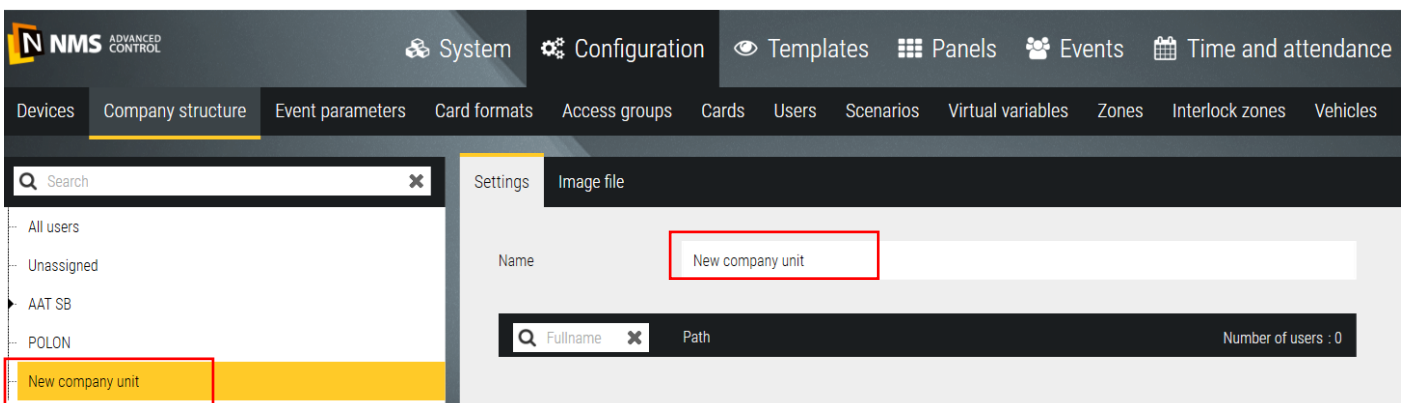
Unassigned - displays in the right window a list of users not assigned to the structure.

After adding users (manually or by importing) both lists are the same.

To add a company structure, click on the Add button in the lower left corner.

A new item will appear in the tree. To add a new item in the main tree, no item can be selected (to deselect it, click on the highlighted item with the right mouse button). If an item in the main tree is selected, you can add another item to it. In this way, you can create a multi-level structure of the company - department, department, department etc.

In the right window you can edit the name of the item. After defining the structure, click on the Save button in the lower right corner. Assigning an employee to the structure should be done in the user definition window.



## Section 4. Card users and privileges

### 4.1 Schedules

The *Templates / Schedules* tab allows you to define schedules intended in the KD system to access levels, automatic door unlocking, monitoring of surveillance lines in specific time intervals and switching on control outputs and scenarios .

By default, two Never and Always schedules are defined that cannot be deleted or edited. To add a new schedule, click on the Add button in the lower left corner of the screen. You can change the default name in the yellow box to your own.

By clicking or moving in the selection box of time intervals with the right mouse button, we can select the active time interval for the whole week in green. Then, with the left mouse button, you can delete the active schedule on the selected day of the week by clicking on the name of the day on the left (e.g. Saturday, Sunday) or directly on the green box to delete 15-minute intervals. In the schedule for KS3000 series controllers, you can define up to 3 time intervals per day - an example next to it.

For the operation of scenarios, you can define special days (holidays) by clicking on the button on the right side of the window. In the date fields, we hover over the date of the holiday in the order: year, month day. Then select the checkbox Special Day. If the holiday is recursive, select the checkbox Repeat every year. If the holiday contains more than one day, we mark the next checkboxes. On public holidays, the fields of activity of the schedule are slightly grayed out. Each schedule can be assigned the same or different special days.

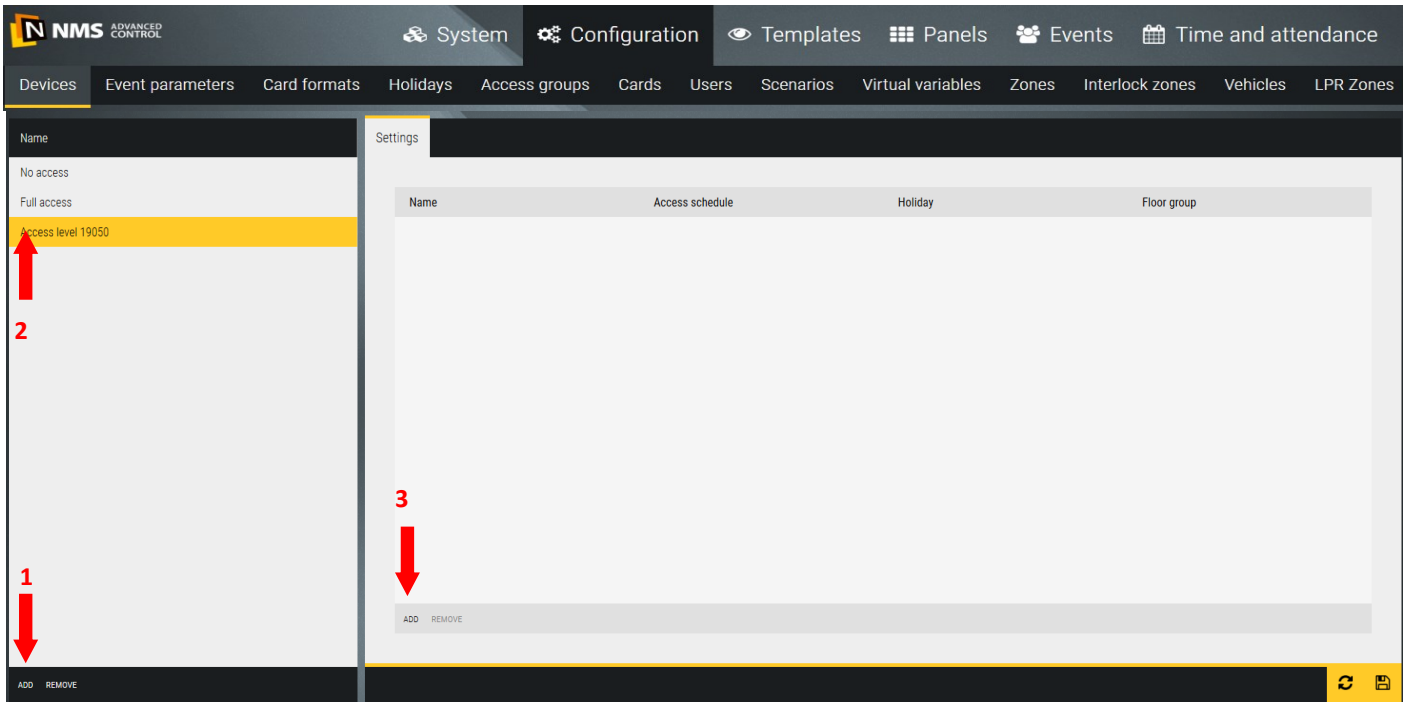
For KD controllers, public holidays are defined in the Configuration / Holidays tab. In the *Preview* tab, we can display the appearance of the defined schedule in the form of a table.

Day	From	To	From	To	From	To
Monday	06:00	07:00	12:00	13:00	17:00	18:00
Tuesday	06:00	07:00	12:00	13:00	17:00	18:00

Date	Special day	Repeat every year
08 11 2021	<input type="checkbox"/>	<input type="checkbox"/>
09 11 2021	<input type="checkbox"/>	<input type="checkbox"/>
10 11 2021	<input type="checkbox"/>	<input type="checkbox"/>
11 11 2021	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12 11 2021	<input type="checkbox"/>	<input type="checkbox"/>
13 11 2021	<input type="checkbox"/>	<input type="checkbox"/>
14 11 2021	<input type="checkbox"/>	<input type="checkbox"/>

You can edit or delete the defined schedule by selecting it in the list and clicking on the Delete button in the lower left corner of the window.

## 4.2 Access levels



Use the *Access levels* tab to define access levels for card users. The access level is a set of permissions that determines which transitions and how long a user will have access.

By default, two access levels are defined: *No access* and *Full access* that can not be deleted or edited.

To add a new access level click on the *Add* button in the lower left corner of the screen. You can change the default name on the yellow box to your own.

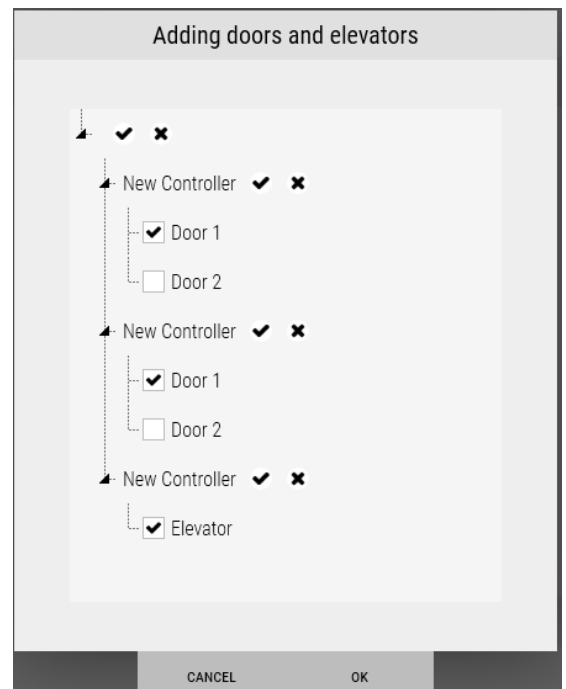
Then click on the *Add* button in the right window.

A window with a list of all previously added doors and elevators will be displayed.

Select the doors and elevators (as readers in the cabin) to which the user will have access rights over a specified period of time and confirm with the OK button.



Checkboxes as above allow you to quickly select and deselect all items.



In the right window appears a table as below, containing the selected doors and elevators in the previous window.

Name	Access schedule	Holiday	Floor group
[00-1B-9D-0A-E5-88] KS3012IP	Never	No holidays	
[00-1B-9D-0A-E5-86] KS3024IP	Always	No holidays	
[00-1B-9D-0A-E7-10] KS2000IPELV	Access schedule19049	No holidays	All floors

In the second column (*Access schedule*) in the drop down list, select the schedule according to the expected access permissions.

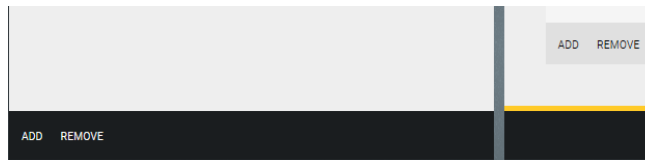
In the third column (*Holiday*) in the drop-down list, select the holiday schedule according to the expected access rights.

In the fourth column (*Group of floors*) in the drop down list, select a group of floors according to the expected access privileges.

Save the settings by clicking on the floppy disk icon in the lower right corner of the configuration window.

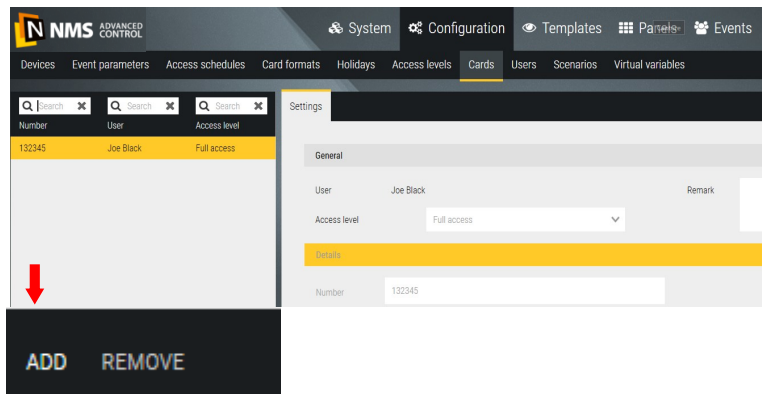
Access levels defined this way can be assigned to one or more users.

*Delete* button at the bottom of the left window is used to delete the entire access level, and in the right to erase one row of selected door or elevator.

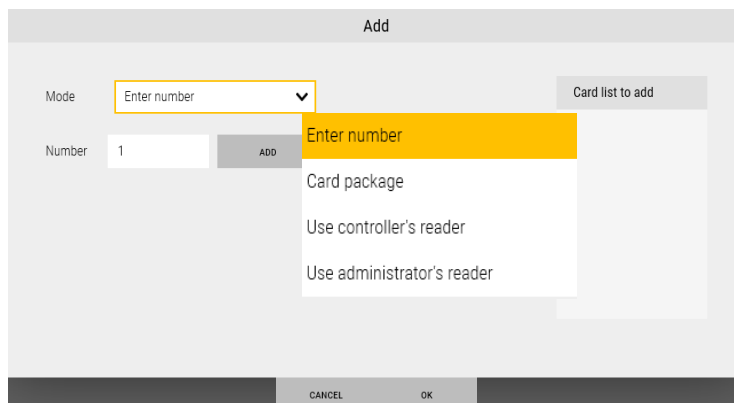


### 4.3 Cards

This tab allows you to create a list of cards with numbers for later and faster assignment to users.



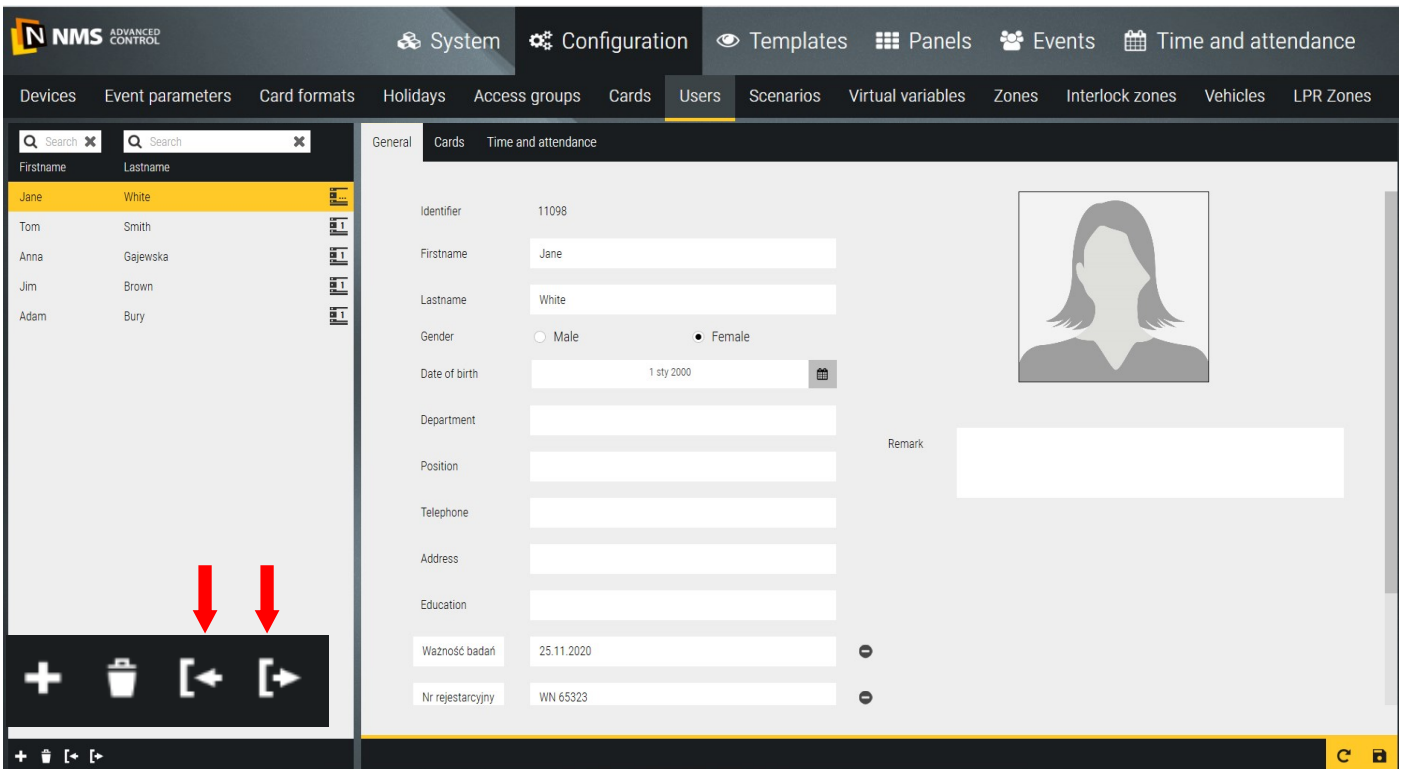
When you click on the *Add* button a window is displayed as below:



The procedure for adding cards is described in section 4.4 - *Users/Cards*.

### 4.4 Users

This tab allows to add new users to database and assign personal, data, pictures and identifiers (card, PIN, fingerprint) to them. It is possible to assign user to T&A group, it allows to register and settle his working time based on predefined schedules and calendars (paid license).



Users can be added manually or by importing data from a file. The file **import procedure** significantly speeds up this process for a large number of cards. In the empty user adding window, click on the Export [->] button. The exported file (Users.csv) contains two pattern lines and should be treated as a template. The order of the columns should not be changed. **The ID column should be empty for new users.** For those added earlier, it will contain the ID assigned by the program and it should not be changed. The exported template looks like this:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
Identifier	Firstname	Lastname	Male	Departme	Date of birth	Pos	Edu	Tel	Adi	Remark	Guid	Servers	T&A calendar	T&A group	Number	Access group	End date	First open	Remark	Number	Access grc	End date	First open
	Firstname	Lastname	Yes		01.01.2000					Add		Server 8086			333333	Full access		No		444444	No access		No
1	Firstname	Lastname	No		01.01.2000					Update		Server 8086			555555	Full access	11.03.2021 14:00	Yes		666666	No access	#####	Yes

If the data in the columns: Work calendar, Working time group and Access level are to be imported, these items must first be defined in the program and then their names should be copied and pasted into these columns. Copy the Servers column from the template. Employees' names and surnames and data to F-L columns can be copied from a file exported from the HR program. The prepared file should be saved as: **CSV UTF-8 file (comma separated)**. Below is an example file prepared for import:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Identifier	Firstname	Lastname	Male	Departme	Date of birth	Pos	Edu	Tel	Adi	Remark	Guid	Servers	T&A calendar	T&A group	Number	Access group	End date	First open
	Jane	White	Yes		01.01.2000					Add		Server 8086	CAL1	TAG1	333333	Full access		No
	Ewa	Gajewska	No		01.01.2000					Update		Server 8086	CAL1	TAG1	555555	Full access	11.03.2021 14:00	No
	Tom	Brown	Yes		01.01.2000							Server 8086	CAL1	TAG1	555556	Full access		No
	Jan	Kowalski	Yes		01.01.2000							Server 8086	CAL1	TAG1	555557	Full access		No
	Adam	Czarny	Yes		01.01.2000							Server 8086	CAL1	TAG1	555558	Full access		No
	Mariusz	Barański	Yes		01.01.2000							Server 8086	CAL1	TAG1	555559	Full access		No
	Edward	Czarny	Yes		01.01.2000							Server 8086	CAL1	TAG1	555560	Full access		No

If, after the first import, you want to continue working on such a file (i.e. change the parameters of previously added users or add new ones), you should always export the current database first and work on this file. The file prepared in this way can be imported by clicking on the Import button. Report will be displayed when the import is complete.



**Add new user** - click on the *Add* button in the lower left corner of the window (to delete, select and click *Delete*). Then fill in the form fields in the right window. Except the name and last name fields, the remaining fields are not obligatory. You can also add a user photo from a file by clicking on the black box. The left window displays a list of added users.

General Cards Time and attendance

Firstname Lastname

Jane White  
Tom Smith  
Anna Gajewska  
Jim Brown  
Adam Bury

Firstname Lastname

Firstname Lastname  
Gender  Male  Female  
Date of birth 1 sty 2000  
Department  
Position  
Telephone  
Address  
Education  
Ważność badań  
Informacja #13  
Information

Click to add and choose picture from folder

Test validate

Information #12

Information

By clicking on „+” you can add next information field with editable name

By clicking on „-” you can delete them

**Add card number** - go to the *Cards* tab. The program will display the window as below:

General Cards Time and attendance

Number Access level

Card

Select	Number
<input checked="" type="checkbox"/>	45684574
<input type="checkbox"/>	554323222
<input type="checkbox"/>	74321342354

Add

Mode Enter number  
Number Card package  
Use controller's reader  
Use administrator's reader

CANCEL OK opening card

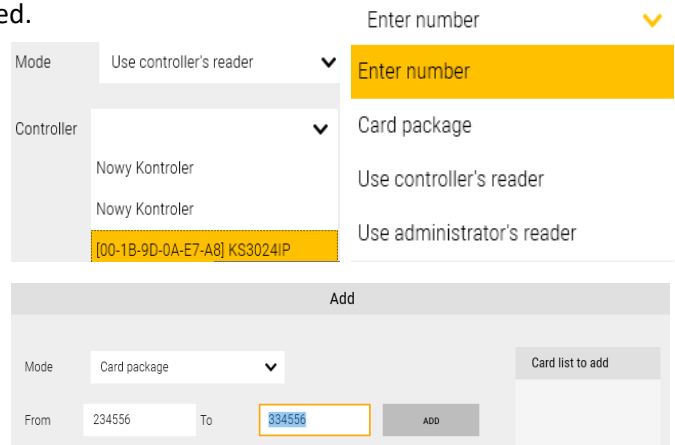
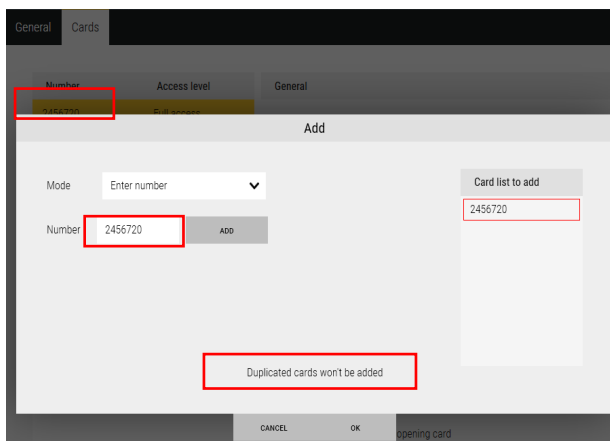
CANCEL OK ADD ADD NEW REMOVE

In the window on the previous page we have two ways to assign a new card to the user. User can have more than one card (max. 5).

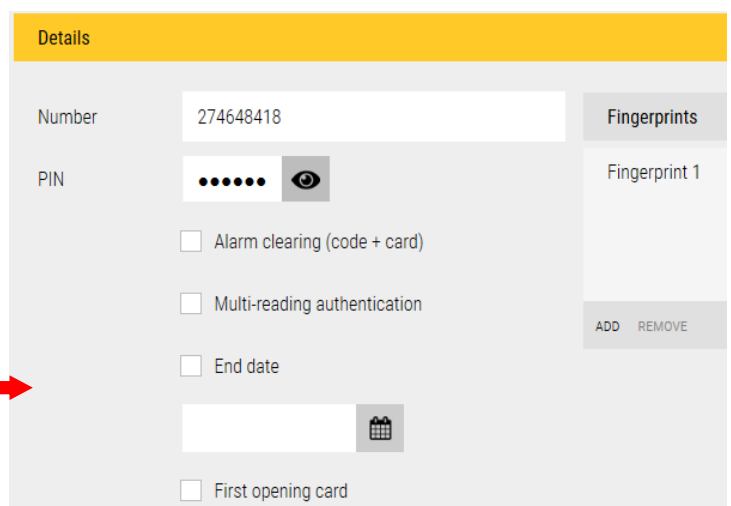
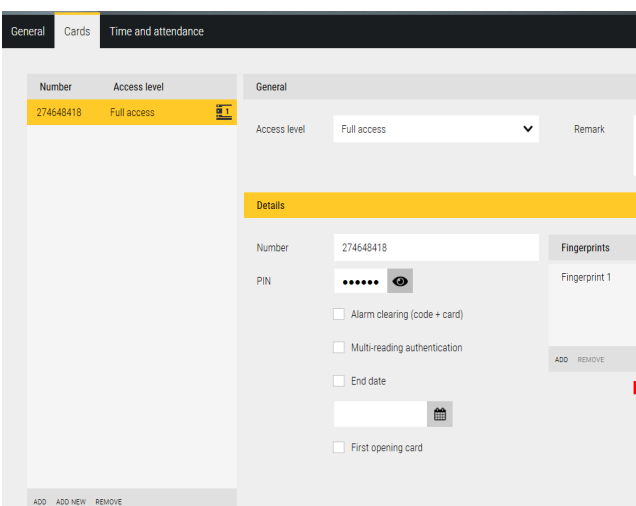
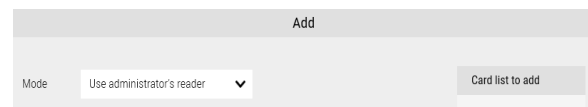
After clicking on the *Add* button a window pops up as on the left side with a list of cards added earlier through the *Cards* tab. Select the card numbers that you want to assign to the user.

After clicking on the *Add new* button window pops up as on the right. In this window you can select one of four options to enter the card number into the list:

- Manually enter a number in the editable field (when we know the card number)  
The number entered is subject to verification if it already exists in the database, it is highlighted in red and cannot be added.



- Manually enter the first number from the card container (consecutive pack) and the final
- Reading the card on the controllers' reader
- By USB administrator reader



After adding the card numbers to the list, return to the *Users/Cards* tab, which now looks like the following. Each card has a separate menu on the right side of the window that appears when you select a card on the list.

Deleting a card from this list does not remove it from the system. To remove it from, go to the *Cards* tab.

Access level - select from the drop-down list

PIN - editable field to enter the passcode associated with this card (6 digits)

Delete alarm (PIN + card) - allows you to delete active alarm on the controller by entering PIN to delete alarm (which is different than PIN predefined in controller setup) and using card.

Multi-read - (2,3-times) entitle to lock/unlock door permanently or on/off control output

First opening card - the option required for the user when it has to be able to unlock access for other users without this permission. Active on readers with this option enabled.

End Date - when selected, set the required date, enter or select from the calendar

**Adding fingerprints** - applies to KDH-KS3000FP-IP-U\_M and KDH-TA500CFP-IP-UMD. To start the procedure of adding fingerprints, click on the Select scanner button in the Fingerprints section.

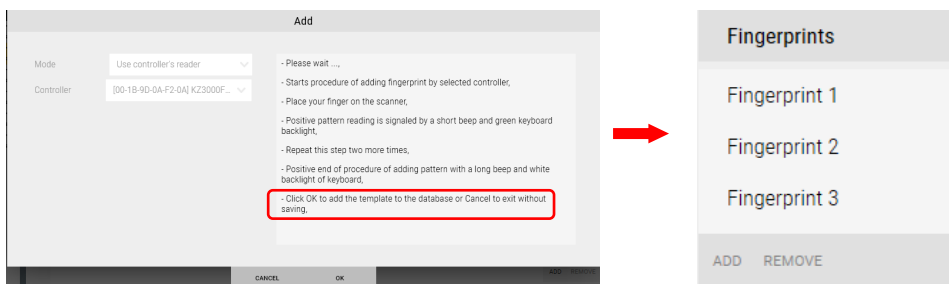
For KDH-KS3000FP-IP-U\_M models, add by selecting a controller from the list.

For KDH-TA500CFP-IP-UMD model, add via USB scanner - KDH-CADM500-FP.

After selecting the scanner, click the *Add* button

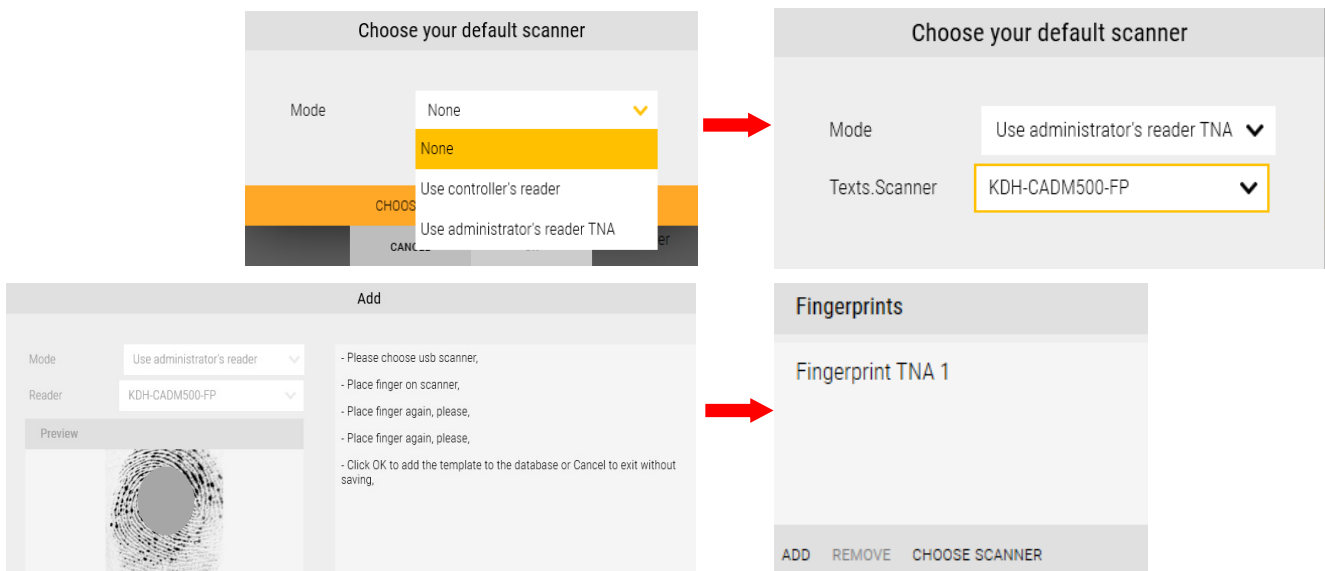


Adding fingerprints is done by biometric scanner in biometric controller. You can add up to 3 fingerprints. After opening window as above and choosing the controller, in the right window instruction of conduct will be displayed.

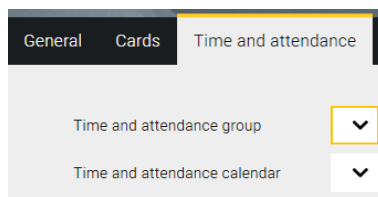


After completing the procedure (3 finger touches) click OK, and you can start adding new fingerprint. Then click save to save user data to database and send them to controllers.

**Adding fingerprints to the RCP terminal**




**T&A** - in this tab you can assign time and attendance group and time and attendance calendar to user. It enable registration on selected readers of entry and exit and generating working time reports.

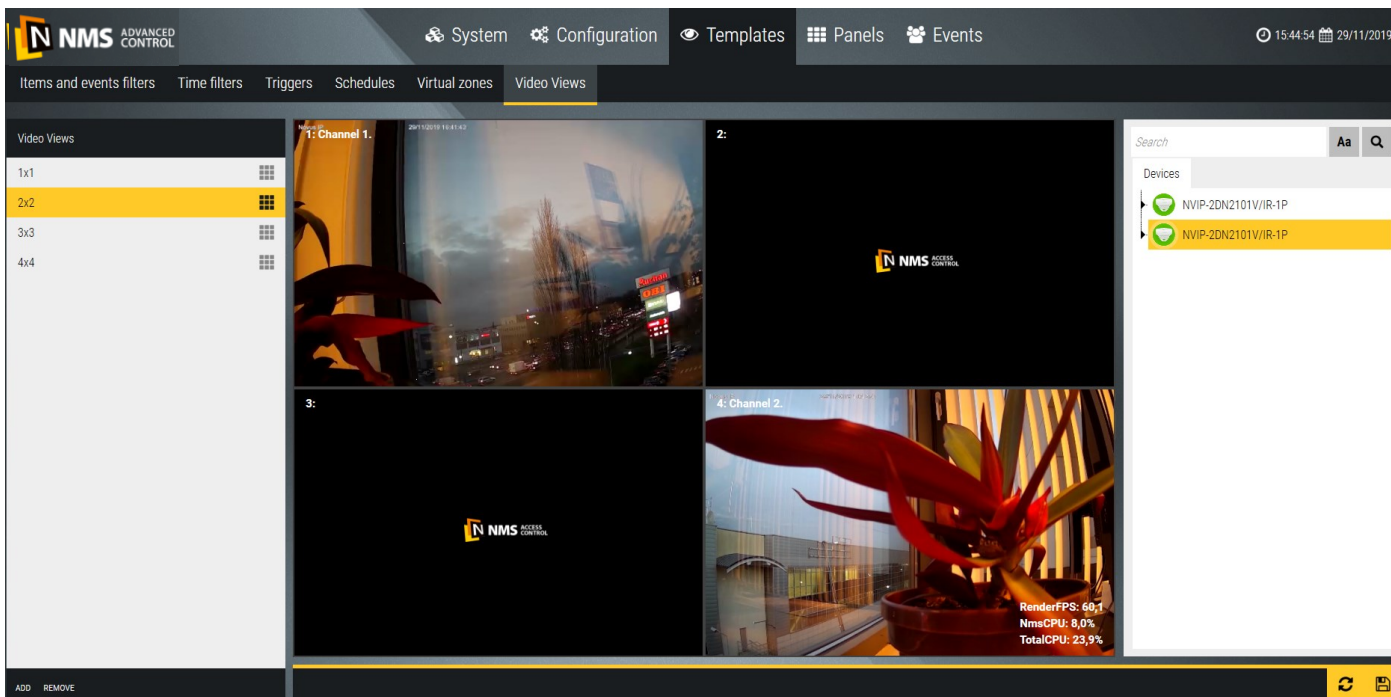


This feature is available under paid license.

## Section 5. Templates

### 5.1 Video views

In the Video views tab, you can define sets of video views that are used to visualize and monitor the state of the system and display video streams from the cameras placed in the object. The list of defined video views is displayed in the left window. By default, four panels with different division are defined. After clicking the *Add* button you can add a new view, rename, assign a division to it by clicking on the  icon in the view name field and the video stream by dragging it with the mouse from the list on the right in the selected view window. The video view can be viewed by clicking on its name in the left window.



Default views can be edited and changed to suit your needs.

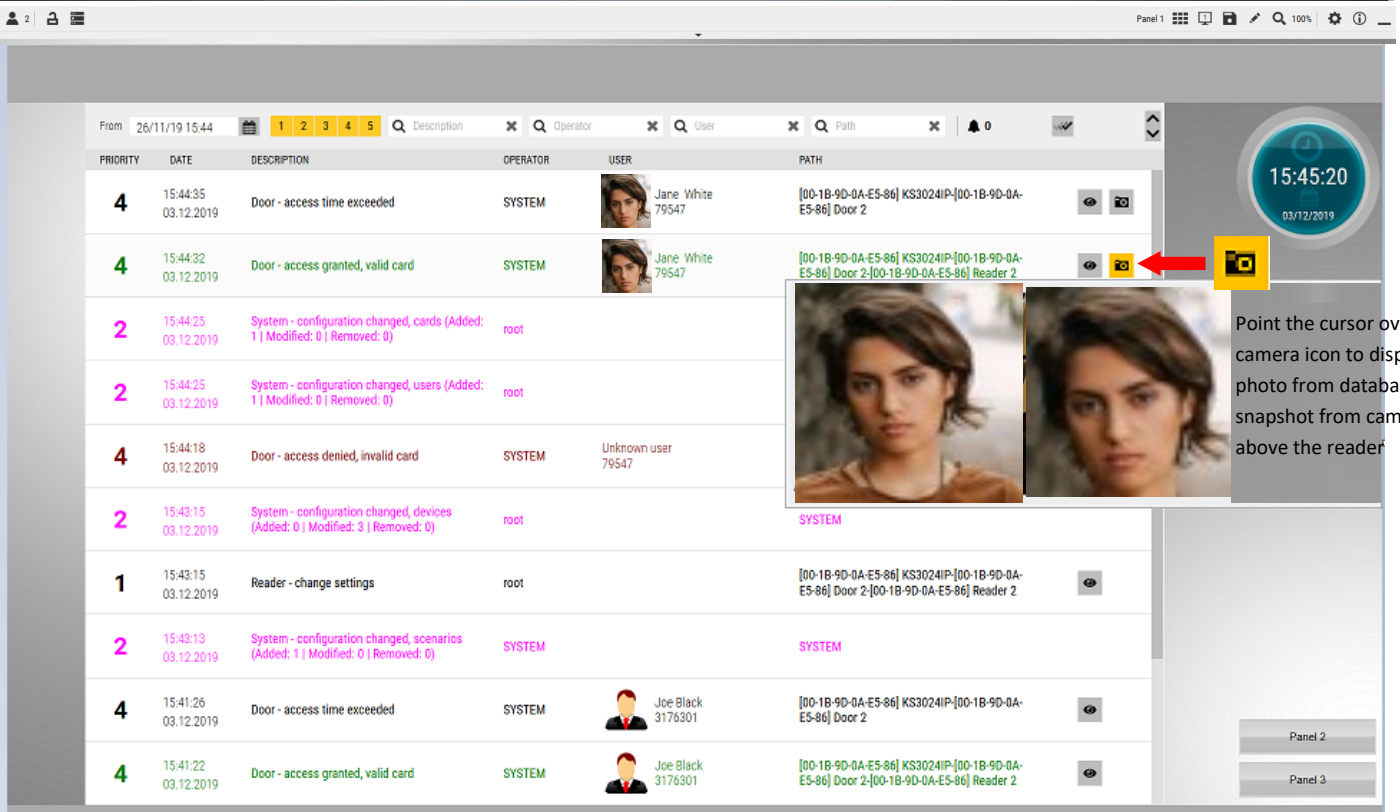
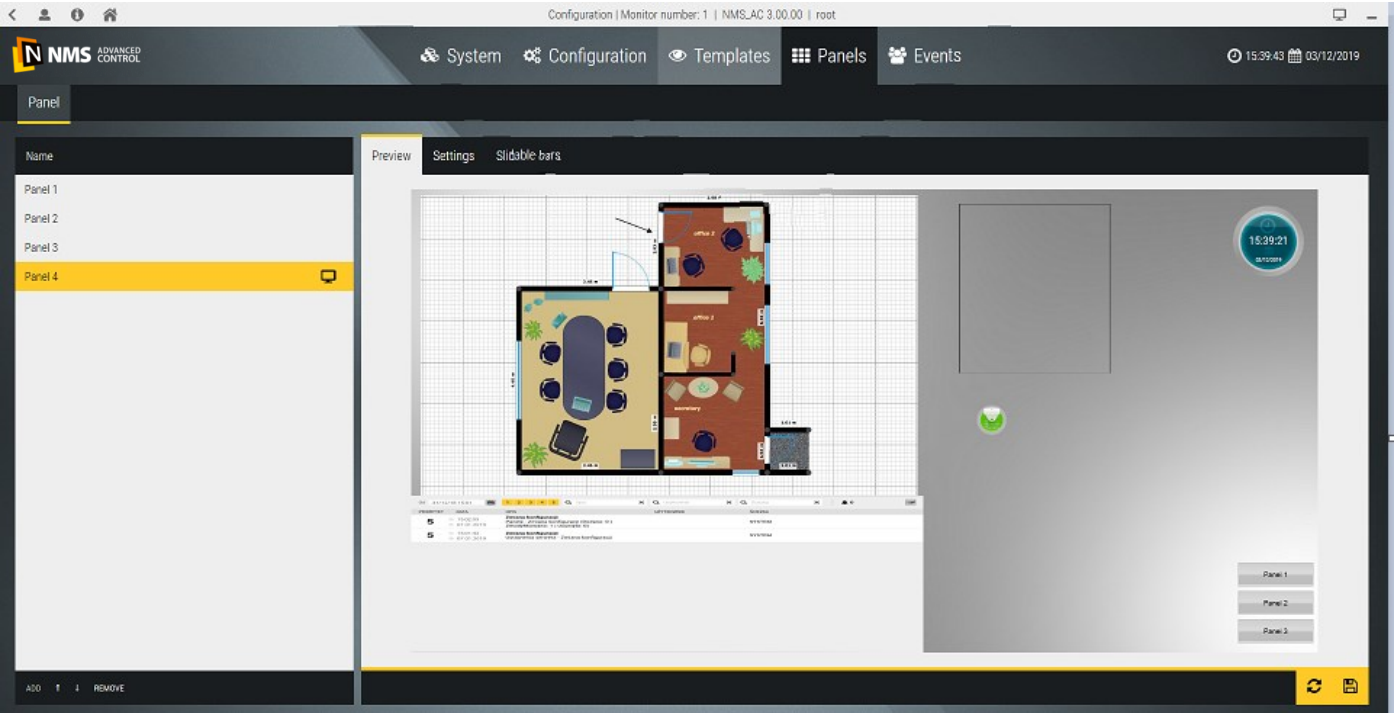
By right clicking on one of the split screens it can be set as a HOTSPOT window. This window will not have a permanently assigned camera. It will display the camera that the user click with the mouse wheel (middle button).

After you define the video views, click the *Save* button in the lower-right corner.

You can view defined video views on panels in video windows. Default Panel 3 includes this view window.

## Section 6. Panels

In the *Panels* tab you can define the panels, which are used to visualize and monitor the status of various system elements and display events and other additional information. The list of defined panels is displayed in the left window and depends on your license. Under the free license, you can define four panels, two of which are the default. The panel can be displayed by clicking on its name in the left window. The default *Panel 1* includes: event stack, clock, and button with link to *Panel 2*.



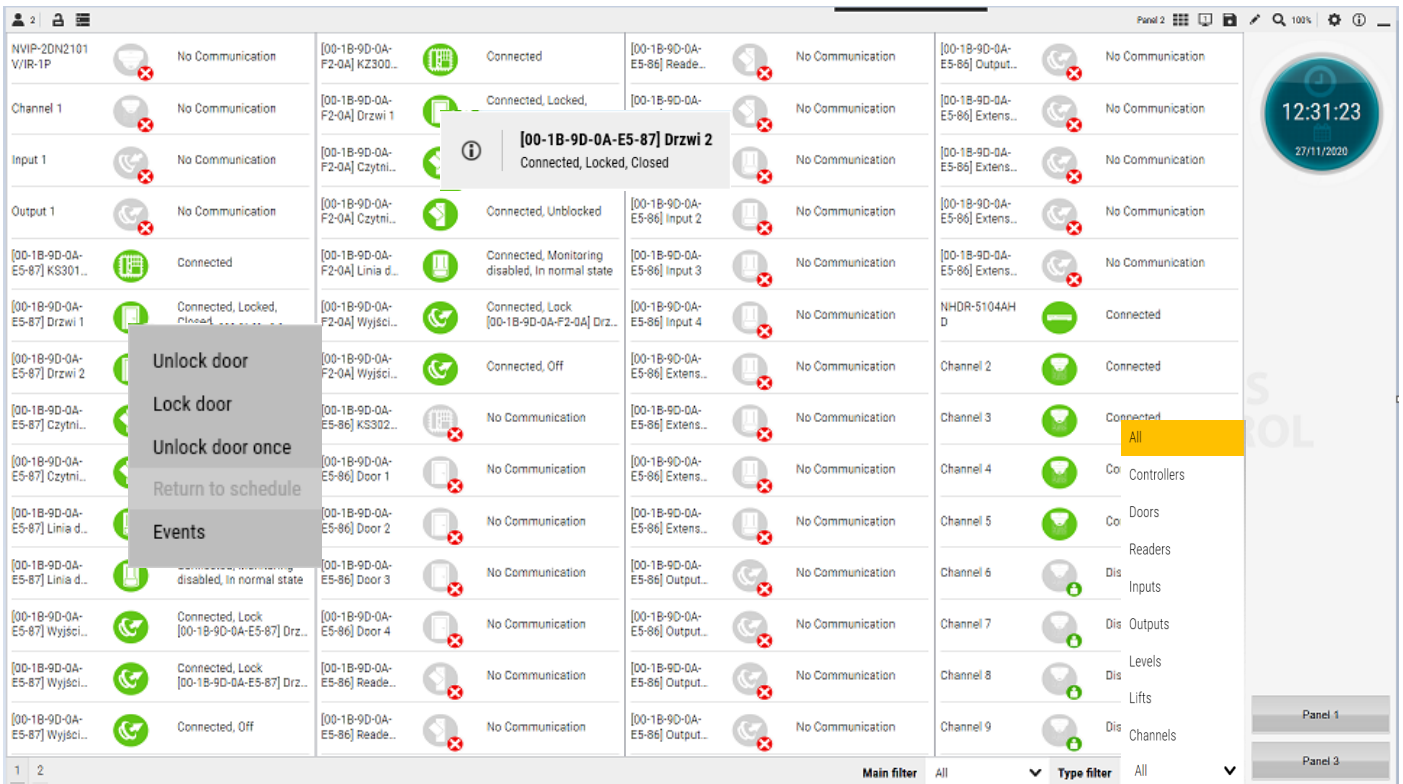
Point the cursor over the camera icon to display photo from database and snapshot from camera above the reader

The descriptions of the icons on the top beam can be found in the table on page 22.

The *Event Stack* displays events according to the default settings in the *Event Parameters* tab.

You can filter them by typing a keyword in window with magnifier or by unchecking selected, yellow priority fields.

The default *Panel 2* contains a synoptic table, a clock, and a buttons with a link to other panels.

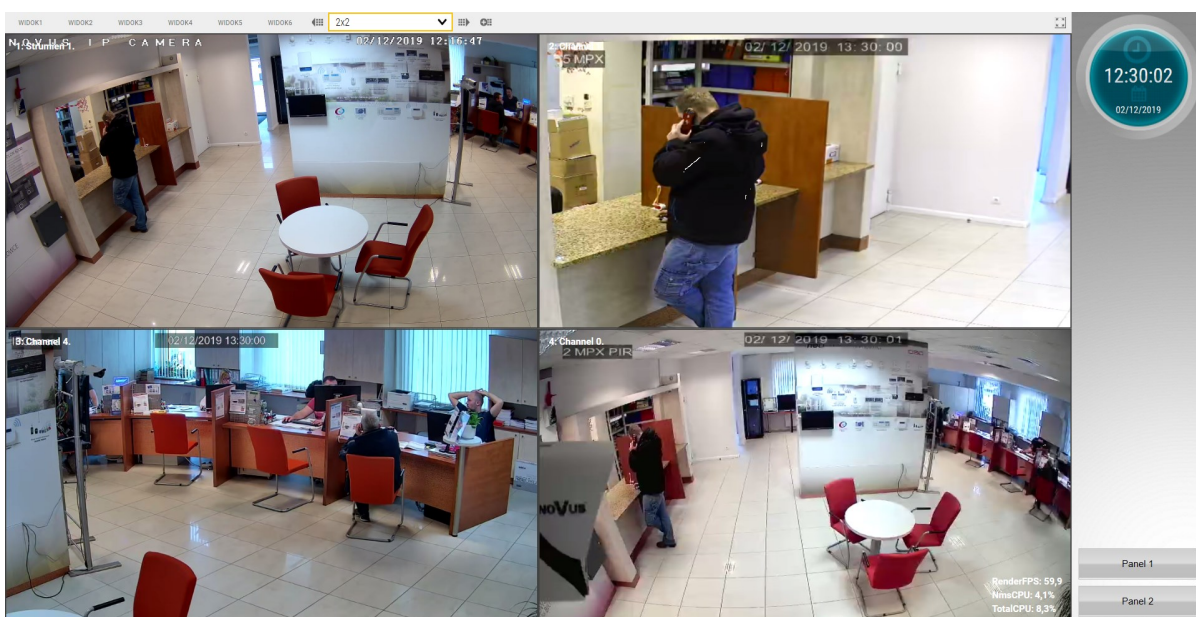


*Panel 2* contains a synoptic array, which automatically adds additional controllers together with the cooperating elements (doors, input lines, control outputs, elevators, floors) and surveillance television devices as icons representing their current status. The status of the icons is updated in real time (when communication with devices is correct). Icons have a context menu (left mouse button).

There are two filters in the lower right corner of the synoptic array to display only selected items:

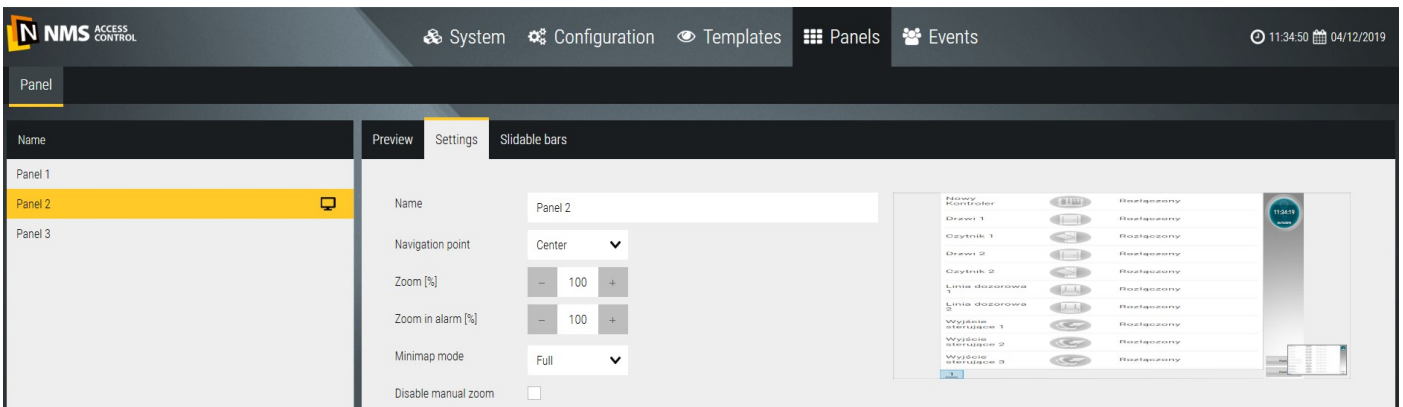
- *Main filter* - defined in the tab *Templates/Items and events filter*
- *Type filter* - allows to display elements of only one type from the currently available on the board.

To define a new panel, click on the *Add* button in the lower left corner of the *Panels* window .



The added panel appears on the list in the left window. A preview of the panel background is displayed in the right.

### Settings tab



**Name** - editable field to type the name of the panel

**Navigation point** - point on the panel to which the process relates, default *Center*, other items will appear in this list after defining additional navigation points on the panel

**Zoom [%]** - sets the zoom value on the panel

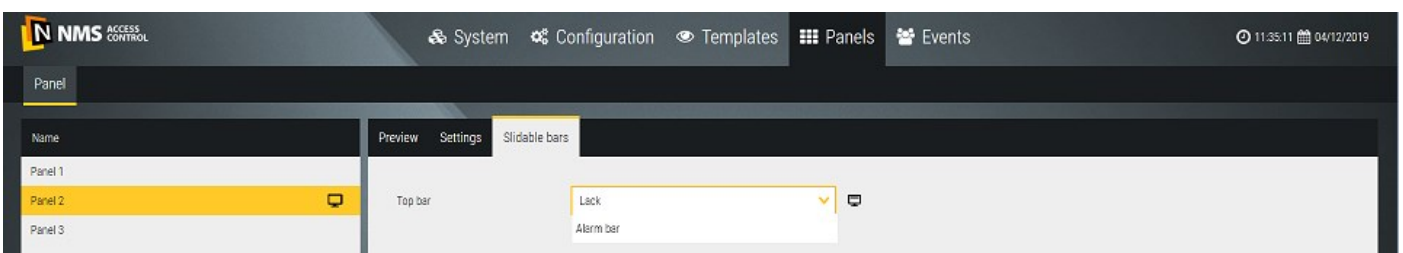
**Zoom in alarm [%]** - sets the zoom value for the alarm event on the panel

**Disable manual zoom** - allows you to turn off the zoom on the panel with the mouse wheel

**Minimap mode** - selectable from the drop-down list of map thumbnail display mode: full, background only, transparent or no minimap.

**Set background** - allows you to select the background of the panel from the specified folder from bmp, jpg, png file or default

### Slidable bars tab

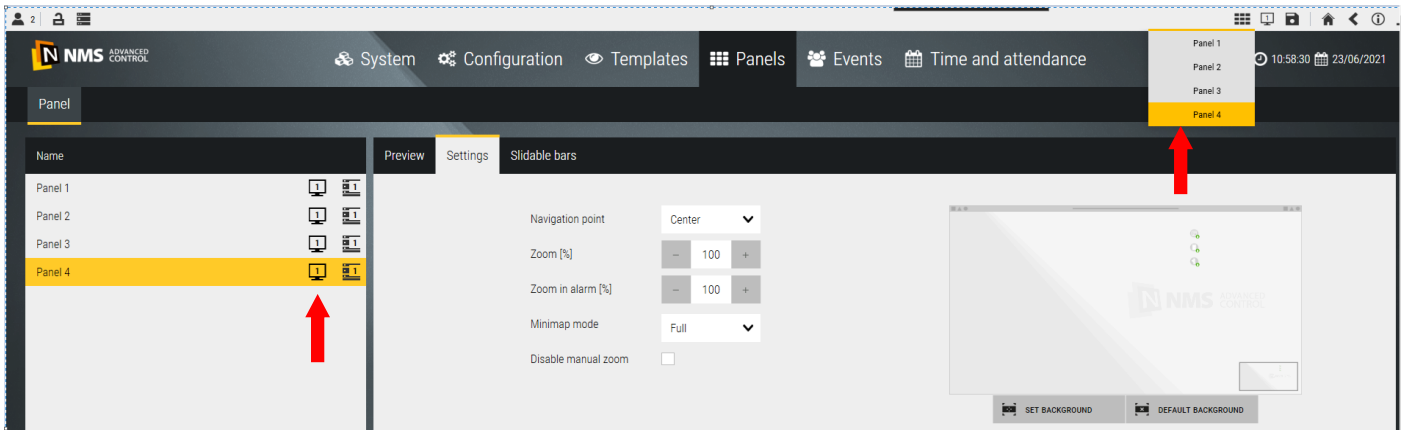


**Top bar** - selectable from the drop-down list: alarm bar or none

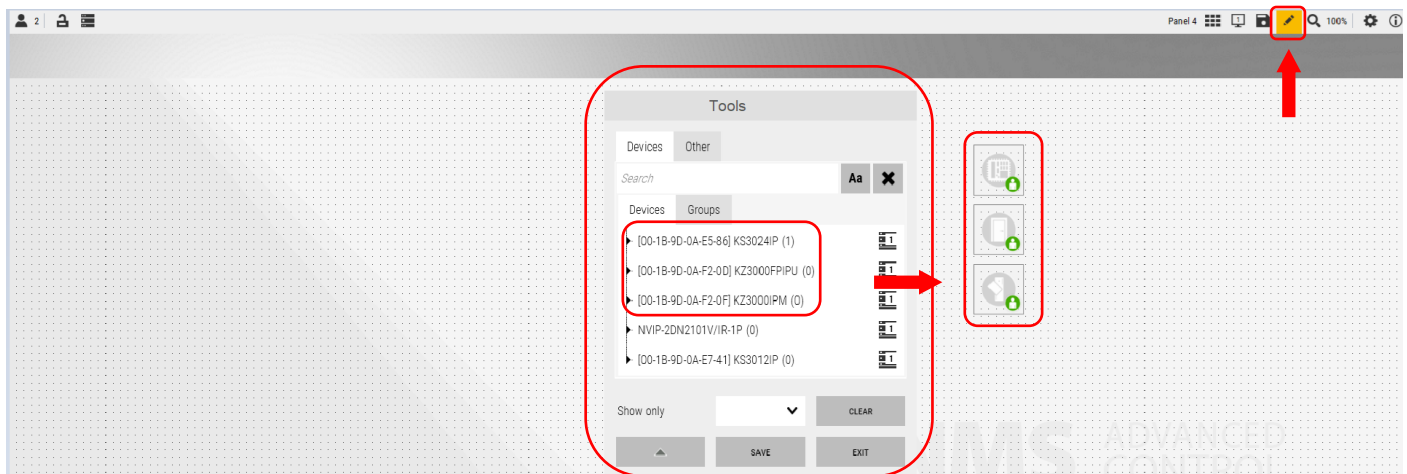
Once defined, save the settings for the new panel by clicking on the floppy disk icon in the bottom right corner.

By clicking on the panel name in the left window, you can enter the display mode and verify the settings.

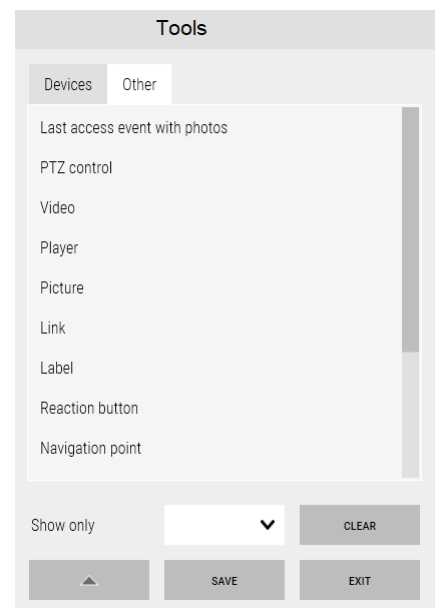
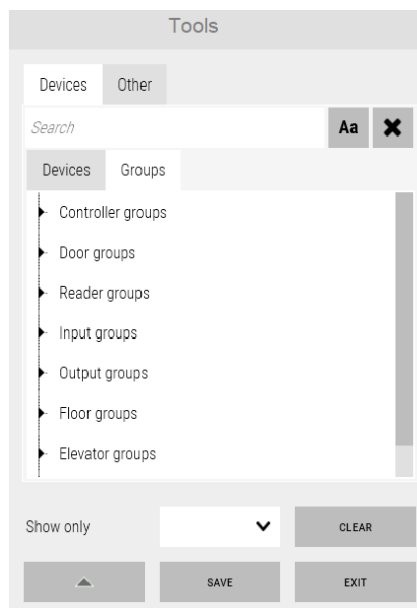
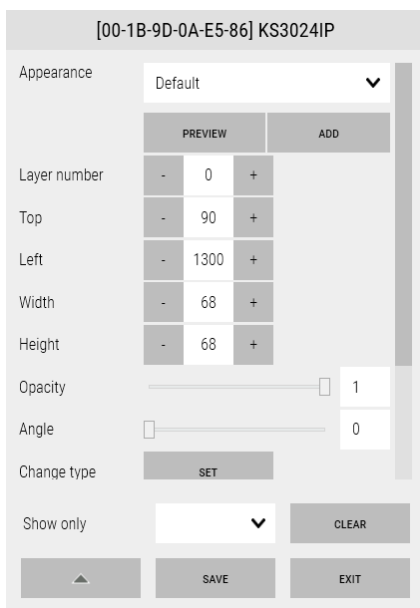
Configuration of a defined panel



After clicking on the list in the left window or in the upper right corner, the following window will appear.



Clicking on the Edit icon in the upper right corner opens the Toolbox. The Devices tab displays a list of devices added to the system database, which can be dragged to the panel window with the mouse. After clicking on an element set on the panel, its properties window is displayed - it is different for different elements. In addition to devices, you can also place element group icons and other elements from the Other tab on the panel.





## Section 7. Events and reports

In the *Events* tab you can generate a filtered report. The generated report is displayed on the screen or can be saved as a file on disk (the buttons in the upper right corner of the window) in the format \*. CSV or \*. HTML (with PDF export capability).

The screenshot shows the NMS Advanced Control interface. The main window displays a table of events with the following data:

PRIORITY	DATE	DESCRIPTION	OPERATOR	USER	PATH
5	07:47:52 04.12.2019	Stream - return of communication	SYSTEM		NMS Server (-
5	07:47:52 04.12.2019	Channel - return of communication	SYSTEM		NMS Server (-
5	07:47:51 04.12.2019	Stream - return of communication	SYSTEM		NMS Server (TEM
5	07:47:51 04.12.2019	Stream - return of communication	SYSTEM		NMS Server (HANDL)-Strumień 1-Stream 2
5	07:47:51 04.12.2019	Channel - return of communication	SYSTEM		NMS Server (HANDL)-Strumień 1
5	07:47:51 04.12.2019	Stream - return of communication	SYSTEM		NMS Server (HANDL)-Strumień 1-Stream 1
5	07:47:33	NMS 1 - return of communication	SYSTEM		NMS Server (HANDL)

The 'Generate report' dialog box is open, showing a form with the following fields:

- Name: Report
- Orientation: Vertical
- Path: (empty)

The dialog also shows an 'INCORRECT PATH' error message and 'CANCEL' and 'OK' buttons. A red arrow points to the 'Generate report' button in the dialog.

Each report line contains a date and time, a description of the event and the association with the operator or card user and the physical element of the system affected by the event.

At the top of the window are the filter fields for date, time interval (default last 24 hours) and items and events. This makes it easier to analyze the events on the object.

After setting the filters, click on the *Search* button. A report appears in the window.

The lower-right corner of the window displays information about the number of events in the generated report. The maximal number of events is 10 000. If this value is exceeded by the filter settings, this information is displayed. You must change the filter settings.

## 7.2 Automatic reports

In the Automatic Reports tab you can set parameters of the new automatically generated report template according to the selected trigger. Generating automated reports is accomplished with scenarios. For ease a simple to use scenarios wizard has been implemented in this window. Similarly to manually generated reports, you have a set of filters here. Click *Add* and configure a new auto report template.

Name - editable field to type the name of the report template

Time filter - selectable from the drop-down list previously defined in the

*Templates/Time Filters*

Items and events filters - select from the drop-down list defined in the

*Templates/Items and events filters*

Trigger -selectable from the drop-down list previously defined in the

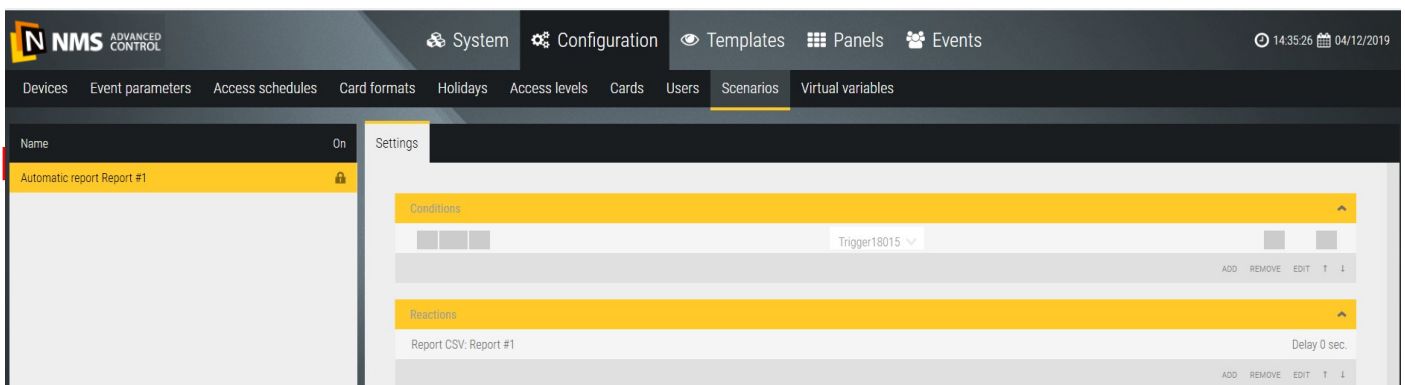
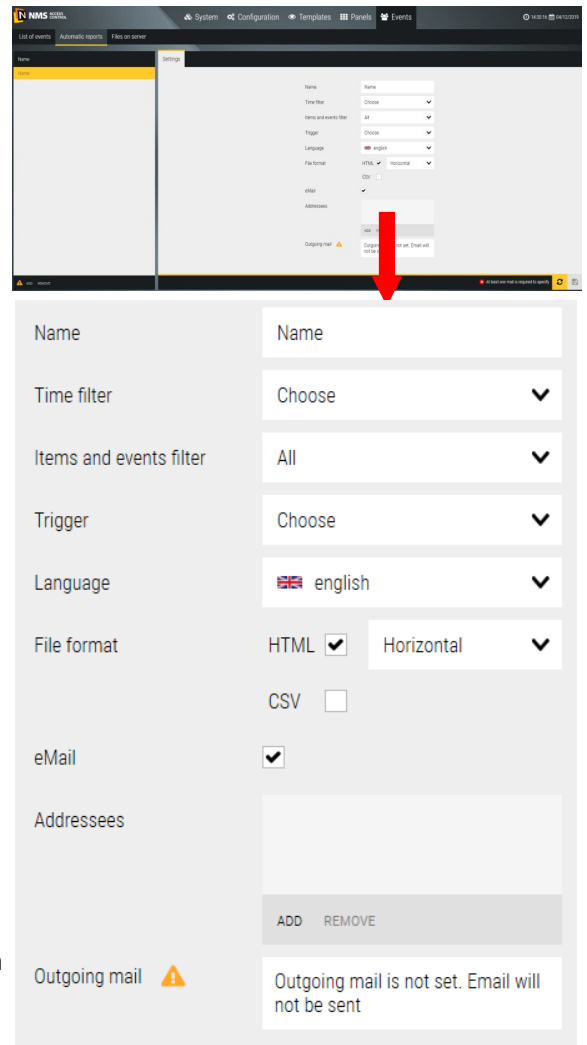
*Templates/Triggers*

Report - select one of the file formats: CSV or HTML

Orientation - select the horizontal or vertical orientation of the page to preview or print. Recommended horizontal orientation due to the number of columns in the report and long descriptions.

Language - selectable from the drop-down list: Polish, English, Russian, Azerbaijani. The next languages during the translation.

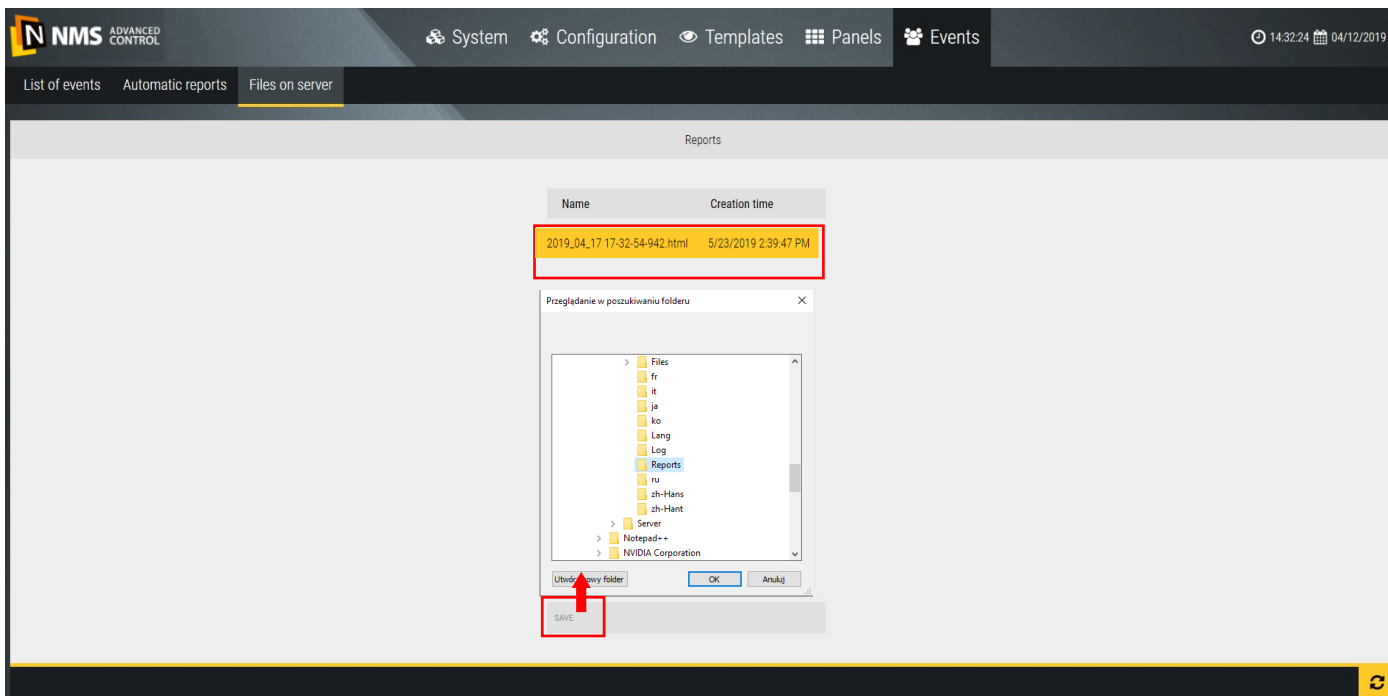
Email - the field selected if the report must be sent as email. When selected, the following fields are displayed to enter the recipients and subject of the email. To add a recipient, click on the *Add* button at the bottom of the window and enter the email address in the field that appears.



After making the settings and clicking *OK* you move to the *Configuration/Scenarios* window - in the left window is a list of defined templates of automatic reports.

### 7.3 Files on server

Reports generated automatically according to the template assigned trigger are saved in the report archive on the computer where the NMS AC Server service is installed. You can change this path in the *System* tab.

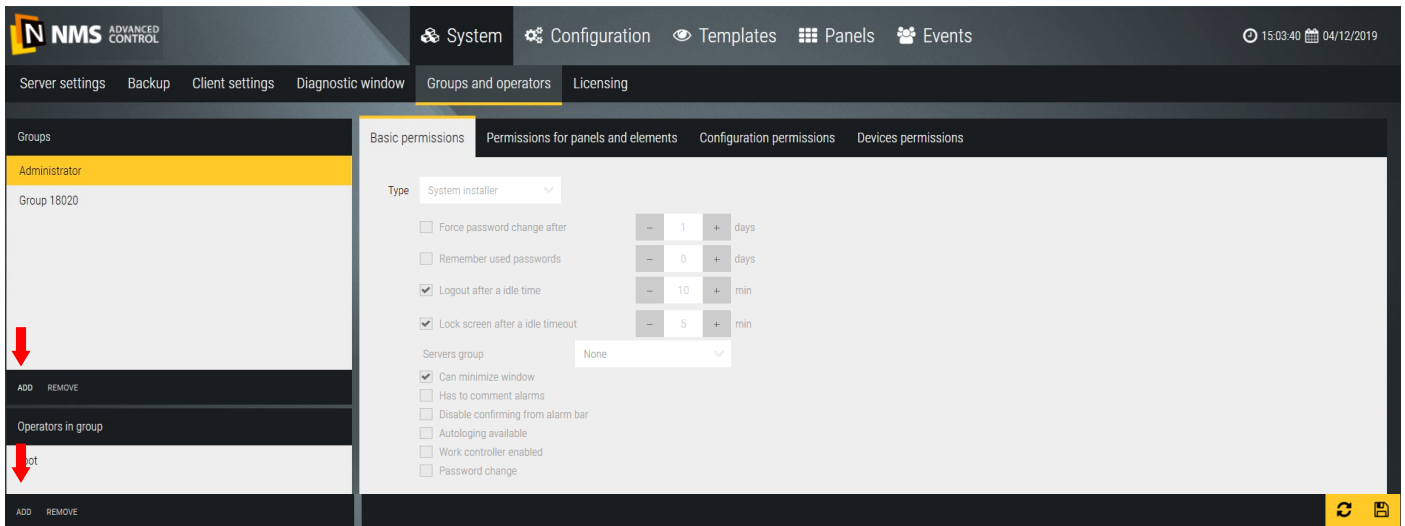


At the client station that is connected to the server you can see a list of automatically generated reports as in the window below (tab *Files on the server*). When you select a report on the list, you can copy it to the client station to the specified folder.

## Section 8. System settings

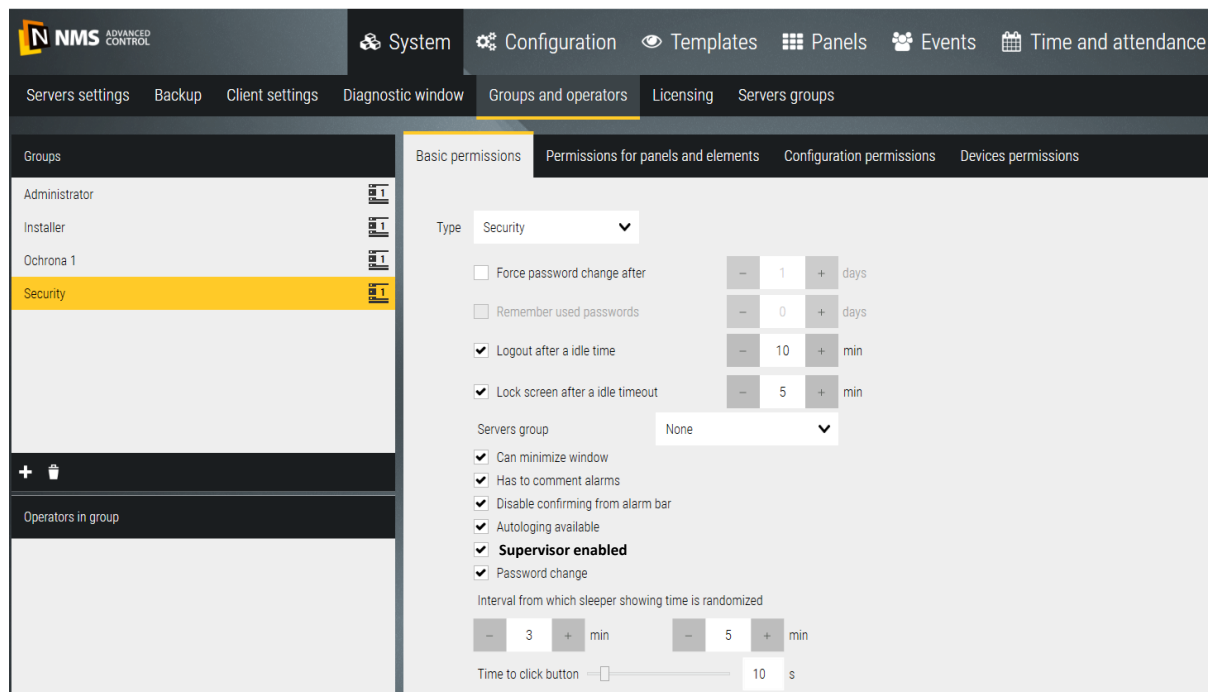
In the *System* tab, you can add new operators, including permissions for access to the program, set the language for the operator, make a copy of the system or restore it, and extend the licenses.

### 7.1 Groups and operators



By default, one group of operators named *Administrator* with full program and system permissions is defined. By clicking on the *Add* button in the upper left window, we can add additional groups with restricted permissions. When you select a group in the top window, you can add operators. By default, a single *root* operator with full privileges is defined in *Administrator* group. The permissions are defined for the group (not for individual operators), for a new group of operators set in subsequent tabs.

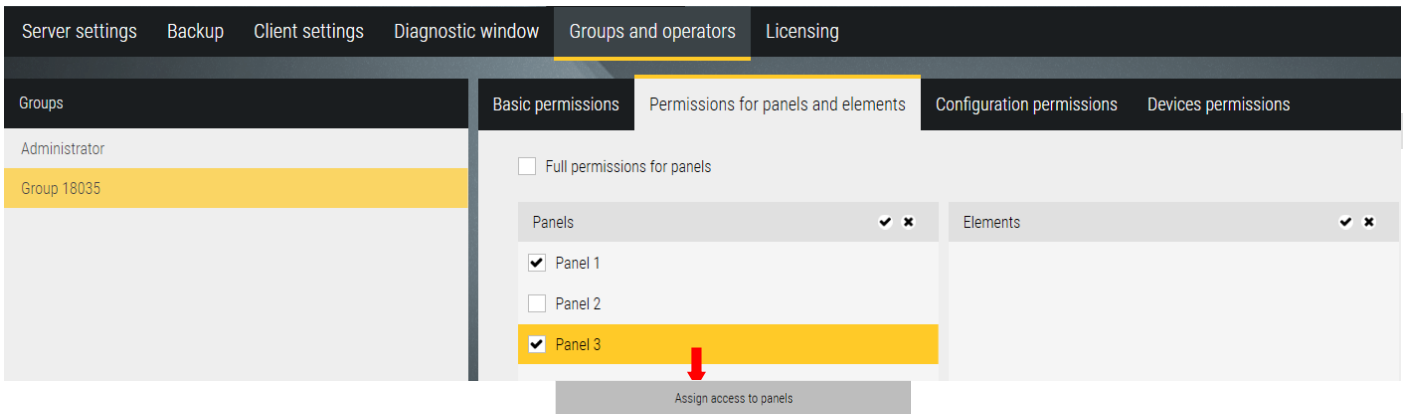
#### Basic permissions



The *Basic permissions* tab contains a number of checkboxes that you must select to assign the selected options.

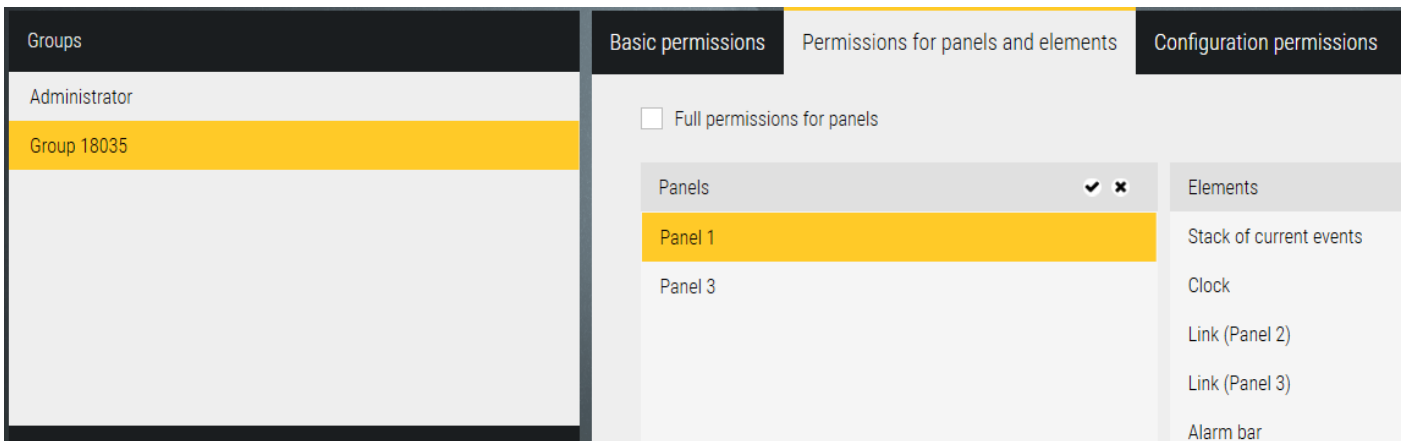
The *Supervisor enabled* function controls the security personnel of the facility monitoring the system at the operator stations at random intervals. When active it requires confirmation in the displayed window and it is logged.

Permissions for panels and elements

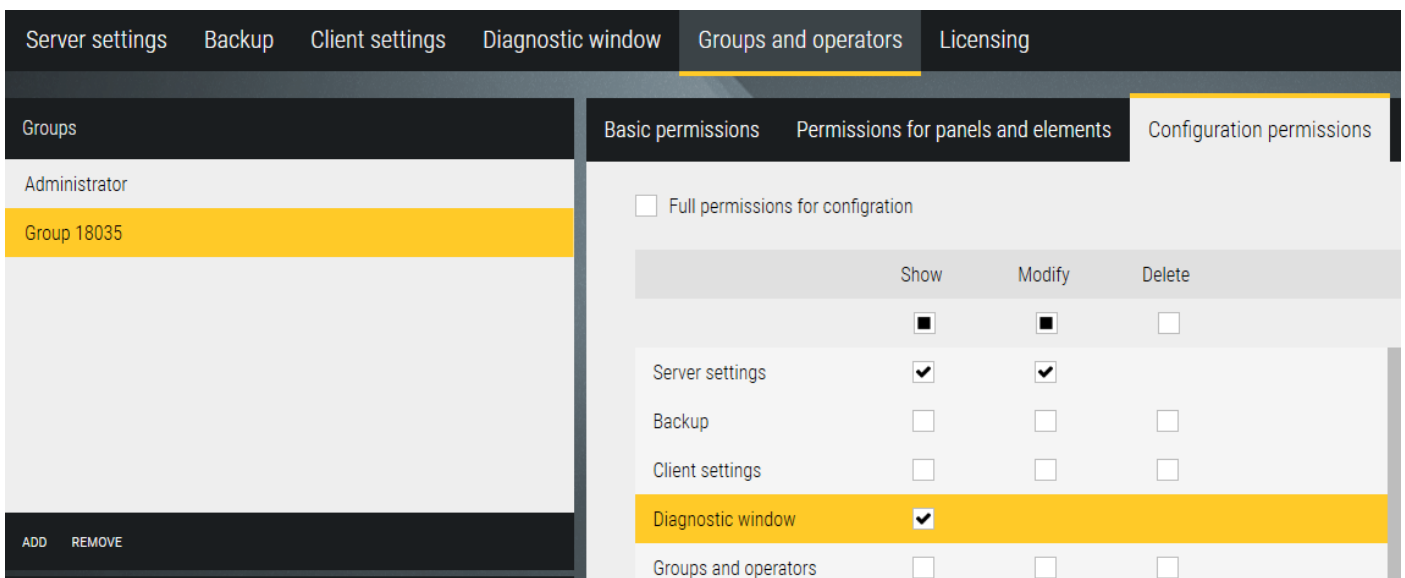


Clicking on the button at the bottom of the window in the first column displays a list of available panels - select those which operators in this group have access to and *OK*.

The second column (*elements*) displays a list of embedded items in the panel. When you select item in this list in the third column (*status*), you can choose to hide this item in the panel.



Configuration permissions



In this tab you need to set which items from the program menu will be accessed by operators in this group. The Administrator has full access in terms of read, modify, and delete. For the *Security* group, only the selected menu items with the *Read* attribute are usually chosen.

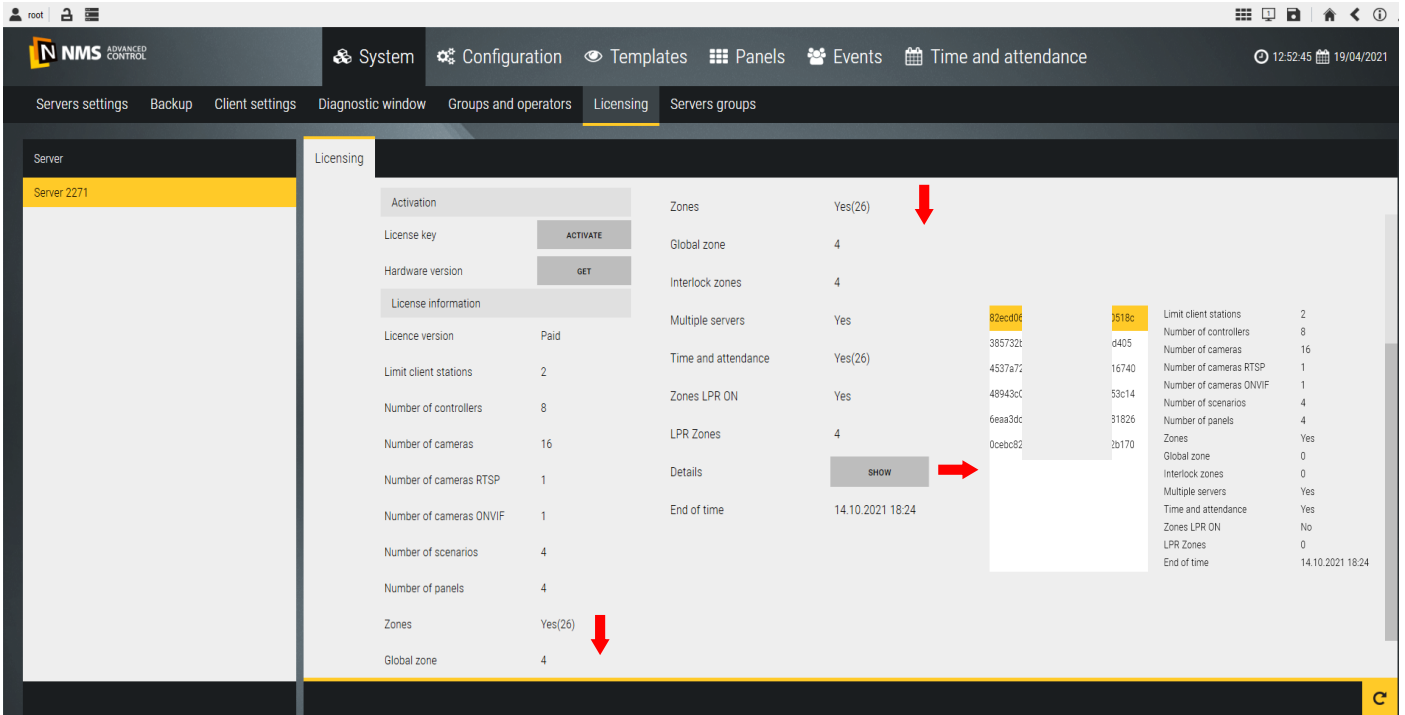
## Device permissions

In this tab you need to set which system devices will be accessed by operators in this group in terms of performing specific operations on them. The Administrator has full access to all operations. For the *Security* group, only the selected items related to basic operations, e.g. *Unlocking/Locking the door* are left.

## 8.2 Client settings (operator station)

In this tab you can set the program menu language for the operator. Choose from one of four languages: English, Polish, Russian or Azerbaijani. The remaining options are used for alarm-related settings.

### 8.3 Licensing



In this tab you can register a free license and activate new licenses to expand the capacity and functionality of the system. By default, the values for the free license are displayed. Purchased new licenses can be added online when the computer running NMS ADVANCED CONTROL is connected to the Internet or off-line when there is no such connection. Licenses are based on strings and do not require hardware keys. The NMS ADVANCED CONTROL software installed works in a limited time period up to 30 days from the date of installation. This indicates the message displayed in the orange box in the upper left corner of the screen.



It is fully functional, but in order for it to work after 30 days, it must be registered on the website: [www.nmsac.aat.pl](http://www.nmsac.aat.pl) in the Download Center / NMSAC system registration tab. After registering the system in a free license, there are three new "trial" licenses for 30 days - multiservers, zone visualization and T&A (red filed above).



VISUAL MONITORING AND ACCESS CONTROL  
MANAGEMENT IN THE FACILITY



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## DOWNLOAD CENTER

**UPDATE**

NMS AC update 3.00.64

↓

NMS AC update 4.00.161

↓

**FULL VERSION**

NMS AC full version 3.00.64

↓

NMS AC full version 4.00.161

↓

**LICENSES/INSTRUCTIONS**

- Procedure of updating from V3 to V4
- NMS AC licenses
- Manuals for NMS AC software

**TOOLS**

- KaDe Firmware Loader
- Firmware 10.3 - KDH-KS3012-IP
- Firmware 10.3 - KDH-KS3024-IP
- NMS IP Tool

**ACTIVATION / REGISTRATION**

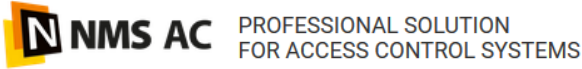
NMS AC SYSTEM REGISTRATION

LICENSE ACTIVATION (OFF-LINE)

System registration in ON-LINE mode (NMS AC server is connected to the Internet)

**Note:** Check that you are connected to the website: <https://vssreg.aat.pl/>, to the license server.

If not - use registration in the OFF-LINE mode.



- NMS AC SYSTEM REGISTRATION
- LICENSE ACTIVATION (OFF-LINE)
- NMS AC



NMS AC SYSTEM REGISTRATION

Country  
Abchazja

City

Object Type  
bank

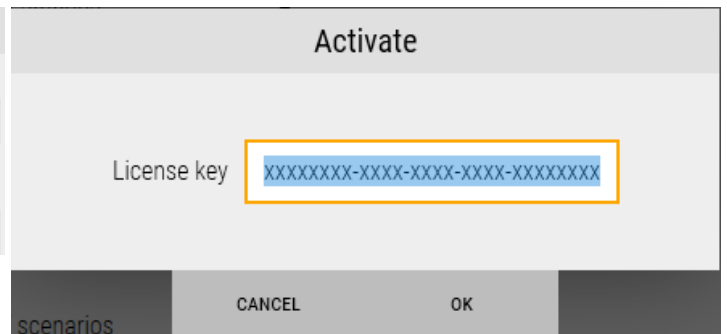
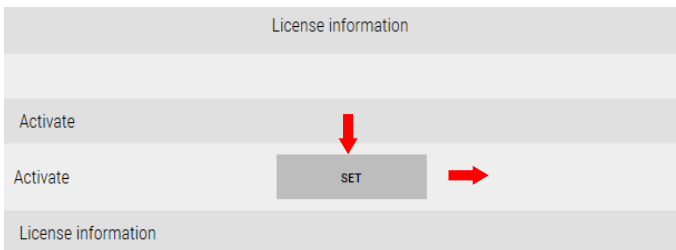
b d f g l  
What code is in the image? \*

SEND

Copy and paste the license key into the window in NMS AC SYSTEM/Licensing/Activate/Set

Clicking on the REGISTER button will display a window as below:

Fill in the fields for the installation location of the system: country (from drop down list), city and object type. After entering the code from the image and clicking **OK** at the bottom the system registration code will be displayed, which should be copied and pasted into the box **SET** according to the info above: SYSTEM tab/Licensing/Activate/Set.



The program will reboot and after logging orange bar at the top of the window disappears. From that point on, the system will run indefinitely.

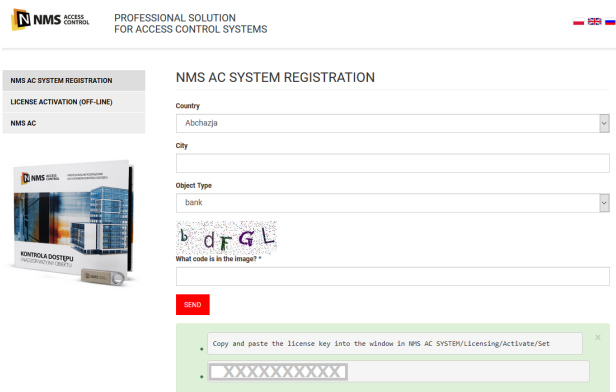


**System registration in OFF-LINE mode (NMS AC server is not connected to the Internet)**

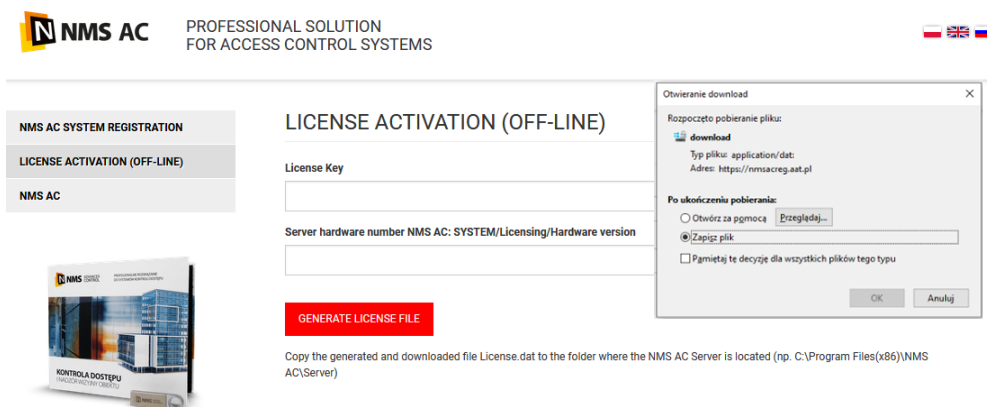
In this case, the system registration process must be performed on a separate computer with Internet access.

Open the page [www.nmsac.aat.pl](http://www.nmsac.aat.pl) in the *Download Center/Registration*.

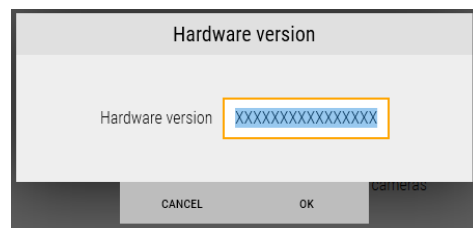
Clicking on the REGISTER button will display a window as below:



Fill in the fields for the installation location of the system: country (from drop down list), city and object type. After entering the code from the image and clicking OK at the bottom will display the system registration code, which should be copied and go to the window [www.nmsac.aat.pl/Download\\_Center/ACTIVATION OFF-LINE](http://www.nmsac.aat.pl/Download_Center/ACTIVATION_OFF-LINE).



Paste the key copied from *REGISTRATION* window into first field and *Hardware version* from *SYSTEM/Licensing/Hardware version* on **NMS AC server**.



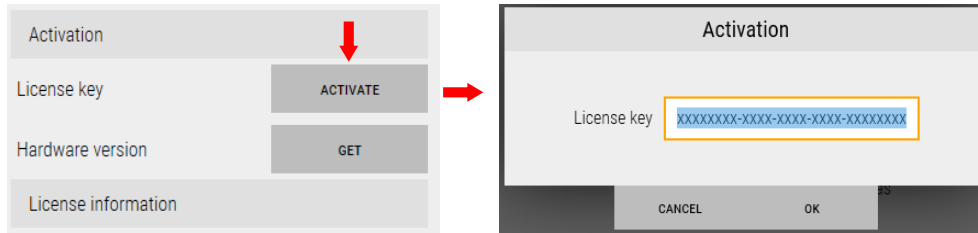
After clicking *Generate license file* button a License.dat file will be downloaded to the disk. You must copy License.dat file to *C:\Program Files (x86)\NMS AC\Server* directory on **NMS AC server**. Paste license key copied from *REGISTRATION* window to *Activate* window on **NMS AC Server**.



The program will reboot and after logging orange bar at the top of the window disappears. From that point on, the system will run indefinitely.

Paid licenses activation in ON-LINE mode (NMS AC server connected to the Internet)

After obtaining paid license key you need to copy it and paste i *Set* field: SYSTEM tab/Licensing/Activate/Set on NMS AC Server.



Software will restart. In *Licenses* tab summary components quantity will be displayed which you can add to the system. After clicking on License GUID information - Get button you can verify owned licenses (after clicking on the key).

License information			
82ecd064	7d00518c	Limit client stations	2
385732b1	fd37d405	Number of controllers	8
4537a72a	4945f16740	Number of cameras	16
48943c01	fbfca53c14	Number of cameras RTSP	1
6eaa3dd1	019281826	Number of cameras ONVIF	1
0cebc824	79472b170	Number of scenarios	4
		Number of panels	4
		Zones	Yes
		Global zone	0
		Interlock zones	0
		Multiple servers	Yes
		Time and attendance	Yes
		Zones LPR ON	No
		LPR Zones	0
		End of time	14.10.2021 18:24

License information			
82ecd064	7d00518c	Limit client stations	0
385732b1	fd37d405	Number of controllers	0
4537a72a	4945f16740	Number of cameras	0
48943c01	fbfca53c14	Number of cameras RTSP	0
6eaa3dd1	019281826	Number of cameras ONVIF	0
0cebc824	79472b170	Number of scenarios	0
		Number of panels	0
		Zones	No
		Global zone	4
		Interlock zones	0
		Multiple servers	No
		Time and attendance	No
		Zones LPR ON	No
		LPR Zones	0

In main window of Licensing tab summary quantities are displayed - number of licenses available after registering the system.

Activation

License key **ACTIVATE**

Hardware version **GET**

License information

License version Paid

Limit client stations 2

Number of controllers 8

Number of cameras 16

Number of cameras RTSP 1

Number of cameras ONVIF 1

Number of scenarios 4

Number of panels 4

Zones Yes(26)

Global zone 4

Zones Yes(26)

Global zone 4

Interlock zones 4

Multiple servers Yes

Time and attendance Yes(26)

Zones LPR ON Yes

LPR Zones 4

Details **SHOW**

End of time 14.10.2021 18:24

End of time 14.10.2021 18:24

Time and attendance Yes(25)

End date of the trial license that ends first

Time and attendance Yes(25)

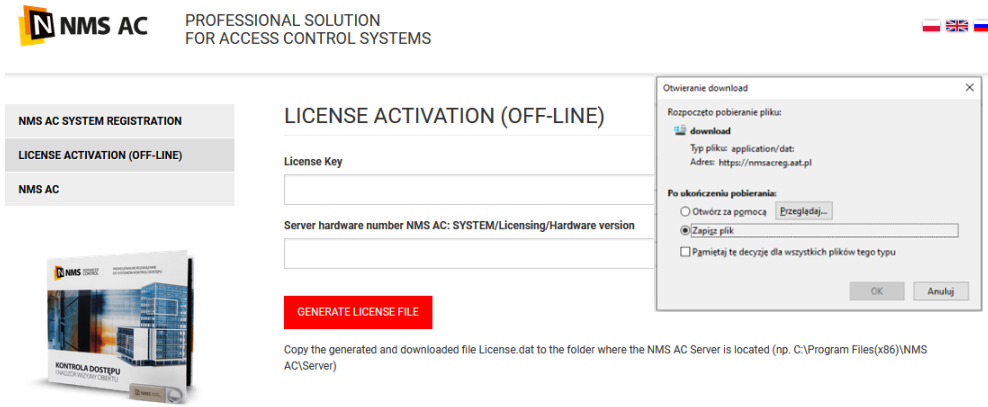
(X) - number of days until the end of this trial license

Paid licenses activation in OFF-LINE mode (NMS AC server has no connection to the Internet)

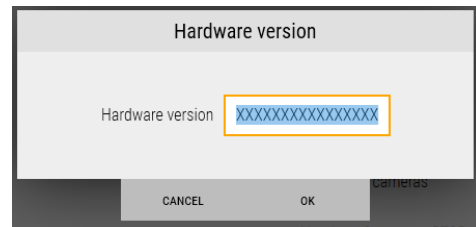
In this case, the system registration process must be performed on a separate computer with Internet access.

Open the page [www.nmsac.aat.pl](http://www.nmsac.aat.pl) in the *Download Center/OFF-LINE ACTIVATION*.

Clicking on the *OFF-LINE ACTIVATION* button will display a window as below:



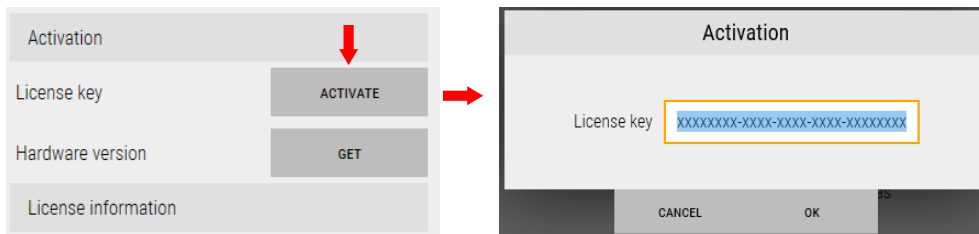
Paste or type purchased license into *License key* field, and *Hardware version* from *SYSTEM/Licensing/Hardware version* on **NMS AC server** below.



After clicking *Generate license file* button a *License.dat* file will be downloaded to the disk.

You must copy *License.dat* file to *C:\Program Files (x86)\NMS AC\Server* directory on **NMS AC server**.

Paste or type purchased license key to *Activate* window on **NMS AC Server**.

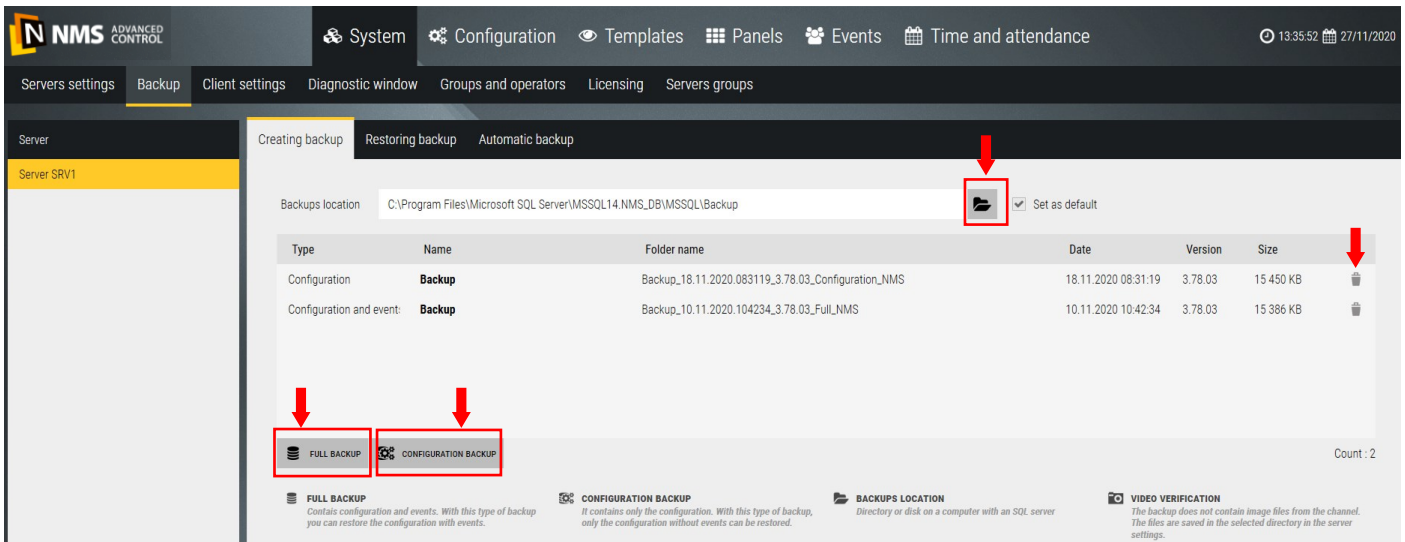


Software will restart. In Licenses tab summary components quantity will be displayed which you can add to the system. After clicking on License GUID information - Get button you can verify owned licenses (after clicking on the key). In main window of Licensing tab summary quantities are displayed.

Activation	
License key	ACTIVATE
Hardware version	GET
License information	
Licence version	Paid
Limit client stations	2
Number of controllers	8
Number of cameras	16
Number of cameras RTSP	1
Number of cameras ONVIF	1
Number of scenarios	4
Number of panels	4
Zones	Yes(26)
Global zone	4

Zones	Yes(26)
Global zone	4
Interlock zones	4
Multiple servers	Yes
Time and attendance	Yes(26)
Zones LPR ON	Yes
LPR Zones	4
Details	SHOW
End of time	14.10.2021 18:24

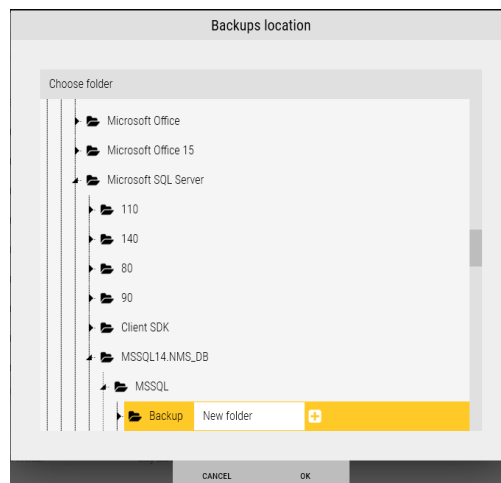
## 8.4 System backup



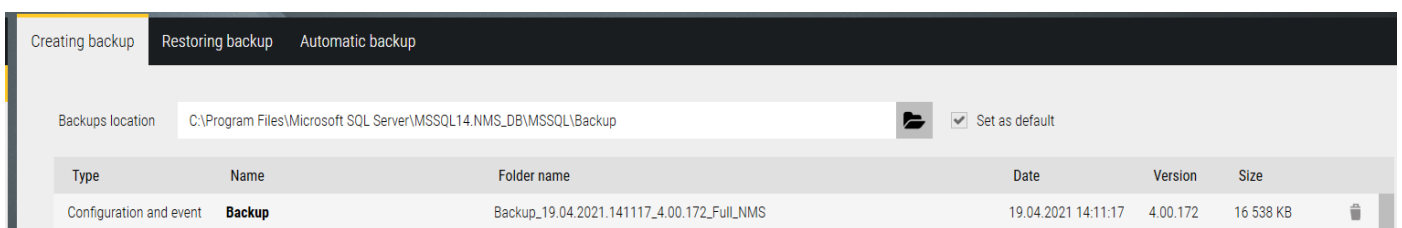
In this tab you can create or restore system backup.

### Creating backup

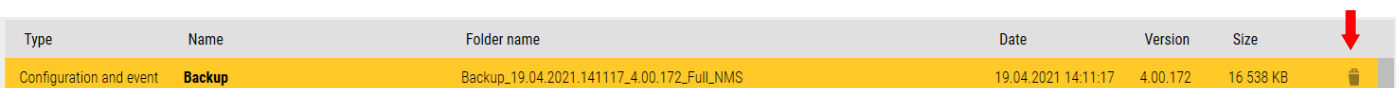
On the top of the window backup localization is displayed. You can change default directory by clicking folder icon.



You can select directory on current hard drive, pendrive or other computer mapped disk and choose it as default localization. You can create events and configuration or configuration only backup clicking on one of buttons on the bottom of the window. The beginning of the name can be changed. Default backup name contains date and time of generation and type.

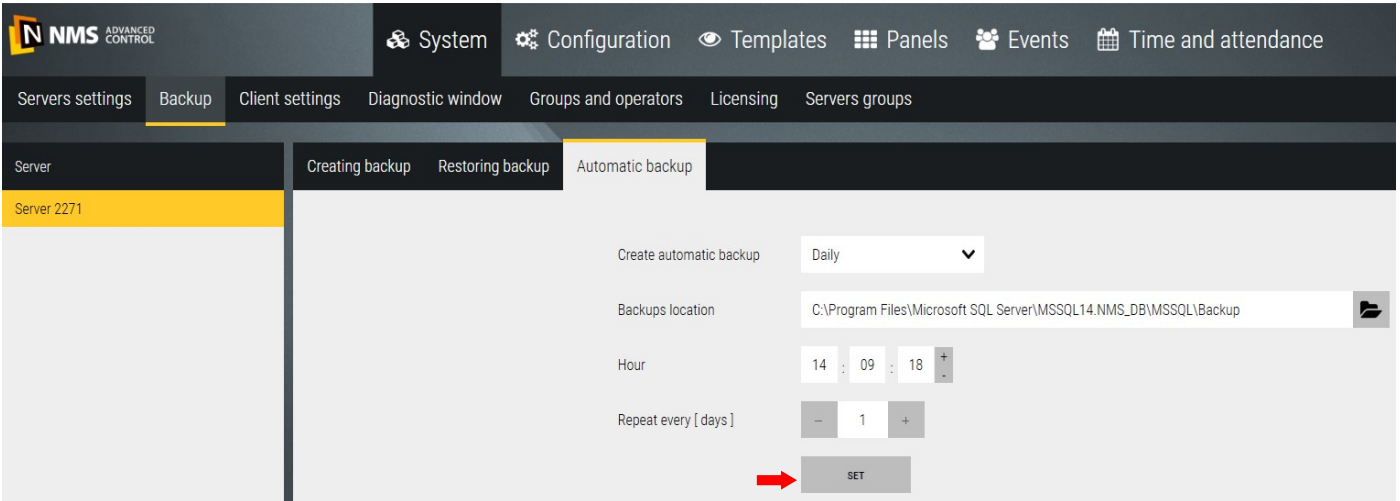


After backup it appears on the list. After moving the cursor over chosen backup Recycle bin icon appears on the right - clicking it deletes backup.

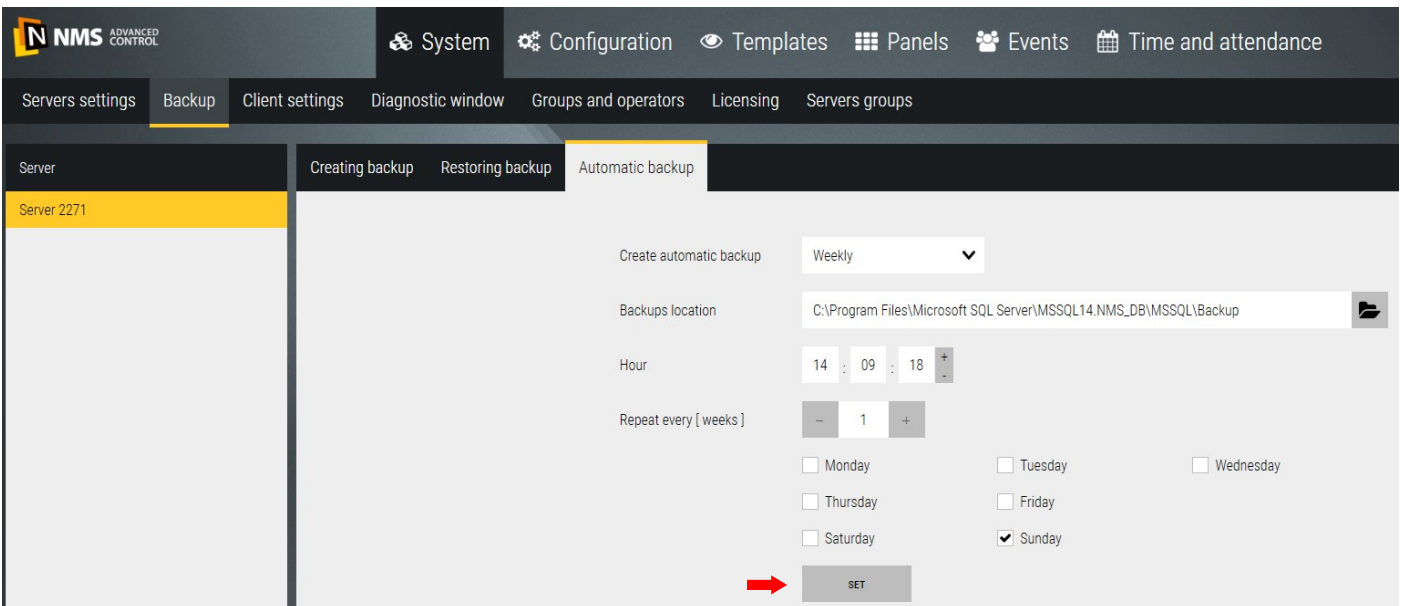


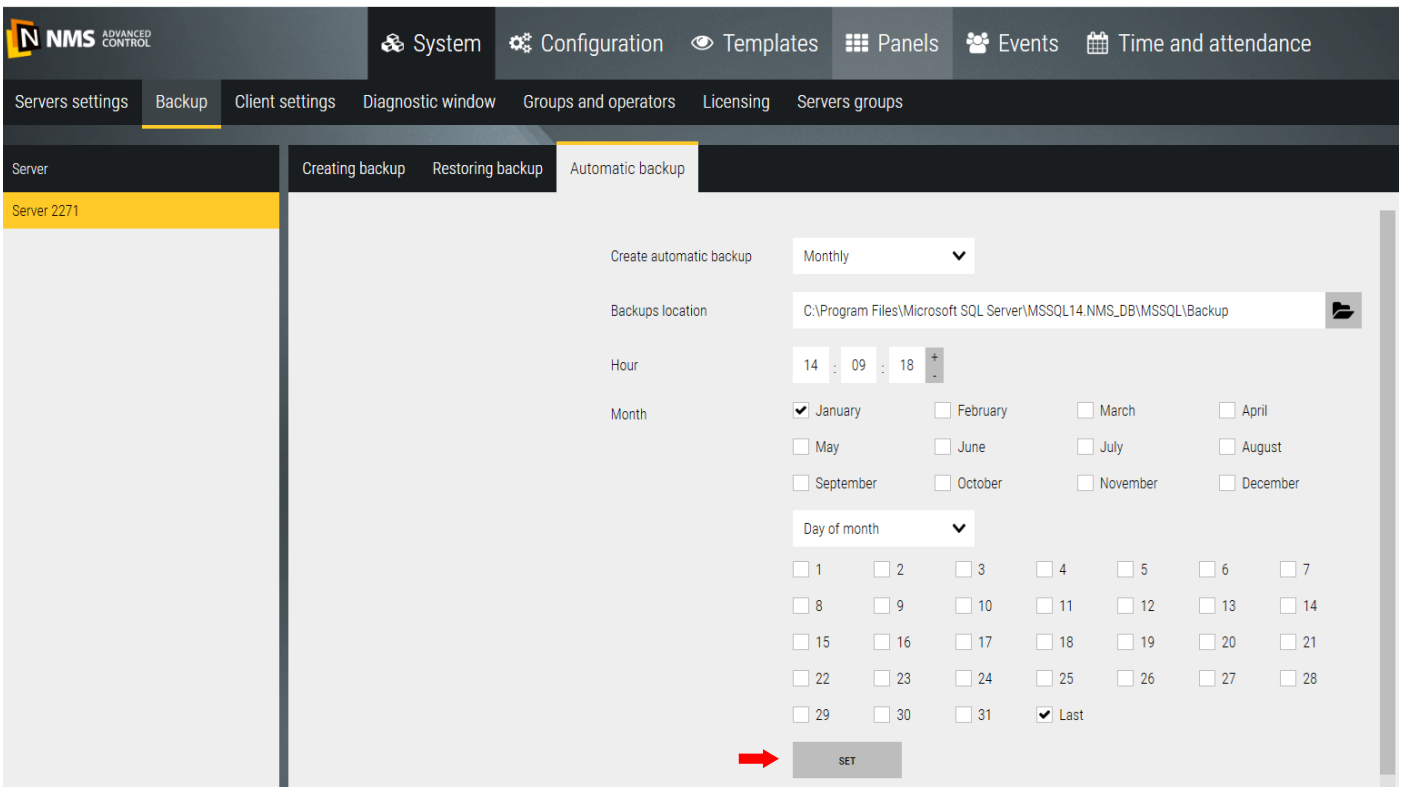
## Automatic backup

A window in which you can set the parameters of automatic backup.



The automatic backup can be created and saved daily, weekly or monthly.

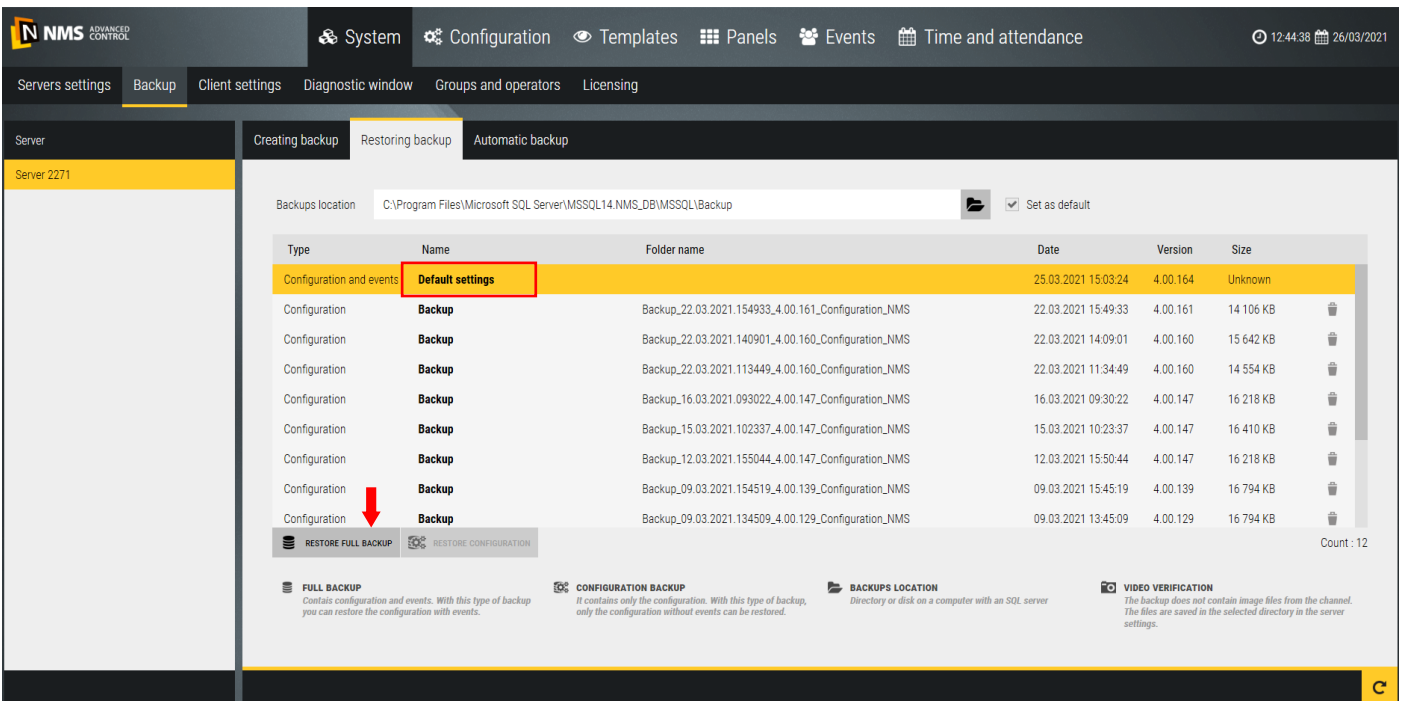




### Restoring backup

Window which you can restore backup from is similar as create backup window.

To restore system backup you need to select the directory which contains backup, select backup and click *Restore configuration* button on the bottom of the window.



It is also possible to restore the initial state of the system (clearing the database) - e.g. after system tests. To do this, restore a copy of *Configuration and events* under the name *Default settings*, which is automatically generated in this window after installing the system.

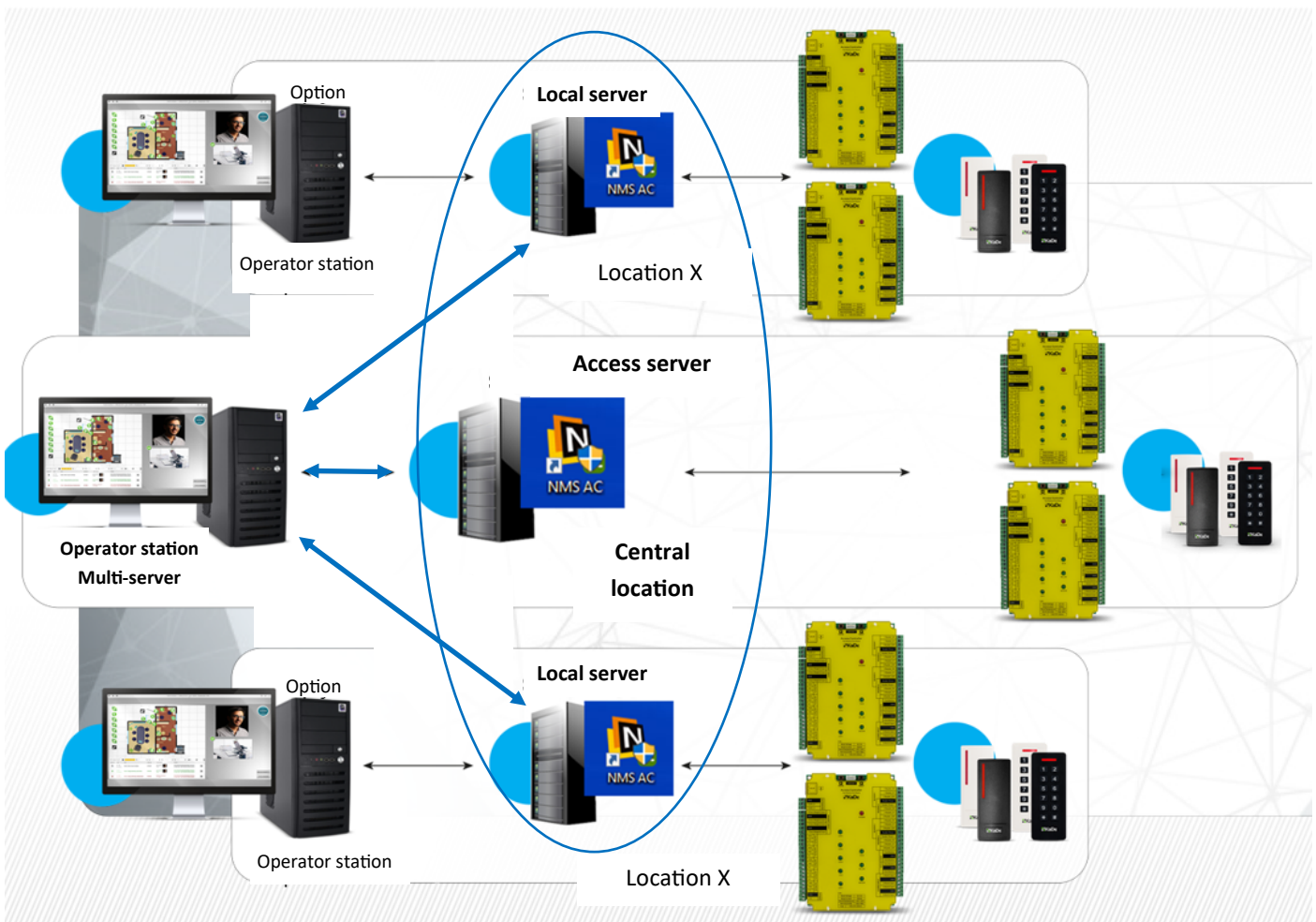
## Section 9. Advanced functions

### 9.1 Multi-server

This options is available as a paid license in 4.0 version or higher. It is mainly designed to support systems in multiple locations, but can also be used to support large access control and video surveillance systems in one location especially if a large number of VSS devices are installed.

NMS AC servers installed in each location support local AC and VSS systems and communicated with local operator stations as in the system without multi-server. This option allows you to add selected servers to group to configure and monitor these subsystems simultaneously from one or more client station (multi-client). This causes that loss of communications with a given location does not affect the work, configuration and monitoring of local systems. This is not possible with a system with one central server. Definitions used in the diagram and descriptions below:

#### NMS ADVANCED CONTROL - SYSTEM WITH MULTIPLE SERVERS

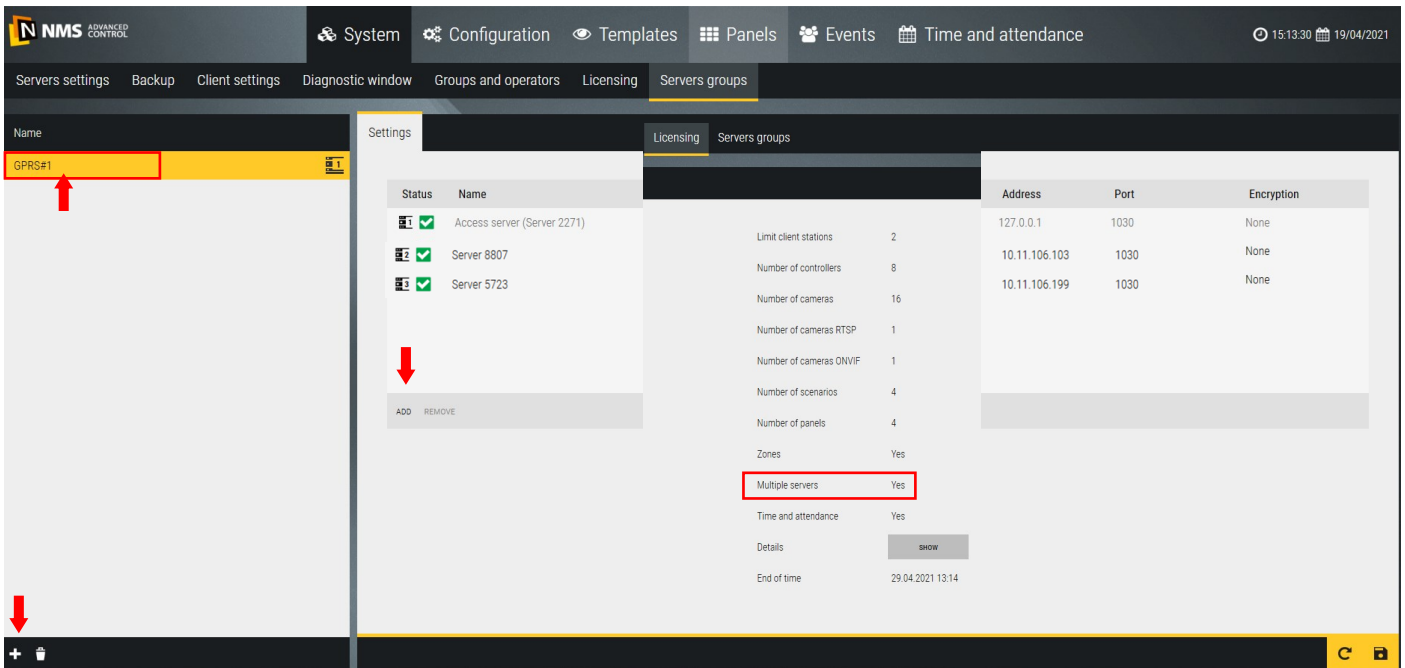



**Access server** - one server in system with a multi-server license added, where is group made of local servers (each of them must have an added multi-server license). In the system and even within one group there can be more than one access server.

**Multi-client** - operator station (NMS AC Client) logged into the access server by an operator with a common login to all servers in the group.

If you want to create a group of servers, each of them requires to purchase of a license- NMS ADVANCED CONTROL SRV.

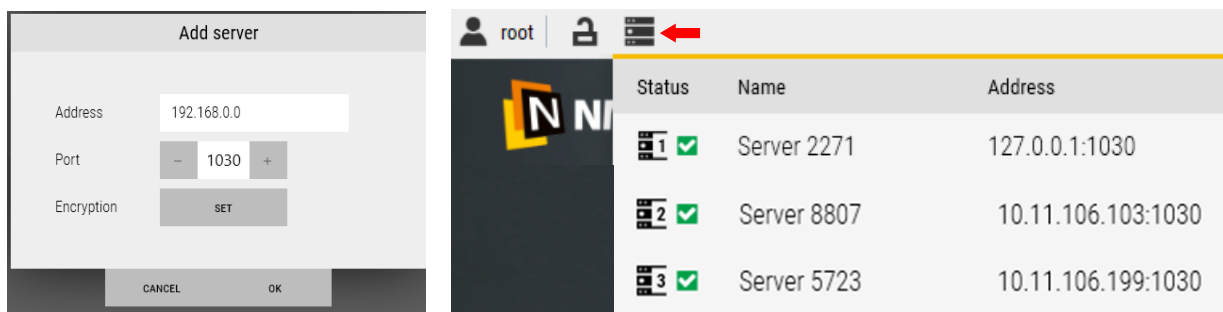
**ADD** - to create a group of servers, click on the „+” button (add) in the lower left corner of the window.



After adding the purchased license to the NMS AC server, a new tab will appear  in the SYSTEM tab - *Server Groups* and new icons in the configuration window with the server number to which the elements belongs. In the next field you can type the name of the server group you are defining.



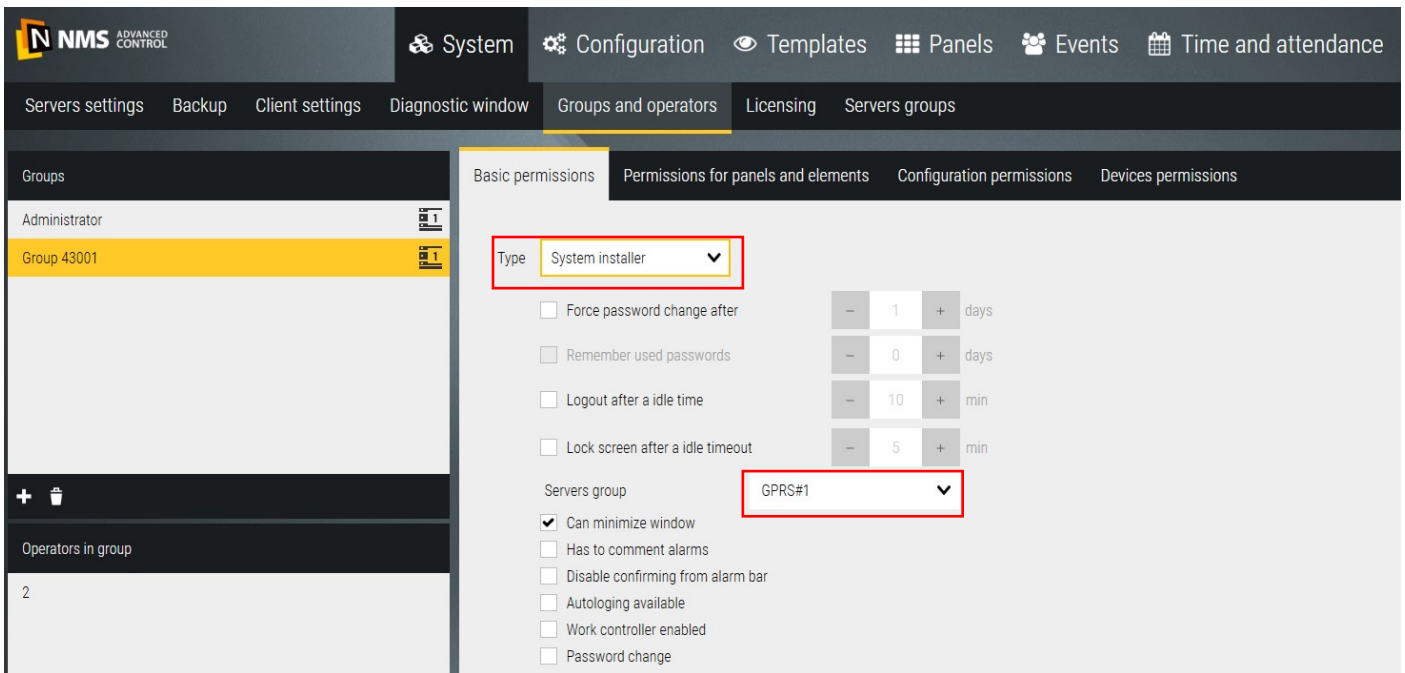
After you define a group, you can add servers to the group, to which multiserver license have been added. To do this, click on the *Add* button in the right window.



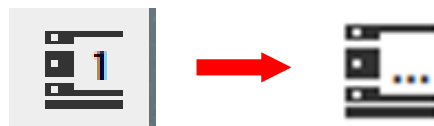
After typing address and clicking OK button, server will appear on the list. If it is running on a network available for this group, the icon to the left of the name will turn green. It will also appear on the list in the top bar on the left after pointing mouse to the server list icon. You can define more than one server group.



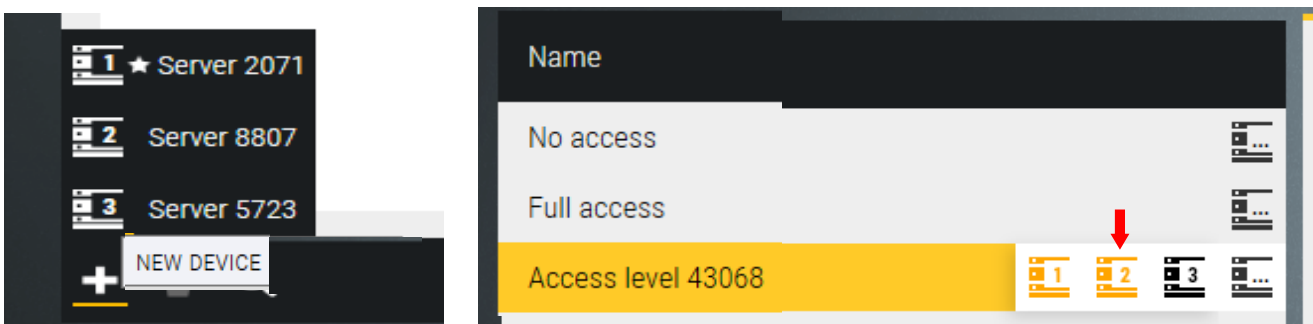
After creating a server group, you must define an operator assigned to that group on each server group. This will allow you to access subsystems within the group when you log on to one of the client station within that group. When you add a multi-server license, a new option appears in the operator definition tab - *Server Group*.



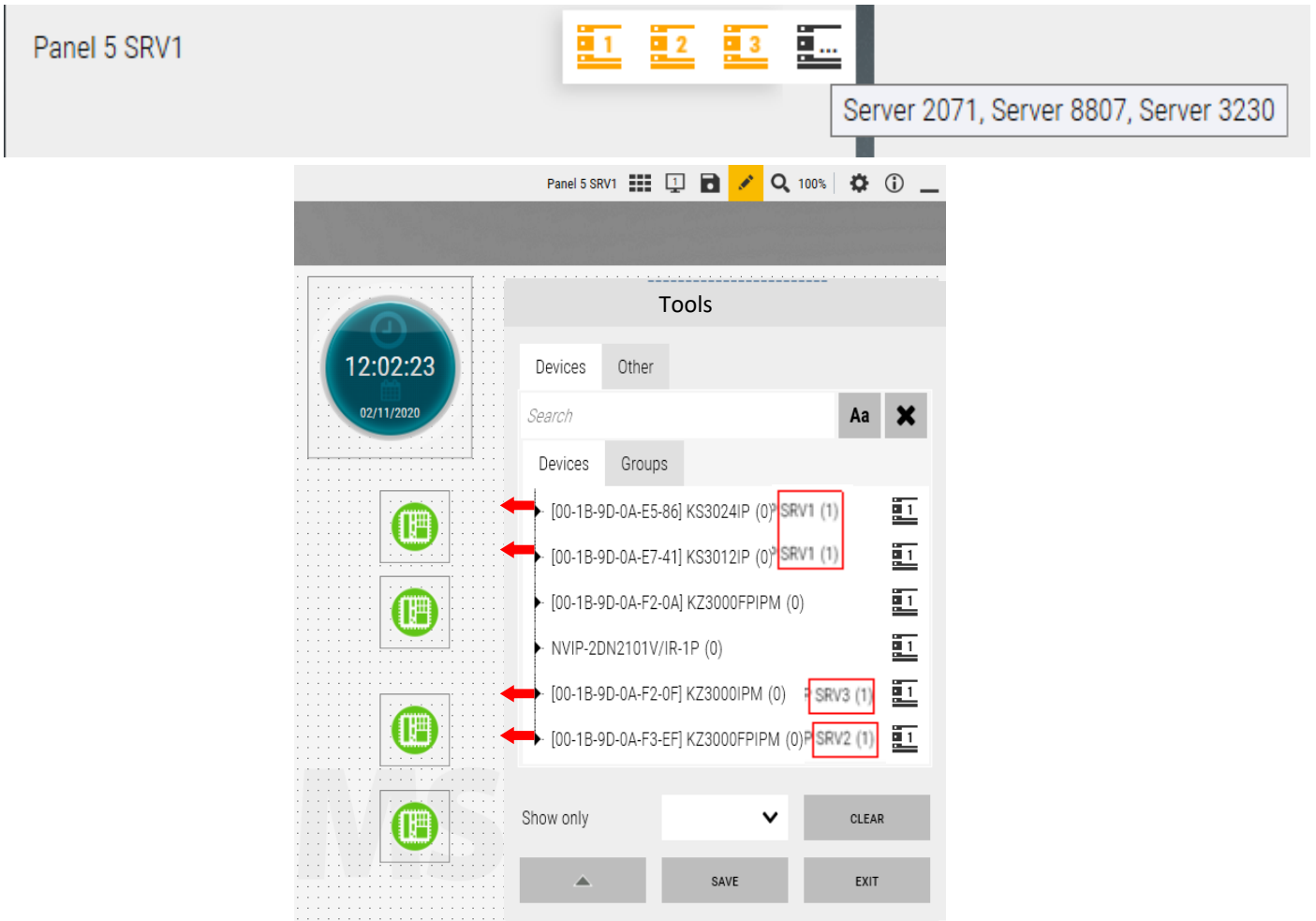
From drop-down list select the server group to which the operator will have permission. After logging in, the operator, depending on the assigned permission, will be able to add, edit and delete elements assigned to servers and perform specific operations on them (e.g. *Unlock door* - in any location). When adding new items, the operator has the option to select the server to which the new item is added. The star marked access server on which we work locally. New logical element added to one server (e.g. *Access level*) can be assigned to other servers in the group after clicking on ikons with server numbers. The assigned servers are displayed in orange and the icon at the end of the list changes the appearance to:



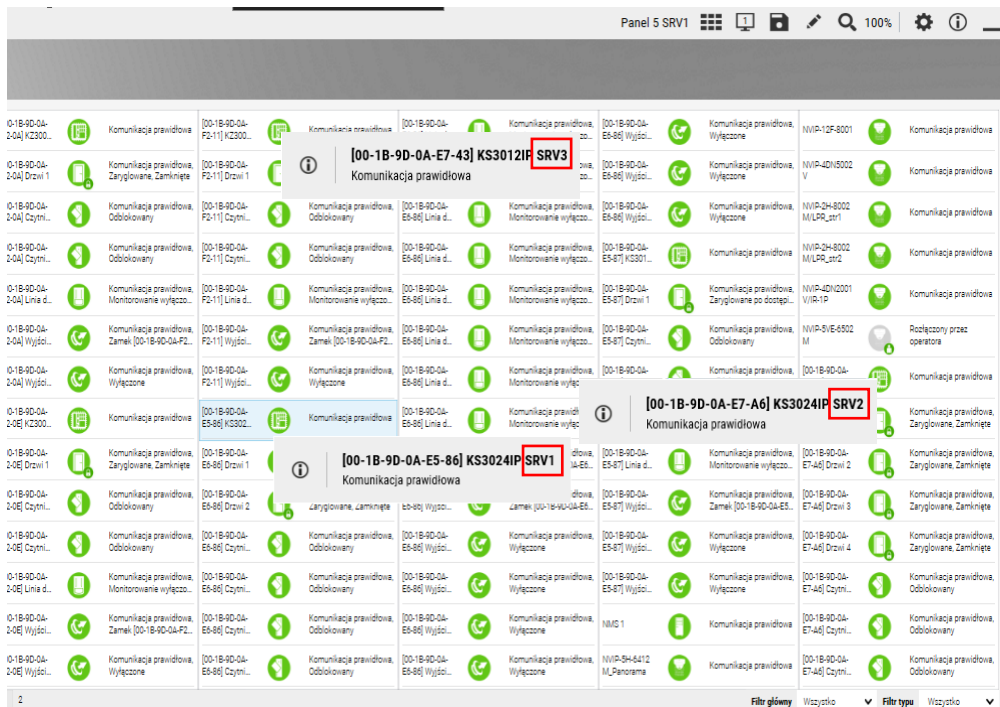
Selected default system elements, which are the same on the servers, are on the lists in the left window only once regardless of the number of servers in the group. This applies, e.g., to timesheets, access levels, holidays.



If, e.g., a newly added panel is to contain elements connected to different local servers (controllers, doors etc.) then, when you add it to the list, you must assign it to the other servers in the group, save new panel and then go into panel editing mode.



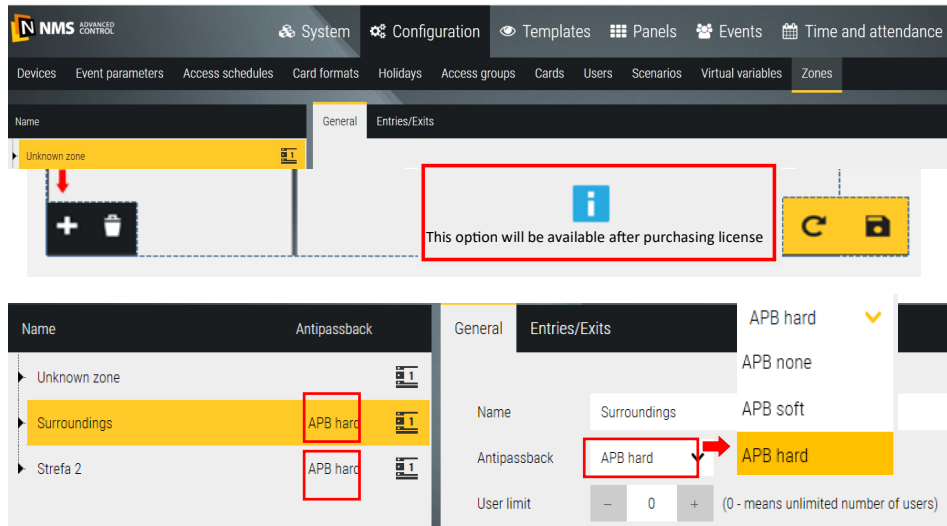
The same is the case with the synoptic table.



A similar policy applies to the current event stack, where events from all servers in the group can be displayed simultaneously.

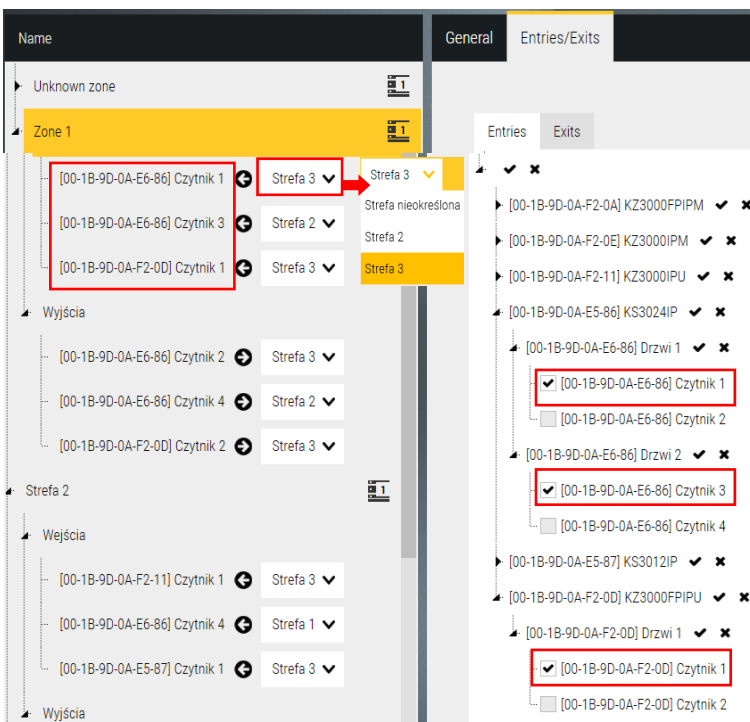
## 9.2 Global zones

This option is available as a paid license in version 4.0 and higher. It is intended to check the condition of persons and vehicles in areas covered by two-ways access control. To use this functionality, you need to buy a license - NMS ADVANCED CONTROL STG. After adding the purchased license to the NMS AC server, in the Configuration/Zones tab the ability to define zones in terms of assignment to each input and output reader is unlocked. The number of defined zones is not limited. A global zone can include readers from multiple controllers. In one of the following version, global zone control will be complemented by global anti-passback. In version 4.01.XX, the control of global zones has been supplemented with a global anti-passback. To use this functionality, you need to purchase a license - NMS ADVANCED CONTROL SG4 or 8. The function works only in on-line mode when the NMS AC server communicates with the controllers.



You can set a user limit in the zone, exceeded is indicated by the color of the edging on the panel and by the appropriate response (e.g. blocking the entrance). The list displays the default *Unknown zone*, which contains a list of new users, who were not moving around the object. Before running this functionality, *Unknown zone* contains all users added to the system database. After reading each card on the reader assigned to the one of the zones and opening the door leaf (door status sensor violation) card (user) is assigned to the new zone.

You can assign APB control to selected zones that have been defined: Soft or Hard. The number of zones to which a hard APB can be assigned results from the paid NMS ADVANCED CONTROL SG (X) license. Hard APB forces the card to be read in enter/exit reader. The soft APB only generates a message about the wrong location of the user.

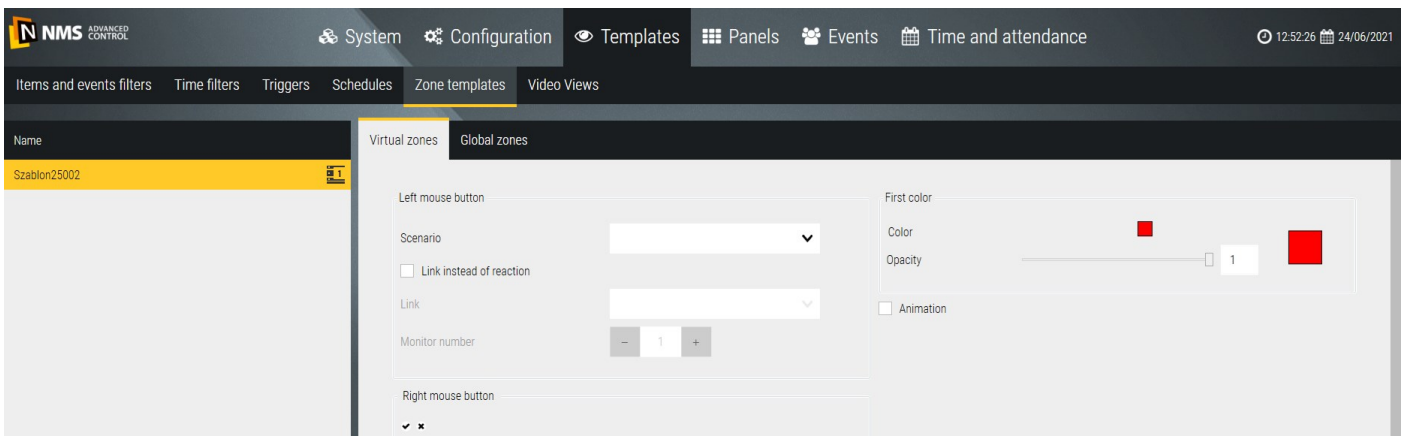


Before defining zones, it is recommended to make a sketch on an object or terrain plan with the zone edge and locations of the entry-exit readers.

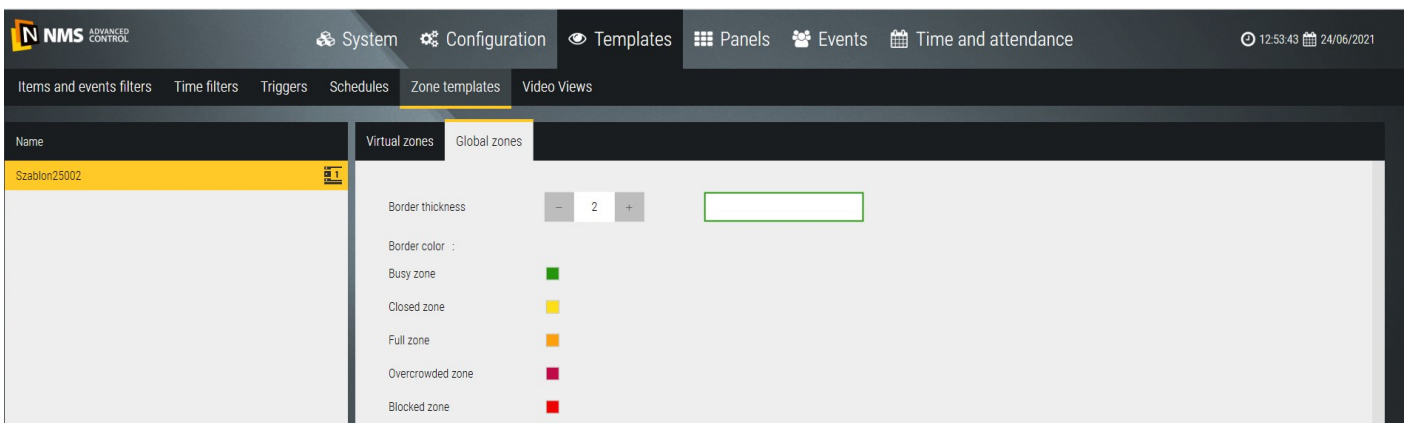
After clicking on the „Add” button, a new item, Zone X, appears on the list in the left window - we can assign input and output readers to it in the right window. After assigning entry and exit readers, go to the left window and assign the zone in which the reader is located to each reader from the drop-down list. This allows you to create a structure of mutual location of zones and transitions between them. After defining the zones and saving them in the database, go to the *Panels* tab and start visualization of the defined zones on a new panel.

### Visualization of global zones on panels

Global zones can be used on panels to monitor their status and to rewrite users on the lists if there is a need to organize their status. On the panels, global zones are linked to the virtual zone templates. Therefore, first of all, define virtual zone templates to which global zones will be assigned on the panels.



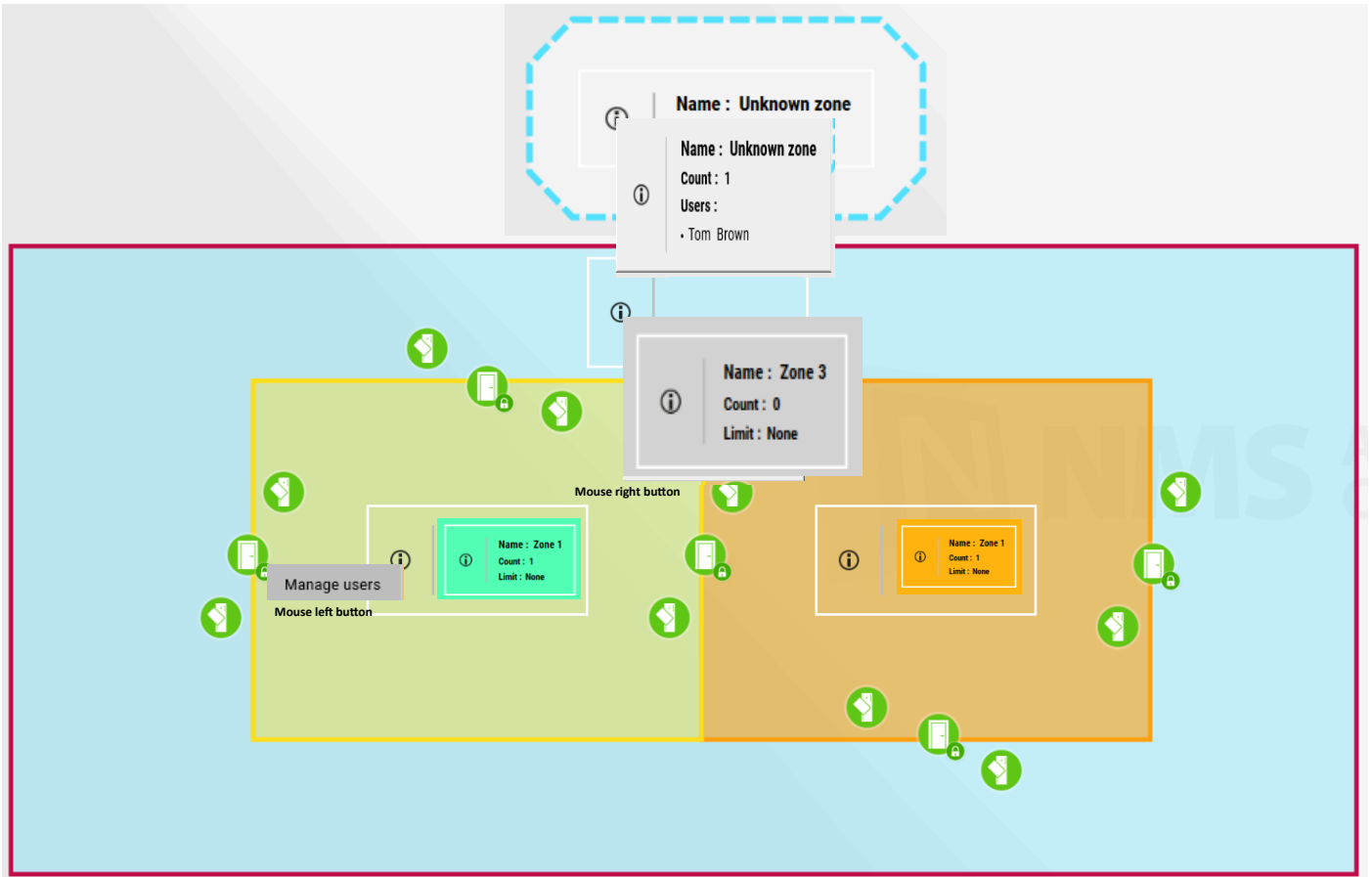
The virtual zone parameters are shown above. If they are used to visualize global zones, different background colors should be selected. Then go to the *Global zones* tab and set the thickness of the frame on the edge of the virtual zone, the color of which indicates the zone status, according to the legend.



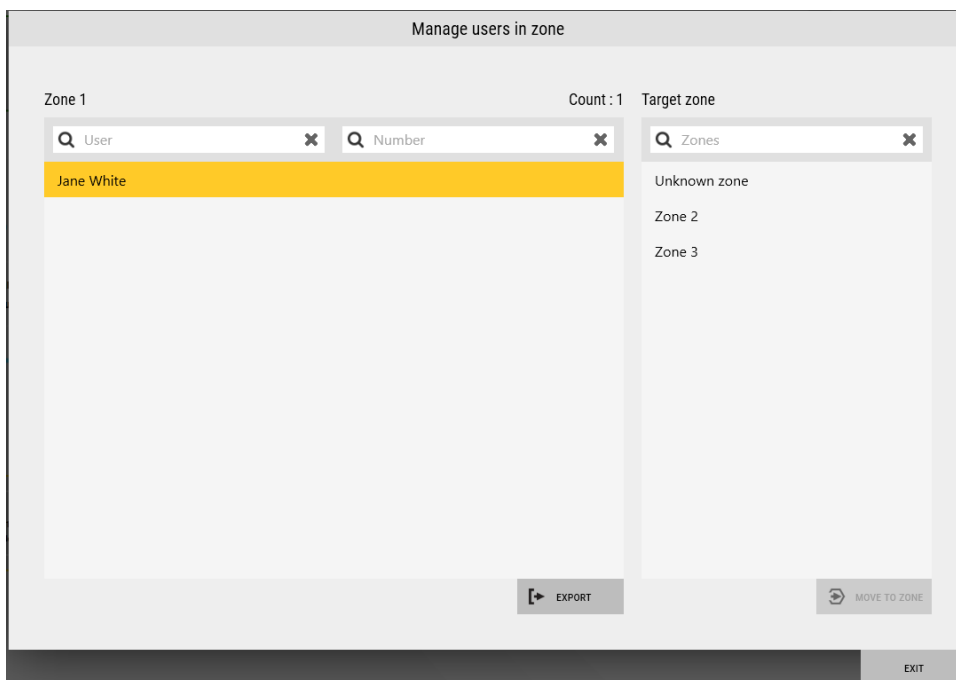
After switching to the panel, enter the edit mode and add a virtual zone, assign it a template and a global zone. Then, modify the parameters of the virtual and global zones (location, size, scale) and save.



Sample view after configuring three zones and marking them with elements below.



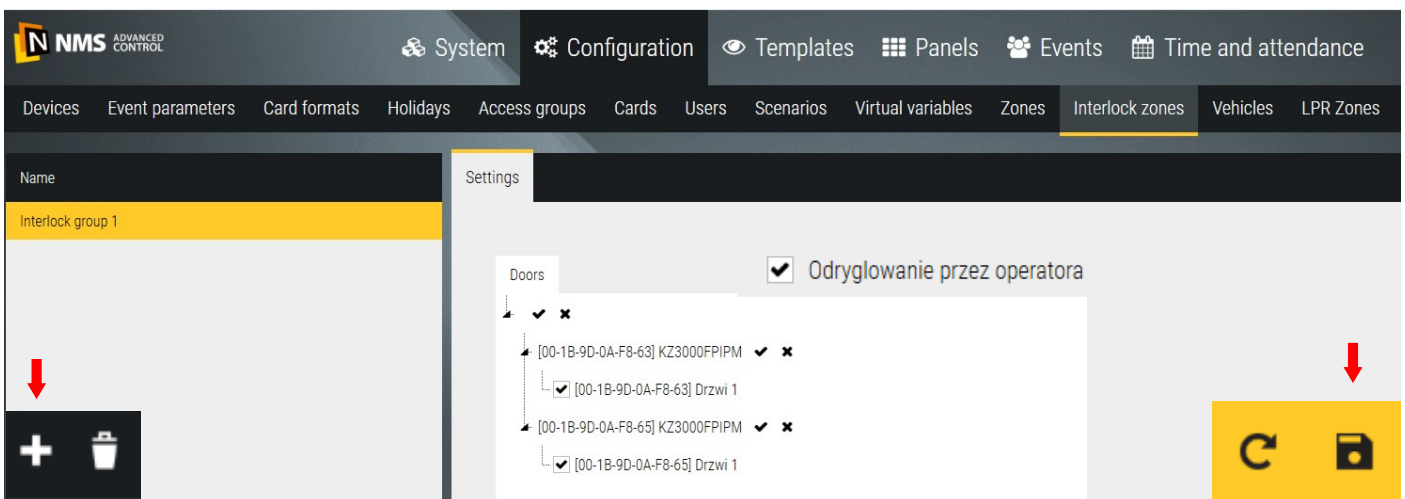
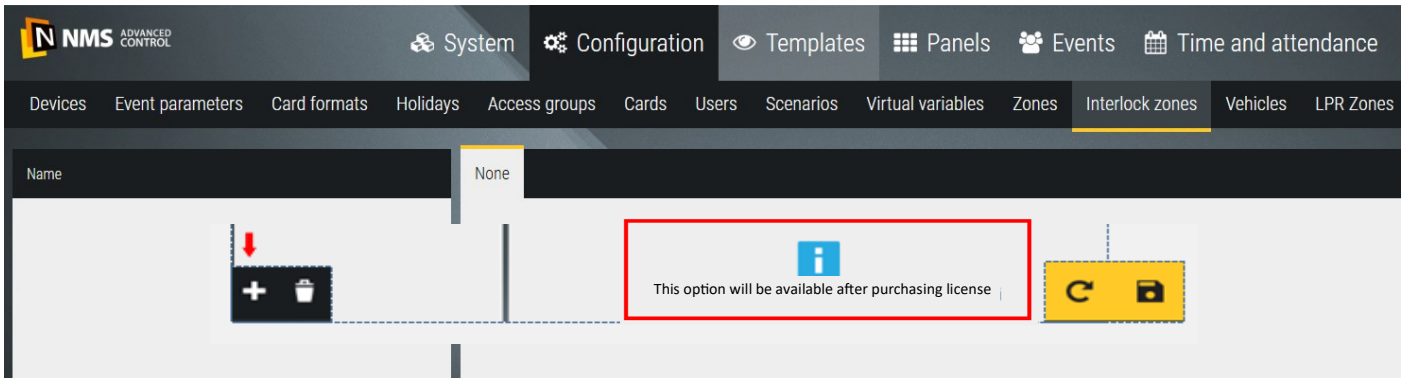
After clicking with the left mouse button on the global zone icon, the following window will be displayed.



The window displays a list of people registered in the given zone. After selecting one or more items on the list (with CTRL) and zone in the right window you can rewrite them to this area. You can also export a list of users to a file (\* .CSV) and print it.

### 9.3 Global interlock

This option is available as a paid license in version 4.01.XX and higher. It is designed to control the closing and locking status of a group of doors. The door can be controlled by various controllers. The function works only in on-line mode when the NMS AC server communicates with the controllers. To define a group of doors for a given lock, click on the + icon in the lower left corner of the window.



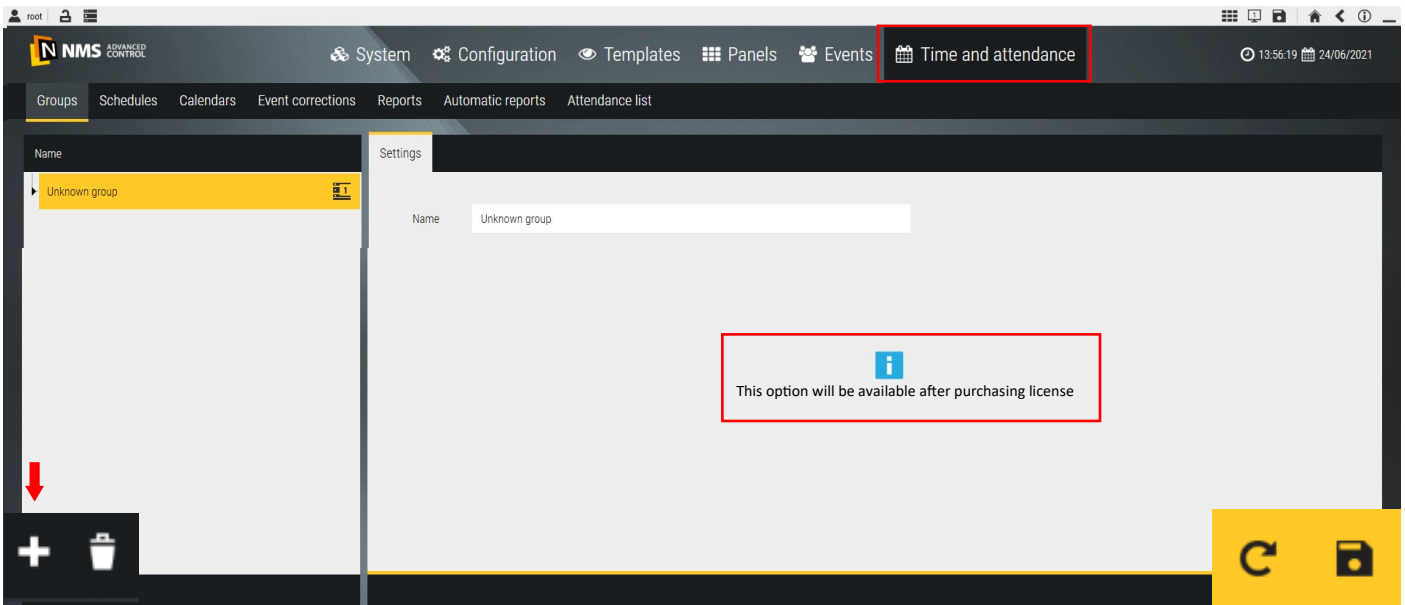
The number of locks (door groups) that can be defined results from the paid NMS ADVANCED CONTROL MS (X) license.

There is no limit to the number of doors per group.

Unlocking by the operator - selecting this field allows the operator to unlock any door from the lock group, even when other doors from this group are open or unlocked

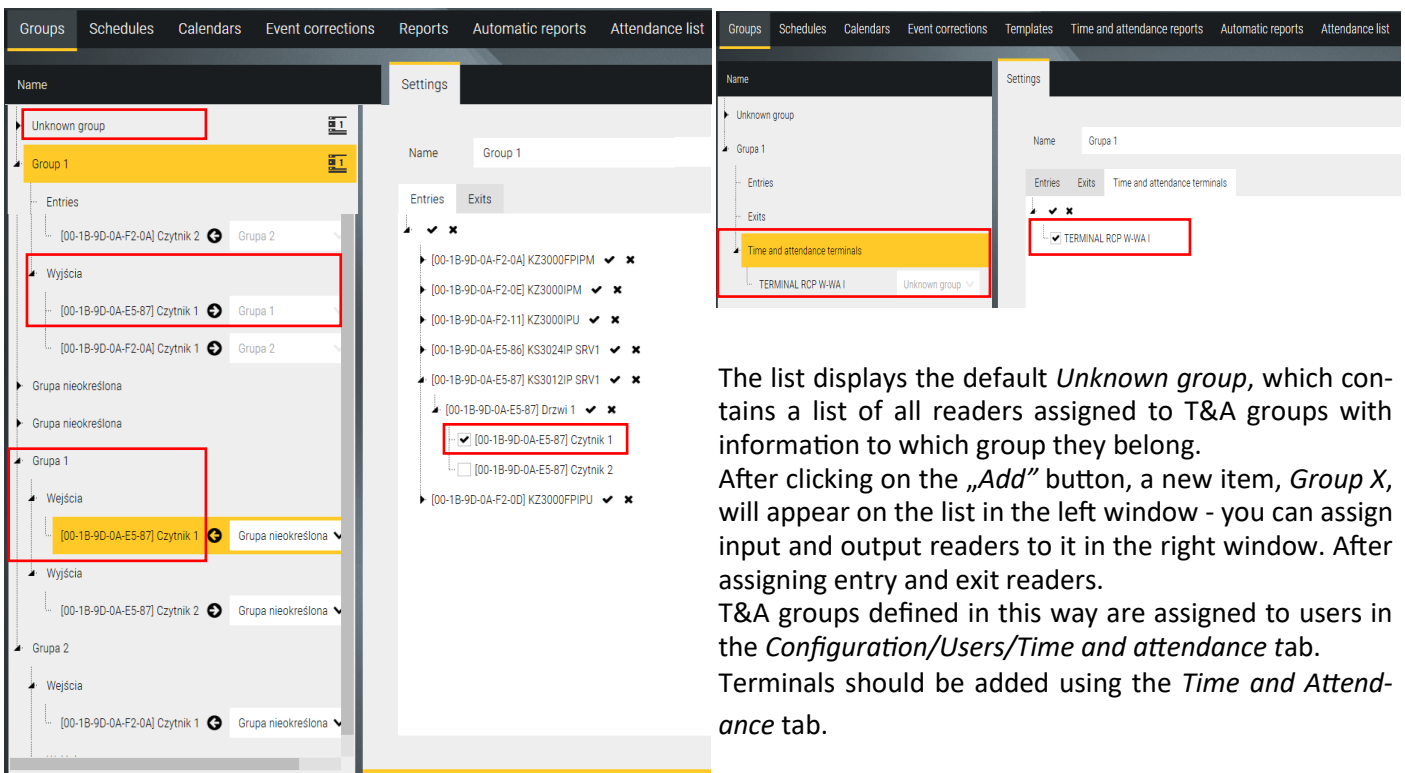
## 9.4 Time and attendance

This option is available as a paid license in version 4.0 and higher (30-day trial). It is designed for recording and settling working time based on events from T&A terminals and AC system readers assigned to T&A groups (T&A terminals are available from version 4.02). To use this functionality, you need to purchase a license - NMS ADVANCED CONTROL RCP, which also enables communication with one T&A terminal or one AC controller with T&A readers. If more T&A points are needed, additional licenses must be purchased. After adding the purchased license to the NMS AC server in the Work time recording tab, the possibility of defining T&A groups is unlocked in terms of assigning input and output terminals and readers to each of them. The number of groups defined in this way is not limited. The RCP group may include readers from multiple terminals and controllers. For working time settlement, only events from readers assigned to T&A groups are taken.



The RCP terminal enables the registration of additional *Entry/Exit* during work: for a break, business, private.

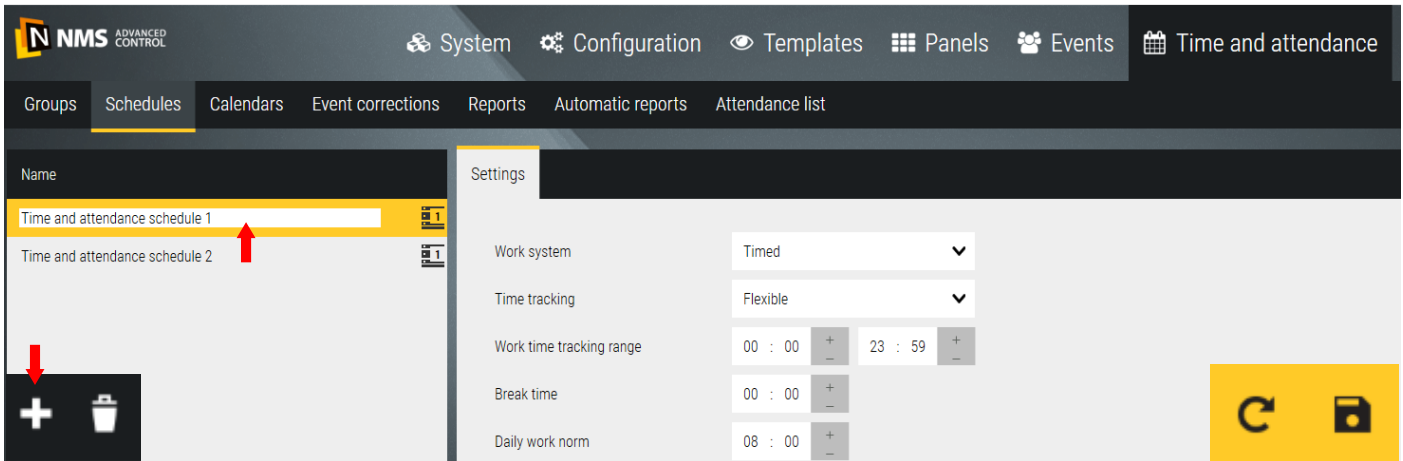
### Groups



The list displays the default *Unknown group*, which contains a list of all readers assigned to T&A groups with information to which group they belong. After clicking on the „Add” button, a new item, *Group X*, will appear on the list in the left window - you can assign input and output readers to it in the right window. After assigning entry and exit readers. T&A groups defined in this way are assigned to users in the *Configuration/Users/Time and attendance* tab. Terminals should be added using the *Time and Attendance* tab.

## Schedules

T&A schedules are needed to settle the working time in a given period accordance with the standard. After clicking on the „+“ (*Add button*), a new schedule appears in the left window with a default name that can be edited.

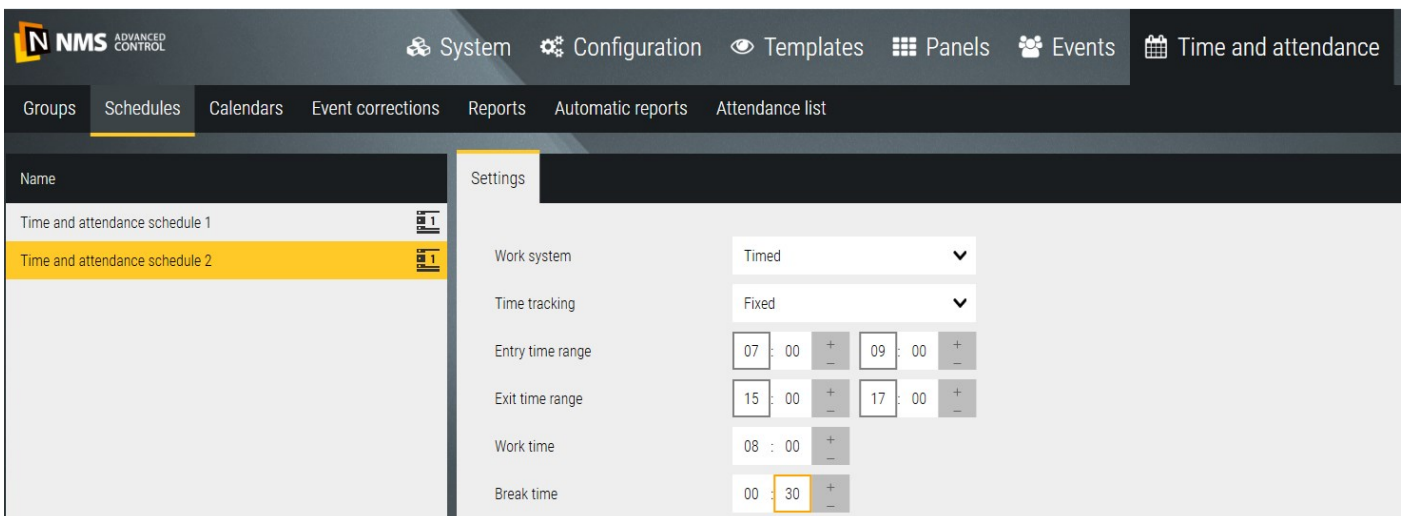


Then, in the *Settings* tab, select:

Work system - *Timed* (Shift in preparation)

Time tracking - *Flexible* - means that the employee will have a set standard of working time for a given period e.g. 168 hours to be worked in a month, but may work for a different number of hours each day. The hours worked during each day are summed up and compared to the standard for a given period assigned in the *Calendars* tab.

Scope of calculating working time - the period of time during which the employee may perform work should be specified



Time tracking - *Fixed* - means that the employee will have a set daily standard of working time. The hours worked during each day are summed up and compared to the standard for a given period assigned in the *Calendar* tab.

Entry time range - establish the time period within which the employee should record the start of work. Only registrations within this time range will be included in the billing. Earlier registration before the entry time range will result in the entry range start, and the later (after the entry range end) as absence.

Exit time range - establish the time period within which the employee should record the termination of work. Only registration within this time range will be included in the billing. The later registration (after the end of the exit range) will result in the counting of the end of the exit range, the earlier (before the beginning of the exit range) as the absence.

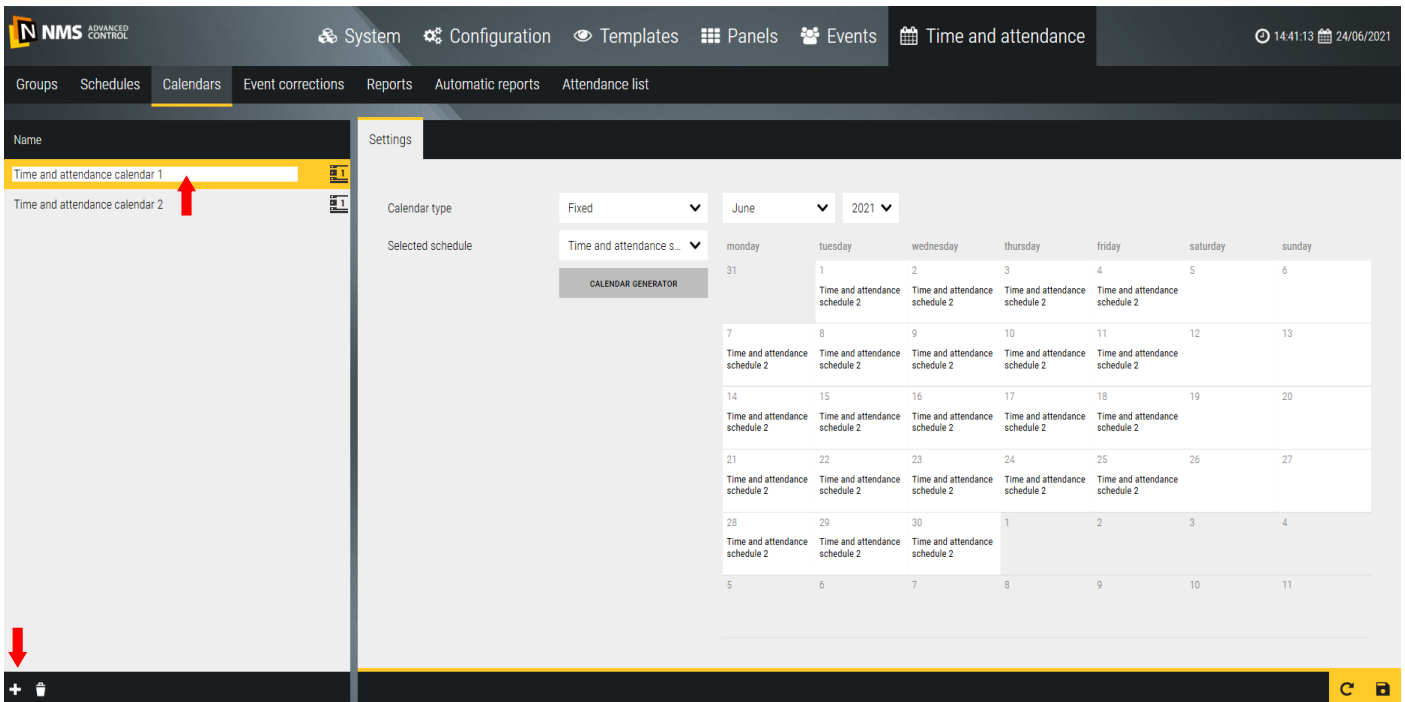
Work time - daily working time standard.

Break time - range of time which is subtracted from Work time.



## Calendars

Calendars are needed to settle the working time in a given period in accordance with the standard. While defining them, a selected schedule should be assigned to each working day of the week. The calendar is then assigned to the user. After clicking on the „+” *Add* button, a new calendar appears in the left window with a default name that can be edited.



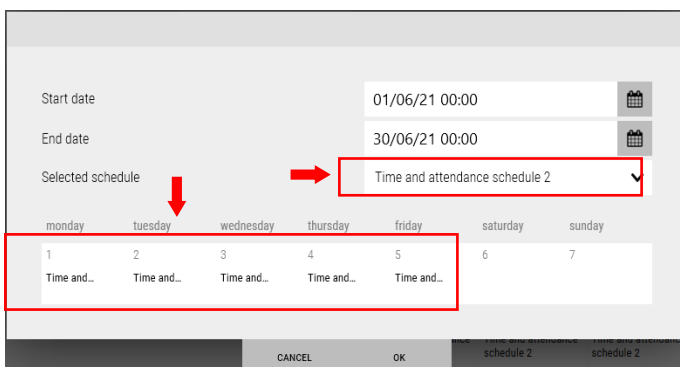
## Settings

**Calendar type - Flexible or Fixed** - after selecting the *Selected schedule* item, you can choose between predefined schedules of *Flexible* or *Fixed* type. In the next field, select the month for which we will generate a calendar with work schedules, and at the end a year. Below, the selection of the schedule and the field for setting monthly standard of working time. The window also displays tiles symbolizing individual days of the month.

Schedules for days can be assigned manually or by using the reports generator.

Manual mode - to assign the selected schedule manually, left-click on a given day, to delete - right-click.

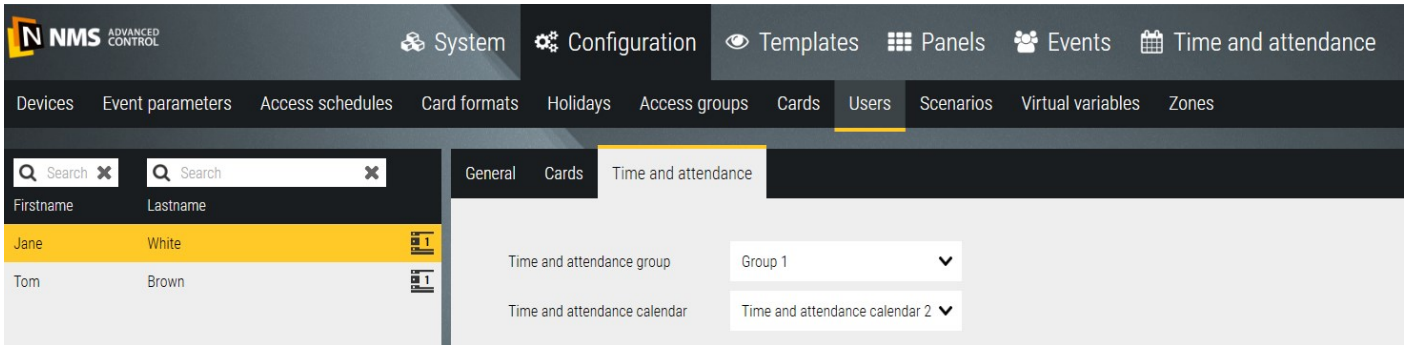
Automatic mode - click on the *Calendar generator* button:



- set the start and end dates of the calendar
- by left-clicking on the days of the week we add a schedule
- after clicking OK, schedules will be automatically Assigned in the calendar for entire set period

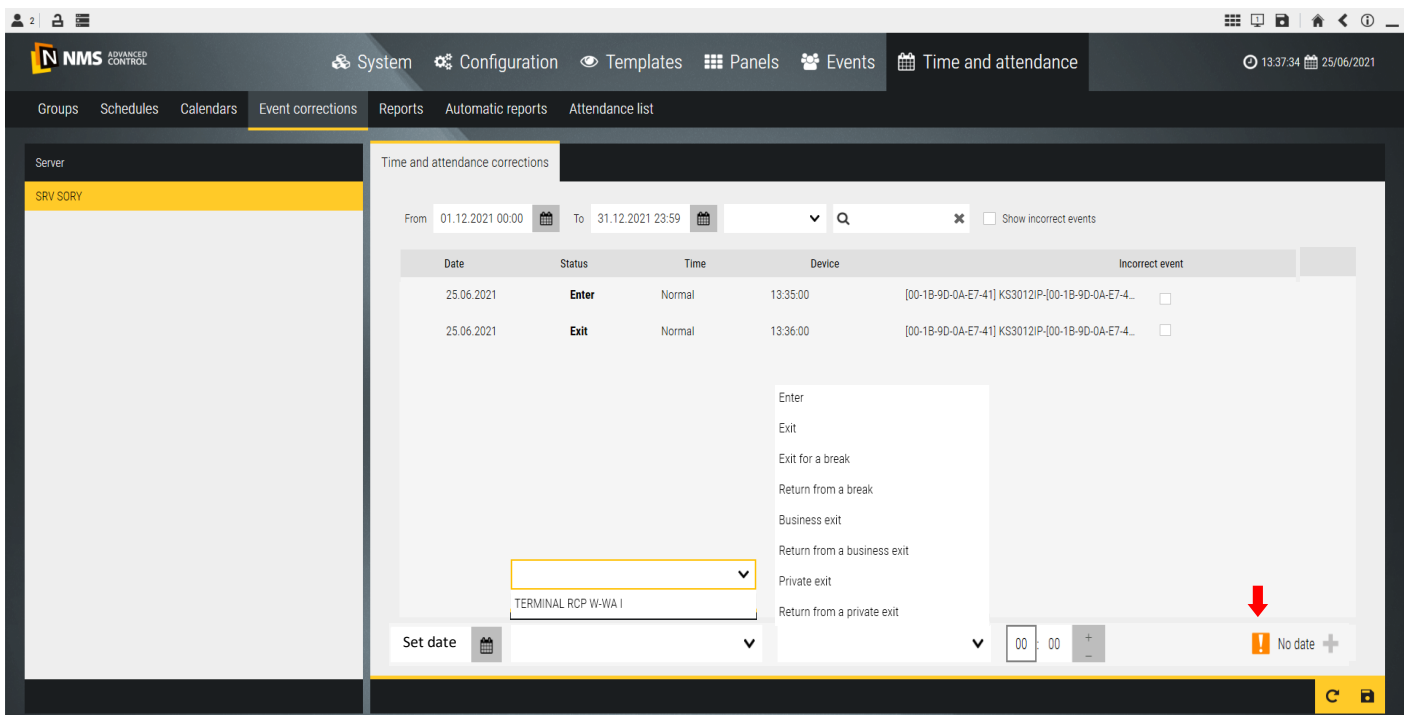
After clicking OK, the schedules will be automatically assigned in the calendar for the entire set period. Save a defined calendar.

## Users - T&A tab

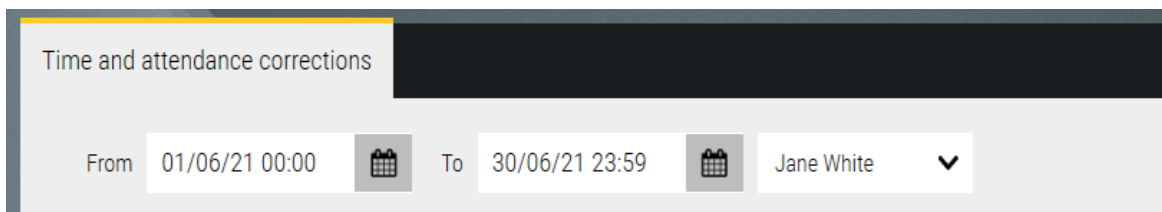


Predefined *Groups* and *Calendars* should be assigned to the user in order to be able to generate a report and settle his working time.

## Event corrections



This tab allows you to view events related to entry and exit registration and to add missing ones - e.g. when an employee forgot his identification card. Such a preview is recommended before generating the report. Incorrect events can be checked and hidden after *Save* or display again after checked *Show incorrect events* box. First, select the period for the report and the employee's name using scrolling list or *Search* field.



After clicking the *Refresh* button in the lower right corner, the registration will be displayed:

Date	Status	Type	Time	Device	Incorrect event
25.06.2021	Enter	Normal	13:35:00	[00-1B-9D-0A-E7-41] KS3012IP-[00-1B-9D-0A-E7-4...	<input type="checkbox"/>
25.06.2021	Exit	Normal	13:36:00	[00-1B-9D-0A-E7-41] KS3012IP-[00-1B-9D-0A-E7-4...	<input type="checkbox"/>
25.06.2021	Enter	Normal	13:38:00	[00-1B-9D-0A-E7-41] KS3012IP-[00-1B-9D-0A-E7-4...	<input type="checkbox"/>
25.06.2021	No exit	Normal			
25.06.2021	Enter	Normal	13:40:00	[00-1B-9D-0A-E7-41] KS3012IP-[00-1B-9D-0A-E7-4...	
25.06.2021	Exit	Normal	13:45:00	[00-1B-9D-0A-E7-41] KS3012IP-[00-1B-9D-0A-E7-4...	
25.06.2021	No entry	Normal			
25.06.2021	Exit	Normal	13:50:00	[00-1B-9D-0A-E7-41] KS3012IP-[00-1B-9D-0A-E7-4...	

If the displayed list includes the „No entry” or „No exit”, the administrator can complete it by adding the missing data manually. To do this, click the edit icon at the end of such an item:

**Missing exit**

30.12.2021 TERMINAL RCP W-WA I Exit 16 : 01 +

At the bottom of the window, set the event data and select the device on which the registration should be made. If both registrations from a given day are missing, you can add entry and exit by completing the items on the bottom bar:

After setting the data, click on the „+” button at the end of the line:

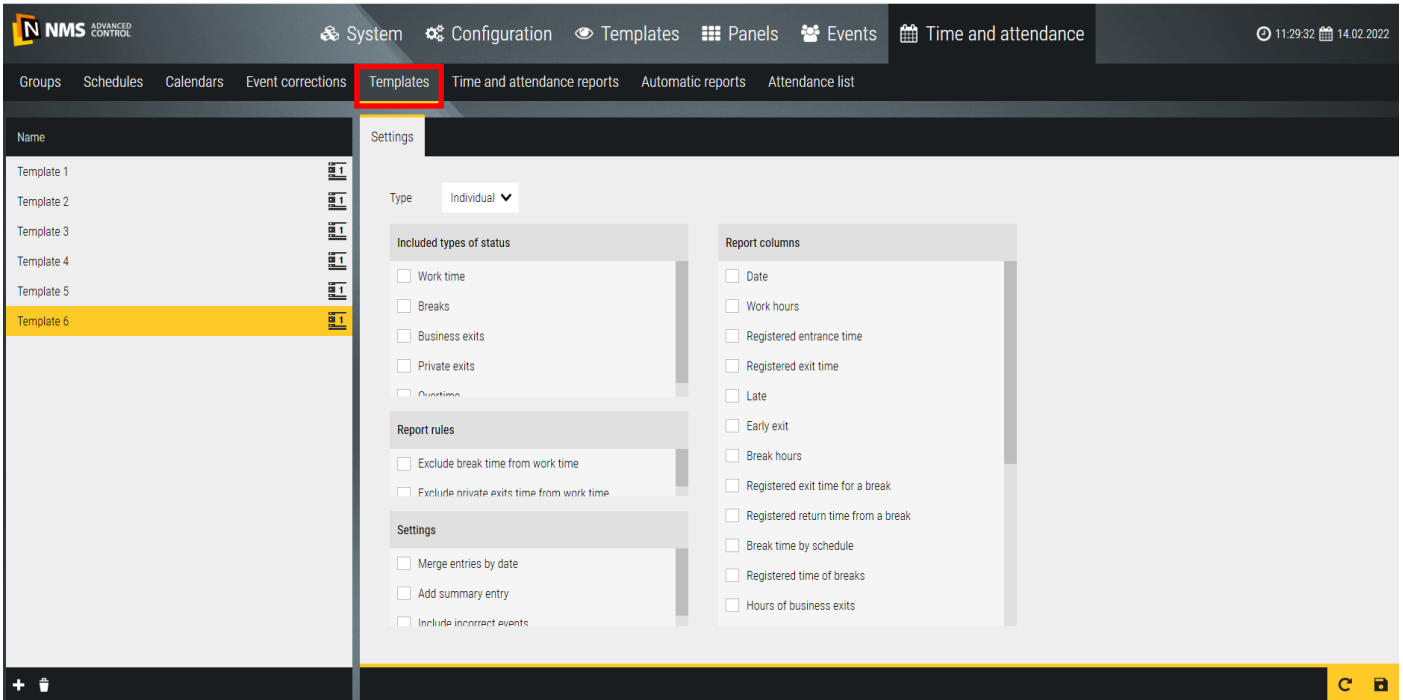
Date	Status	Type	Time	Device				
30.12.2021		TERMINAL RCP W-WA I		Exit		16	01	+

The added registration will be moved to the list above. The icon at the beginning of the added record indicates that the registration has been added by the operator. A registration added in this way can be deleted by clicking on the trash can icon.

Similarly, you can add a registration for and exit.

Date	Status	Type	Time	Device				
25.06.2021	Enter	Normal	12:00:00	[00-1B-9D-0A-E7-41] KS3012IP-[00-1B-9D-0A-E7-4...				

## Templates



This tab allows you to define the templates necessary to generate T&A reports.

The left window contains five predefined templates for individual, group and attendance reports. These templates cannot be used - they can be used to generate reports or as examples to define your own reports.

To define a new report, click the plus sign in the lower left corner of the window, and then select the desired fields in the right window.

The lists in the sections in the right pane allow you to select the following template parameters.

**Included Status Types** - Select which job status types are to be included in the report. These settings affect the look and feel of your working time billing.

**Report rules** - define whether break and private outputs are to be included in the report calculation.

**Settings** - define the appearance of the report form.

**Report columns** - allows you to define which columns will be displayed in the report. This avoids displaying or printing unnecessary columns. Depending on the needs, the same report can be generated with the use of different templates to obtain the result in the form of interest to us.

## Reports

The screenshot shows the NMS Reports interface. The 'Reports' tab is selected. The interface displays a table of attendance data for a selected user (Jane White) and a time range (March 2021). The table columns are: Date, Registered entrance time, Registered exit time, Registered work time, Overtime, and Negative balance. The data shows a regular work schedule with a 15-minute overtime period on 05.03.2021.

Date	Registered entrance time	Registered exit time	Registered work time	Overtime	Negative balance
01.03.2021	00:00	00:00	00:00	--:--	--:--
02.03.2021	00:00	00:00	00:00	--:--	--:--
03.03.2021	00:00	00:00	00:00	--:--	--:--
04.03.2021	00:00	00:00	00:00	--:--	--:--
05.03.2021	10:00	10:15	00:15	--:--	--:--
06.03.2021	--:--	--:--	--:--	--:--	--:--
07.03.2021	--:--	--:--	--:--	--:--	--:--
08.03.2021	00:00	00:00	00:00	--:--	--:--
09.03.2021	00:00	00:00	00:00	--:--	--:--
10.03.2021	00:00	00:00	00:00	--:--	--:--
11.03.2021	00:00	00:00	00:00	--:--	--:--
12.03.2021	00:00	00:00	00:00	--:--	--:--
13.03.2021	--:--	--:--	--:--	--:--	--:--
14.03.2021	--:--	--:--	--:--	--:--	--:--

The individual report that settles the employee's working time is generated on the basis of events from the entry / exit readers assigned to T&A groups. The top bar contains filters that allow you to set report parameters:

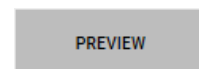
In *Time range*, we have three options:

1. Monthly (default the previous one)

2. From the time range set in selected time filter

3. From a range defined by calendar

In a system with multiple servers, select the server (local by default) and then employee's name. You can use the *Search* field to search for an employee's name.



After setting the filters, click on the *Generate report* button. The report will be displayed on the screen. A summary is displayed at the bottom of the report.

User: Jane White, Department: Position, Handlowy, Time range: 01/03/2021 - 31/03/2021, Monthly work norm (hrs): 0

The displayed report can be saved to an HTML file (with the option to convert to PDF) or as an editable file in CSV format. The last one can be used for data export to the HR program.

Generate report dialog box with fields: Title (Report), Orientation (Horizontal), Path (C:\Program Files (x86)\NMS).

## Group reports

Fullname	Card number	Department	Position	Time range	Registered work tl...	Overtime	Negative balance
Jane White	3175667	Handlowy		01.03.2021 - 31.03.2021	00:15	00:00	-167.45
Ewa Gajewska	8457969	Handlowy		01.03.2021 - 31.03.2021	00:00	00:00	-184.00
Jan Kowalski	2628269842	Handlowy		01.03.2021 - 31.03.2021	00:00	00:00	-184.00
Tom Brown	274648418	Handlowy		01.03.2021 - 31.03.2021	00:05	00:00	-167.55
Adam Czarny	2628395666	Handlowy		01.03.2021 - 31.03.2021	00:00	00:00	-168.00

The group report that settles the department working time is generated on the basis of events from the entry / exit readers assigned to T&A groups. The top bar contains filters that allow you to set report parameters:

In *Time range*, we have three options:

1. Monthly (default the previous one)

2. From the time range set in selected time filter

3. From a range defined by calendar

In a system with multiple servers, select the server (local by default) and then employee's name. You can use the *Search* field to search for an employee's name.

**PREVIEW**

After setting the filters, click on the *Generate report* button. The report will be displayed on the screen. A summary is displayed at the bottom of the report.

User	Jane White	Department	Handlowy	Time range	01/03/2021 - 31/03/2021	HTML	CSV
Card number	3175667	Position		Monthly work norm (hrs)	0		

The displayed report include in each line summary time for one employee and can be saved to an HTML file (with the option to convert to PDF) or as an editable file in CSV format. The last one can be used for data export to the HR program.

**Generate report**

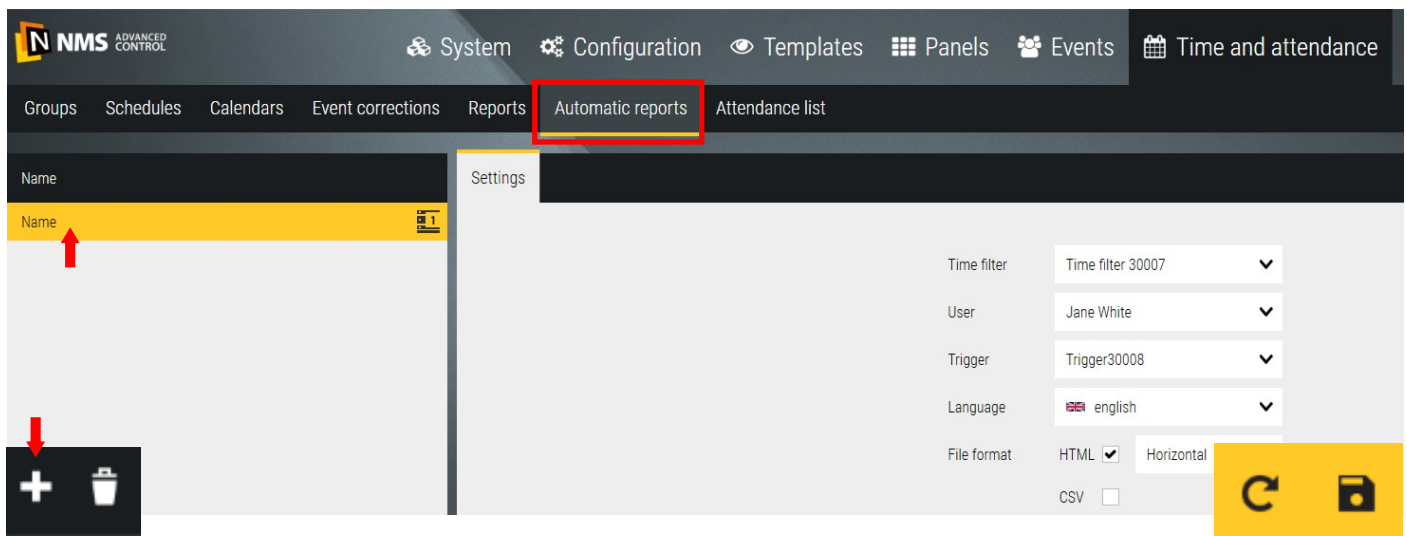
Title: Report

Orientation: Horizontal

Path: C:\Program Files (x86)\NMS

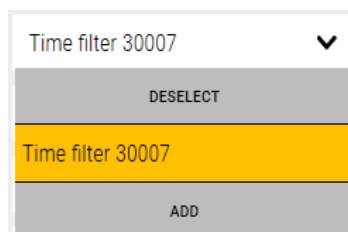
CANCEL OK

## Automatic reports

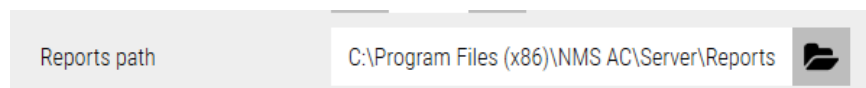


Report that settle the working time can be generated manually by the operator in the manner described in the previous point or automatically in the accordance with the agreed calendar. After clicking on the „+” Add button, a new report template appears in the left window with a default name that can be edited.

Then set the filter parameters in the right window.



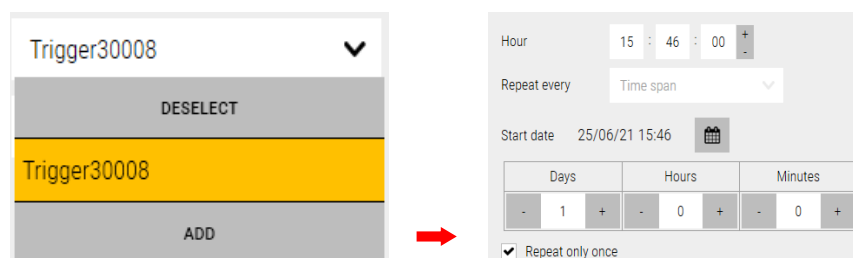
The time filter allows you to set the period of time that will be included in the report generated automatically and saved on the disk. Time filters are defined in the *Templates/Time filters* - by clicking Add we go to this window. Default folder for saving reports:



It can be changed in the *System / Server settings* tab.

The triggers allows you to set the time, day and cycle in which the report generations is to be repeated.

Triggers are defined in the *Templates / Triggers* tab - by clicking Add we go to this window.



The automatic report template also allows you to set the report language and file format.

## Attendance list


The screenshot displays the 'Attendance list' window in the NMS software. The main area contains a table of employee attendance records. The table has columns for Photo, Firstname, Lastname, Department, Time of entry, Status, and Last verify. The status column uses colored circles to indicate the employee's current status: green for present, orange for break, blue for business exit, red for private exit, and red for absent. On the right side of the window, a summary panel shows the current time as 14:41 and provides a breakdown of user statuses: 20 total users, 14 present users, 6 absent users, 1 on a break, 1 on a business exit, and 1 on a private exit. A red arrow points to a refresh button (circular arrow icon) at the bottom right of the summary panel.

Photo	Firstname	Lastname	Department	Time of entry	Status	Last verify
	Robert		DPI	07:39	present	13:48
	Daniel		VSS SUPPORT	13:04	break	13:44
	Patryk		SSWIN, KD, ADV	08:00	private exit	12:46
	Damian		VSS R&D	08:18	absent	08:18
	Patryk		VSS SUPPORT	08:02	business exit	08:02
	Wojciech		VSS SUPPORT	08:02	present	08:02

The attendance list allows you to quickly verify the current attendance status of employees. After opening the window, a list of employees with photos is displayed, as well as the presence status and time of registered entry to the company. The status according to the legend shows one of the five states: presence, absent and exiting during work.

The list can be sorted by clicking on the column headings: Entry time, Status and Last read.

On the right side of the window, the time is displayed - after opening the window, it is the current time and the presence status for that moment. Refreshing the status by clicking on the *Refresh* button.


The  icon allows you to generate and save a report from the attendance list for a given moment.

**Generate report**

File format:  ▼

Title:

Orientation:  ▼

Path:  

Summary:

SSWIN, K    CANCEL    OK    08:00


Generating a report from the attendance list is also possible in the automatic mode.

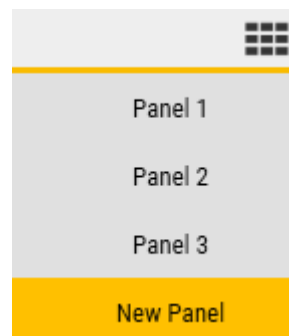


## 9.5 Integration with VSS devices

The NMS ADVANCED CONTROL software enables integration with a video surveillance system. Adding devices of this type is described in chapter **3.10 Devices - Video Surveillance System**.

The connected devices can be operated from the level of *Panels* described in chapter **6. Panels**. The default *Panel 3* includes the *video views* window. You can modify it or create new panels to take full advantage of integration with VSS devices. To do this, enter a panel

using  button located in the main bar of the program and select the appropriate panel.

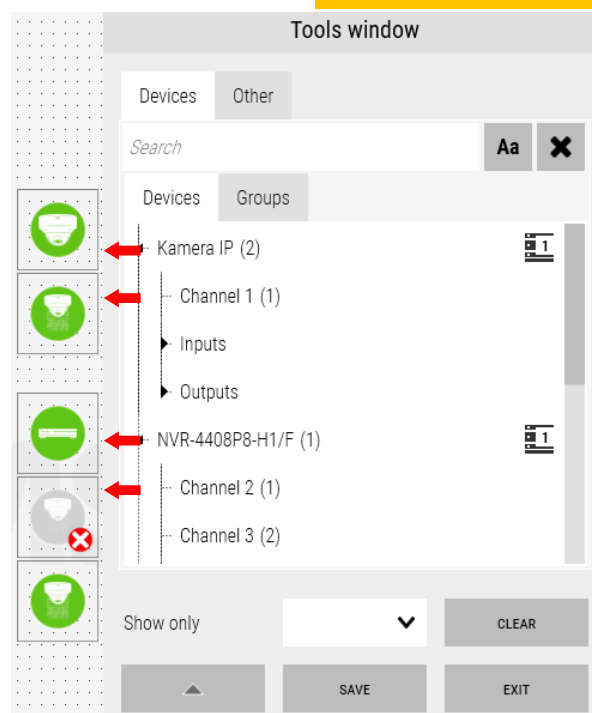


After selecting the panel, you can edit it using the pencil icon



. The *Tools window* appears. You can find there all the elements for panel configuration. The *Devices* tab contains previously added VSS devices. You can move them to the panel by dragging the device or just the video stream. When the panel is saved, clicking the mouse on the device icon displays its event list. Clicking on the video stream icon shows the camera image in a pop-up window.

The *Other* tab in the *Tool Window* shows other panel configuration tools. For the integration of VSS devices, The *Video*, *Player* and *PTZ Control* tools are essential for the integration of VSS devices.



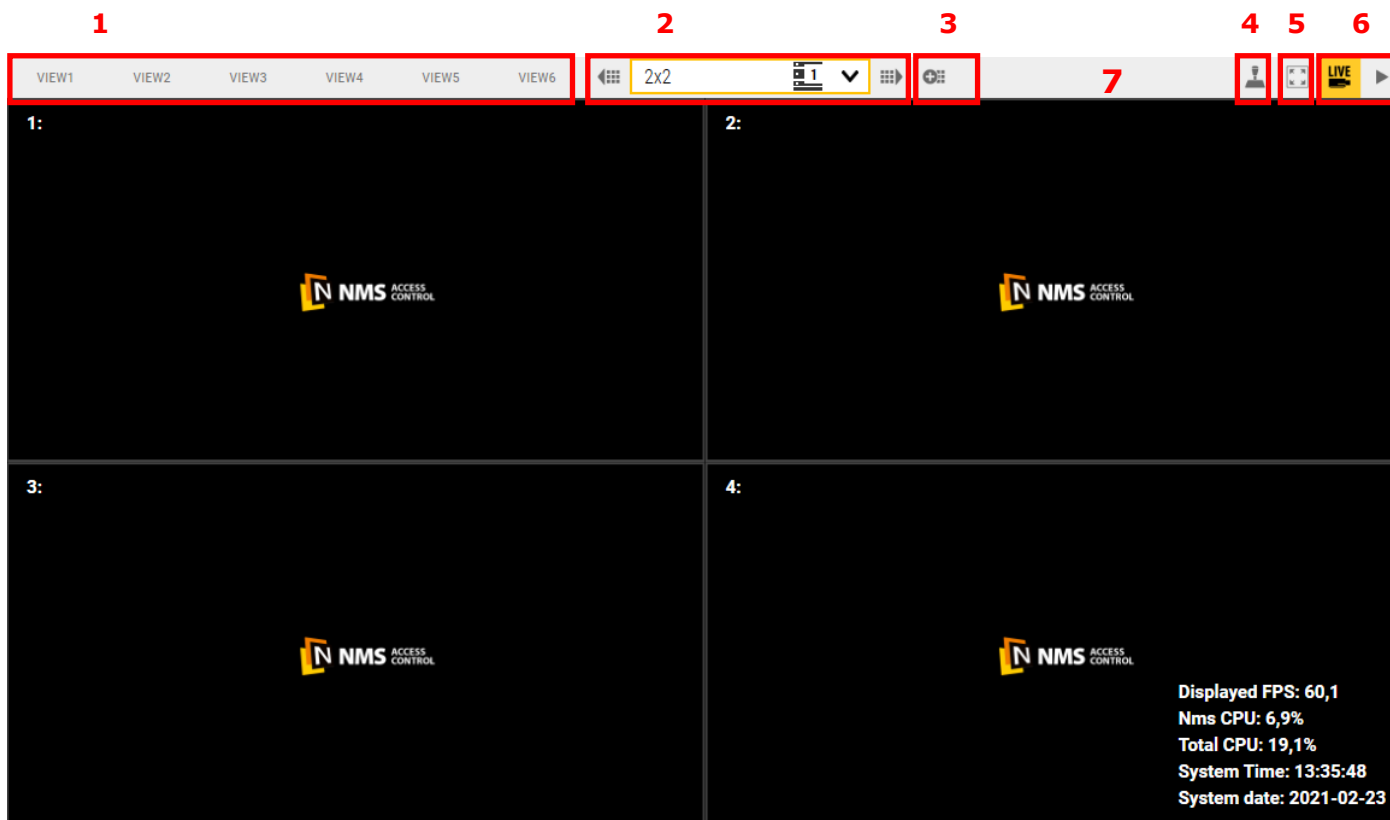
Pay attention to the options that appear after clicking on the stream icon in edit mode:

- Enable OSD—checkbox enabling display of video stream parameters in the image.
- Preview stays open—enabling this checkbox causes the video stream will be displayed until the user closes it with the red cross in the upper right corner of the window. When the option is disabled, the image disappears when you first click on another object
- Preview size—place to define the size of the popup video window.

Another function is to double-click the pop-up video to display the stream in full screen mode. Selecting a part of the image activates the digital zoom function, which can be adjusted using the mouse wheel. Use the right mouse button to exit.

## 9. 5. 1. VSS integration tools—Video

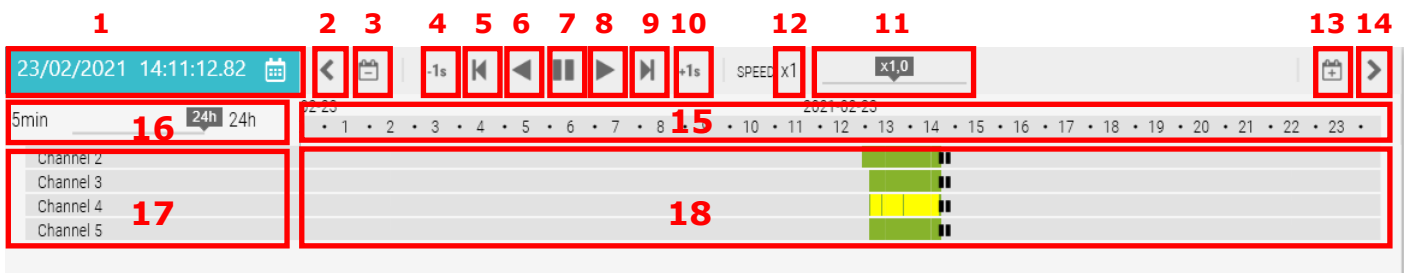
The *Video* window is used to display video streams. It displays cameras previously defined in *Templates*, *Video Views* tab. (described in chapter 5.1 **Video Views**). In the top bar of this window there are icons to manage the window.



1. View Buttons—shortcuts to display defined *Video Views*. The buttons do not have any defined views by default. To assign them, press the shortcut using the right mouse button. Then you can add a *Video View* or rename the shortcut button. You can attach multiple views to a defined button. In such a situation, after pressing it, a list of assigned views will appear. If only one view is attached to the button, pressing it will display the view immediately.
2. Buttons that allow to switch views to the next, previous or choose from a list of defined views.
3. The button to add another *Video View*. Pressing it, a window with different divisions appears. Selecting the split, defining the displayed cameras by dragging the stream icons (see the previous page), you can save the *video view* using the floppy disk icon that appears after selecting the split. Then you must enter a name for the saved *Video View*.
4. Joystick icon—enables / disables the ability to control PTZ cameras. When it is enabled, move the cursor over the image of camera, the arrow indicator changes into a control arrow. You can control the dome camera directly on the video image. The zoom ratio can be changed using the mouse wheel.
5. Full screen icon — when pressed, the Panel displays in full screen. The top bar is also visible, it can be removed by right-clicking on any video image and clicking "Hide menu bar".
6. Live view and playback icons. Alternately lit, they indicate which mode is currently displayed. You need the *Player* tool to control the playback material.
7. Right-click on the top bar shows a window where you can add / remove selected icons of the top bar.

## 9. 45 2. VSS integration tools—Player

The player tool is necessary to view recordings from VSS recorders. It is blank and grayed while viewing live images. When any *video view* is switched to playback mode, the list of channels of the window is filled in and recordings are displayed on the graph.



1. Date and time of the currently playing video. By pressing the calendar button, you can change the date and time of the material being played.
2. Button to move back the timeline of the panel.
3. Button to move 24 hours back the timeline of the panel.
4. Button to move the recordings 1 second back.
5. Button to move the recordings 1 frame back.
6. Button to play the recordings back.
7. Pause button.
8. Playback button.
9. Button to move the recordings 1 frame forward.
10. Button to move the recordings 1 second forward..
11. Playback speed slider. It enables slow or fast playback of recordings (from x0,1 to x10).
12. „x1” button to set default playback speed (x1).
13. Button to move 24 hours forward the timeline of the panel.
14. Button to move forward the timeline of the panel.
15. Timeline. It shows 24 hours by default, it can be zoomed up to 5 minutes (using mouse scroll or timeline scale). You can move it smoothly using the left mouse button.
16. The timeline scale allows to zoom in the timeline (from 5 minutes to 24 hours).
17. List of playing channels. All cameras that have been switched to playback mode in video views are listed.
18. Recordings presented in the form of a graph and various colors. Clicking on the appropriate point of the graph, you can quickly change the time of the played material.

## 9. 5. 3. VSS integration tools—Video

You can control PTZ cameras directly on the camera image by pressing the joystick icon in the top bar of the *Video* window. For full control, use the *PTZ Control* tool.

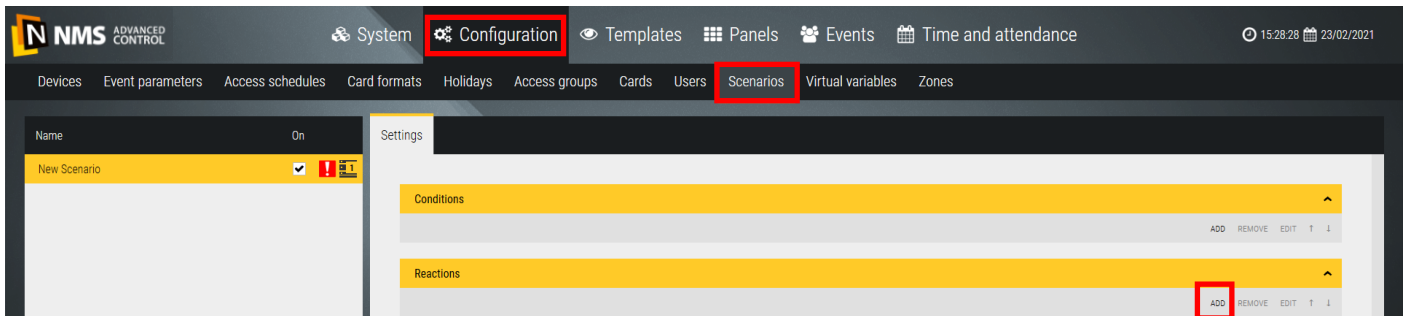
1. Preset button—to call the preset. It is greyed out by default, it activates when you select a number in the lower part of the tool.
2. Pattern button—to call the pattern. It is greyed out by default, it activates when you select a number in the lower part of the tool.
3. Tour button—to call the tour. It is greyed out by default, it activates when you select a number in the lower part of the tool.
4. Autoscan button—to call the autoscan function. It is greyed out by default, it activates when you select a number in the lower part of the tool.
5. Autofocus button—focuses automatically.
6. Numeric keyboard—allows you to select the number of the recalled preset, tour, etc. The highlighted element indicates the selected number.
7. PT control area—allows to move rotating cameras, use different rotation speeds.
8. Zoom buttons—allow to zoom out and zoom in on a camera with a motorzoom lens.
9. Focus buttons—allow to set focus of the image manually in a camera with a motorzoom lens.
10. Iris buttons—allow to manually open or close the iris of the lens.



Attention! The availability of particular functions depends on the functionality of the selected camera model.

## 9. 5. 4. View video streams in response to the scenario

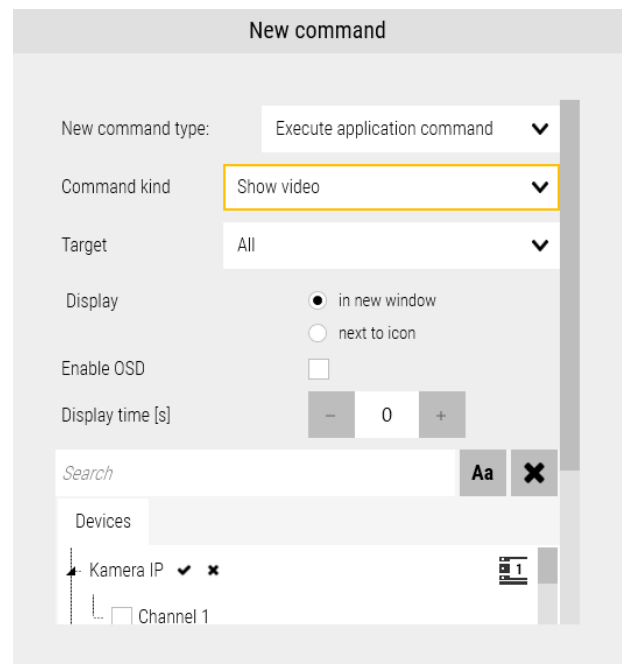
The integration of NMS AC software with VSS devices also applies to displaying video streams as a reaction to any events available in the system. Reaction settings can be set in the Configuration menu, Scenarios tab.



After creating a new scenario and its launch conditions, click the *Add* button in the Reactions section. *New command* window appears, select the command type *Execute application command*. Further options will appear, you must set *Show Video* as the command type.

There are additional display options:

- Target — video display can be set for a specific operator or group of operators.
- Display — display can be set in a new window or in the pop-up window next to the video stream icon. In the first case, a single camera will occupy the entire window. By increasing the number of streams, it will automatically divide into 4, 9 or 16 streams. For more than 16 streams, the streams displayed first disappear.
- Enable OSD — displaying a video in a new window, you can enable the OSD of that window
- Display Time — the default value of 0 means that the stream, after calling, will be displayed until the operator disables it. By specifying a different value, we make the streams indicated in this scenario disappear after a written number of seconds while displaying subsequent streams.
- Devices — list of added video devices, you can select any streams from cameras and recorders.
- Delay time— response delay time.



## 9.6 LPR - license plate recognition

General description of the functionality of the parking system implemented using the LPR license plate recognition function:

- cooperation with Novus LPR cameras connected to NMS AC directly or via NMS software
- control of vehicle access to defined zones in accordance with specific schedules
- the ability to define parking zones and assign them different levels of access
- defining limits on the number of vehicles in defined zones
- visualization of vehicles in defined zones
- assigning license plate numbers as user IDs
- defining the database of vehicle license plate numbers along with additional information about the vehicle, vehicle owner and expiry date
- recording the history of recognized license plate numbers with the possibility of subsequent export
- the possibility of cooperation with thermal transfer printers in order to print tickets containing such information as, m.in, recognized license plate number, allowed time in the zone, date and time of ticket printing and others

The screenshot displays the 'Zdarzenia LPR' (LPR Events) interface. The main table lists events with columns for date, image, registration number, description, information, and actions. The sidebar on the right shows details for three zones: 'Strefa nieokreślona', 'Strefa T+O', and 'Strefa Hala'.

DATA	ZDJĘCIE	NUMER REJESTRACYJNY	OPIS	INFORMACJA	AKCJE
09.08.2021 12:59:30		ABC 1234	Wyjście - żądanie wyjścia [ABC 1234]		ZAAKCEPTUJ ŻĄDANIE
09.08.2021 12:59:31		BCD 1234	Wjazd - żądanie dostępu [BCD 1234]		GENERUJ BILET
09.08.2021 12:56:30		CDE 1234	Wjazd - dostęp zabroniony, ważność biletu wygasła [CDE 1234] (UnknownZone -> Strefa T+O)		
09.08.2021 12:56:29		DEF 1234	Wjazd - dostęp dozwolony, ważna rejestracja pojazdu [DEF 1234] (Strefa Hala -> UnknownZone)		

Nazwa	Liczba	Limit
Strefa nieokreślona	0	
Strefa T+O	0	128
Strefa Hala	0	128

### 9.6.1 LPR—Number plate recognition

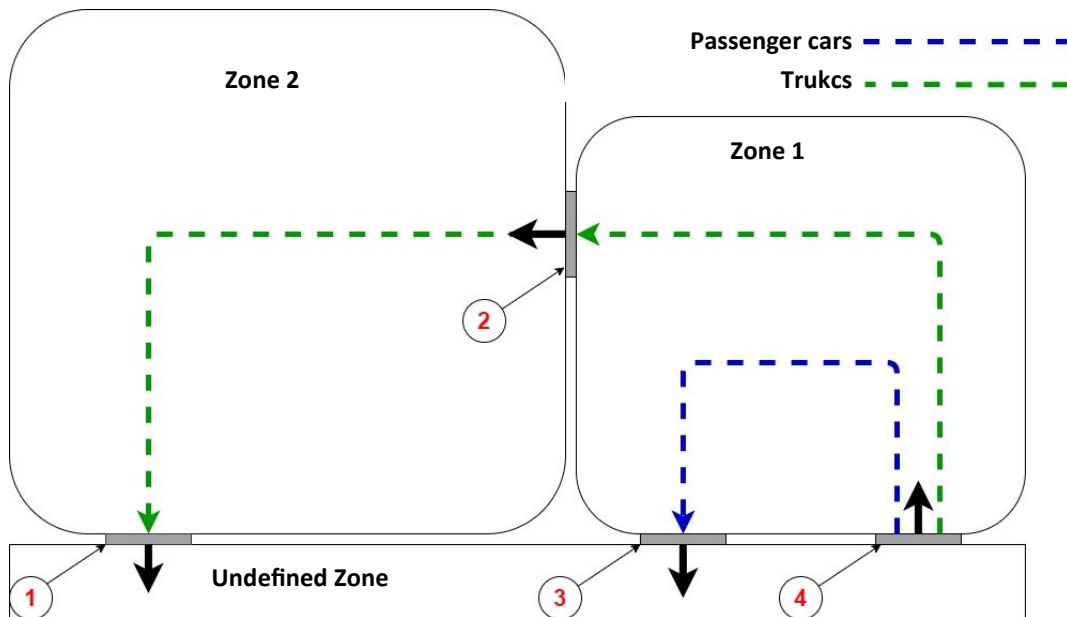
NMS AC software integrated with IP cameras equipped with LPR functions allows you to control the access of vehicles to pre-defined zones.

Assuming that:

You want to have control over two separate zones, as in the figure below.

**Zone 1** can be accessed by the group": "Passenger cars" and the group "Trucks".

**Zone 2** can be accessed by the "Trucks" group.



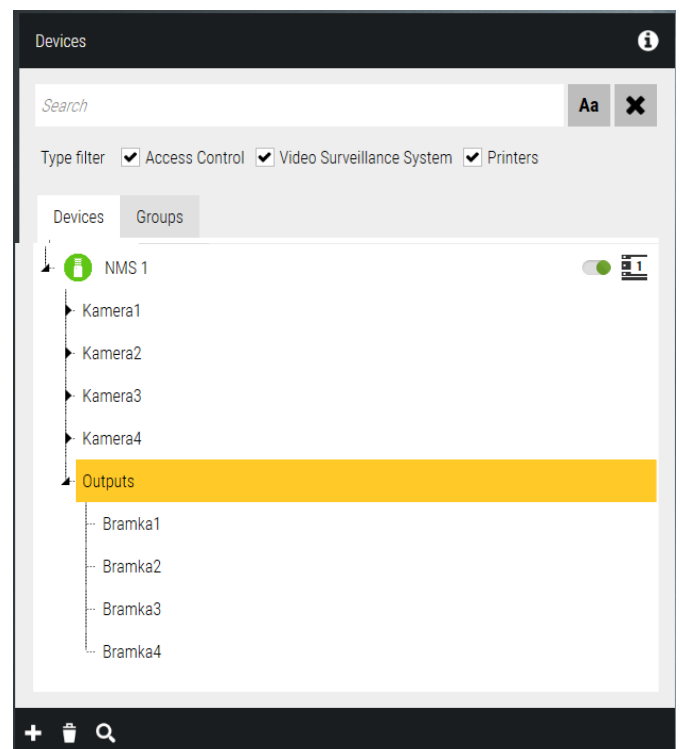
The numbers 1-4 indicate both the numbers of mounted cameras and relays controlling devices such as barriers or gates.

The program should be configured as follows:


#### 9.5.1 Adding devices

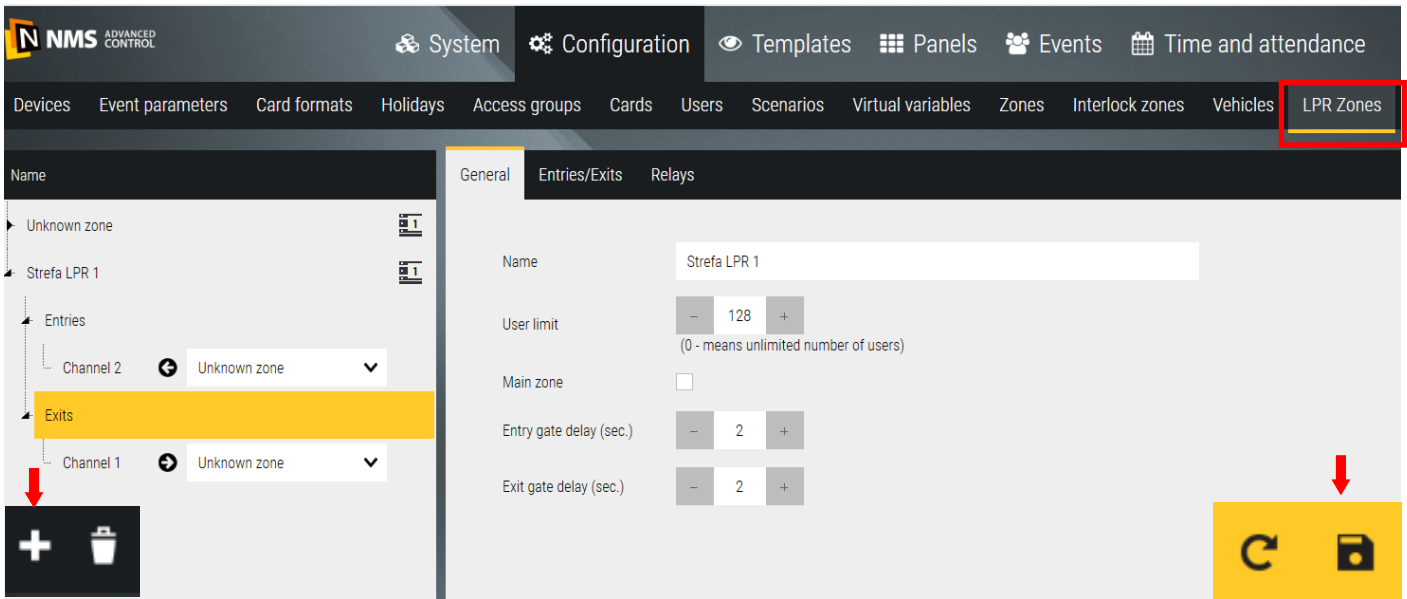
In order to ensure control over vehicles entering and leaving specific zones, cameras equipped with license plate recognition functions should be installed when entering/leaving the zone, and then adding them to the NMS AC program.

The process of adding CCTV devices is described in Chapter 3.10 CCTV. In the example above, the cameras added to the system were named according to the figure next to it.



### 9.6.2 LPR Zones

After you add devices to NMS AC, you must create virtual zones in the program. To do this, go to the Configuration tab > LPR Zones and click on the icon with the plus  symbol, add the required number of zones.



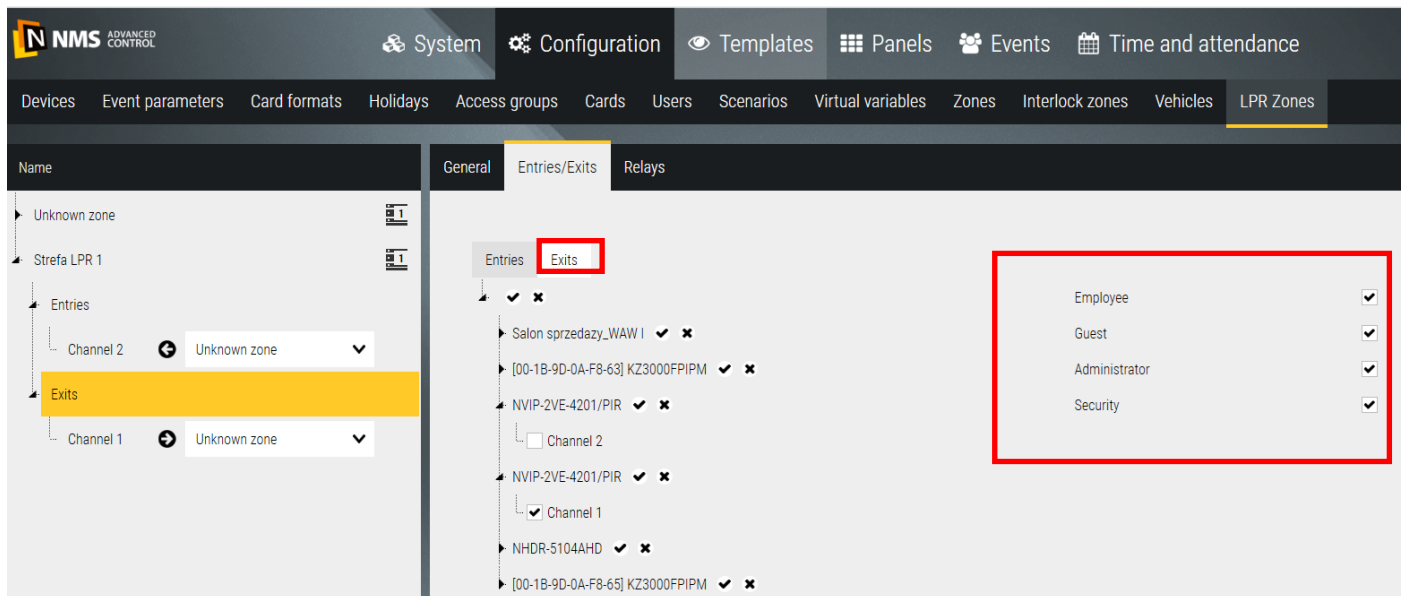
After clicking on the selected zone, in the "General" tab there are fields:

**Name** - allows you to name the zone



**User limit** - determines the maximum number of vehicles that can be in the zone at the same time


**Main zone** - after leaving the main zone to the unspecified zone, the ticket expires

**Delay of the entrance / exit gate** - this is the time of delaying the operation of the relay output controlling the entrance / exit gate



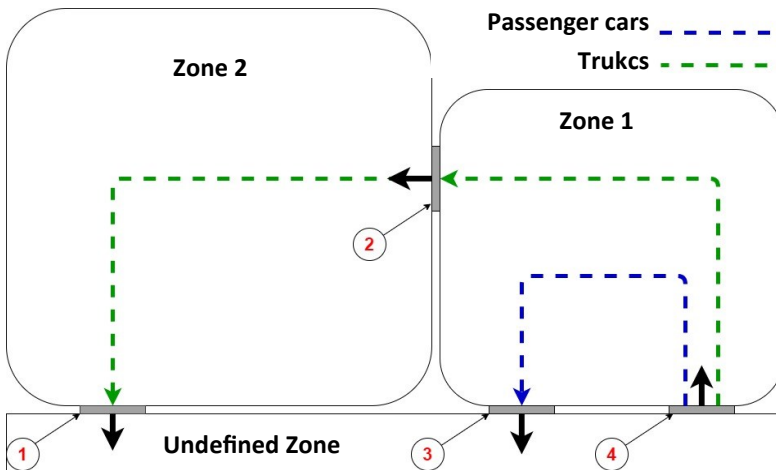
In the "Entries/Exits" tab, you can assign individual cameras according to the entries and exits from the zone marked in yellow.

Buttons   are used to select and deselect multiple channels at once.

The button  is used to delete individual zones after selecting them.

After clicking "Departures", in addition to the possibility of assigning appropriate cameras to trips, you can also define for which of the 4 special groups (Employee, Guest, Administrator, Security) the trip to the unspecified zone will require confirmation by the operator (departure request).





Entries	Exits
<input checked="" type="checkbox"/> Salon sprzedazy_V <input checked="" type="checkbox"/> [00-1B-9D-0A-F8-6 <input checked="" type="checkbox"/> NVIP-2VE-4201/PI <input checked="" type="checkbox"/> Channel 2 <input checked="" type="checkbox"/> NVIP-2VE-4201/PI <input type="checkbox"/> Channel 1	<input checked="" type="checkbox"/> Salon sprzedazy_V <input checked="" type="checkbox"/> [00-1B-9D-0A-F8-6 <input checked="" type="checkbox"/> NVIP-2VE-4201/PI <input type="checkbox"/> Channel 2 <input checked="" type="checkbox"/> NVIP-2VE-4201/PI <input checked="" type="checkbox"/> Channel 1

### Entries/Exits

According to the figure:

At the entrance to **Zone 1** there is a **camera 4**.

On two departures from **Zone 1** there are **cameras 2 and 3**.

Therefore, the entrances and exits for **Zone 1** should be set as in Figure(1).

**Entry to Zone 1:**

From the "Indeterminate Zone" monitors **camera 4**

**Departure from Zone 1:**

To the "Indeterminate Zone" monitors **camera 3**

For "Zone 2" monitors **camera 2**

Thus, the drop-down menu on the left side of the panel should be configured as in Figure (2).

### Relays

The LPR Zones configuration step can be completed by assigning relays to the appropriate devices. The names of the devices and relays were previously defined when adding devices in section 9.5.1. Due to the fact that in the adopted project, each camera is to control the gate at which it is placed, the relays should be configured in the same way as in the figure (3).

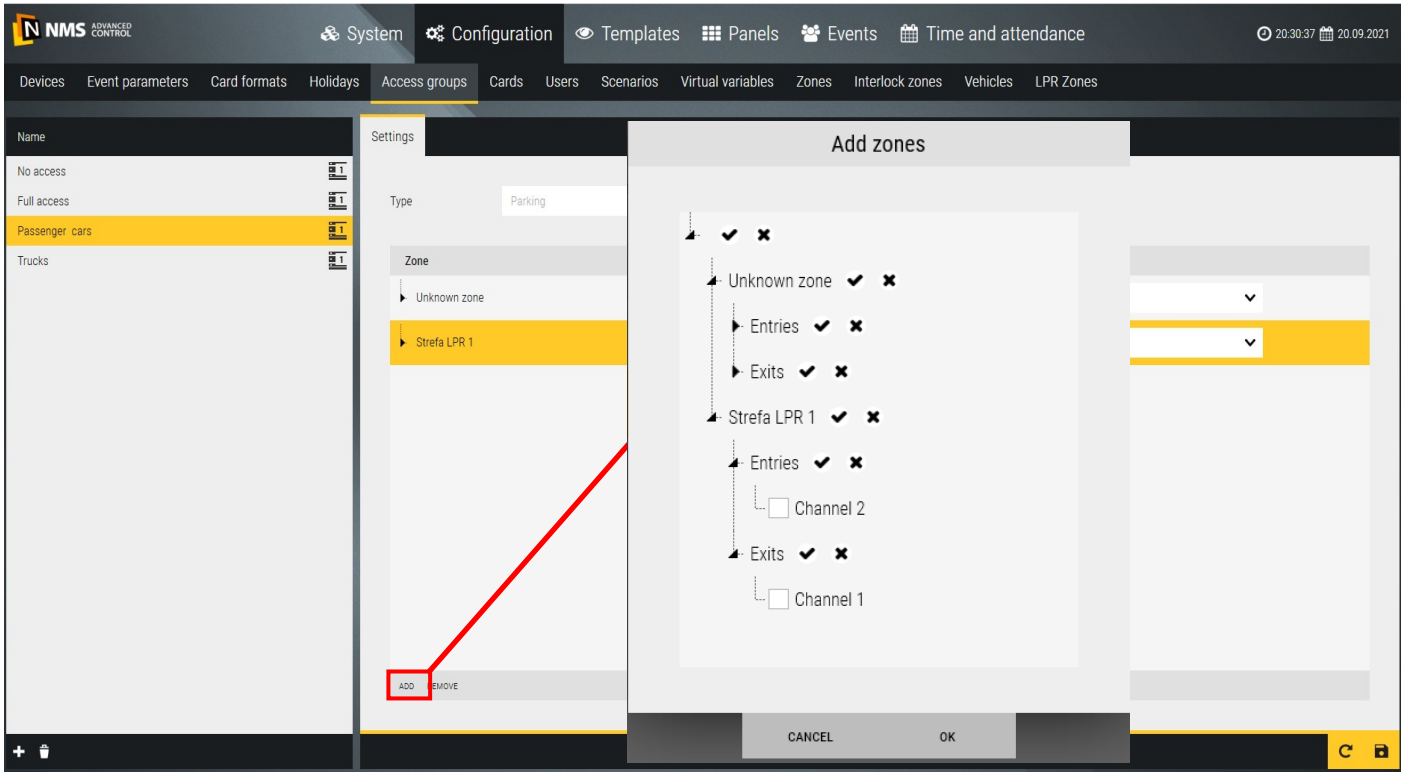
**2**

Device	Relay
Channel 1	[00-1B-9D-0A-F8-63] KZ3000FPIPM-Wyjścia sterujące-[0...
Channel 2	[00-1B-9D-0A-F8-63] KZ3000FPIPM-Wyjścia sterujące-[0...

**3**

### 9.6.3 Access levels—parking

The access level menu is described in Chapter 4.2 Access Levels, using the example of defining access to doors and elevators. In the case of LPR, instead of doors and elevators, the user has to deal with zones to which access is controlled m.in by LPR cameras.

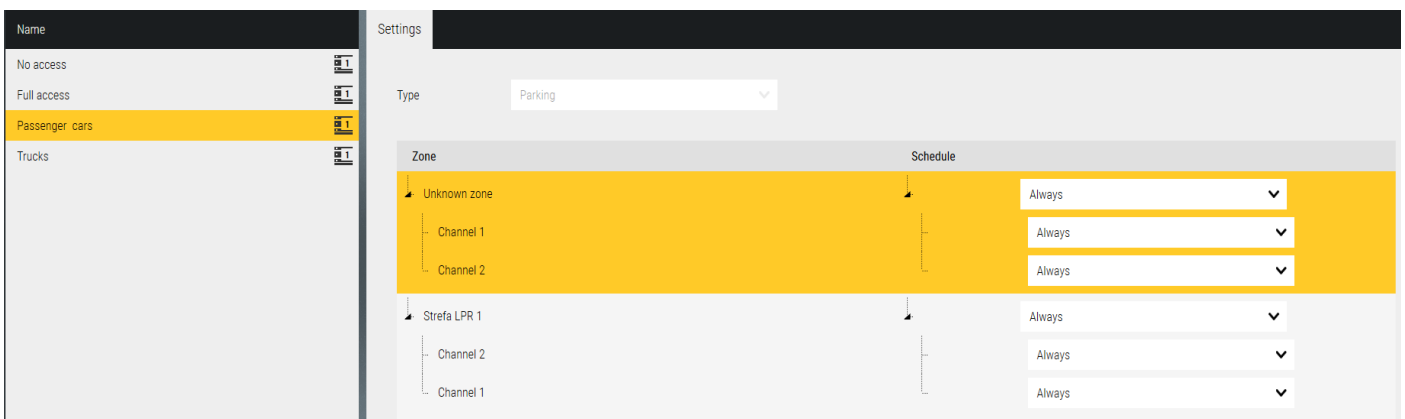


In the example project, you need to create two levels of access:

**Passenger cars**—who will have access to Zone 1 and will be able to pass through Gates 3 and 4.

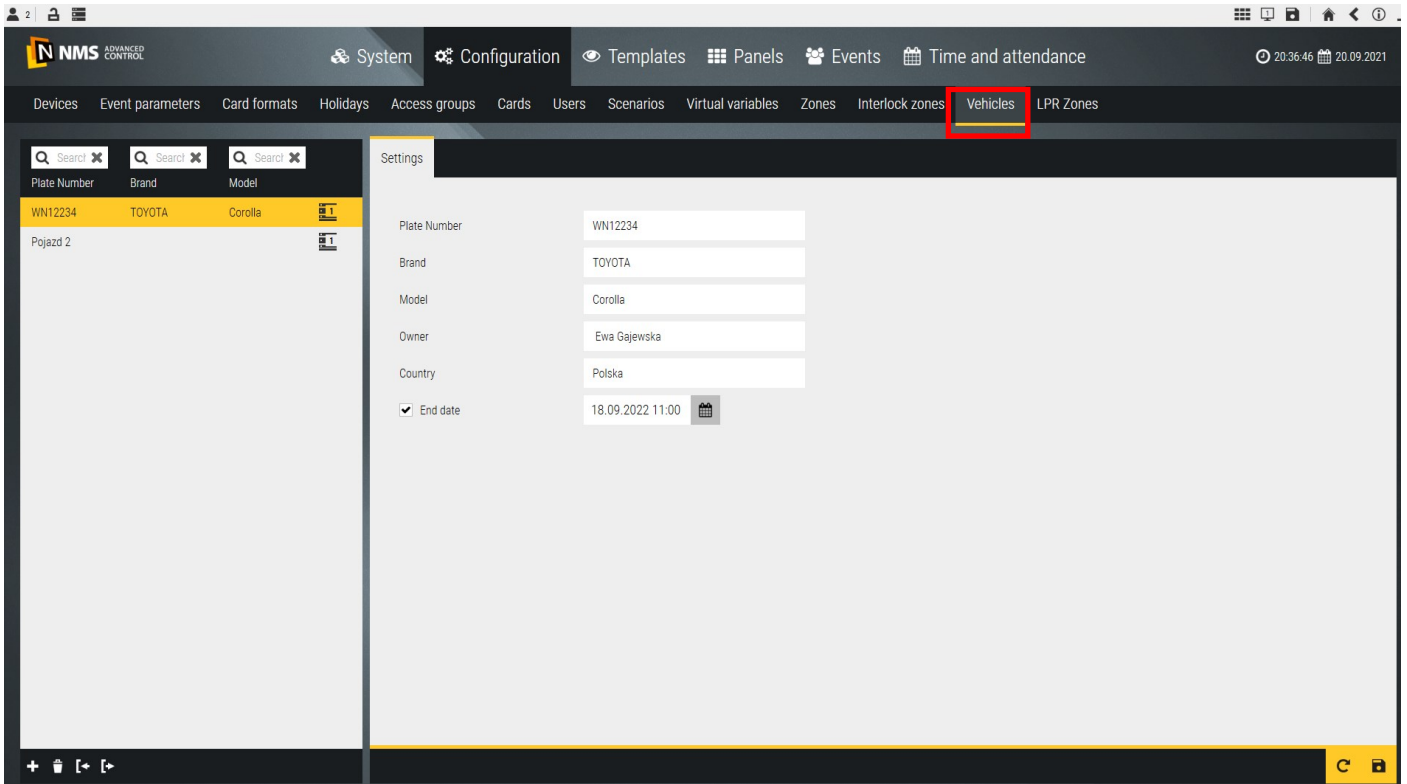
**Trucks** – which will have access to Zone 1 and Zone 2 and will have the opportunity to pass through gates **1,2,4**.

To do this, click on the **+** icon and add the two levels of access above. To rename newly created access levels, double-click it. After naming and clicking on the newly created level, it will light up in yellow, in the Settings tab you need to change the type to Parking. Then, by clicking the Add button, you will be able to define access to individual entries and exits for each of the levels separately. According to the project assumptions on page 85, access to the zones by trucks should be configured as in the figure below. Finally, in the schedule column, change Never to Always for each zone.





### 9.6.4 Vehicles


The Vehicles tab is used to create a vehicle base. Information such as registration number, make, model, owner and country are stored there. The program also allows you to define the time after which the vehicle will be removed from the base. To add a vehicle to the database, click the **+** icon, then to complete the information about the vehicle, click on the newly created field and in the Settings tab fill in the relevant information.

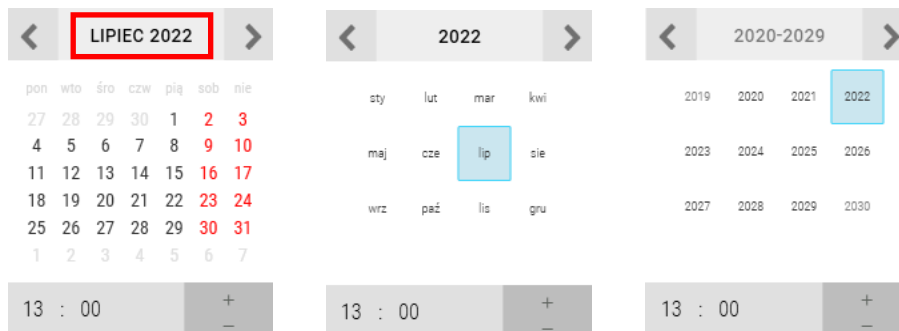


Buttons:

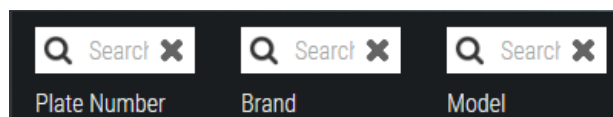
 - is used to import the vehicle database in .csv format,

 - is used to export the vehicle database in .csv format,

The **End Date** field is used to specify the expiration date of an item in the vehicle database. If this box is unchecked, the vehicle will not be automatically removed from the base. The date and time can be set by clicking on the calendar icon. To go to the month selection and then to the years selection, click the box selected in the figure below. Below the calendar is a time checkbox, you can type it from the keyboard or use the buttons. 



Above the list of added license plates there is a search engine that allows you to narrow down the list of license plates by license plate number, make and model of the car.



### 9.6.5 Users—Identifiers

Granting users permission to enter specific zones is carried out using the Users>Identifiers tab. This involves assigning a vehicle to the user (from a previously created vehicle database) and giving it a specific level of access. A full description of the Users tab is available in this manual in **section 4.4 Users**.

The screenshot shows the NMS software interface with the 'Users' configuration page. The 'Identifiers' tab is active. A user named 'Joe Black' is selected in the left sidebar (1). The 'Access level' dropdown is set to 'Passenger cars' (2). The 'Add' button is highlighted (3). The 'Access level' dropdown is also highlighted (4). The 'Add' button is highlighted (5).

Assuming that the user is to have access to the "Passenger Cars" zone by car with ABC 1234 registration, and to the "Trucks" zone - by car with DEF 1234 registration, first select it from the menu on the left (1) and go to the Identifiers tab (2). In the Access Levels field, click the Add button (3), then the "No access" level will be set by default, in the (4) field it should be changed to "Passenger cars". Then, after clicking Add (5), a list of vehicles assigned to this user (defined earlier in the Vehicles tab) will be displayed, you need to add a vehicle with registration ABC 1234. The above method has been configured bookmark in the figure above.

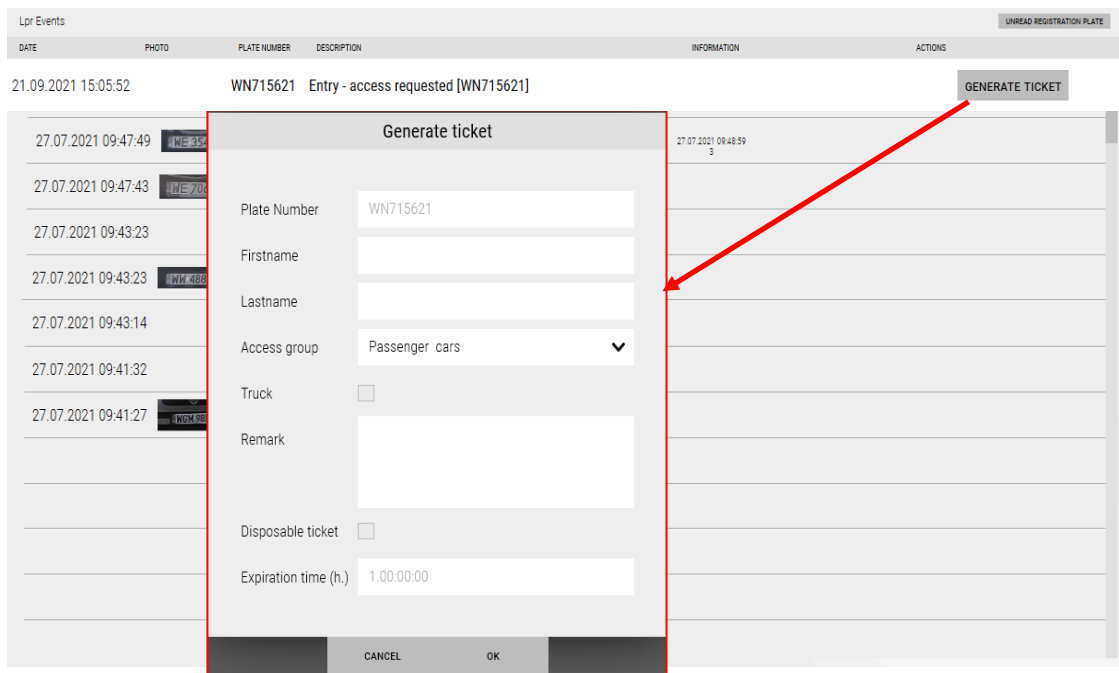
In the case of access to the second zone, the access level "Trucks" should be added and the action repeated, with the difference that in field (5) a vehicle with registration DEF 1234 should be added, as in the figure below.

The screenshot shows the NMS software interface with the 'Users' configuration page. The 'Identifiers' tab is active. A user named 'Ewa Gajewska' is selected in the left sidebar. The 'Access level' dropdown is set to 'Trucks'. The 'Add' button is highlighted.

### 9.6.6 Tools in the LPR panel

To gain insight into the operation of the vehicle license plate recognition system, NMS AC software allows you to create panels tailored to the user's needs. The process of adding panels and their configuration is described in more detail in **Chapter 6. Panels**. **In order to properly operate the vehicle access control system, it is best to use at least two tools.**

The most important tool is the **LPR Events** window. It is used to display events related to the recognition of license plate numbers and to manually manage the entry and exit of cars from individual zones. When a license plate is detected, the system displays the time of the event, the photo of the plate, the license plate number and the description of the event in the window. The description may include, inter alia: information on the mixing of vehicles between zones; information on whether or not vehicles have been granted access to the zones; information on the validity of tickets; access requests.



A special event is the **access request**, which is displayed when an unknown vehicle wants to enter from an unspecified zone to zones under access control. The person supervising the operation of the system can click the **Generate Ticket** button, then a window will be displayed in which you must provide information related to the vehicle entering. The person generating the ticket can assign the vehicle the appropriate level of access and define the validity time of the ticket. In case the ticket printout fails, the **Reprint** button appears after the ticket is generated.

To print a ticket, a dedicated printer should be added to the system. This can be done in the Configuration> Devices tab. For more information on adding devices to NMS AC, see Chapter **3.System Configuration**.

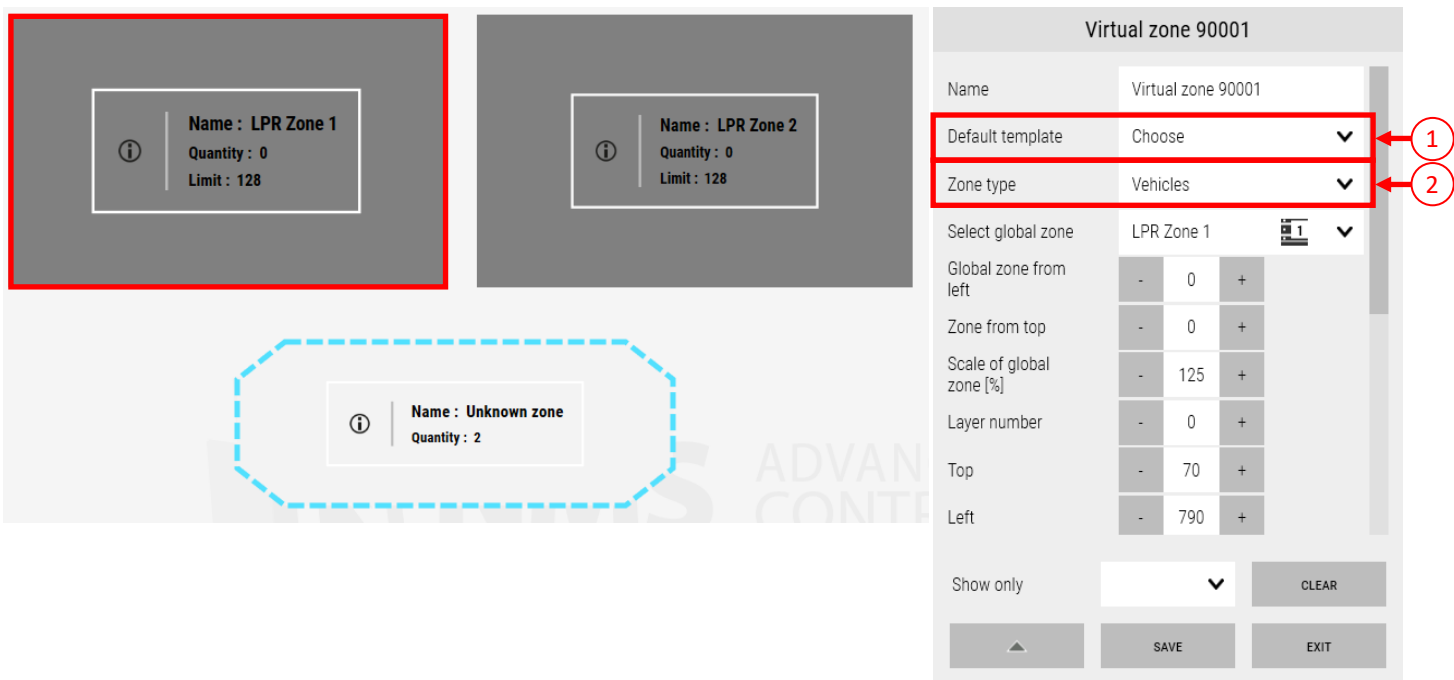
An example ticket for a vehicle with registration "ABC 1234" is shown in the figure next to it. The ticket, in addition to the information supplemented when generating it, has a unique QR code (the possibility of using the QR code functionality will be available in the future).




## Virtual Zone

Another tool used in the LPR panel is the **virtual zone**.

The process of adding zones to the panel is already described in this manual in **Chapter 9.2 Global Zones**.



A Special type is the Unspecified Zone, it represents the area outside the zones covered by access control (e.g. the street from which you enter the object covered by the access control system). The other zones added to the panel can be assigned previously created (ch. 9.5.2) LPR Zones. To do this, in edit mode,  left-click on the newly created zone and in the edit window select **Zone Type** (1) :

**Vehicles** and in the **Select global zone** field (2) select the LPR zone or the unspecified zone. The rest of the settings concern the appearance and location of the zone in the panel.

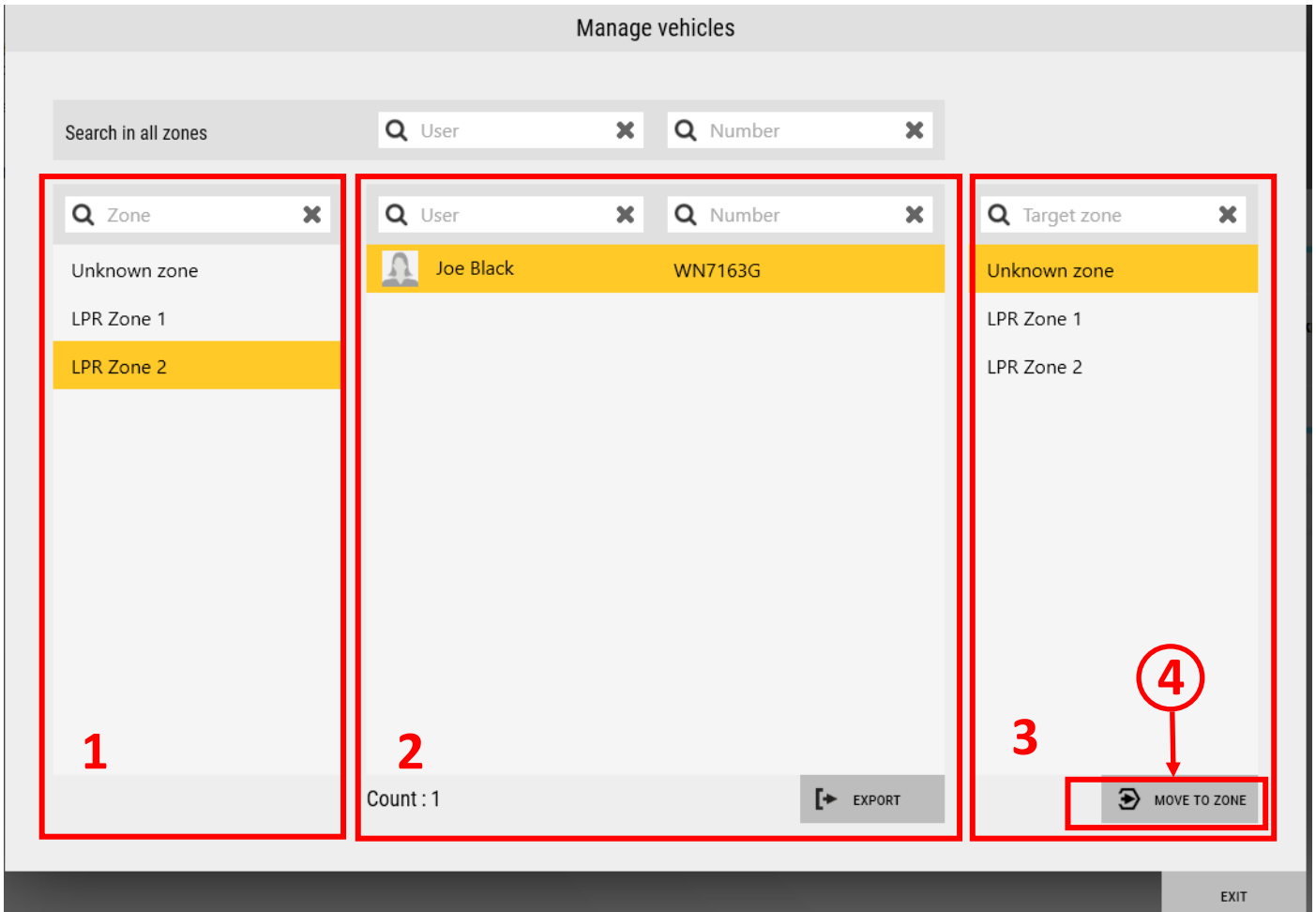
After configuring the newly created zone, information such as:

- name
- number of vehicles currently in the zone the
- limit of people who can be in the zone at the same time.

After right-clicking on the virtual zone, a list will be displayed next to it with the license plate numbers of the vehicles in the zone and the names of their users.

## Management of vehicles located in zones

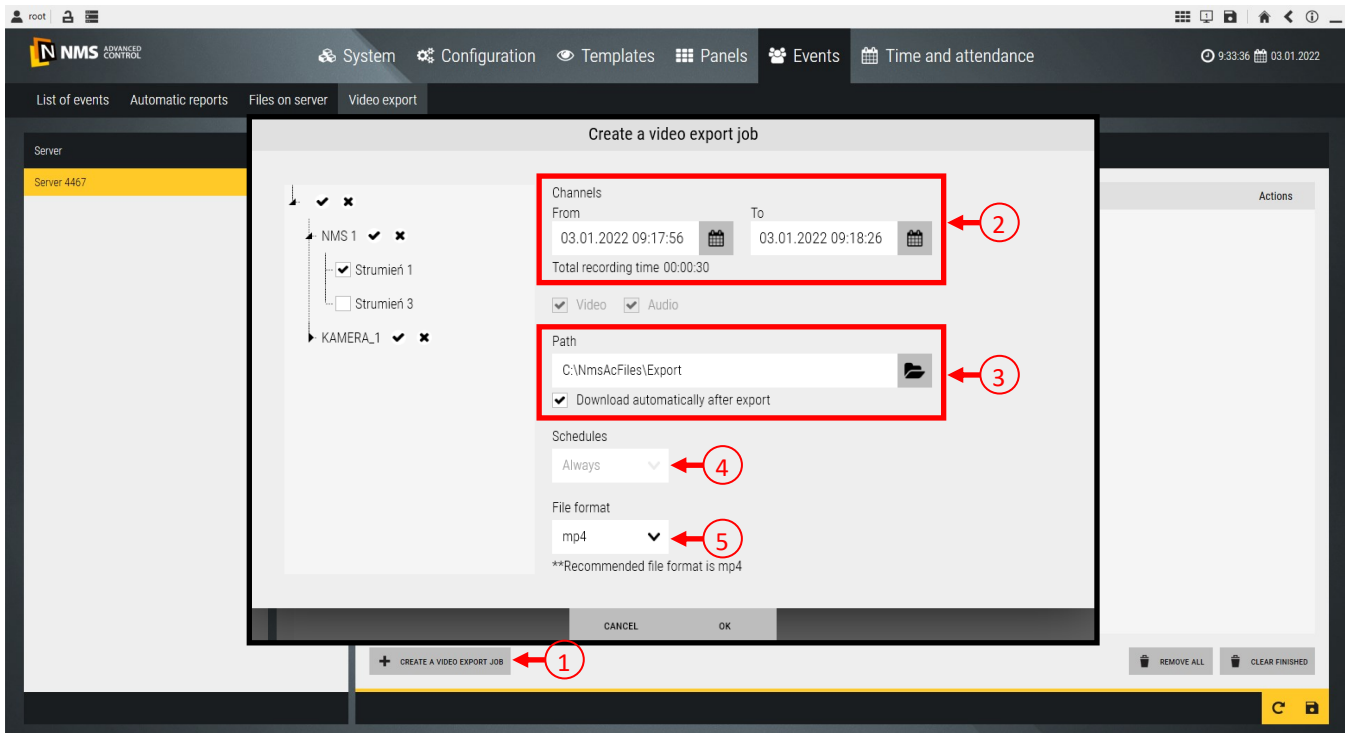
After clicking the left mouse button on any zone, the user has the option to go to the vehicle management window. Field (1) is used to select the zone from which the preview is displayed in the middle field (2). Field (2) is used to view which users are currently in a given zone. In the event of non-compliance of information on vehicles in the zone with the actual state of affairs, the user has the possibility to transfer vehicles from that zone to the target zone (3). To do this, select the selected user and the target zone and click the **Move to Zone button** (4).





## 9.7 Export of recordings



### 9.7.1 Export recordings from the main menu





In order to export recordings stored on the network recorders connected to the system (NMS, NVR / NHDR NOVUS, etc.) go to the **Events** tab, then **Video export** and click the **Create a video export job** button (1). Then in the following window select the cameras from which you want to export recordings, it can be done in the left part of the window by selecting the appropriate video channels.



Click the calendar icon in the field (2) to select the time period of exported video. By using the checkbox below it is possible to choose whether the exported recording have the picture and/or sound (function available in the future). It is worth mentioning that the recordings are exported from the recording devices to the NMS AC server. To download recordings immediately after export and save it on the selected path (3) (on the device where the NMS AC client is located), select the box „**Download automatically after export**” (3) otherwise they will be exported to the NMS AC server and ready to download by clicking the  button next to the blue bar with „Ready to download” status. The Schedules function (4) is used to export recordings periodically (function available in the future). It is also possible to select the exported files format (5), the available formats are: AVI and mp4.

To save the settings click **OK** button. Afterwards, to export and download the recordings click the  floppy disk icon in the lower right corner of the window. After the recordings have been successfully downloaded, the status **completed** is displayed.



The  icon is intended for open the folder with downloaded recordings and the  icon is intended for delete the selected items from the list.

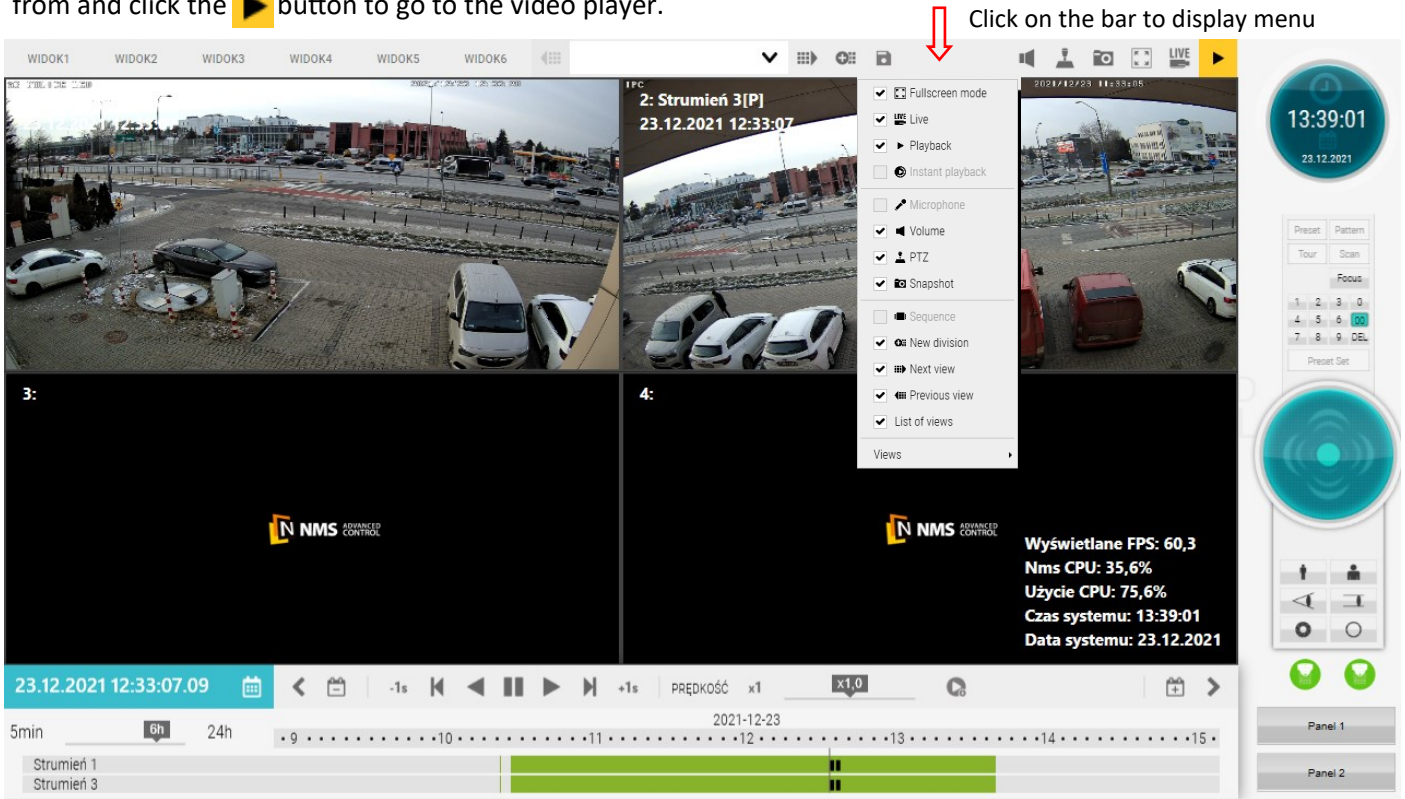
Device	Channel	From	To	File	Status	Actions
NMS 1	Strumień 4	1/3/2022 10:34:26 AM	1/3/2022 10:34:56 AM	mp4	Complete	 
NMS 1	Strumień 3	1/3/2022 10:34:26 AM	1/3/2022 10:34:56 AM	mp4	Ready to download	 

At the bottom of the table, there are buttons: **CREATE A VIDEO EXPORT JOB**, **REMOVE ALL**, and **CLEAR FINISHED**.




### 9.7.2 Export recordings from the video player

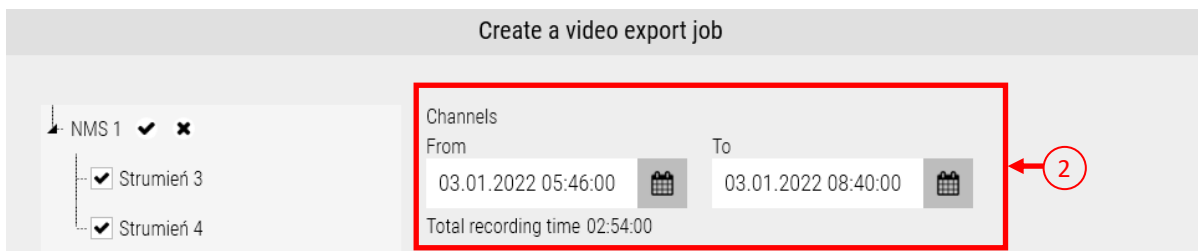
The second way to export recordings from NMS server consist in go to the panel where the player and video window are placed. It can be done by going to the default defined panel 3. To do this, click on the  icon located on the right side of the top interface bar. Next, select the view with the cameras you want to export recordings from and click the  button to go to the video player.



To export recordings, first select the desired time period. There are two ways to define the time period from which the recordings are exported. One of them was mentioned on the previous page. The second way is to drag the mouse cursor along the timeline while holding the right mouse button.







So firstly select area on the timeline and click the export icon  (1). Next, the **Create a video export job** window appears and the field (2) is automatically filled in for each selected channel according to the selection on the timeline.

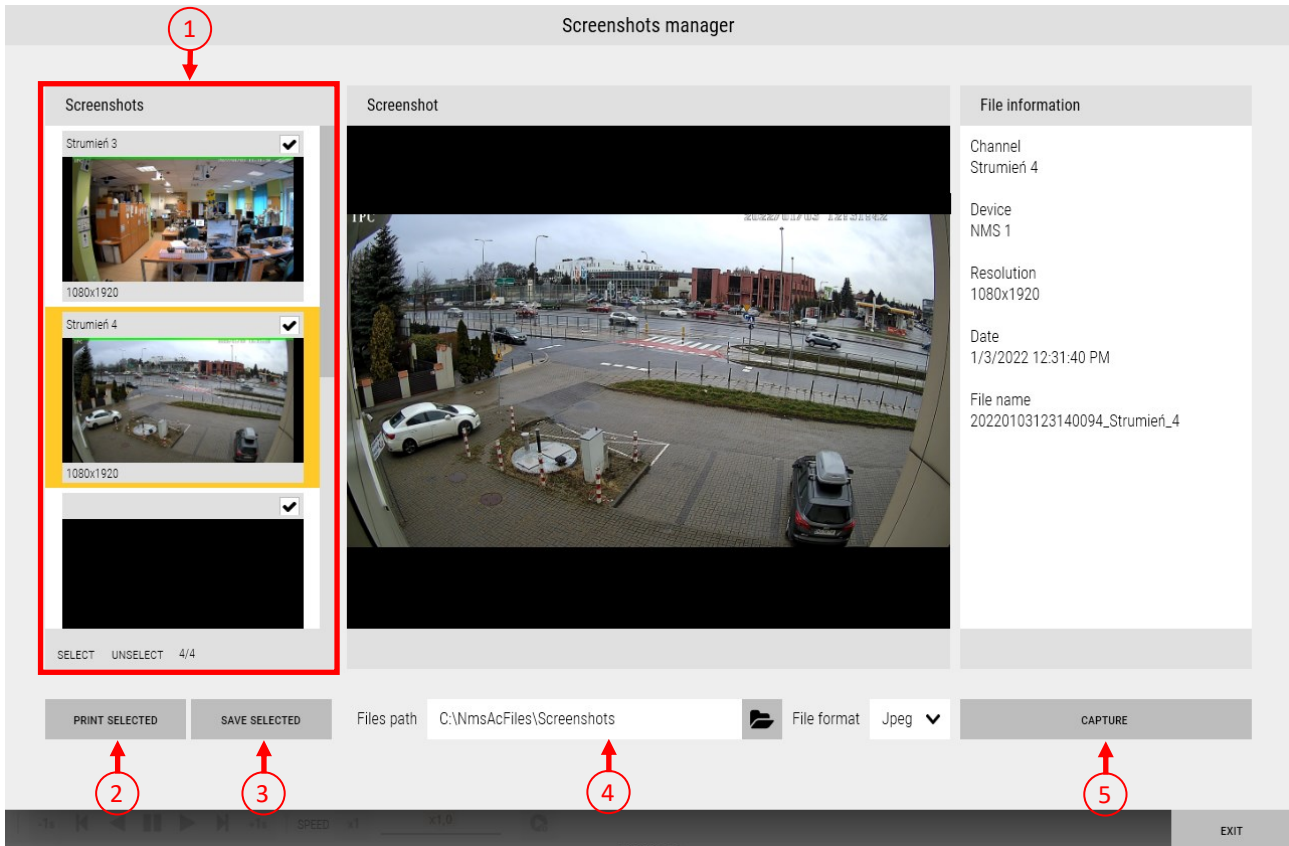



At the end to export and download selected recordings, follow the same procedure as described in the section **Export recordings from the main menu** on the previous page.

## 9.8 Downloading screenshots

To make a screenshots go to the panel where the video window is located. It can be done by going to the default defined panel 3. To do this, click the  icon located on the right side of the top interface bar. Then, in the video window select the view with the cameras you want to make a screenshot. Depending on whether you want to take a screenshots from, click the appropriate icon   (live view and video player) in the upper right corner of the video window.

To go to the screenshot manager, click the camera icon .



In the screenshots manager field **(1)** is possible to select channels from which images are captured. Use the **Capture** button **(5)** to capture the image currently displayed on the player, if the player is set to "live" mode, the current camera view is captured. The path to the folder where captured images are saved can be entered in the field **(4)** or indicated manually by clicking the  icon, next to it is a **File Format** field where you can choose from a drop-down list the format in which the image should be saved (Jpeg, Png or Bmp). Click the **Print Selected** **(2)** button to print the photos directly without saving them on the computer, the **Save Selected** **(3)** button saves the photos to a designated file directory.

**THE LICENCE AGREEMENT  
FOR THE “NMS ADVANCED CONTROL” PROGRAMME**

**AAT SYSTEMY BEZPIECZEŃSTWA SPÓŁKA Z OGRANICZONĄ ODPOWIEDZIALNOŚCIĄ**  
with a registered office in Warsaw  
ul. Puławska 431, 02-801 Warsaw

**The District Court for the Capital City of Warsaw, XIII Commercial Division, entry number KRS 0000838329,**  
**Tax identification number NIP 9512500868, statistical number REGON: 385953687,**  
**Value of the share capital: PLN 17 005,000.00 (“the Company”)**

This licence agreement is an agreement concluded between the user (hereinafter referred to as the User) and AAT SYSTEMY BEZPIECZEŃSTWA SPÓŁKA Z OGRANICZONĄ ODPOWIEDZIALNOŚCIĄ, with a registered office in Warsaw, ul. Puławska 431, 02-801 Warsaw, entered in the Register of Entrepreneurs kept by the District Court for the Capital City of Warsaw, Thirteenth Commercial Division of the National Court Register, number of entry KRS 0000838329, tax identification number NIP 9512500868, statistical number REGON: 385953687, value of the share capital: PLN 17 005,000.00 (hereinafter referred to as the Producer) for the use of the NMS ADVANCED CONTROL programme, subject to the terms and conditions specified below. The User acknowledges that the Agreement concerns all the possibilities of using the Programme, regardless of the place or method of its installation.

## **1. Definitions**

- 1.1. “Copyrights and Related Rights” – each and all copyrights and related rights, including, in particular, copyrights, rights to patents, trademarks, as well as know-how and business secrets forming a part of incorporated in the Programme, constituting the property of the Producer. Copyrights and neighbouring rights are protected, in particular, by the Act of 4 February 1994 on Copyrights and Neighbouring Rights (Journal of Laws of 1994, no. 24, item 83, as amended). This Agreement shall not transfer any copyrights and neighbouring rights to the User and shall not grant him such rights. The User shall only have a possibility of using the Programme within the scope specified in the Agreement.
- 1.2. “Installer” - a third party performing in particular sales/deliveries and installation of the Programme at the User's. The installer shall be only granted the right to resell the Programme and install it at the User's, the Installer shall have no other rights indicated in the Agreement and concerning the User.
- 1.3. “Key” – distributed along with the Programme sequence of signs enabling activation of the Programme's licence, intended for use in the server where the Programme is installed. The key prevents, among others, free license transfer. Key loss or damage makes it impossible for the Programme to operate.
- 1.2. “The Agreement” – this licence agreement which the User concludes with the Producer for the purpose of obtaining a possibility of using the Programme.
- 1.3. “NMS ADVANCED CONTROL” or “the Programme” – a computer programme developed by the Producer dedicated only for some devices, enabling, among others, integration to a limited extent of Access Control Systems (KD) CCTV systems (VSS), along with the function of receiving technical and alarm signals.

## **2. Licence and limitations**

- 2.1. The Producer hereby grants a licence to the User, solely for the User's use, on a non-exclusive basis, without a right of transfer or sublicensing thereof to third parties, for downloading, installation and use of the Programme on a PC or a laptop, also using mobile devices and the Internet..
- 2.2. The Installer may mediate in sales of the Programme and perform its installation at the User's, which shall not be regarded as breach of the terms hereof.
- 2.3. The Agreement covers one server post and customer post of the User, and the number of devices connected and customers connected is limited by the efficiency of hardware used by the User and the kind of Key and/or Programme version.
- 2.4. Installation of the programme on the User server and customer posts on computers placed in facilities of the User is made by the Installer after the Producer or Installer gives the carriers with the Programme and the Key. Transferring the carriers does not mean the User acquiring proprietary copyrights to the Programme.
- 2.5. In order to enable implementation of the Agreement the Producer shall assign to the User ownership to carriers of the Programme as well the Key upon issuing them to the User.
- 2.6. The User has the right to make one back-up copy of the Programme.

- 2.7. The User may not, in any way, transfer for use, resell, transfer, distribute or in any way make the Programme or any part thereof available to third parties, and breach any rights referring to the Programme or any parts thereof.
- 2.8. The User shall not be authorized and undertakes not to undertake, not to cause and not to grant consent or authorization to any third party to conduct modification, create derivative elements, translations, de-compilations, disassembly or breaking the code of the Programme or any parts thereof or the Key.
- 2.9. The Producer reserves the exclusive right to modify, extend, update, translate, as well as repair the Programme at his own discretion.
- 2.10. The Producer is not obliged to inform the User about any modifications, extensions, updates, translations or next versions of the Programme.
- 2.11. The Producer is not obliged to provide the User with the next versions of the Programme, its extensions, updates and translations.
- 2.12. The User, supported by the Installer, may collect and install the modifications, extensions or Programme's updates made available by the Producer on their website or directly transferred to the User or the Installer.

### **3. Term of the Agreement**

- 3.1. The Agreement shall be concluded by the acceptance of the terms and conditions hereof by the User during the Programme installation.
- 3.2. The Agreement is concluded for an unspecified period of time.
- 3.3. The Agreement shall be unrestricted territorially, the User has the right to use the Programme on the territory of Poland and any other country.
- 3.4. Either Party shall have the right to terminate the Agreement with due observance of the period of notice of one month, with legal effect for the Party as of the last day of the next calendar month. Expiration or termination of the Agreement shall have no effect on the responsibilities of the Parties resulting from Copyright and Related Rights and shall not waive the prohibition to breach in any way the integrity of the Programme, including its modification, creating derivative elements, translation, decompilation, disassembly, or breaking the Programme's code or its part or the Key.
- 3.5. The Producer shall have the right to terminate the Agreement without notice in the event of significant breach of its provisions by the User. A significant breach of the provisions of the Agreement is especially proprietary breach of copyright to the Programme granted to the Producer.
- 3.6. The User may, at any moment, terminate the Agreement without a notice period by uninstalling the Programme and removing it from memories of all PCs and portable computers, mobile devices, destroying backup copies.
- 3.7. Upon termination of the Agreement, all the User's rights to the Programme transferred hereunder shall expire. Then the User shall be obliged to stop using the Programme and delete the Programme and the backup copy thereof from all media and devices.
- 3.8. The Producer shall not bear liability for any damages incurred in connection with termination of the Agreement.

### **4. Guarantees and liability of the Producer**

- 4.1. The Producer guarantees that he has the legal capacity to conclude and perform the Agreement.
- 4.2. The Producer shall deliver the Programme as is, with no guarantees and shall not bear any liability for the consequences of using the Programme in the cases of improper operation of the computer system caused by defects of the hardware, improper installation or configuration of the software and hardware, and in the events of occurrence of improper operation of the Programme.
- 4.4. The Producer shall not bear liability under any warranty or guarantee for the Programme. In the event that the aforementioned limitation of liability is not possible, such liability shall be limited to the greatest possible extent.
- 4.5. The Producer shall not bear liability for the method of use of the Programme by the User, and in particular for the use of the Programme in contradiction with the Agreement or instruction manual accompanying the Programme, e.g. at a computer station other than the one designated for that purpose, and for any damages connected therewith.

## 5. User's risk

- 5.1. The User guarantees that he has the legal capacity to conclude and perform the Agreement.
- 5.2. The User acknowledges and agrees that all the risk connected with the use of the Programme in the manner specified in the Agreement and in the instruction manual accompanying the Programme shall be borne by the User, to the greatest extent permitted by the provisions of law. Moreover, in the event that circumstances arise which prevent the operation of the Programme – unless a direct cause of such circumstances are the reasons attributable to the Programme – the User should immediately notify the Producer thereof, under the pain of exclusion of any liability of the Producer thereunder. The User acknowledges that installation of the Programme should be made by the Installer.
- 5.3. The Producer may control the manner of using the Programme by the User in terms of its compliance with the provisions of the Agreement and intended use of the Programme.
- 5.4. The Producer may additionally control whether there were any attempts to remove or evade technical protections of the Programme. Should the inspection disclose that the User has a computer programme used solely for removing protections, the Producer may claim destroying such a Programme.
- 5.5. If the Producer has legal interest in obtaining the User's statement that they use the Programme on the basis of the Agreement, they may request from the User to issue such a statement.
- 5.6. The name and logo of the Programme are subject to legal protection on the basis of relevant regulations. The User without prior written consent of the Producer is not entitled to record, multiply or distribute intangible goods referred to in the previous sentence, either in full or in part, by any means and in any form.

## 6. Settlement of disputes

- 6.1. The Parties undertake to settle any disputes which may arise in connection with the performance of the Agreement in an amicable manner.
- 6.2. In the event that the Parties are unable to settle a dispute resulting from the Agreement in an amicable manner, the Parties shall subject themselves to the Polish law as the law governing the settlement of any disputes, which shall be referred by them for settlement to a court having jurisdiction over the registered office of the Producer.

## 7. Copyrights and Neighbouring Rights

A breach of Copyrights and Neighbouring Rights of the Producer may entail civil and penal liability of the entity breaching such rights.

## 8. Remuneration

- 8.1. Under the Producer granting to the User license in accordance with the Agreement, the User has made one-time lump-sum license fee when purchasing the license to the Software.
- 8.2. The amount of remuneration indicated in passage 1 above includes also remuneration for transfer of ownership of the Programme carrier/carriers and the Key.

## 9. Final provisions

- 9.1. The Producer may transfer his rights to the Programme or its part to any third parties of his choice, without an obligation to notify the User thereof.
- 9.2. The User may not transfer his rights granted hereunder to any third parties without the consent of the Producer.
- 9.3. Any amendments to this Agreement shall require a written form, under a pain of nullity.
- 9.4. The Parties declare that they have read the text of the Agreement, that they understand it and that they are aware of the scope of their rights and obligations.

## 10. Partial Invalidity

If any provision of the Agreement is illegal or its purpose is the circumvention of law, it shall be invalid. The remaining provisions of the Agreement shall remain in full force and effect unless it follows from the circumstances that without those invalid provisions, the Agreement would not have been entered into. In such situation, the Parties agree to enter into negotiations in order to replace invalid provisions by provisions fulfilling possibly the most similar economic goal.

