REC FACES

ID-GUARD FACE RECOGNITION PLUGIN IN MILESTONE

USER MANUAL

VERSION 1.0

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1. GENERAL TERMS

The integrated video management system includes the following components:

1. Server part:
   - XProtect Smart Client installation package;
   - XProtect Smart Client configuration application XProtect Management Client;
   - Id-Guard Face recognition installation package.

2. Client part:
   - XProtect Smart Client (Milestone) program;
   - Id-Guard Face recognition plugin.

2. CUSTOMER PART

XProtect Smart Client designed for Milestone XProtect IP video management software (VMS) and Milestone Husky series is a powerful, easy-to-use client application for a surveillance installation's daily operations.

The application XProtect Smart Client is integrated with Id-Guard Face recognition components, including:

- Id-Guard Face recognition plugin – the plugin for the display of information regarding a person in front of the camera, searching for the archived data, and the display of video stream captured with a camera, working with profile database.

3. PREPARATION TO WORK WITH ID-GUARD PLUGIN

3.1 LOG INTO AND GENERAL SETTING

To start working with the Id-Guard Face recognition Plugin enter your authentication credentials and log into the XProtect Smart Client program. See (Figure 1).

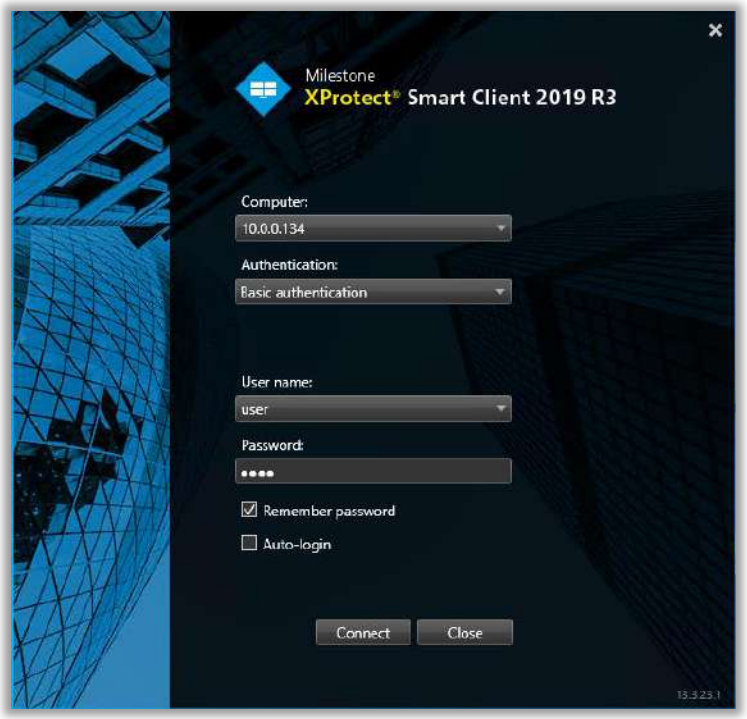

Figure 1. Authorization window

After the successful authorization, the XProtect Smart Client main page is displayed. (Figure 2).

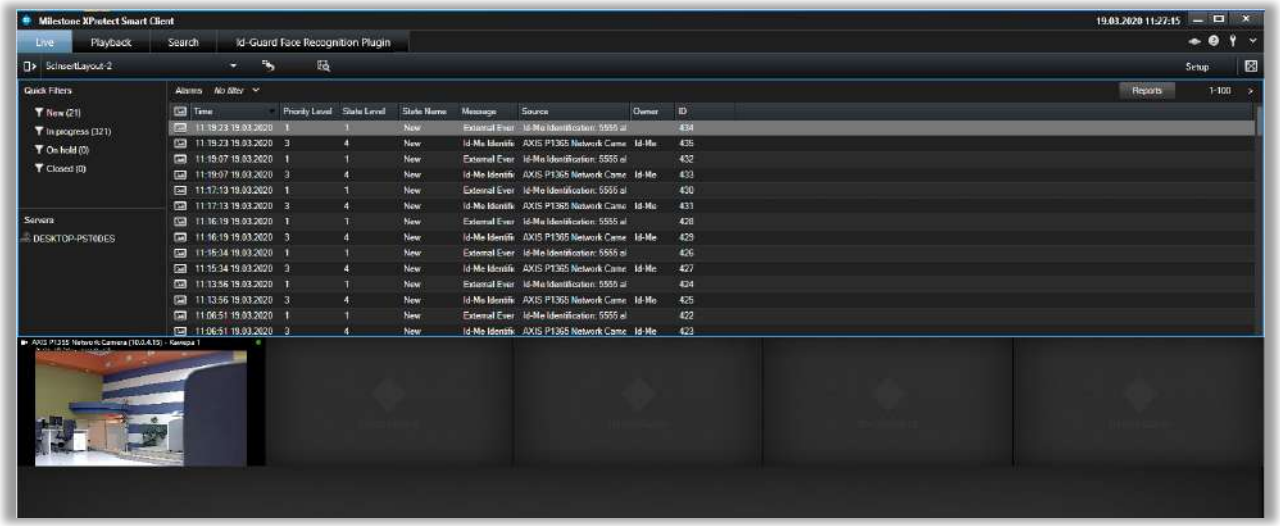

Figure 2. The main page

The XProtect Smart Client interface consists of the following components:

- The tab *«Live»* - to view live video;
- The tab *«Playback»* - to view the recorded video;
- The tab *«Search»* - to search and filter the results.

The Toolbar:

- Access the Status;

- Access the help system;

- Log out from XProtect Smart Client;

- XProtect Smart Client menu:

- *Settings*
- *Toggle theme*
- *Toggle simplified or advanced mode*

4. ID-GUARD FACE REGONITION TOOLBOX

4.1 REGISTERING THE SYSTEM

To register the Id-Guard system you need to open Milestone XProtect Smart Client menu by clicking in the right-upper corner. Select the item «Settings» from the drop-down list. (Figure 3)

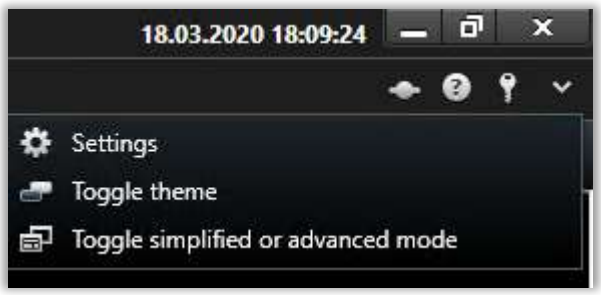

Figure 3. Additional menu in the Milestone XProtect Smart

Click on the *Id-Guard Face Recognition Plugin* in the toolbar. (Figure 4)

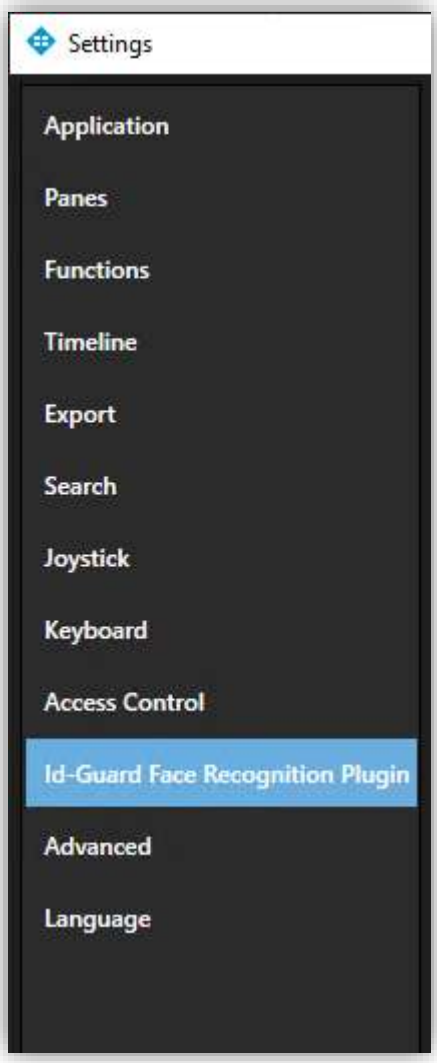

Figure 4. Settings list

The registration window will appear. (Figure 5). Establish the connection between Milestone and Id-Guard Face Recognition system. Fill in the following fields:

- *VideoOS Server* – Milestone Server IP-address;
- *Id-Guard External IP* - Id-Guard Face Recognition Server IP-address.

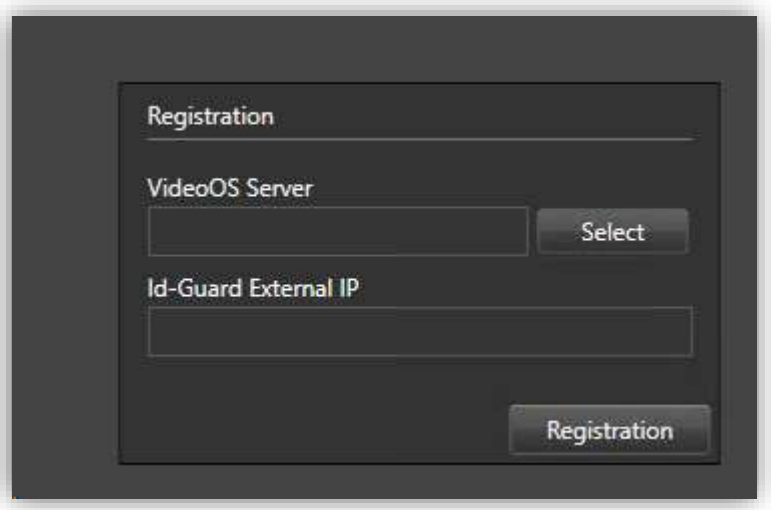

Figure 5. Registration window in the Id-Guard Face recognition Toolbox

To choose a VideoOS Server from the extisting ones, click the «Select» button next to VideoOs Server field. (Figure 6)

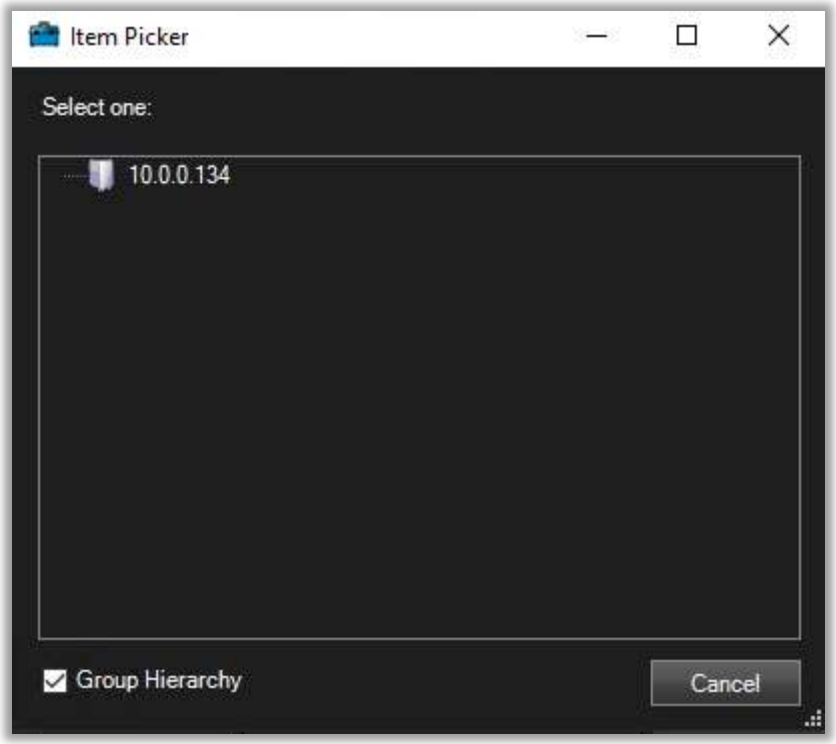

Figure 6. Selecting VideoOS server

Then click the «Registration». The authorization is completed. At the bottom of the page the notification will appear. (Figure 7)

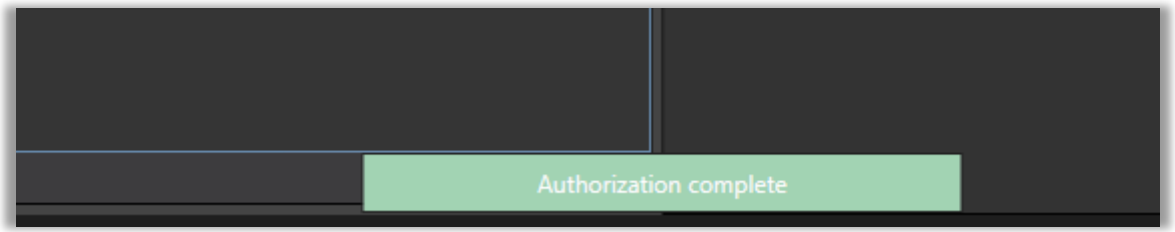

Figure 7. Successful authorization

4.2. MAIN FEATURES

The Toolbox is divided into 10 tabs and indicates the tool that is currently being used. This provides quick and convenient access to commonly performed operations. (Figure 8).

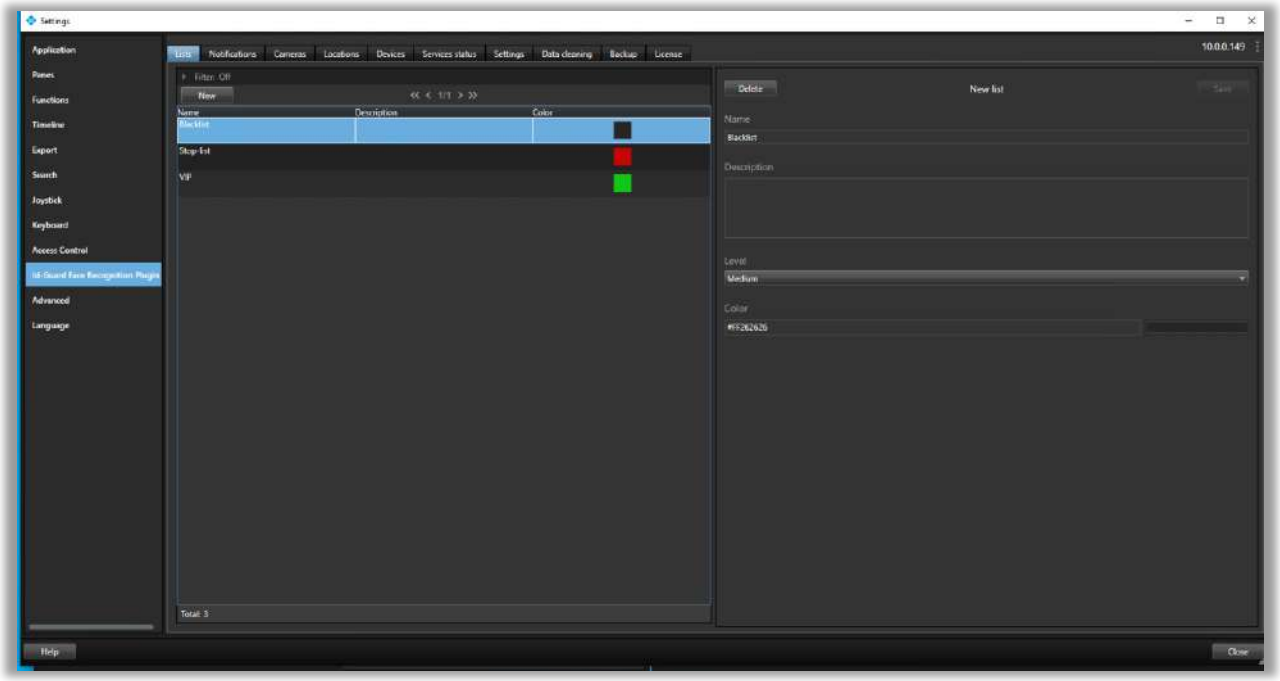

Figure 8. The main settings window

The system includes the following tabs:

- **Lists** – configuration of the list into the system (For example, Black -lists, VIP-lists);
- **Notifications** – setting up notifications by email, http, sms, in the mobile app;
- **Cameras** – register a camera into the VX system, camera configuration parameters, connection to the tracker services;
- **Locations** – creates a location, viewing lists of locations;
- **Devices** – list of connected devices;
- **Services status** – reloads the services, tracking services management, status monitoring;
- **Settings** – the main configuration parameters of the system, import photos from the local folder;
- **Data cleaning** – the archived data (objects) management;
- **Backup** – backup and restore profiles and configuration;
- **License** – licenses activation and management. Activation refers to the retrieval and installation of the activation code into the system.

4.3. MANAGIG LISTS

3.3.1 LISTS VIEW

Open the tab «Lists». All available lists are displayed. (Figure 9).

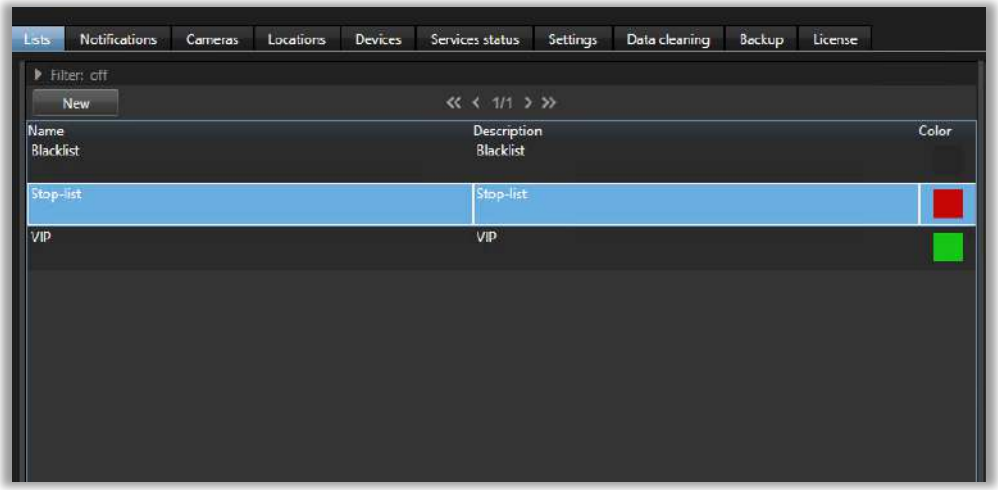

Figure 9. The display of the lists into the system

The following information is displayed for each list:

- *Name* – title of the list;
- *Description* –text description, a comment;
- *Color* –the indication by color. If the identified individual assigned to a priority list (for instance a list with high priority) the event will be highlighted. A color can be preconfigured here.

3.3.2 FILTER LISTS

1. To filter the searching results, you need to click on the «Filter» item. The available filters are displayed. (Figure 10).

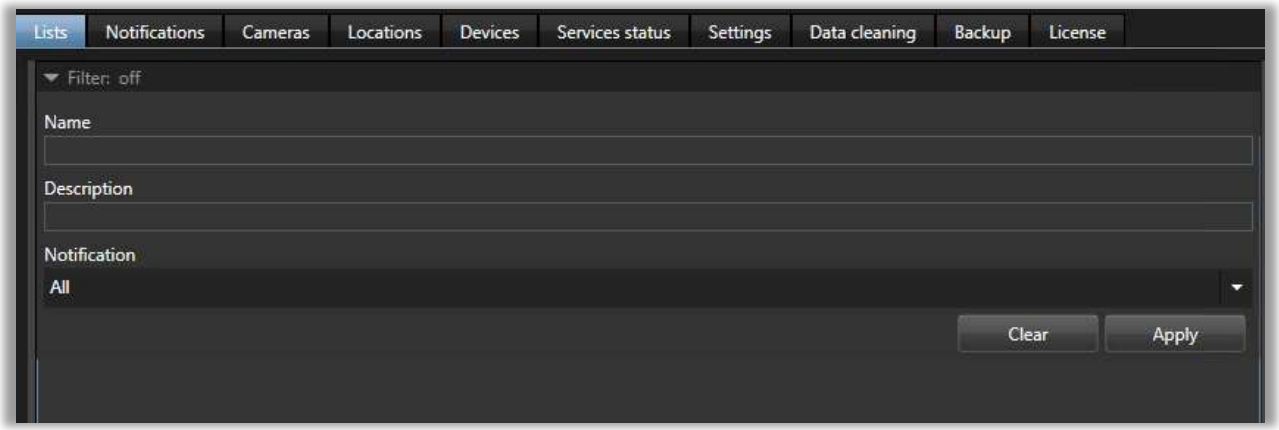

Figure 10. Filtering fields

You can use various types of filtering to display only required data. The following fields are available to be filtered:

- *Name* – name of the list;
- *Description* – text description;
- *Notification* – with notification or without it.

2. For each field enter the required parameters and click on the «Apply» button. The filter edit window is closed and only data only filtered data is displayed. To reset the parameters in the edit window, click the «Clear».

3.3.3 VIEW\EDIT INFORMATION OF THE LISTS

1. To view full information regarding a list or edit it you need to select the list and click on it. The detailed information is displayed. (Figure 11).

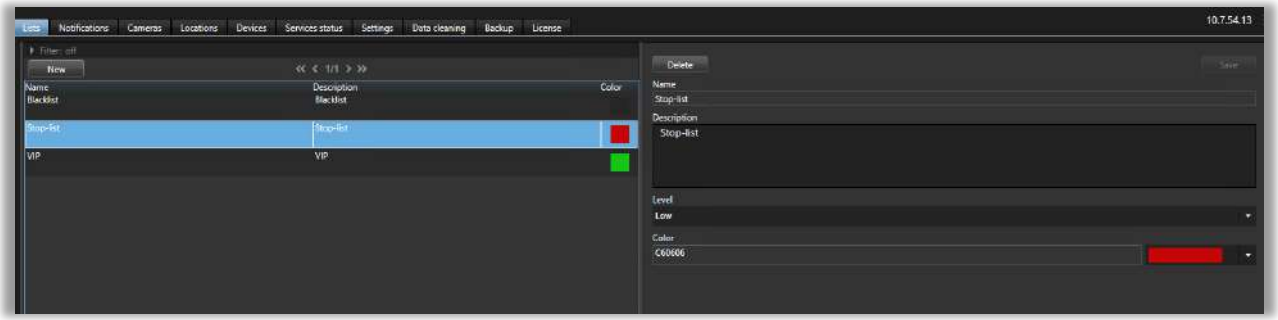

Figure 11. Lists editing window

2. You can change the list's information at any time by editing the required fields.
3. To save the changes click on the «Save». All changes will apply.

3.3.4 CREATING A LIST

1. To add a new list on the page, click on the «New» button. The edit window will appear. (Figure 12).

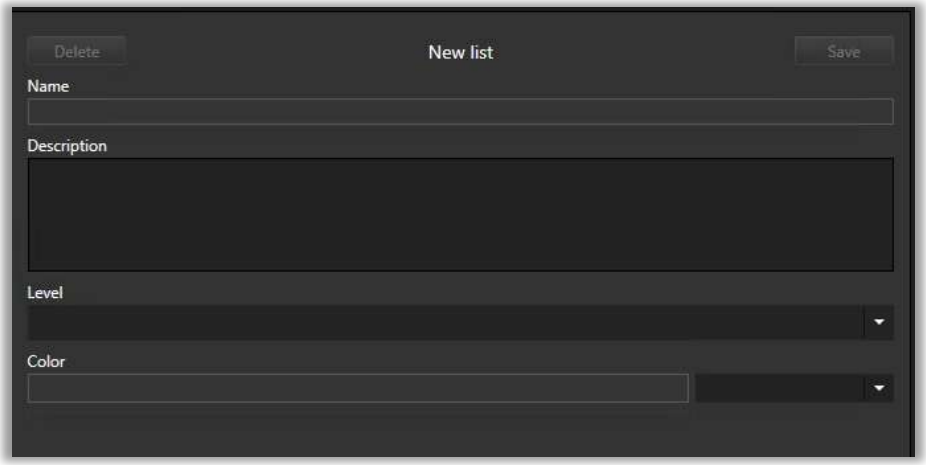

Figure 12. Creating a new list

The following fields are available for filling out:

- *Name* – title of the list;
- *Description* –text description, a comment;
- *Level* –select the required level. The list of levels is presented on the drop down list. (Figure 13);
- *Color* –the indication by color. If the identified individual belongs to a priority list (for instance a list with high priority) the event will be highlighted. A color can be preconfigured here;

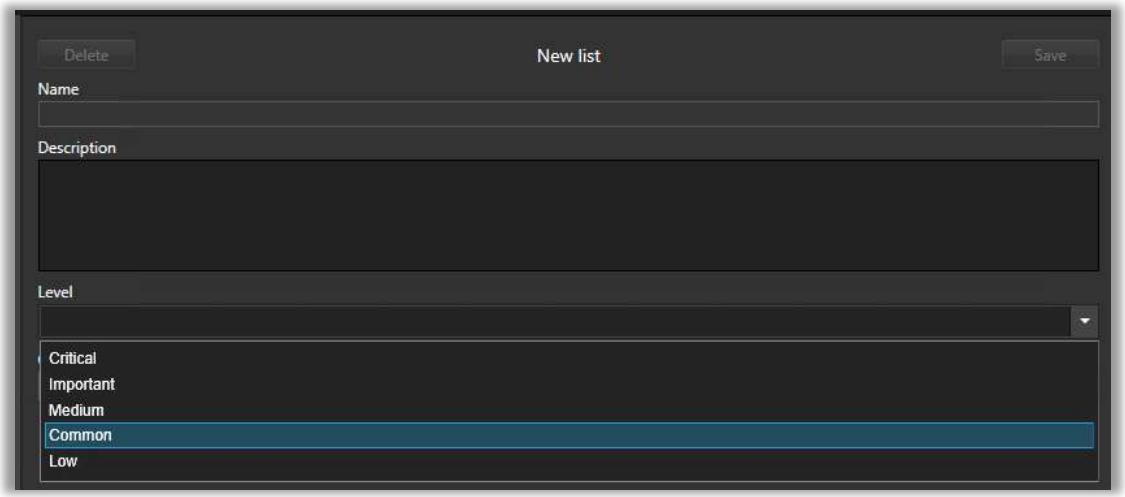

Figure 13. Drop down list of the notification priority levels

2. Fill out the fields. Click on the «Save list» button. A new list is saved and displayed on the page.

3.3.5 DELETING LISTS

1. To delete a list, select the required one and click on it. The information on the selected list will appear. (Figure 11).
2. Click the «Delete list». A window with confirmation is displayed. (Figure 14).

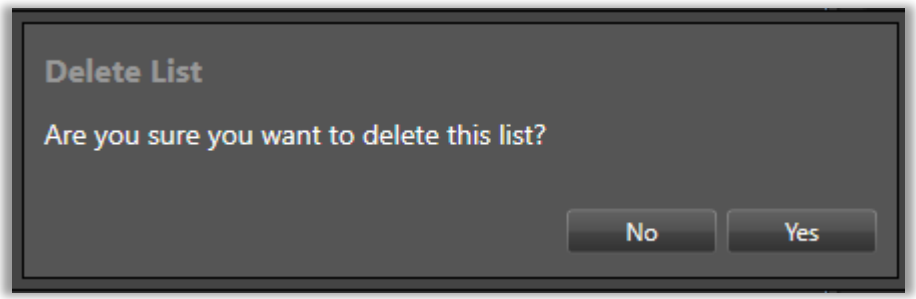

Figure 14. Confirmation dialog box

3. To confirm the action, click the «Yes». To return to the edit window press «No».

4.4. SET UP NOTIFICATIONS

3.4.1 NOTIFICATONS SETTINGS VIEW\EDIT

To set up specific notifications open the tab «Notifications». A page with settings is displayed. (Figure 15).

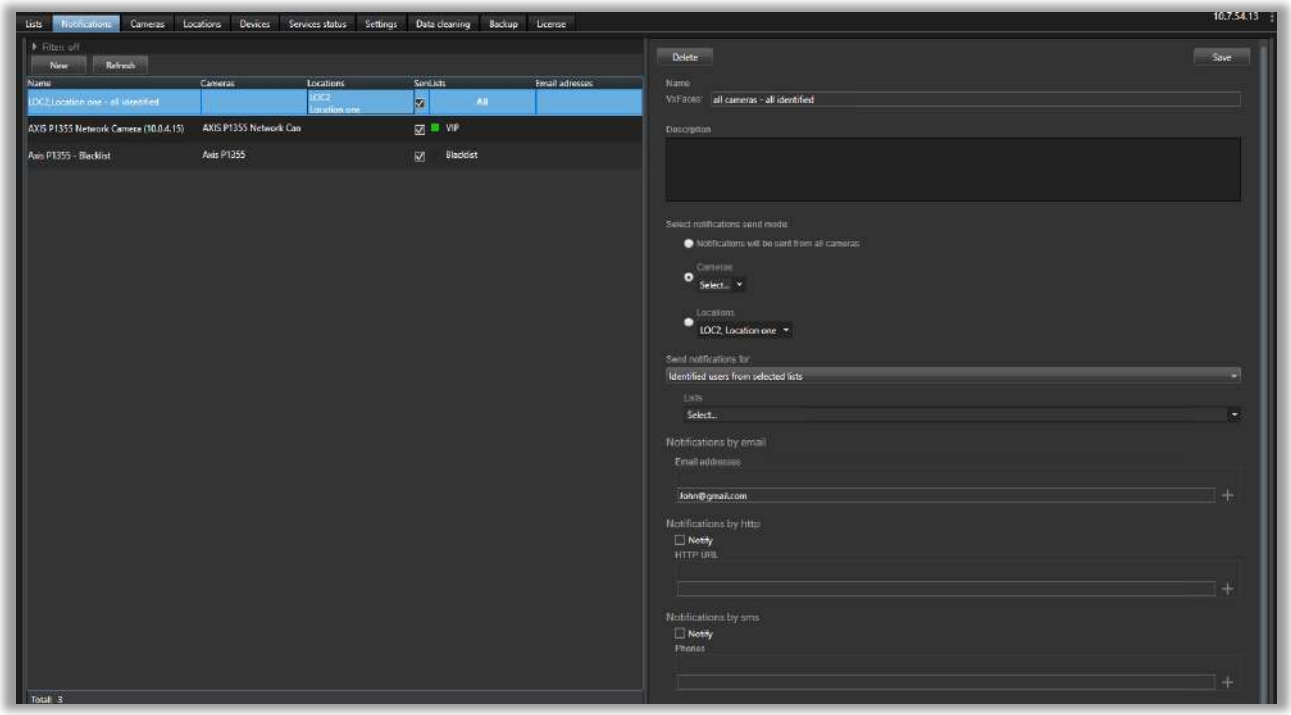

Figure 15. Viewing notification lists

Here you can change all notifications settings.

To apply all changes, click the «Save» button and then click the «Refresh» button in the upper-left corner.

3.4.2 FILTERING NOTIFICATIONS

The following fields are available for filtering in the «Notifications» section:

- *Name* – search by name ;
- *Locations* – select a location + Select all;
- *Cameras* – select a camera from the list of cameras into the system + Select all;
- *Send by identified* – notification is send only by identified visitors. Available: Yes (Check mark), No (empty), All (line);
- *Lists* – select a list from the existing ones + Select all.

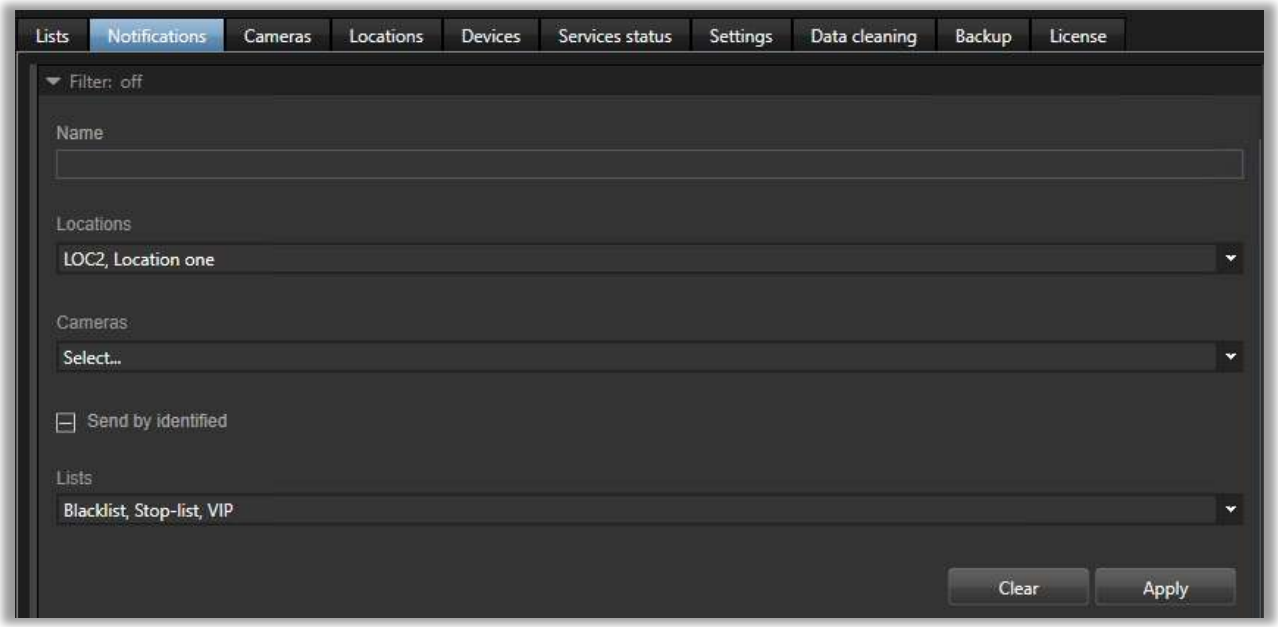

Figure 16. Search by lists and cameras

3.4.3 CREATING A NEW NOTIFICATION

To set an email notification click the «New» button in the upper-left corner. (Figure 17). The following fields are available for filling out:

- *Name* – title of the notification;
- *Description* – detailed information;
- *Select notifications send mode* – set up a notification according to cameras or locations (you can set only one parameter):
    - If «Notifications will be sent from all cameras» is enabled, notifications are sent according to information obtained from all cameras;
    - If «Cameras» is enabled, notifications are sent according to the camera that you select from the «Cameras» list;
    - If «Locations» is enabled, notifications are sent according to the location that you select from the «Locations» list;
- *Send notifications for* – sends notifications by unidentified or identified visitors or by visitors assigned to the specific list;

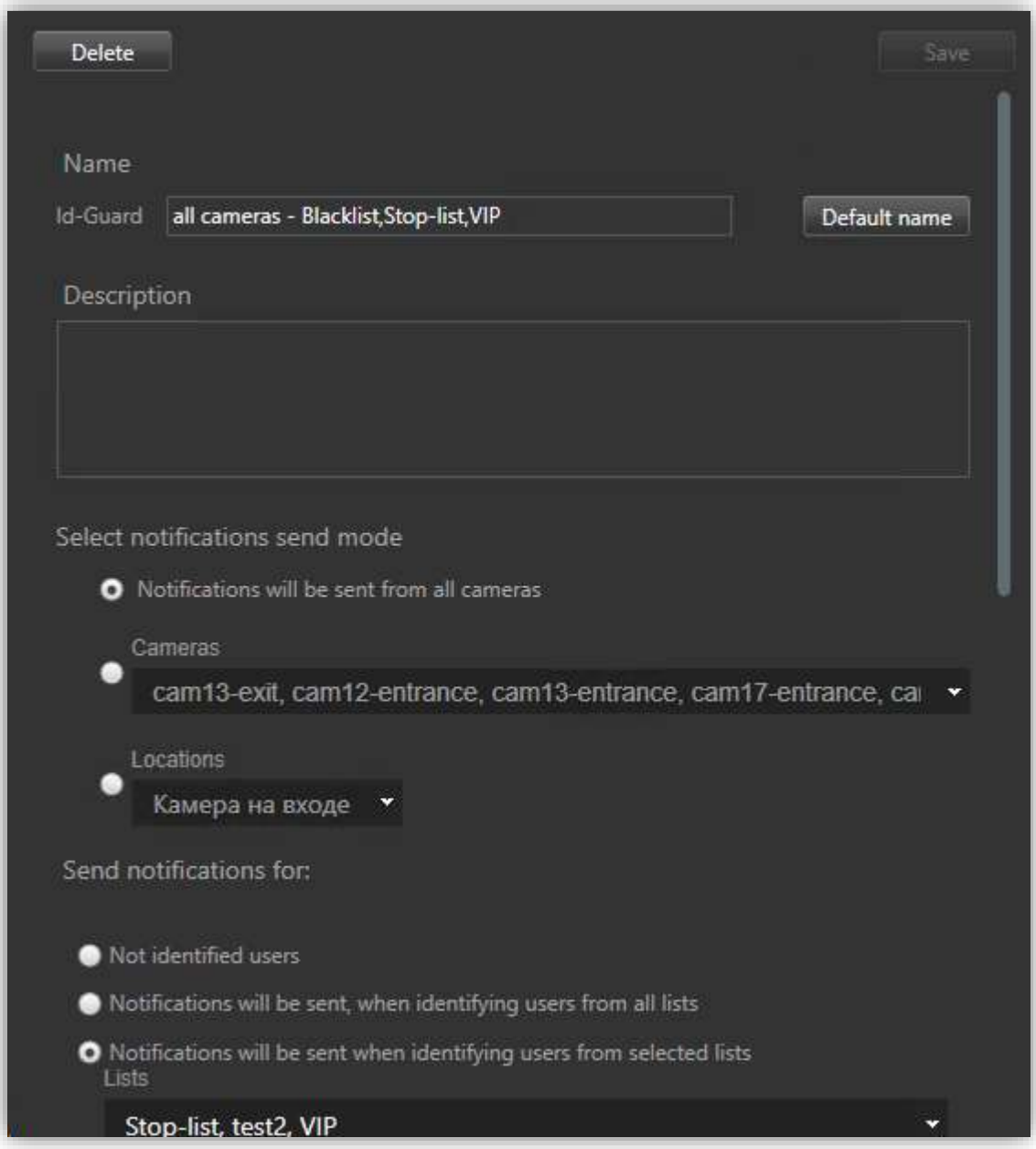

Figure 17. Creating a new notification

You can configure notifications by the following parameters:

- *Notifications by email* - set up this parameter to receive email notifications. Enter an email address, fill in the "Email addresses" field and click on "+";
- *Notifications by http* – set up this parameter to receive http notifications. Enter the http address; fill and in the “HTTP URL” field. Activate the “Notify” parameter and click on “+”;
- *Notifications by* SMS - settings for receiving notifications by phone number. To enter a phone number, enter data in the Phones field and activate the "Notify" button and click on "+".
- *Notifications in the interface and in the mobile application* - enable notifications in the interface and in the mobile application. Select the role and users in order to send them notifications. (Figure 18)

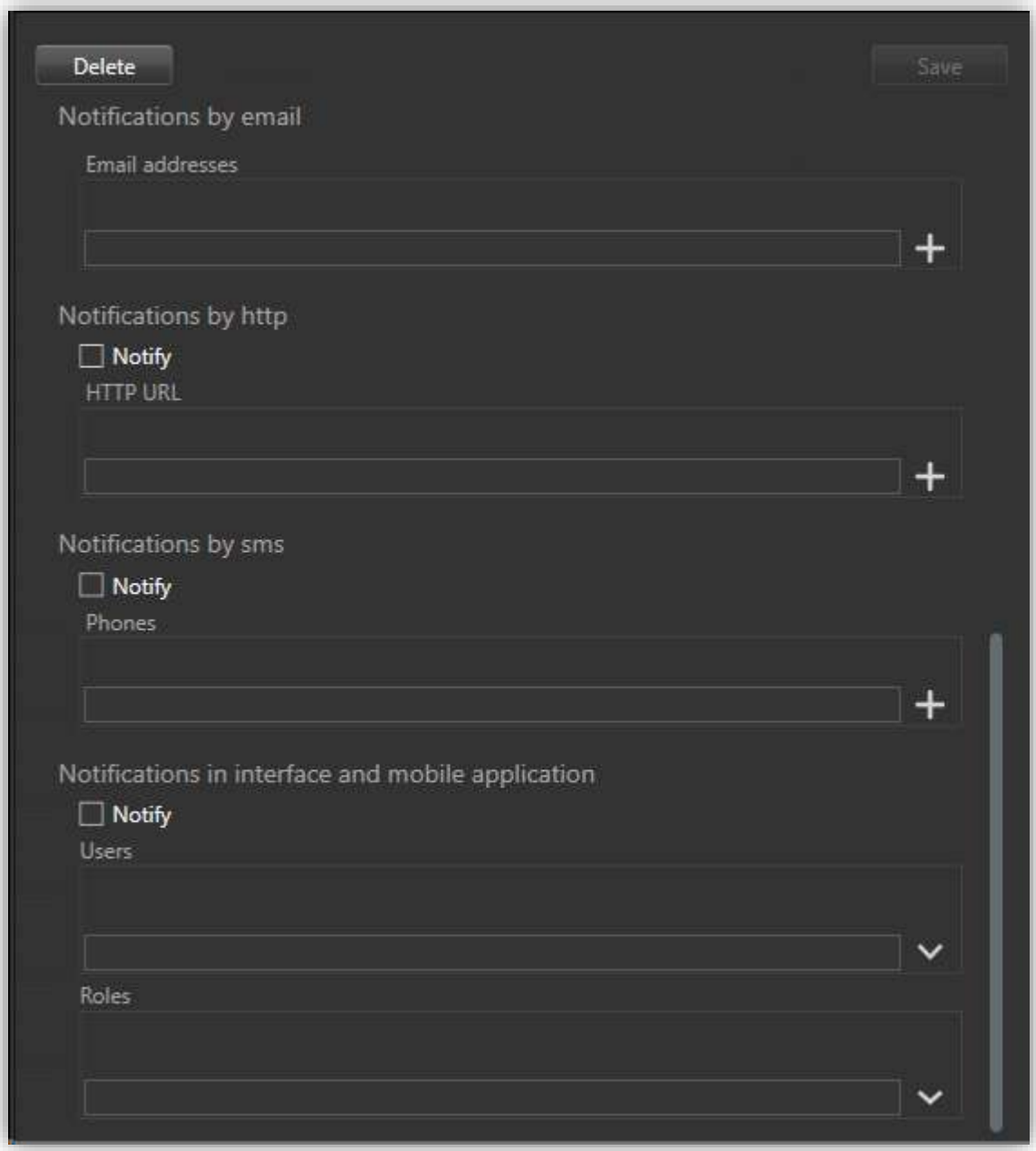

Figure 18. Setting up an email notification

4.5. MANAGING CAMERAS

3.5.1 VIEW LIST TO THE CAMERAS

Open the tab «Cameras». A list of available cameras is displayed. (Figure 19).

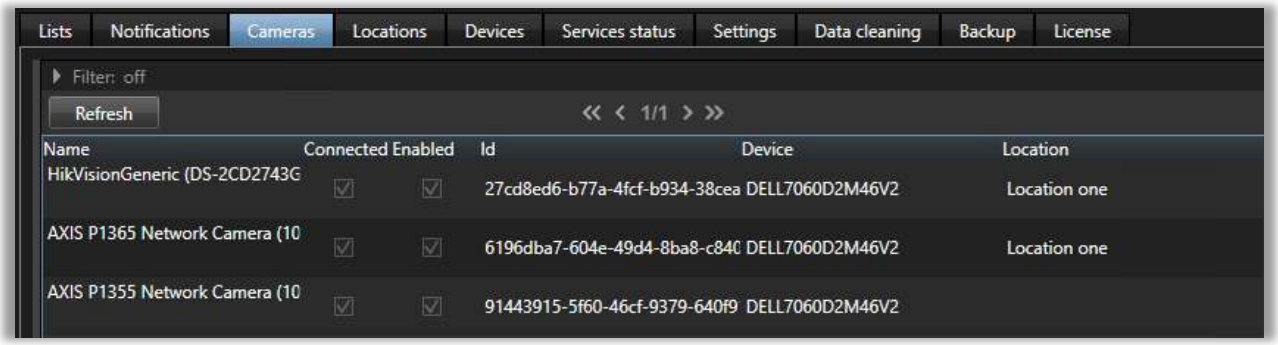

Figure 19. List of cameras

For each camera, the table displays:

- *Name* - the name of the camera;
- *Camera status* - the status of connecting the camera to the system;
- *Devices* –device (tracker) to which the camera is connected;
- *Location* - add a location for the camera from the list;
- *Enabled video processing for recognition* - activates the recognition mode.
- *Verification mode* - activation of the comparison mode 1:1;
- *Identification mode* - activation of the face recognition mode 1:N;
- *Stream type* - video stream settings;
- *Statistics* - statistics of the camera.

To receive actual information on cameras you can update the list by clicking the «Refresh» button.

3.5.2 FILTER BY A LIST TO THE CAMERAS

1. To apply a filter on the list of cameras click the «Filter» on the tab. The filter window is expanded. (Figure 20).

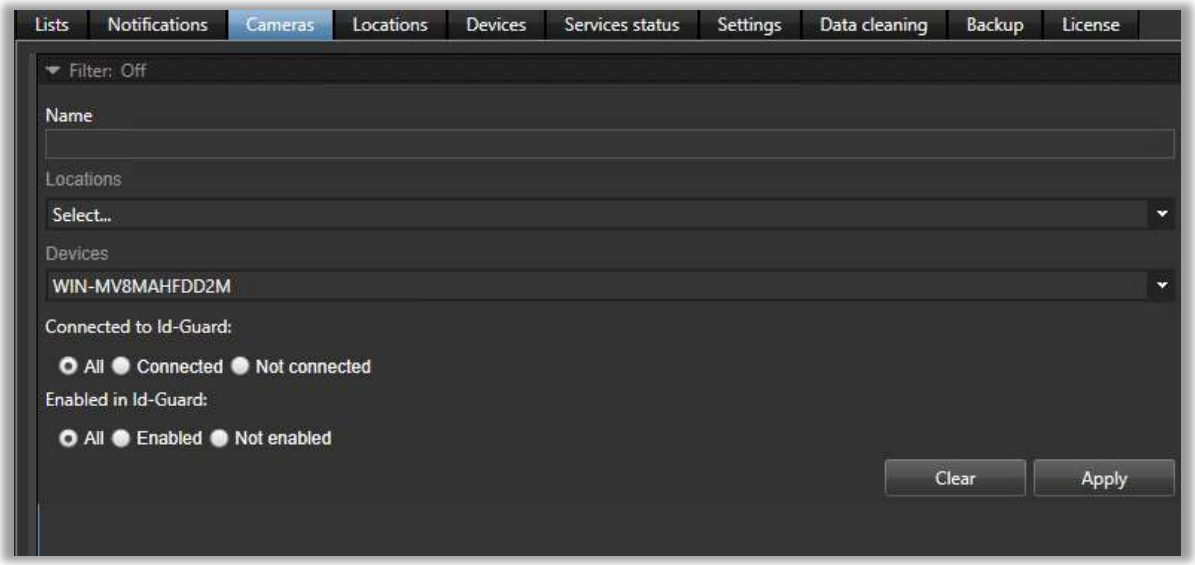

Figure 20. Filters for searching by cameras

The following fields are available for filtering:

- *Name* – field for entering the name of the camera;
- *IP* – search on a camera's IP;
- *Locations* – location of a camera;
- *Devices* – search on computers;
- *Connected/Not connected* – search on cameras connected/disconnected to Id-Guard Face Recognition;
- *Enabled/Not enabled*– search on cameras where face recognition is enabled in the Id-Guard Face Recognition.

2. On the filters page select the required values for each field and click on the «Apply» button.
3. To reset the selected values, click on the «Clear» button.

3.5.3 VIEW\EDIT INFORMATION TO THE CAMERA

1. To view the information on the camera configuration or to change the data of the camera you need to click on the required camera. The information on the selected camera will appear. (Figure 21).

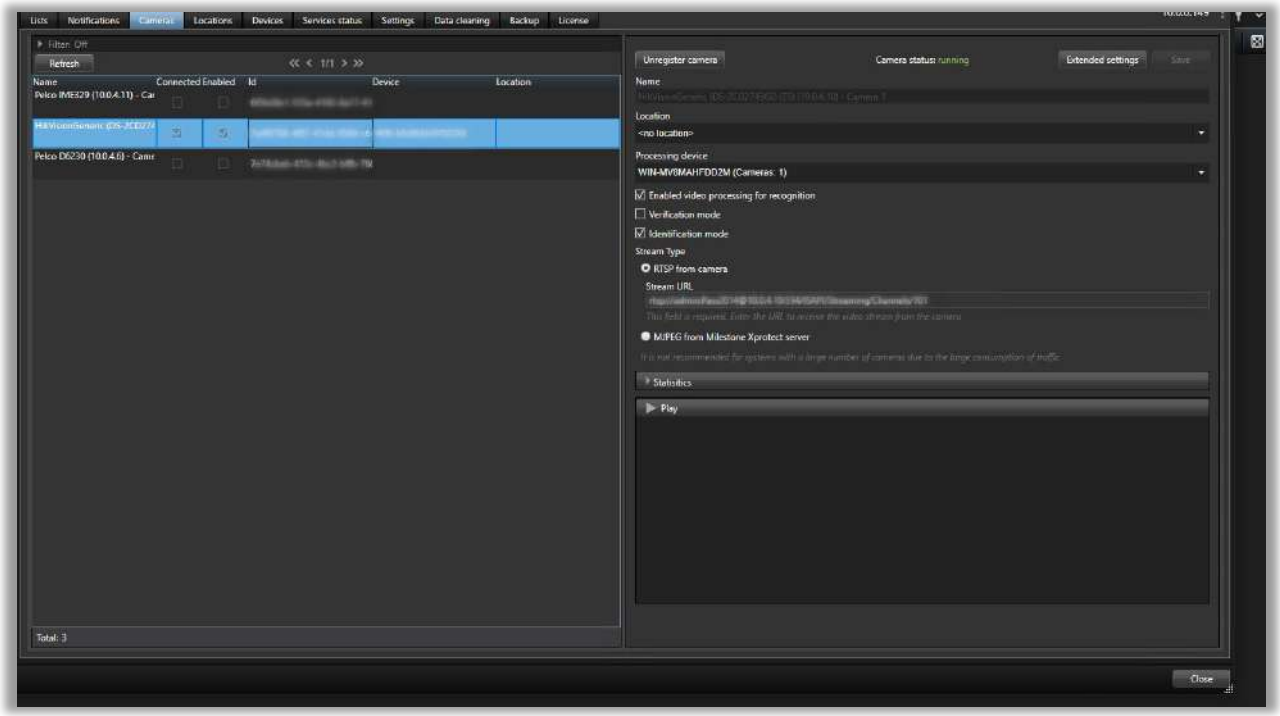

Figure 21. The information about the camera

2. To enable processing of video from the camera, select the option *«Enabled video processing for recognition»* is selected.

3. To enable the verification mode, select the *«Verification mode»* parameter.

4. To enable the authentication mode, select the *«Identification mode»* parameter.

5. To select the type of video stream in the *«Stream type»* field, select one of the following parameters: *«MJPEG from the Milestone Xprotect server»* or *«RTSP»*. Next you need to enter the *«URL stream».*

6. To view statistics on the camera, you must open the "Statistics" tab. A window appears with the following information:

- *Count frames from camera;*
- *Camera frames RPS*
- *Frames processed count*
- *Frames processed RPS*
- *Frames on which faces were searched count*
- *Frames on which faces were searched RPS*
- *Frames for templates count;*
- *Frames for templates RPS;*
- *Templates built count;*
- *Templates built RPS;*
- *Templates sent count;*
- *Templates sent RPS.*

An example of statistics display if the camera does not work correctly is presented in Figure 22.

Figure 22. Camera's statistics

2. To check camera connection, click the button «Play». Real time video is displayed on the screen. It will stop in 60 seconds automatically. If you want to check one more time click on the «Play» again.
3. To save the selected changes click on the «Save» button. All changes will apply.
4. When you try to close without saving the alert will appear.
5. To confirm the action, click the «Yes». To return to the previous edit window press «No».

To delete a camera from Id-Guard click on the «Unregister camera» button. The camera is not deleted from Milestone.

3.5.4 CAMERA COMMON SETTING

1. To configure a new camera, select the required camera from the list. The detailed information is displayed on the page. (Figure 21***).***
2. To save the changes click on the «Save». All changes will be applied.

4.6. MANAGING CAMERAS. EXSTENDET SETTINGS

1. To proceed to the extended settings page, you need to select a camera from the list and click on the «Extended settings». A page with additional settings is displayed. (Figure 23).

The following sections are available for configuring:

- *Video* – change camera configuration;
- *Face detection* – set parameters for detection;
- *Window blanking* – window that is set to conceal areas, where facial recognition is not enabled;
- *Region of interest* – highlights an area. Allows to focus on providing the highest quality image for a selected region.

You can change the settings by editing the required fields. To restore the default settings, click the «Reset» button. To go to the previous page, click the button «Back».

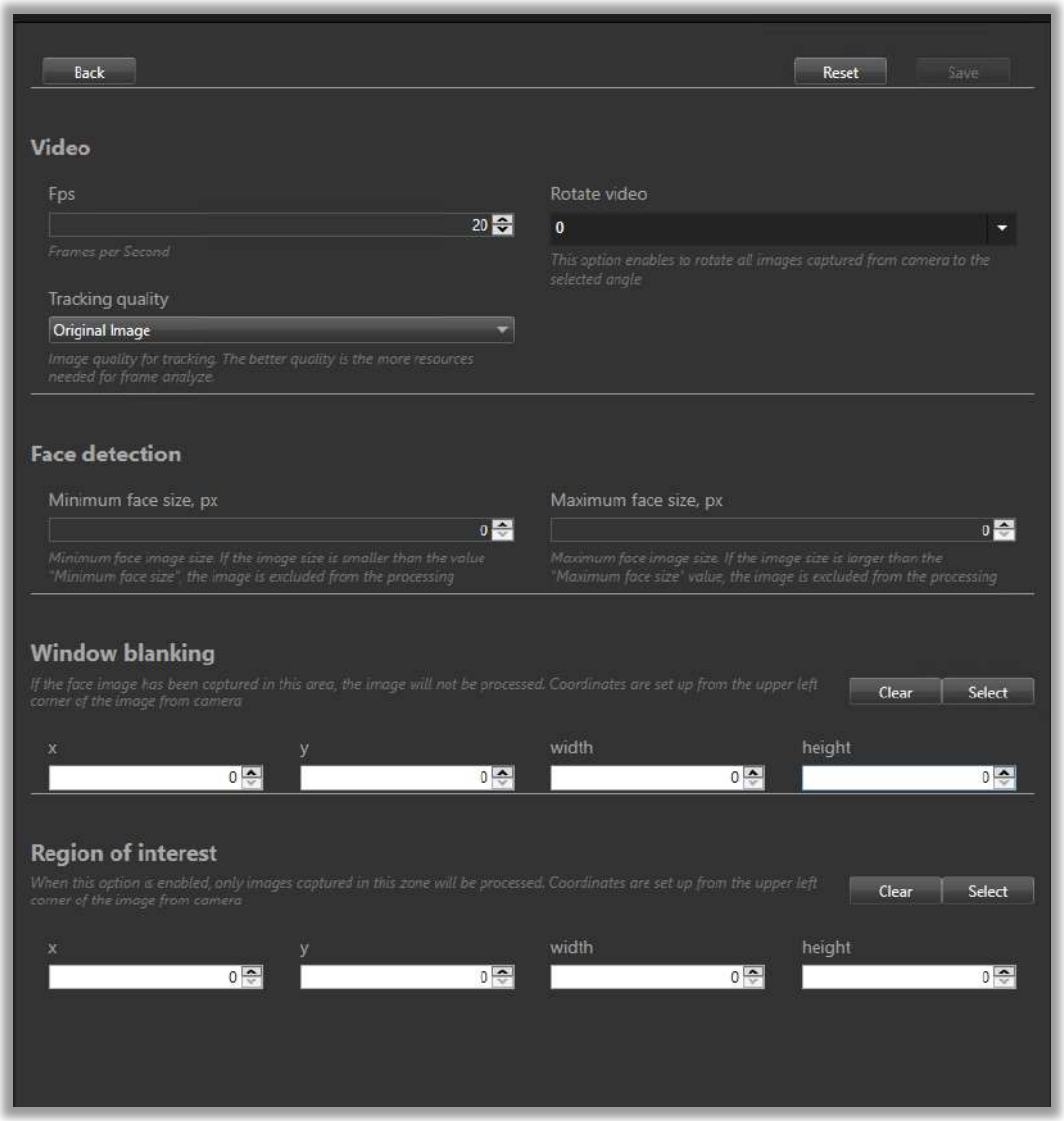

Figure 23. Extended camera settings

3.6.1 VIDEO

In this section, you can configure the following values:

- *FPS* – define frame rate for the tracker;
- *Rotate video* – rotates all images captured with all cameras to the selected angle;
- *Tracking quality* – set parameters for configuring the tracker. Allow to set images quality.

Reset camera settings to default click the «Reset» in the upper-right corner.

To apply all changes, click the «Save».

3.6.2 FACE DETECTION

In the «Face detection» section, you can adjust images size. The values are set in px.

The following parameters are available:

- *Minimum face size* – If the image size is larger than the value «Minimum face size», the image is excluded from the processing
- *Maximum face size* - If the image size is smaller than the value «Maximum face size», the image is excluded from the processing.

Reset camera settings to default click the «Reset» in the upper-right corner.

To apply all changes, click the «Save».

3.6.3 WINDOW BLANKING

1. To define the area, where faces are not recognized click the «Select» in the Window blanking» section. Live preview area is displayed. See (Figure 24).

Figure 24. Window blanking settings

Draw a window in the Live Preview area of the page. After the area has been selected press the «Save». The parameters x, y, width and height are filled automatically.

If the face image has been captured in this area, the image will not be processed. The coordinates are set up from the upper left corner of the image from camera

Reset camera settings to default click the «Reset» in the upper-right corner.

To apply all changes, click the «Save».

4.6.4. REGION OF INTEREST

To define an area for accurate face detection, you need to click the button «Select» in the «Region of interest» section. A new window with real-time video appears. (Figure 25).

Figure 25. Creating a region of interest

After the area has been highlighted, press the «Save». Parameter x, y, width and height will be set automatically.

If you enable the parameter, only images obtained from the selected zone will be processed.

These coordinates specify from the upper left corner of the image. Image quality will be higher in this area.

To reset settings to default, click the «Reset» in the upper-right corner.

To apply all changes, click the «Save».

4.7. CAMERA'S LOCATION MANAGING

3.7.1 VIEW A LOCATION OF THE CAMERA

Open the tab «Locations». A page with the list is displayed. (Figure 26**).**

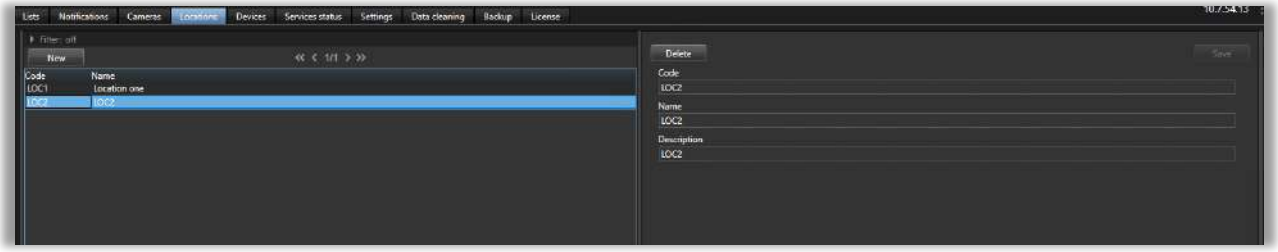

Figure 26. List of the locations

The following information is displayed for each location on the page:

- *Code* – camera's location code;
- *Name*– camera's location name.

3.7.2 FILTER A LIST OF LOCATIONS

1. To filter the results in the table, click on the «Filter» button. A filtering window is displayed. (Figure 27).

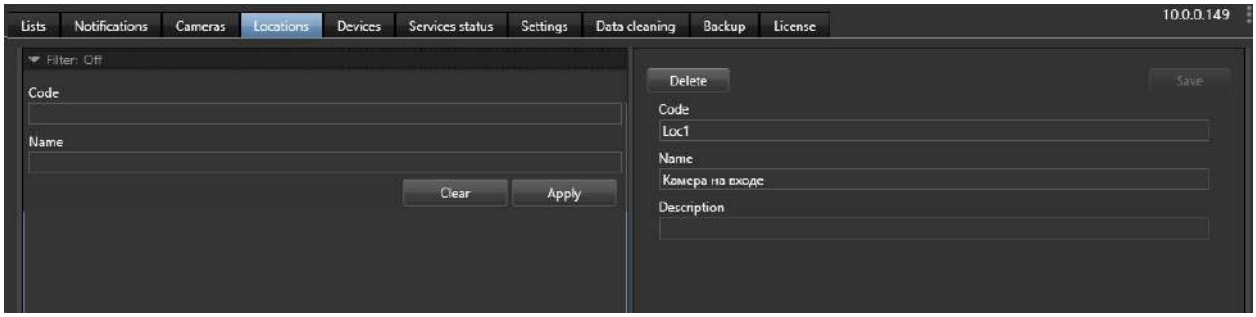

Figure 27. The display of filters

The following fields are available for filtering:

- *Code* – camera's location code*;*
- *Name* – field for entering the name of camera locations.

2. In the filtering window select the required options for each field and click the «Apply» button. The filtering window will close and the page will display only the data filtered.

To reset the filters, you need to click the «Clear» button.

3.7.3 VIEW\EDIT CAMERA'S LOCATION INFORMATION

1. To view detailed information on the camera's location or to change the fields click on the required location. The information will appear. (Figure 28).

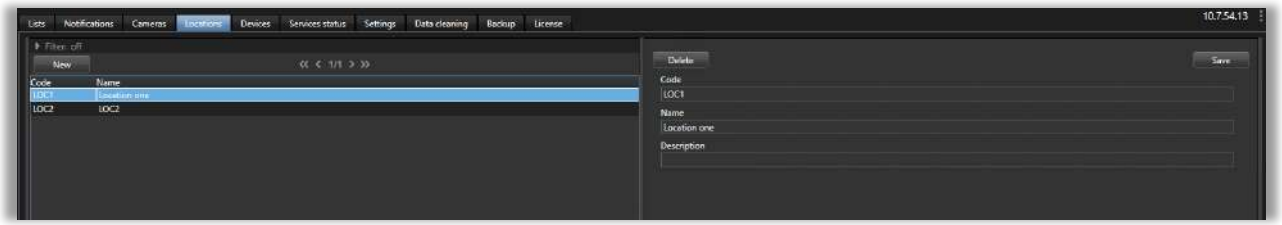

Figure 28. Camera's location editing

Window for editing and viewing of locations

1. You can configure a camera's location information by editing the required fields.
2. To apply the changes, click the «Save». The changes are saved.

4.7.4. CREATING A CAMERA'S LOCATION

1. To create a new camera's location, click the «New» button on the page «Lists. A new form window is displayed. (Figure 29).

Figure 29. Creating a new location

1. Fill out the forms for a new camera location. Click on the «Save location» button. A new location is saved and displayed on the list.

4.7.5. DELETING A LOCATION

1. To delete a camera location, you need to select the required one and click on it. The camera locations page.is displayed. (Figure 29).
2. Click on the «Delete location» button. The delete confirmation window will appear. (Figure 30).

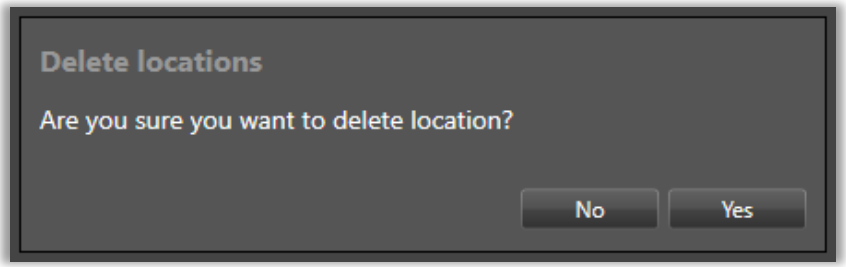

Figure 30. Confirmation window

3. To confirm the action, click the «Yes». To return to the edit window press «No».

4.8. DEVICES

Open the tab «Devices». A list is displayed. (Figure 31).

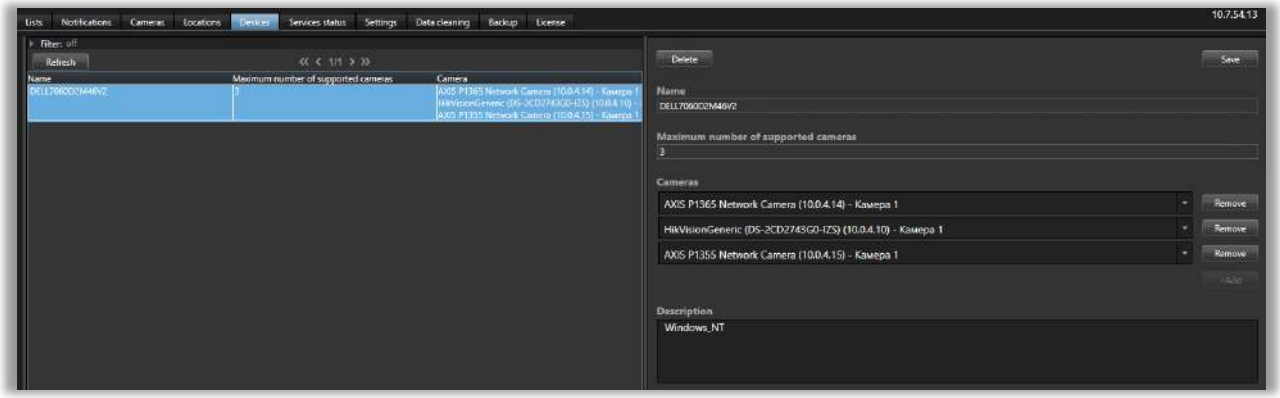

Figure 31. List of connected devices

4.8.1 VIEW\EDIT INFORMATION ON A DEVICE

1. To see more detailed information on a device or edit it click the required one. A window with the data is displayed. (Figure 32***).***

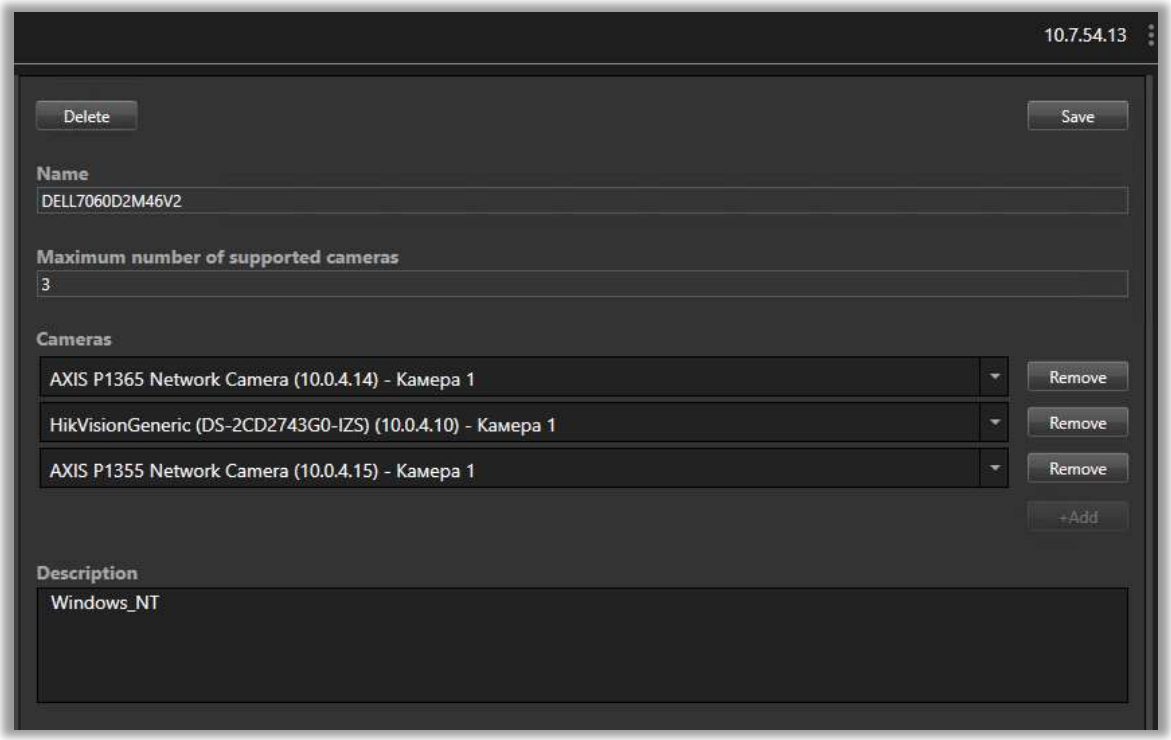

Figure 32. Setting up cameras and devices

The following fields are available for editing:

- *Name* – title of the device;
- *Maximum number of supported cameras* – a number of cameras;
- *Cameras* – add/remove a camera;
- *Description* – brief note.

1. To connect a camera with the device, click the «Add» and select the required one from drop-down list.
2. To delete a camera, click the «Remove».

To apply all changes, click the «Save».

4.8.2 FILTER A LIST OF DEVICES

1. To filter the searching results, you need to click on the «Filter» item. The available filters are displayed

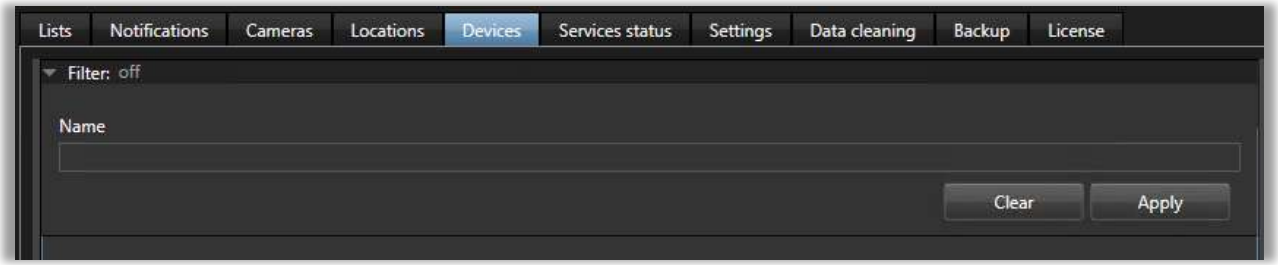

Figure 33. Search in all devices

The following fields are available for filtering:

- *Name* – enter a name of the device (tracker).

2. Set the required values for each field in the filtering window and click the “Apply”. The filtering window is closed, and only data that matches the specified filters will be displayed on the screen.
3. To reset all filters, click the «Clear».

4.8.3 DELETING A DEVICE

1. To delete a device, click on the required one.
2. Click the «Delete». The alert will appear.
3. To confirm your action, click the «Yes». To return to the previous page click the «No».

4.9. SERVICES STATUS

1. Open the tab «Services status». The list of services is displayed. (Figure 34).

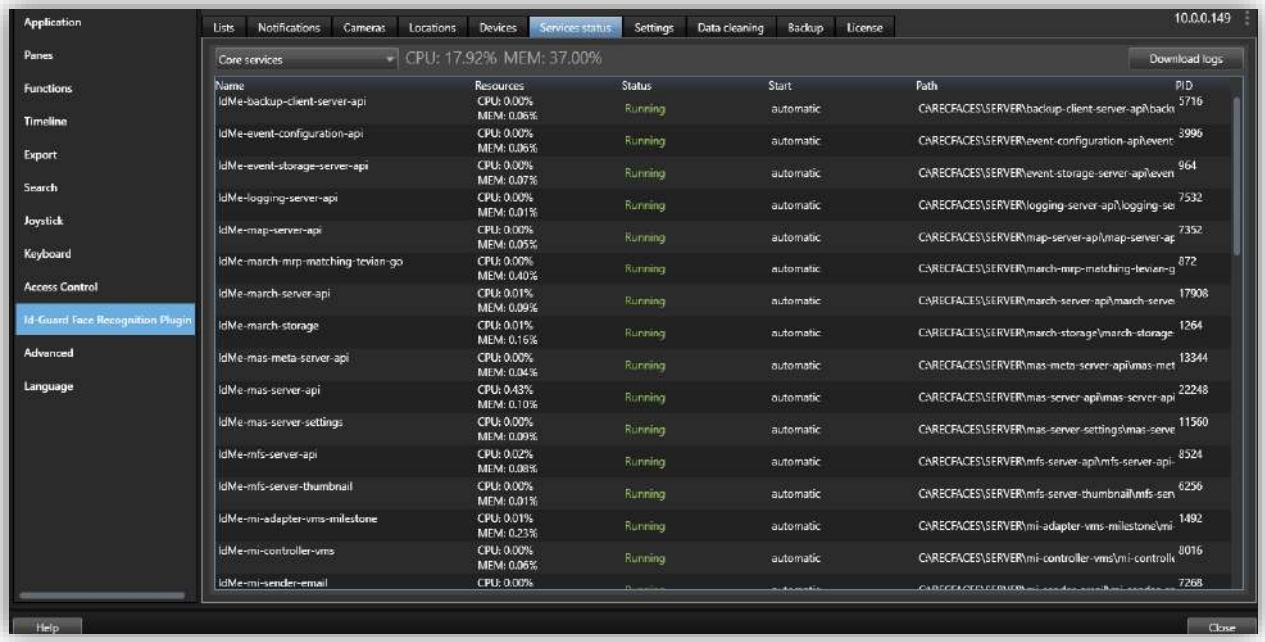

Figure 34. List of the services

The following information displays for each service:

- *Name* – title of the service;
- *Resources* –CPU and Memory utilization;
- *Status* – actual status of the service;
- *Path* – the directory;
- *PID* – process identifier.

CPU and Memory usage values for all services is located under the table.

2. To view an event log, click the «Download logs» for saving the data to a text file.
3. To view information on trackers, click the «Trackers services» button from the drop-down list in the upper left corner. (Figure 36**).**

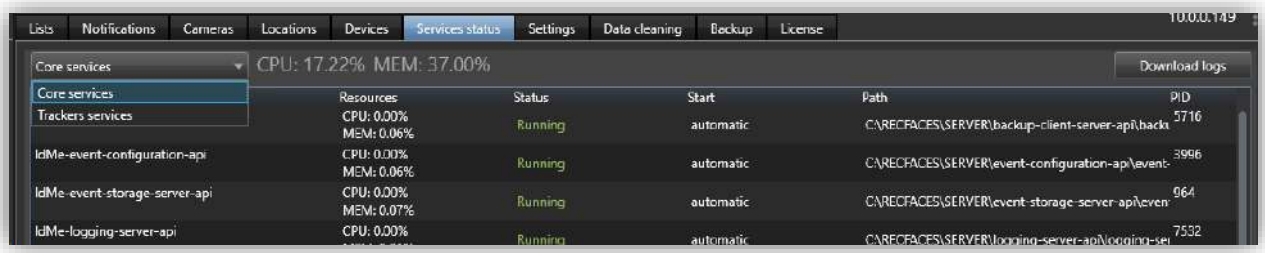

Figure 35. Switch between services

The following information displays for each tracker:

- *Device Name* – computer name;
- *Device Status* – status of the computer;
- *Device Resources* – CPU and MEMORY utilization for devices;
- *Application name* – name of the service;

- *Application* - status of application services
- *Application Recourses* – CPU and MEMORY utilization for devices for applications;
- *Cameras* – a list of cameras.

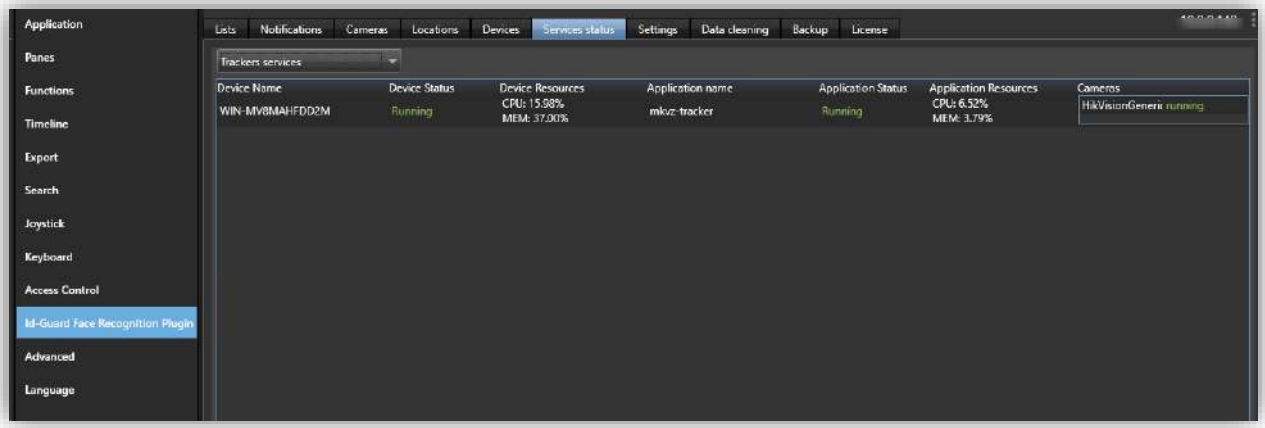

Figure 36. Tracker's services

4.10. GENERAL SETTINGS

1. Open the tab «Settings». A page with all settings is displayed. See (Figure 37).

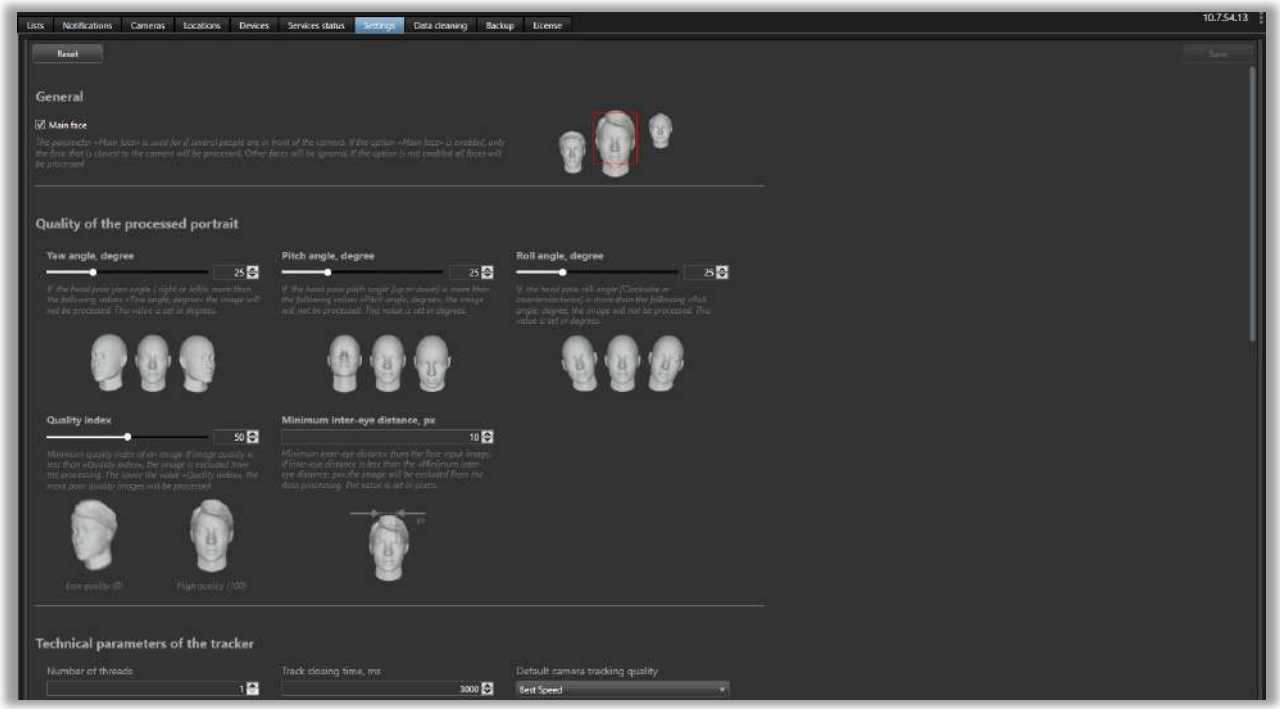

Figure 37. General settings

You can change the settings by editing the required fields. To restore the default settings, click the «Reset» button.

To save the changes you need to click on the «Save» button. All changes will apply.

4.10.1. SETTING UP THE «MAIN FACE» PARAMETER

In the section «General» there is the opportunity to configure the parameter «Main face». The parameter «Main face» is used, if several people are in front of the camera. If the parameter «Main face» is enabled, only the face that is closest to the camera will be processed. Other faces will be ignored. If the option is not enabled all faces will be processed.

4.10.2 IMAGE QUALITY

In the «Quality of the processed portrait» section the following parameters are available:

- *Yaw angle, degree* -If the head pose yaw angle (right or left) is more than the following values «Yaw angle, degree» the image will not be processed.
- *Pitch angle, degree* - If the head pose pitch angle (up or down) is more than the following values «Pitch angle, degree», the image will not be processed. This value is set in degrees.
- *Roll angle, degree* - If the head pose roll angle (Clockwise or counterclockwise) is more than the following «Roll angle, degree, the image will not be processed. This value is set in degrees.
- *Quality index* - Minimum quality index of an image If image quality is less than «Quality index», the image is excluded from the processing. The lower the value «Quality index», the more poor-quality images will be processed.
- *Minimum inter-eye distance, px* - Minimum inter-eye distance from the face input image. If inter-eye distance is less than the «Minimum inter-eye distance, px», the image will be excluded from the data processing. The value is set in pixels.

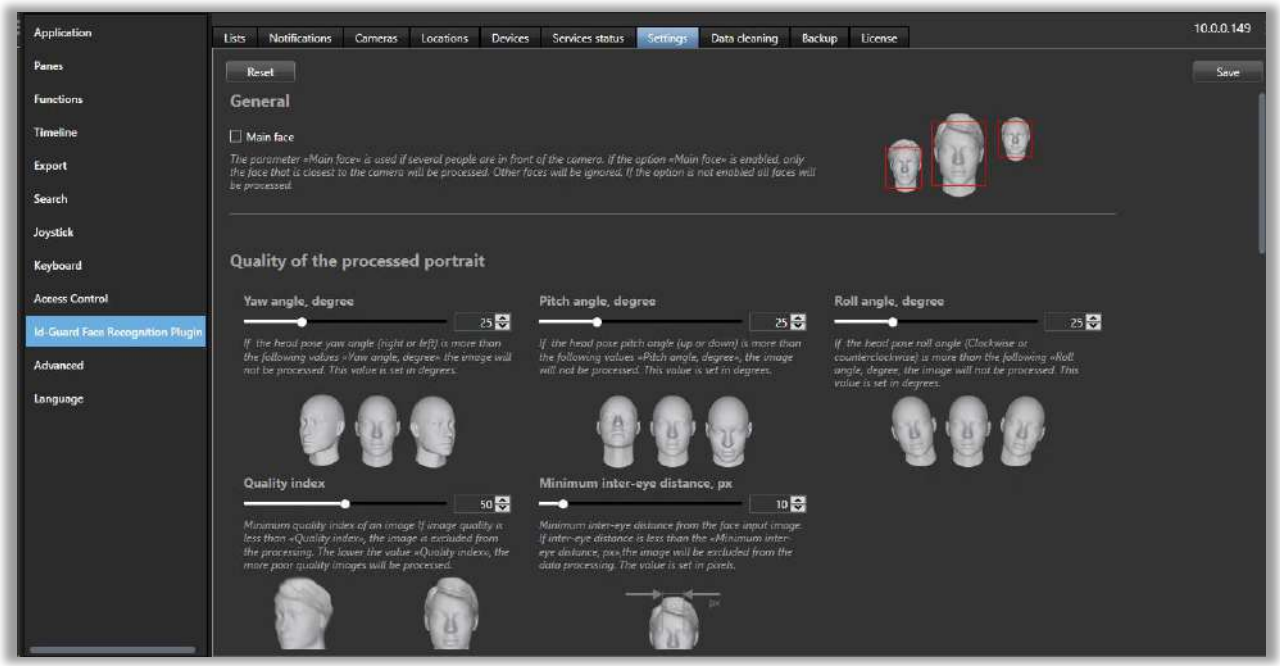

Figure 38. Setting up images captured with camera.

4.10.3 MANAGING THE TRACKER

In the «Technical parameters of the tracker» section the following parameters can be modified:

- *Number of threads* –a number of threads for creating a biometric template.
- *Track closing time, ms* –time of the last shot made when a person passes through the camera until the time when this action has been completed. The value is set in milliseconds;

- *Default camera tracking quality* – default values for newly created cameras. You can select the required one from the drop-down list. (Figure 39)

Figure 39. Tracker's configuration

4.10.4 ZONE IDENTIFICATION

These zones show the match rate of the image captured with the camera with the profile found. The match rate is defined by the similarity score with values from 0.00 to 1.00. (Figure 40).

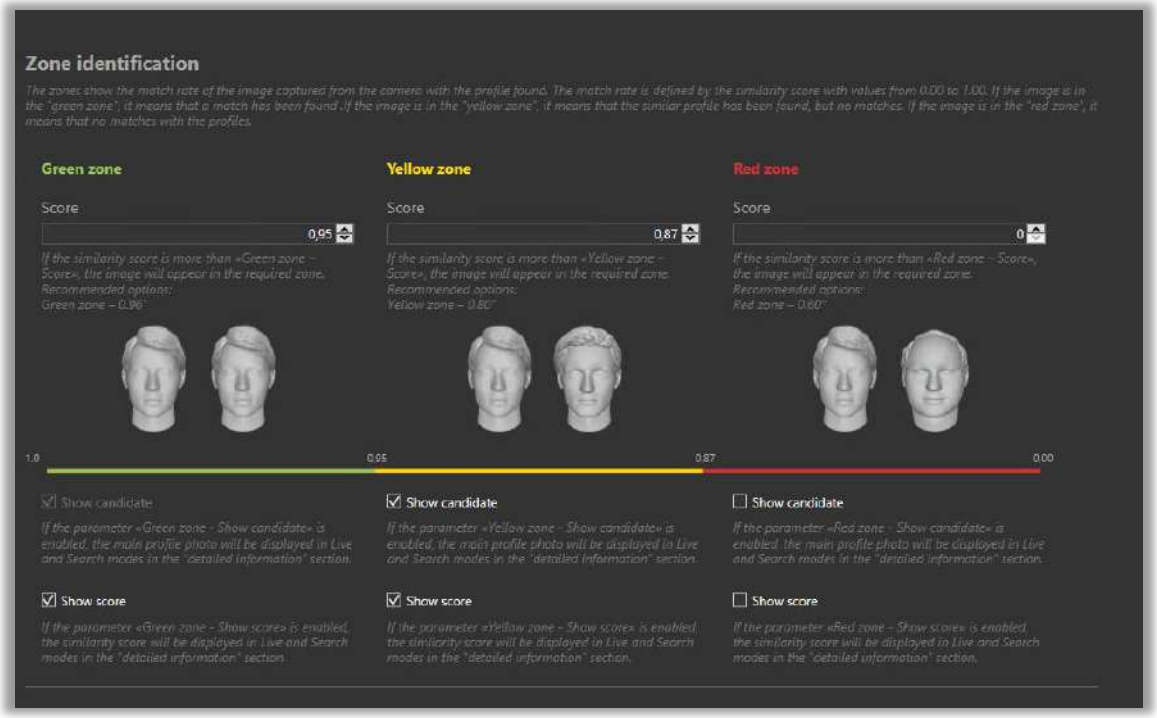

Figure 40. Identification parameters

If the image is in the «green zone», it means that a match has been found. If the image is in the «yellow zone», it means that the similar profile has been found, but no matches. If the image is in the «red zone», it means that no matches with the profiles.

The parameters «Show candidate» and «Show score» can be configured for all zones (green, yellow, red) by clicking the following checkboxes:

- Show candidate – in the modes «Live» and «Search» the profile photo (depending on the Zone you selected) is displayed at the bottom of Live page.
- Show score – in the modes «Live» and «Search» the similarity score (depending on the Zone you selected) is displayed on the «Detailed information» section.

4.10.5. IMPORT PHOTOS AUTOMATICALLY

In order to create profiles automatically and assign a list to profiles, in the settings there is a function Auto Import Profiles. (Figure 41)

Figure 41. Import from the specific folder

The Auto Import feature automatically imports photos into the system. To import photos to the system, do the following:

1. Locate the following folder **C:\RecFaces\Upload\Profiles.** The directory is specified in the settings in the «Profile photo import folder» section.
2. Create a destination folder with the list name. For example, C:\RecFaces\Upload\Profiles**Watch list.**
3. Drag photos into the folder.
4. The list **Watch list** is created automatically and new profiles will be generated.
5. Depending on the number of photos in the folder, the import procedure may take from several seconds to several minutes. It is recommended to use the Refresh button to update information on the uploaded profiles.
6. To delete the uploaded profiles and list, you need to delete the folder previously created for import. The created list and profiles will be deleted automatically from the system.

4.10.6. SETTING UP SMTP SERVER

To configure email notifications, proceed to the section «Smtp server settings for sending notifications». The following fields are required:

- *Host* – hostname or IP address of your SMTP relay server.
- *Port* – the SMTP port to contact this server on
- *Account* – If your SMTP server requires authentication enter a username
- *Password* – If your SMTP server requires authentication enter a password.

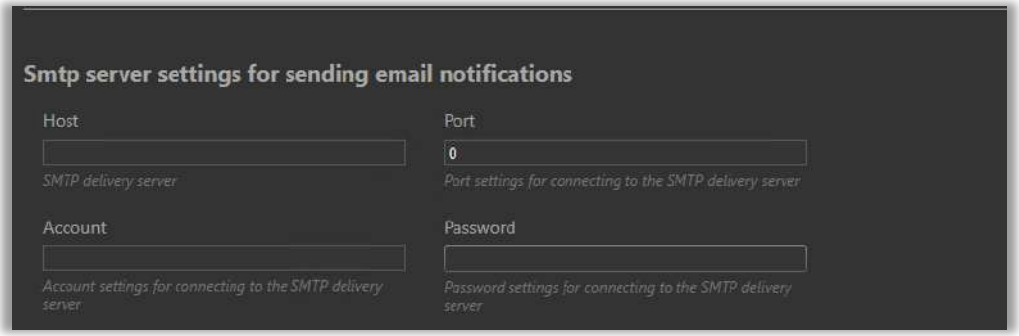

Figure 42. Email settings

In order to receive SMS notifications in the settings, you must specify the com-port of the modem in the "Com-port" section.

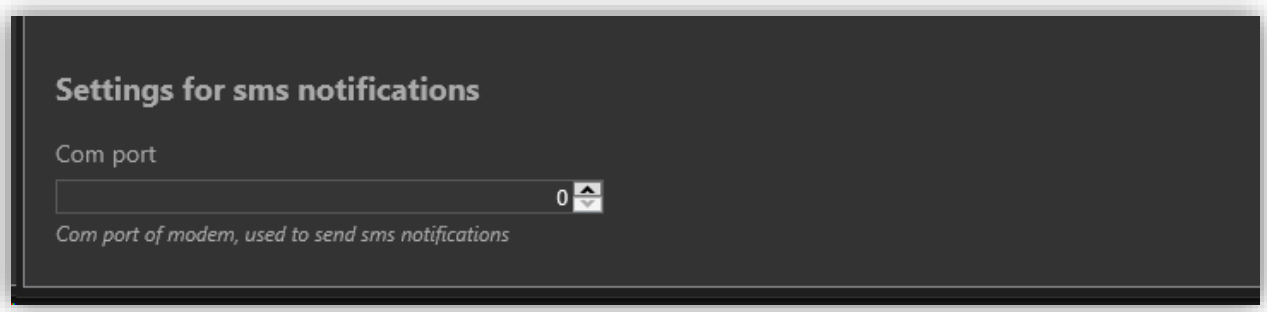

Figure 43. Com port number

4.11. DATA CLEANING

Open the tab «Data cleaning». A window with settings is displayed. (Figure 44).
For automatic data cleaning, the following options are available:

- *Operational data (days)* –a retention period, how long operational data are retained before deletion;
- *Archived data (days)* –a retention period, how long archival data are retained before deletion;
- *Expiration* – expiry date; days after which the data will be deleted;
- *Time of day* – time during a day.

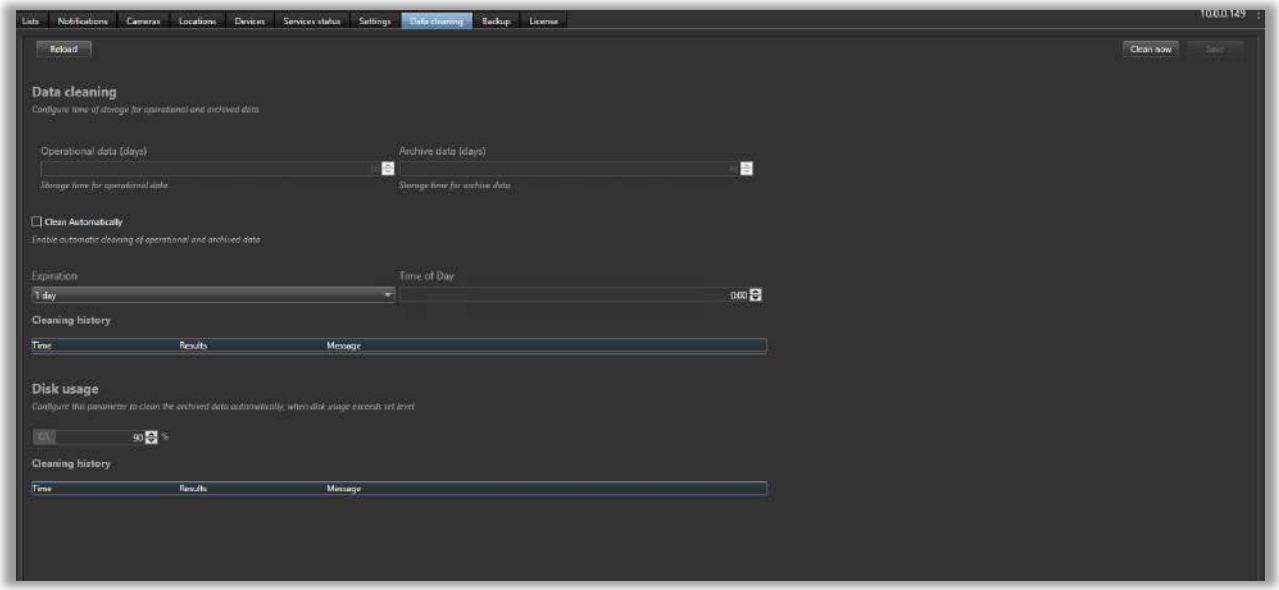

Figure 44. Set up the automatic cleaning

1. To delete archival and operational data manually click the «Clean now» button. The information regarding the previous actions of cleaning see in the section «Cleaning history»
2. In order to clean the data automatically, you need to click on the "Clean Automatically" checkbox. Configure Operational data (days) and Archive data (days) parameters. Specify the period of how many days the system must store old files before they are automatically cleaned. Then set the schedule parameters «Expiration» and «Time of day».
3. The data for the selected time will be deleted automatically.
4. Click on the “Save” button to save the changes.

5. To refresh the page, click the "Reload" button.

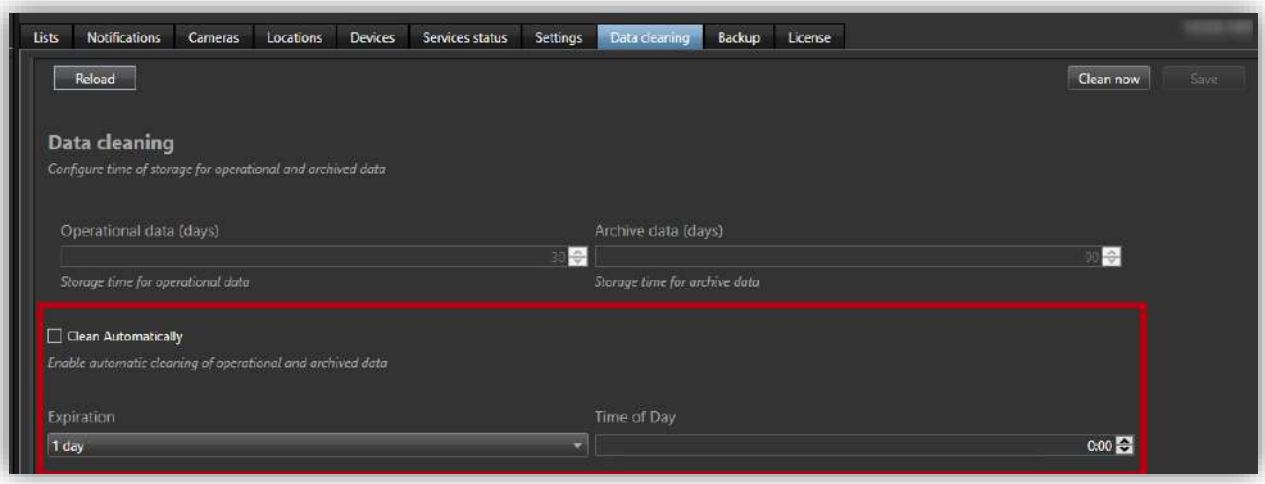

Figure 45. Fill in data for cleaning

In the «Disk usage» section the disk cleaning history displays. Here you can set the value for Disk usage. (Figure 46). If the disk usage exceeds the specified threshold, the archived data will be automatically cleaned.

Click "Save settings" to apply the changes.

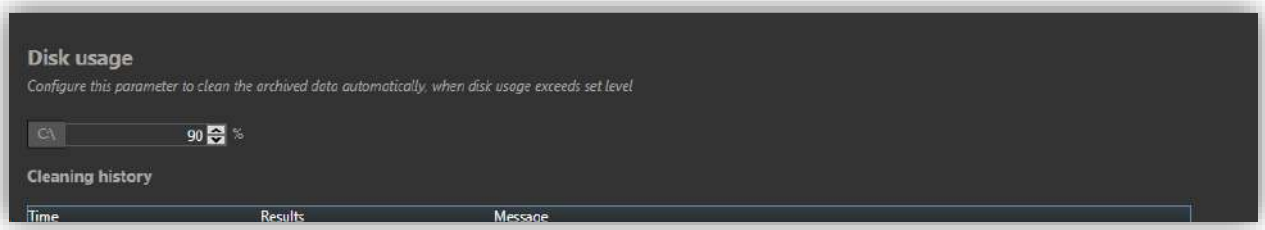

Figure 46. Disk usage information

4.12. BACKUP AND RESTORE

Open the tab «Backup». The settings page is displayed. (Figure 47)

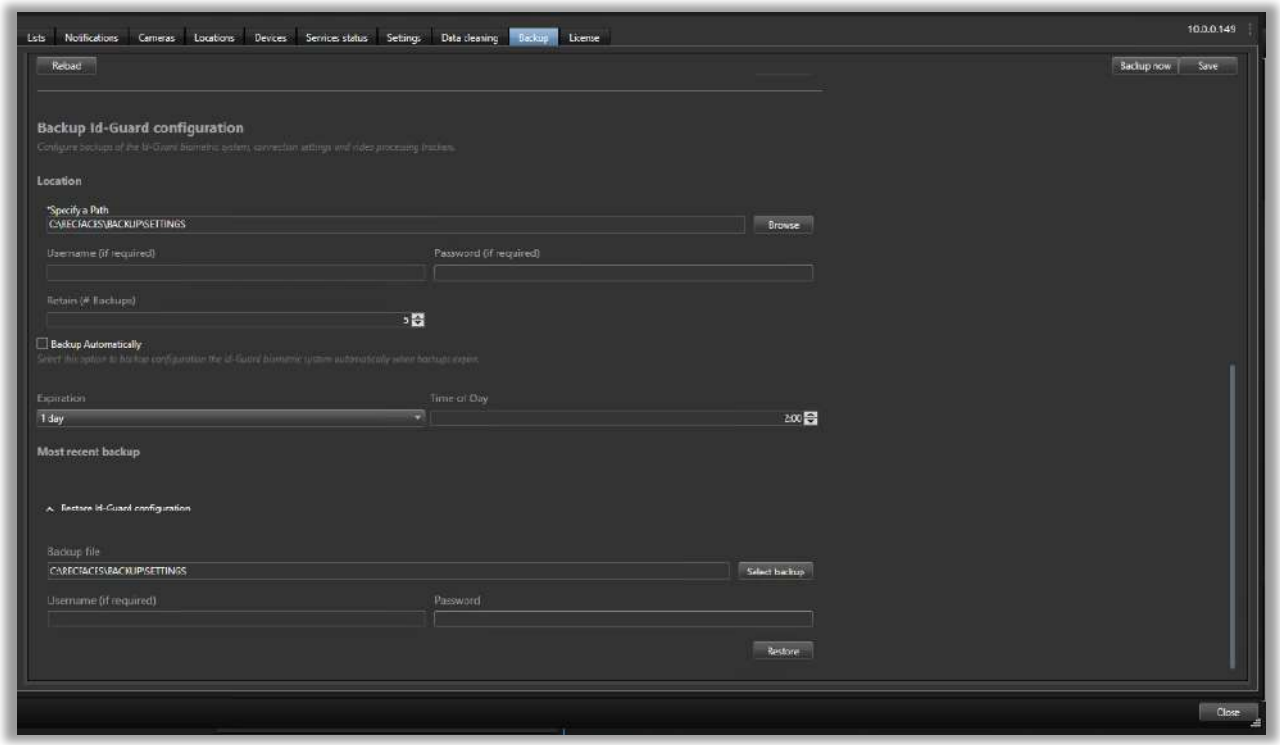

Figure 47. Backup and restore settings

4.12.1 PROFILES BACKUP AND RESTORE

In the «Backup profiles» section you can configure backup settings that are available in the system. (Figure 48)

The following values can be modified:

- *Specify a Path* – choose your backup destination by selecting a folder;
- *Username (if required)* – login to access the shared resource;
- *Password (if required)* – password to access the shared resource;
- *Retain (#Backups)* – specify a number of copies;
- *Expiration* – backup retention period;
- *Time of day* – time to backup.

After the backup options is defined, click the «Backup now».

To configure automatic backup, click the «Backup Automatically» checkbox and set the desired parameters.

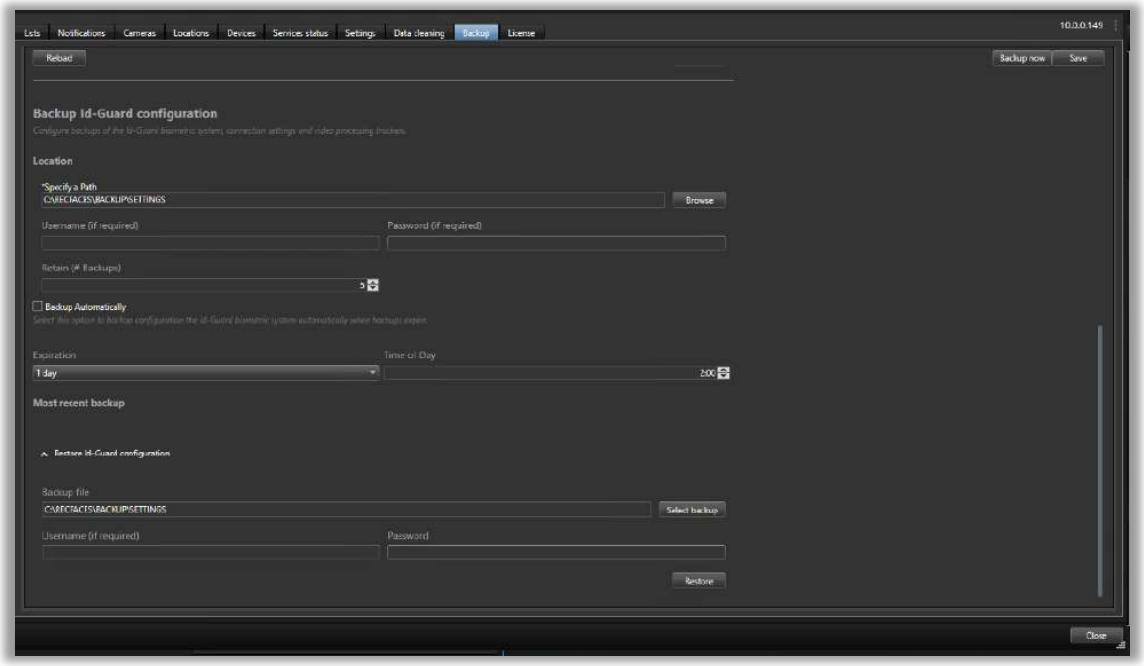

Figure 48. Profiles backup and restore

To recover profiles from the specific folder «Restore profiles» specify the directory, by clicking the button «Select backup». To provide access to the shared resource enter your credentials.

Then press the «Restore». The profiles will be restored.

To apply the changes, click the «Save».

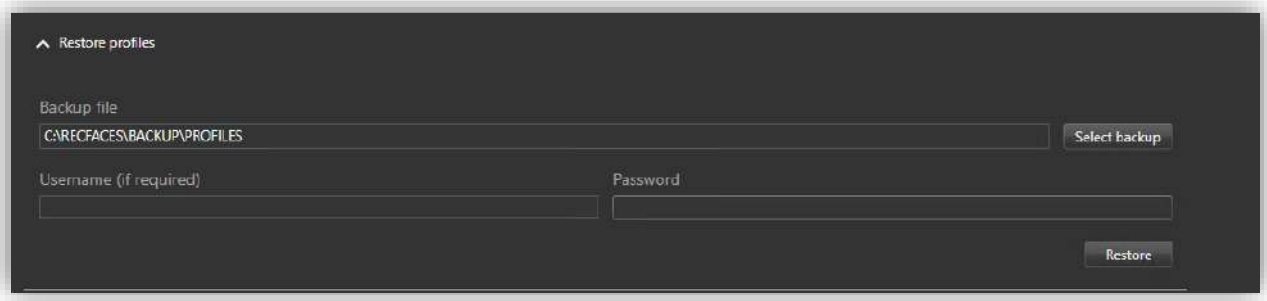

Figure 49. Restore profiles

4.12.2 BACK UP AND RESTORE CONFIGURATION

In the «Backup Id-Guard Face recognition configuration» section you can modify (backup and restore) configuration parameters of the system. (Figure 50).

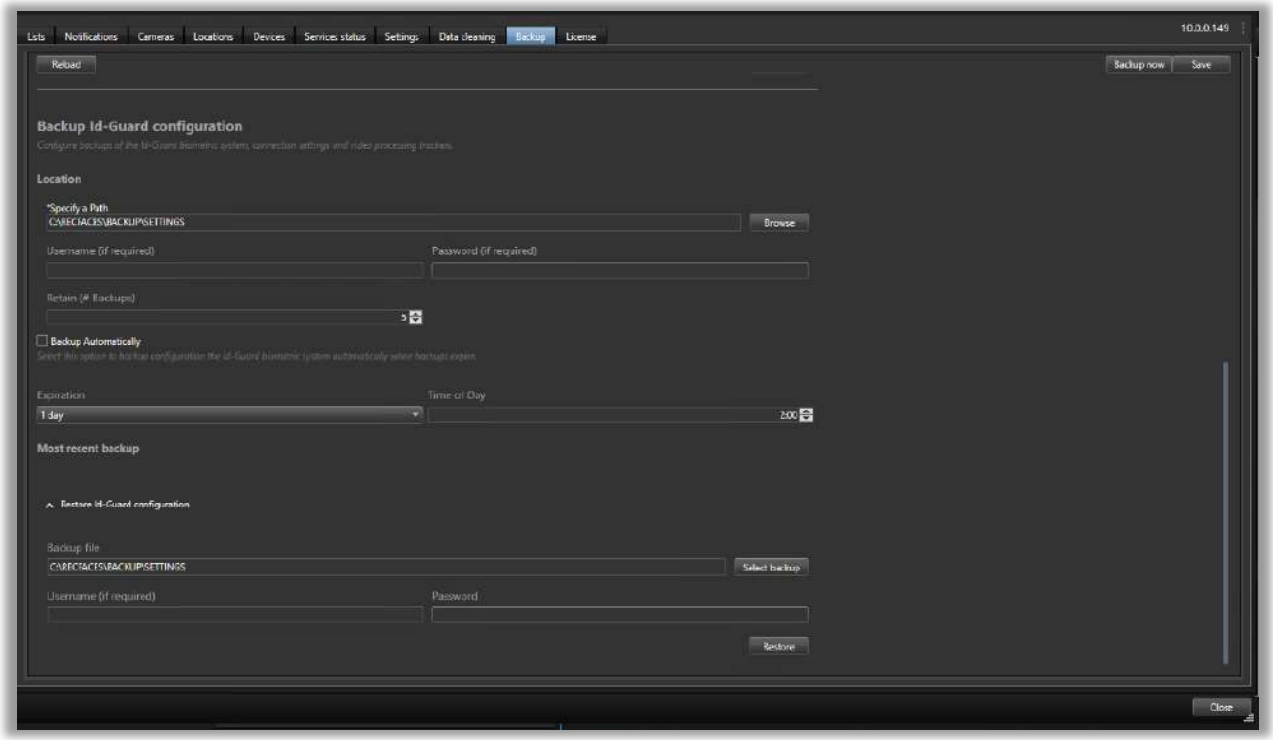

Figure 50. Backup Id-Guard Face Recognition configuration

The following fields can be modified:

- *Specify a path* – choose your backup destination by selecting a folder;
- *Username* –login to access the shared resource;
- *Password* – password to access the shared resource;
- *Retain* – specify a number of copies;
- *Expiration* – backup retention period;
- *Time of day* – time to backup.

In order to create a backup manually, you must click the "Create backup now" button. A backup for the entire period will be created and placed in the folder you specify.

In order for the copies to be created automatically, it is necessary to activate the "Automatic backup" button and fill in the necessary parameters Backup retention period, Time, Number of copies.

To restore profiles from a local folder, in the "Restore Id-Guard Settings" section, select the folder path by clicking the "Select Archive" button. To access the network folder, specify the username and password. Next, click the "Restore" button. Settings will be restored. Figure 51

To save the changes, click the "Save" button.

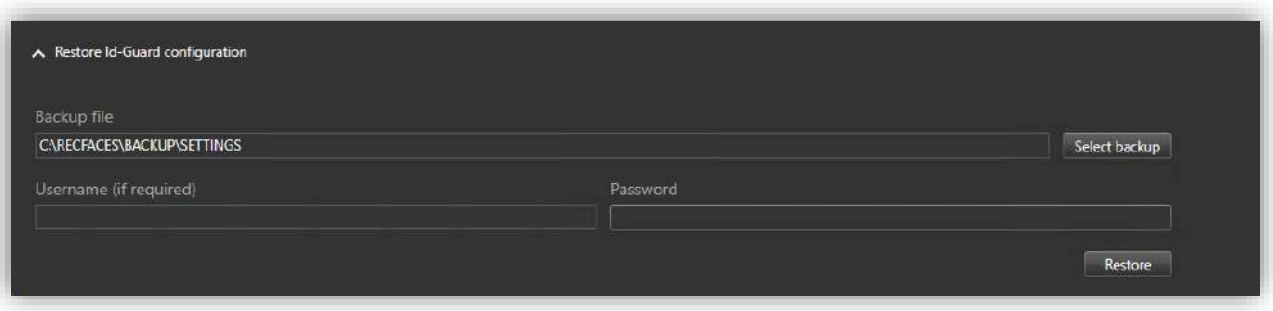

Figure 51. Restoring system configuration

4.13. LICENSES

Open the tab «License». The license information is displayed. (Figure 52).

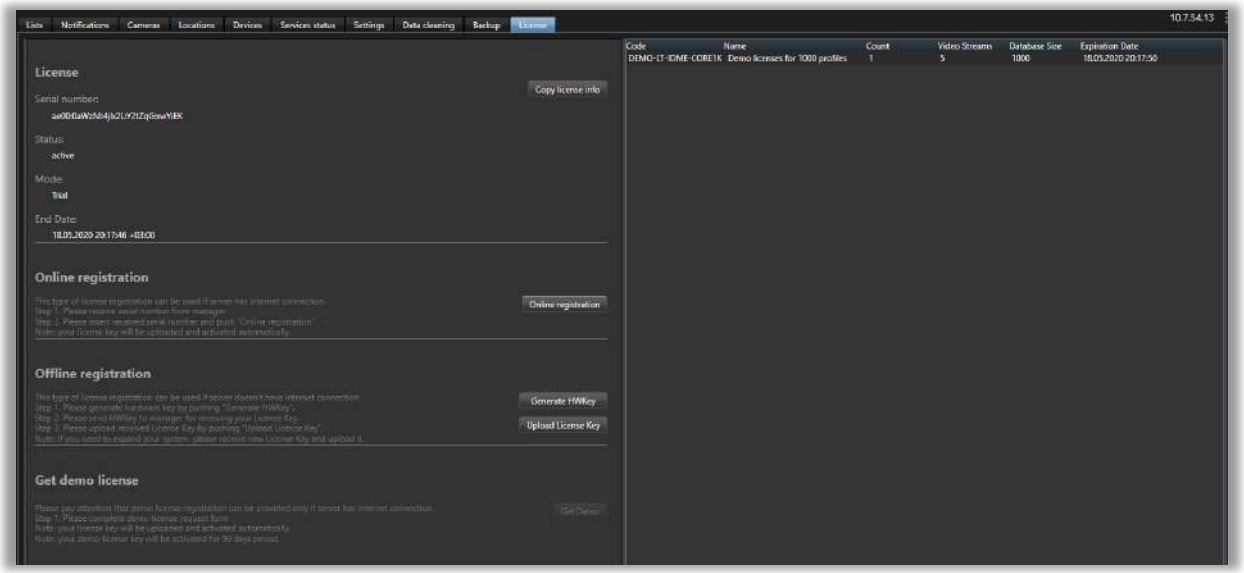

Figure 52. Licenses activation and management

The following sections will be available:

License - all information about the current version of the license. If necessary, you can download the license information to your computer by clicking the "Copy license info" button.

Online registration – activate license if the system is connected to the Internet. It will be necessary to enter the serial number of the license received from our managers.

Offline registration - license activation if the server does not have access to the Internet. It is necessary to download the hardware key (HwKey) and send it to our managers.

Get demo license - activation of a trial license for a period of 3 months, with the ability to connect 3 cameras to the system and 1000 profiles.

If the license expiration data is approaching, the warning will display when launching the plugin. See (Figure 53).

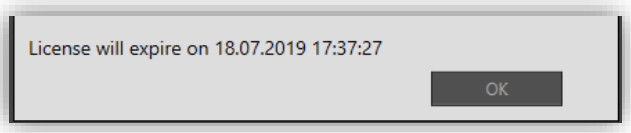

Figure 53. License expiration warning

If the system has been registered, the information about active licenses is displayed.
The following information displays for each license:

- *Code* – license code;
- *Name* – name of the license;
- *Count* – number of active licenses of this type;
- *Video Stream* – number of video streams are available under the license;
- *Database Size* – number of profiles in the database are available under the license;
- *Expiration Date* – license expiration date.

5. ID-GUARD FACE RECOGNITION PLUGIN

5.1. TAB «LIVE»

To get started, open the Milestone XProtect Smart Client application, and go to the tab «Id-Guard Face Recognition plugin». To open «Live» page click on the tab «Live». Real-time video, a list of recent identifications and detailed information on recent or selected detection are displayed on the page. (Figure 54).

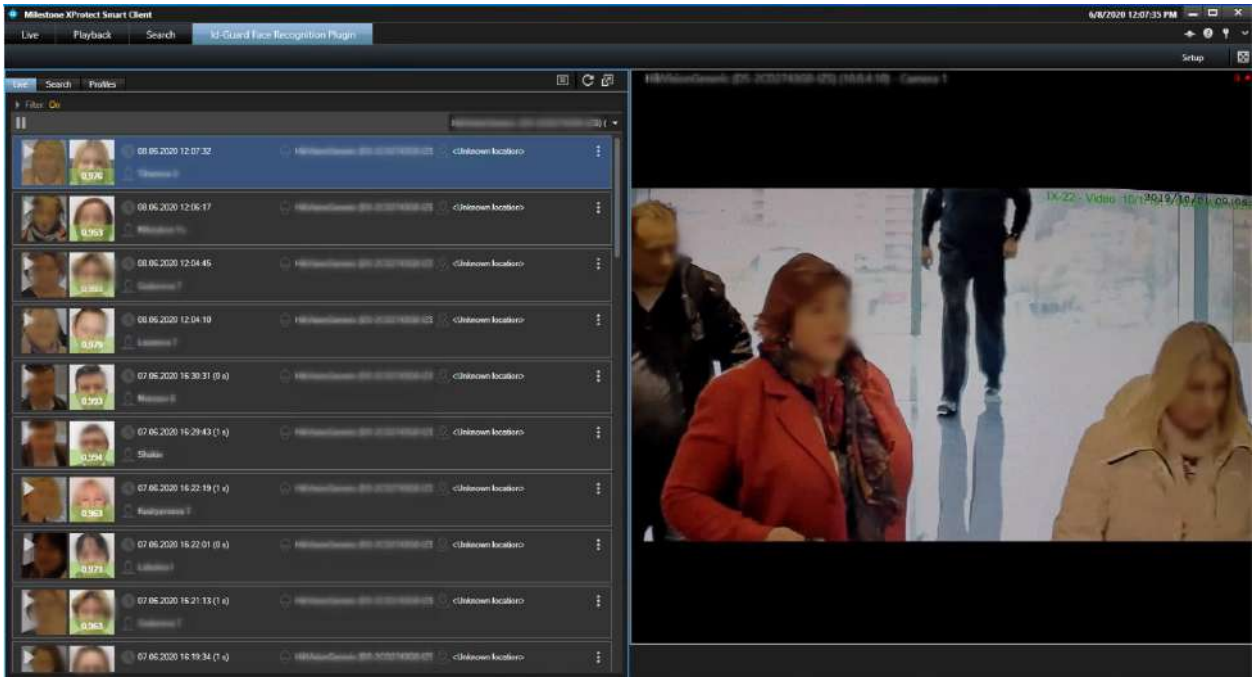

Figure 54. «Live» mode window

1. The button ⏸ switches to the display mode from the active recording and to pause the fixation of faces for 60 seconds. When this button is pressed, new tracks will display after 60 seconds.
2. Select a camera from the drop-down window in the left upper corner.

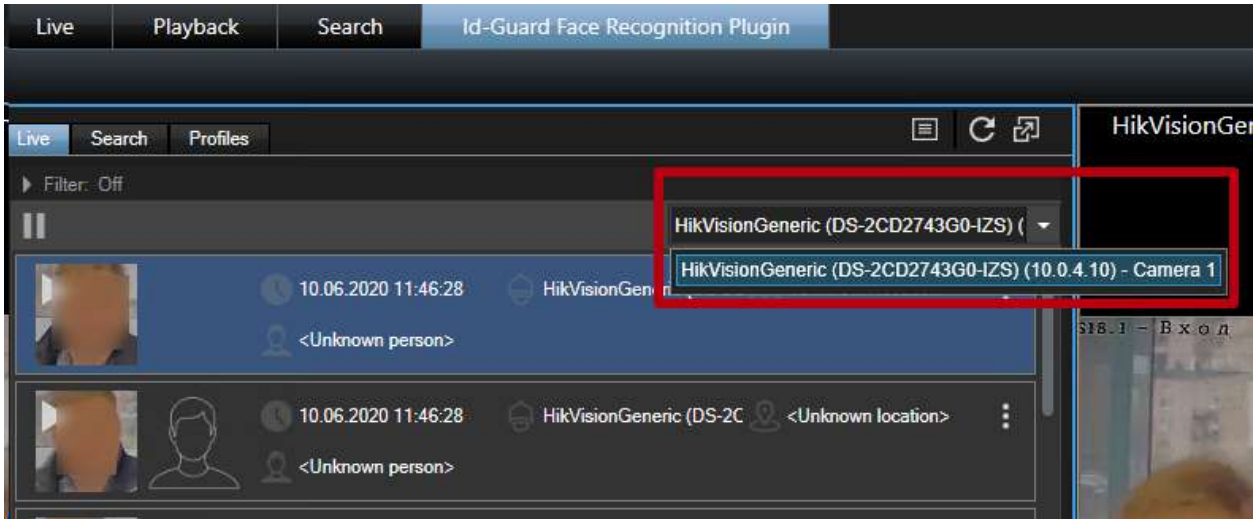

Figure 55. Selecting cameras

3. When clicking the button in the upper right corner of the plugin a window will open with two options for displaying tracks on the page. (Figure 56)

Figure 56. Setting the display of tracks

There are two ways to display page data:

- Display a complete list of tracks;
- Display of tracks with the appearance of an additional window with recognition information. (Figure 57).

Figure 57. Identification information

4. To update the list of tracks, use the button .All changes made in the settings section will be applied too.
5. To select the size of the images in the recognition list, press the button and select the size of the images from the list of values: Small, Medium, Large. (Figure 58)

Figure 58. Page resizing

5.1.1. IDENTIFICATION LISTS VIEW IN “LIVE” MODE

For each record in the table, the following information is displayed:

- the best photo;
- date and time;
- full name (If a profile exists);
- similarity index;

5.1.2 FILTERING THE LIST OF DETECTED FACES IN “LIVE” MODE

1. To filter the results in the table, click on the «Filter» button. The filter window is expanded. (Figure 59).

Figure 59. The filter windows

The following fields are available for filtering:

- *Cameras* – field for selecting a camera;
- *Locations* – field for selecting a location;
- *List* – set a list for displaying data only from the selected list;
- *Tracks/Identified/Not identified* – displaying by all photos/by photos on which profiles are found/ not found.

2. Select the required parameters in the filtering window for each field and click on the «Apply» button. The filtering window is closed and the plugin is displayed only data filtered.

   To reset options, click on the «Clear» button in the filtering window.

5.1.3. VIEW THE ARCHIVED DATA ON RECOGNITION RESULTS

To display the archived data on detected faces you need to click on the line. On the «Video» tab, the selected record is displayed and within the information tab, the detailed information on the selected record is shown:

- photo from the camera;
- profile picture (if a profile exists, or the most similar photo is displayed);
- thumbnail of images obtained during recognition process;
- date and time;
- camera on which photos were taken;
- similarity score;
- full name (if a profile exists);

When you press the «Play», a video on the selected record is displayed on the «Video» tab. The video is played 4 seconds before the person has been captured on the camera.

When viewing the extended information or the archived records, the timer for one minute will start automatically. In one minute, the plugin will change mode to the default and facial recognition data is displayed on the tab with detailed information. Real-time video is displayed on the «Video» tab

5.1.4. CONTEXT MENU

To open the context menu, click the button (Figure 60).

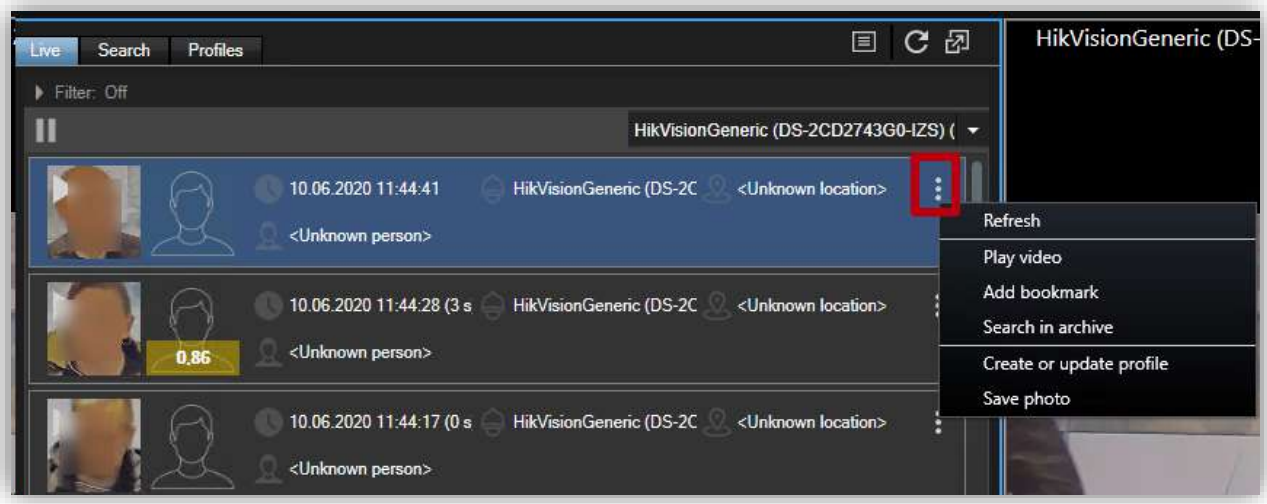

Figure 60. Button of context menu

To open the context menu in “Live” mode you need to right click a record (track). A menu with the following options will appear:

- *Refresh* – updates cameras, filters and the page;
- *Play video* –VX archive video playback related to the identification event;
- *Add bookmark* – add VX bookmark for the event;
- *Search in archive* – search for a person in the archive events (switches to Search mode);
- *Create or update profile* –not identified person can be enrolled into the database from “Live” mode. Profile information can be also updated by clicking the checkbox *“Add to profile”.* Locate the profile and the photo will be added to the required profile.
- *Save photo –to save all photos of the track as ZIP file*

5.2. TAB «SEARCH»

When you click the button in the upper-right corner of the plugin, a drop-down list will appear. (Figure 61)

Figure 61. Change the display mode

There are two ways to display the page data:

- Displaying just a list of search results;
- Displaying search results with an additional information window on the track. (Figure 62).

Figure 62. Information on the identification

To view other pages with the list of face detection results you can use the navigation menu. To open the previous or next page use the buttons and . To open the first or last page click on the button or

5.2.1. SEARCHING FOR THE «ARCHIVE»

1. To open the search page, click on the tab «Search» in the plugin.
2. To enter parameters for searching you need to click on the «Filter» button. The parameters input window is displayed. See (Figure 63).

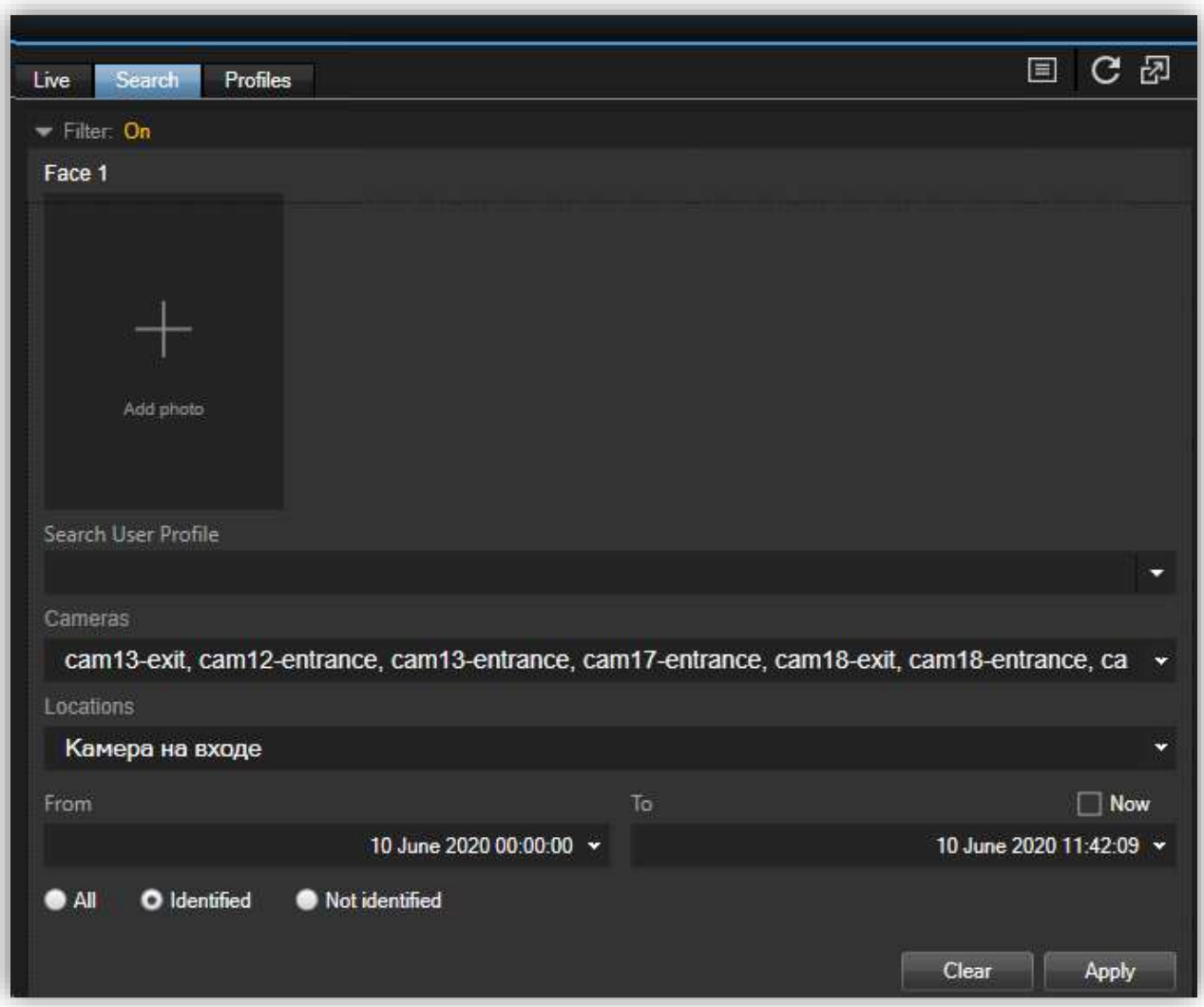

Figure 63. Parameters for searching

3. To search for the archived data, you can use the following parameters:
    - *Photo*. To upload a picture, click on the «Click to add photo» area. A window for selecting files is displayed. Select the photo and add it to one of the fields Face 1.
    - *User profile*. If you select a profile, the main picture of the profile is displayed in the «Face» tab. The search is carried out on all the pictures of the profile.
    - *Cameras.* Here you can select a camera. Only pictures from the selected cameras will be found.
    - *Locations*. Here you can select a camera's location. Only pictures taken by cameras of selected locations will be found.
    - *From.* The search within selected period is carried out.

Source. When you upload the photo the «Search» parameter will be selected the «Search» parameter allows you to set the similarity score are considered for the search. (Figure 64)

NOTE: To search all people for the certain time do not fill out the fields with photos in the "filter" tab. Other appropriate parameters need to be selected. Click on the «Clear» button and then the «Apply».

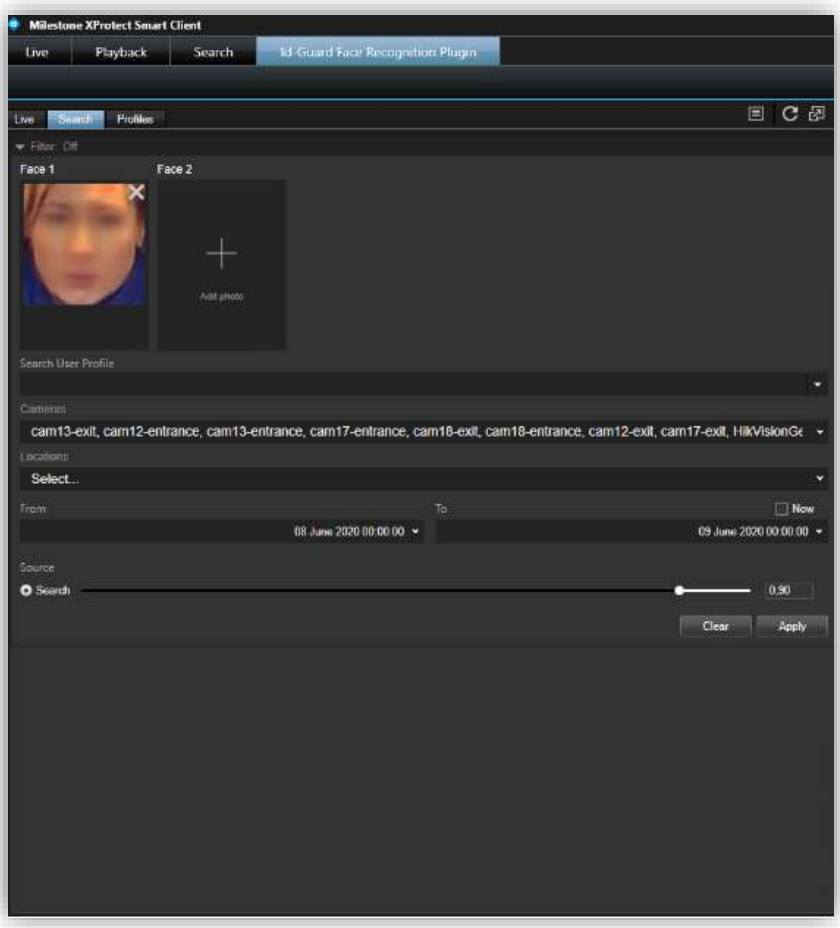

Figure 64. Search by photo

1. Click on the «Apply» button. A window with the parameters is closed and in the plugin is displayed the results of searching.
2. The results will display in the search window. See. If the search is not ended a title «Searching…» is displayed.
3. To reset options, click on the «Clear» button in the filtering window. (Figure 65).

NOTE: In this mode, the system provides search functions among huge detected faces database so it may take time to complete this operation depending on date/time and number of cameras selected.

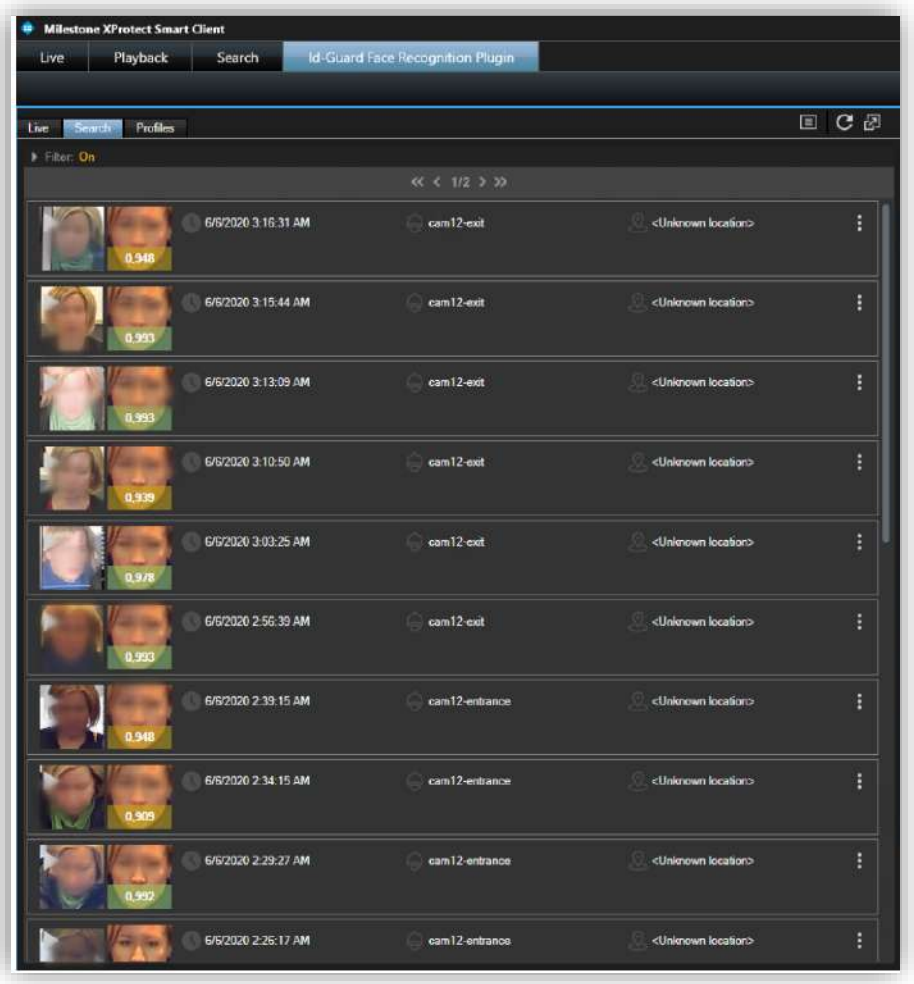

Figure 65. The search results

4. When clicking on the line the details of the record selected are displayed:
    - photo in the moment of identification;
    - date and time;
    - camera on which photos were made;
    - similarity score;

NOTE: The full name is not displayed while searching for the «Archive». When searching in the "Archive" source, the name is not determined. Maximum number of displayed search results: 20000.

5.2.2. SEARCHING FOR «IDENTIFICATIONS»

1. To open a search page, click «Search» button. A page for searching will open. (Figure 66)
2. To specify parameters for the search, click on the «Filter» button. The input window is displayed. To search for «Identifications» you need to input the following parameters.
    - *User profile*. After selecting a profile, the profile picture is displayed in the «Face» fields. The search is carried out on all pictures of the selected profile.
    - *Cameras*. A field for selecting a camera. Only pictures taken by cameras of selected locations will be found.
    - *Locations*. A field for selecting a location. Only pictures of the selected camera locations will be found.
    - *From, To*. The search for uploaded photos is carried out within selected period.
    - *Source*. You need to set the «Identification» parameter.

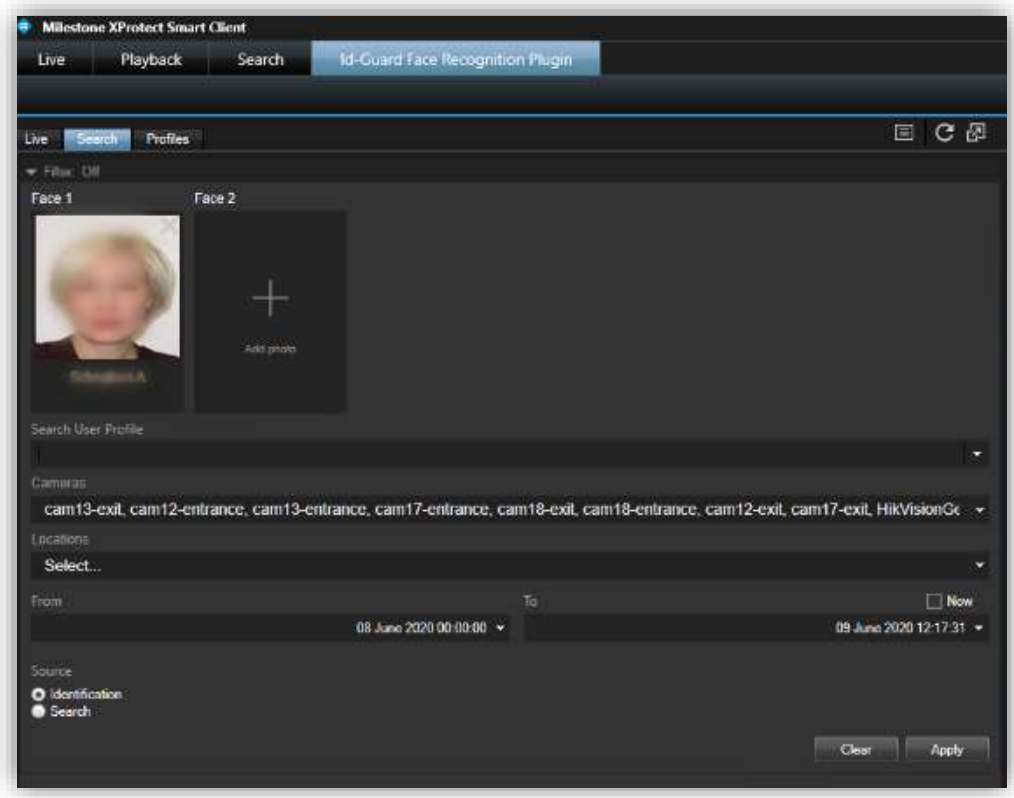

Figure 66. Search in the identification mode

1. Click on the «Apply» button. The filtering window is closed and searching results is displayed on the screen. (Figure 67)
2. To reset the parameters in the edit window, click the «Clear».

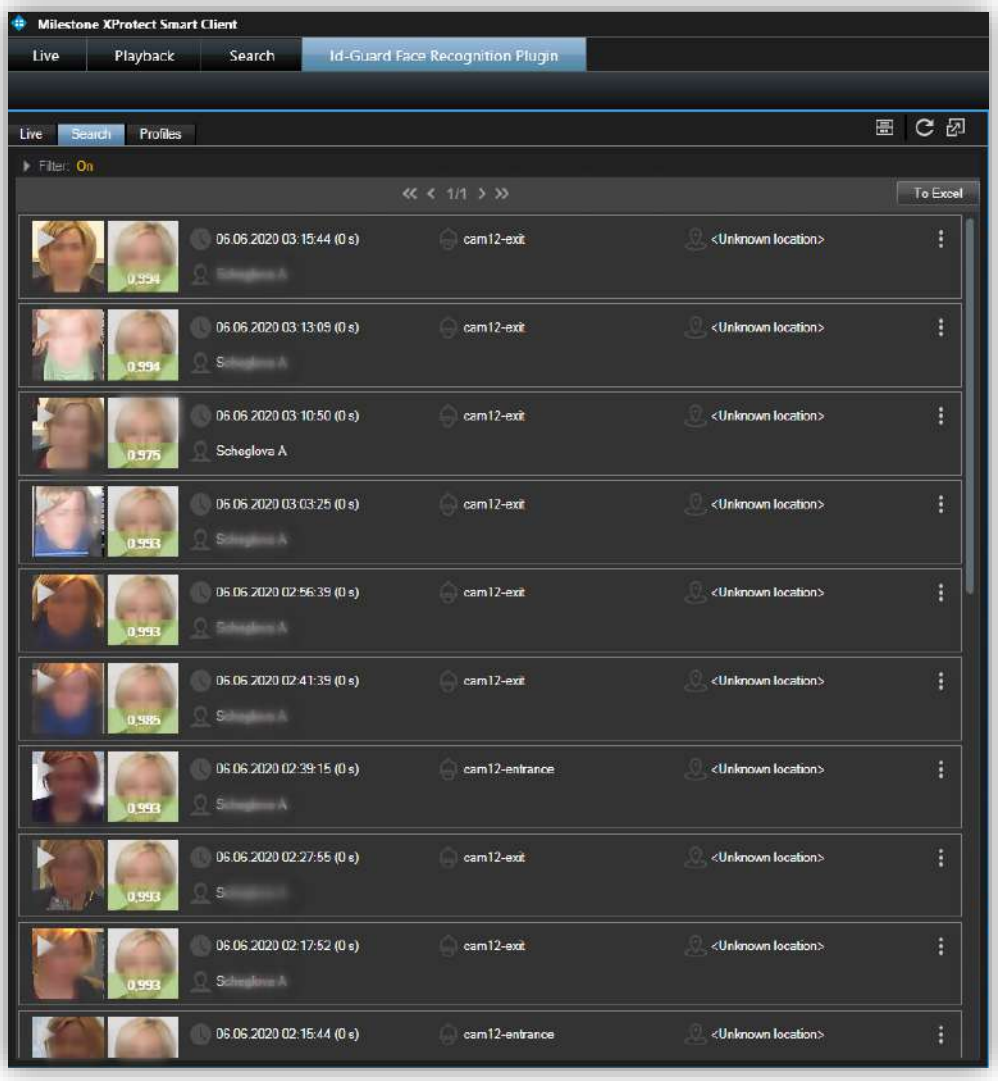

Figure 67. Results of the identification search

To switch to other pages with a recognition list, there is a page navigation bar. In order to go to the next or previous page, you should press the following items or . To go to the first or the last page you need to click on items or .

5.2.3. CONTEXT MENU

To open the context menu in the "Search" mode, press the button .

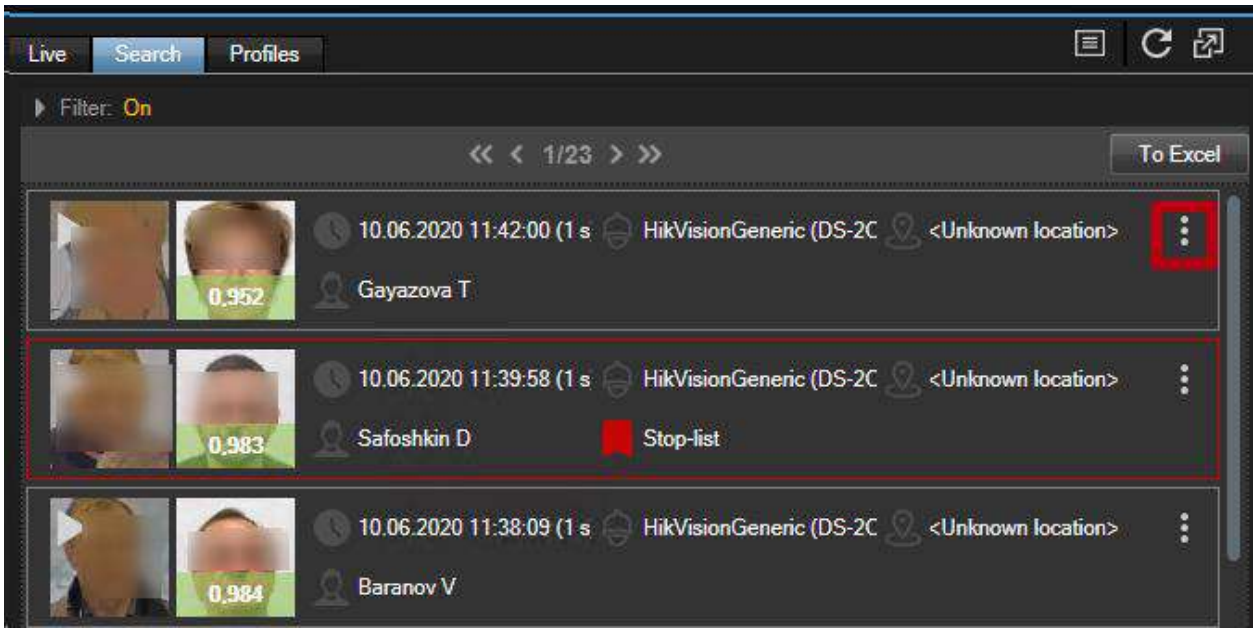

Figure 68. Context menu button

You will see a menu with the following commands:

- *Refresh* – update profile information;
- *Play video* –video record from the VideoXpert on each track;
- *Add bookmark* – add a bookmark to the video;
- *Search in archive* – received photo can be used for another search request;
- Add to profile - add photos received from the camera to your profile;
- *Create profile* – create a new profile using found photos;
- *Save photo* – save photo to the disk.

5.3. TAB «PROFILES»

5.3.1. LIST OF PROFILES VIEWING

To view a list of profiles you need to click on tab «Profiles» in the plugin. A page with the list of profiles is displayed. (Figure 69).

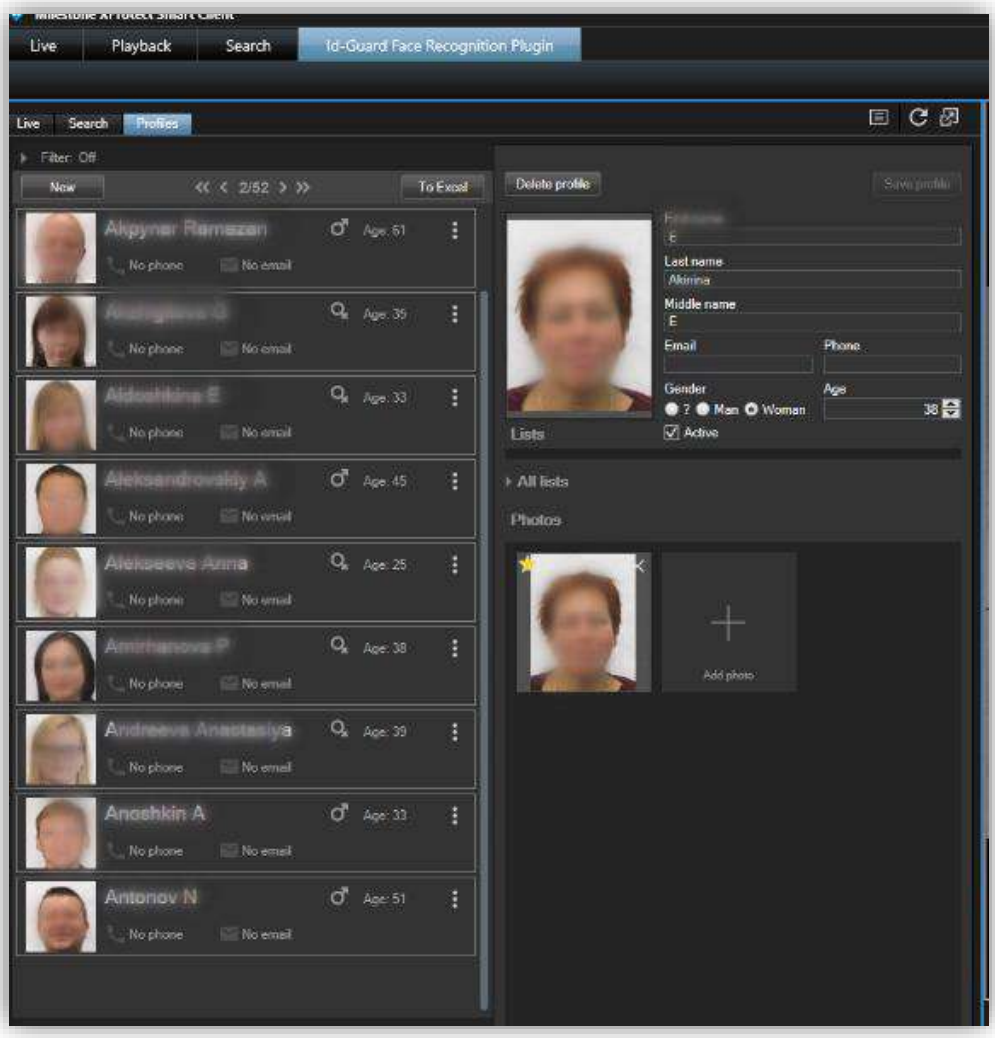

Figure 69. List of existing profiles

For each profile, the table is displayed:

- Profile picture;
- Full name;
- Age;
- E-mail and phone number;
- Lists, which includes the profile.

To switch to other pages with a recognition list, there is a page navigation bar. In order to go to the next or previous page, you should press the following items or . To go to the first or the last page you need to click on items or .

5.3.2. FILTER BY A LIST OF PROFILES

1. To view a list of profiles in the table click on the «Filter». The filter window is expanded. (Figure 70)

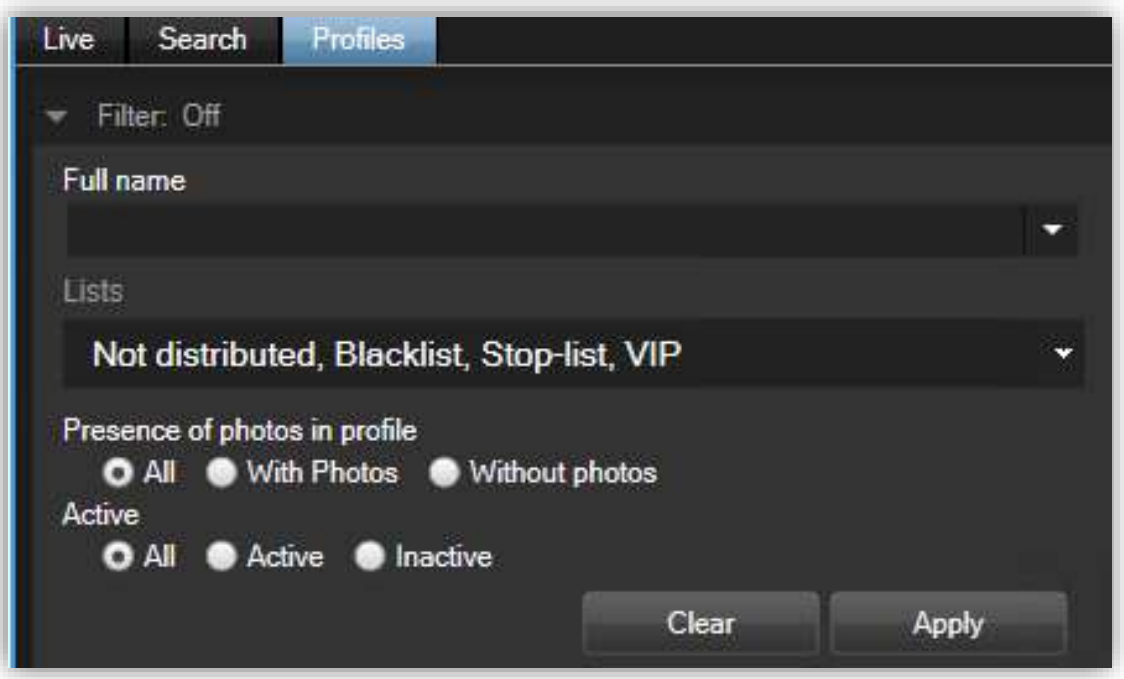

Figure 70. Filters window

The following fields are available for filtering:

- *Full name* – field for entering full name or part of it;
- *List* – only profiles from the selected lists are displayed;
- *Presence of photos in profile* – displaying only the following parameters: all/with photo/without photo profiles.
- *Active* – if a profile activated or deactivated.

2. Select the required parameters for each field in the filtering window and click on the “Apply” button. The filtering window will be closed, and only data that matches the selected filters will be displayed.
3. To reset the parameters in the edit window, click the «Clear».

5.3.3. VIEW\EDIT PROFILE INFORMATION

1. To view the detailed information on a profile or change the data you need to select the required profile and click on it. The information on the selected profile are displayed. (Figure 71).

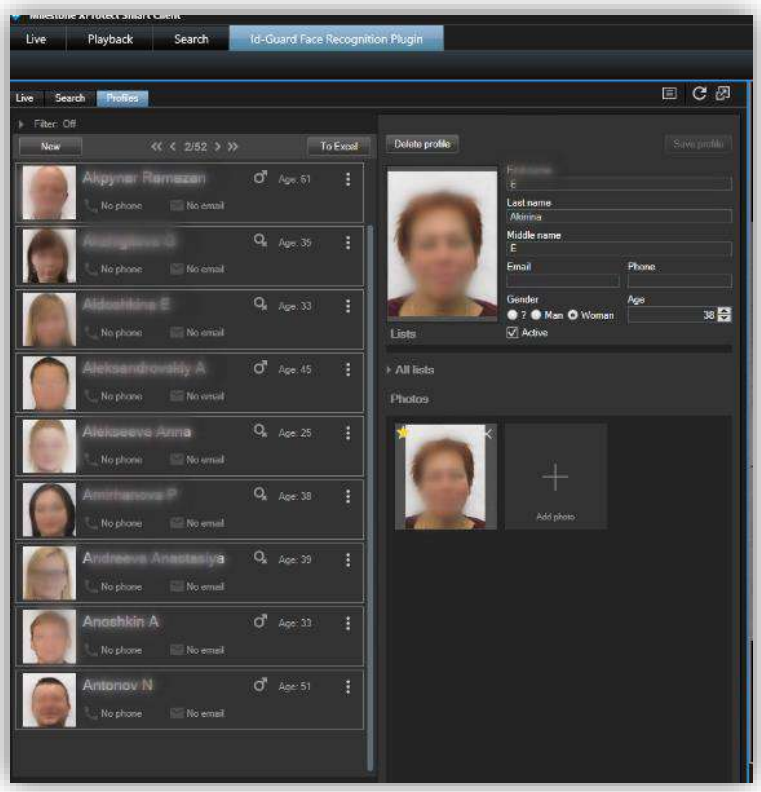

Figure 71. Profiles edit window

2. You can change the list's information at any time by editing the required fields.
3. To assign a profile to a new list click on the «All lists». All lists are displayed. When you put a mark, new list will be added and displayed on the «Lists» field.
4. To upload a photo, click on the «Click to add photo» area. File explorer will appear. Select the required photo and download it to the profile. After adding the photo, you can set it as main picture by clicking this button
5. To save the changes click on the «Save list». All changes will apply.
6. When you try to close without saving the alert will appear.
7. To confirm the action, click the «Yes». To return to the edit window press «No».

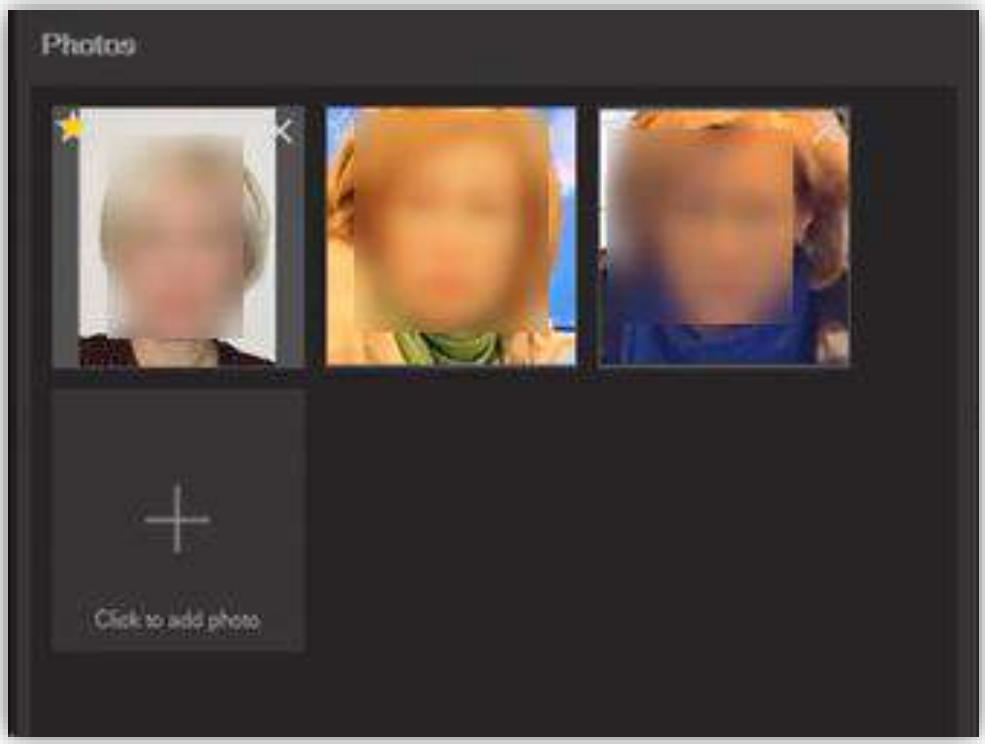

Figure 72. List of existing profiles

The following information is displayed for each profile:

- Profile picture;
- Status of profile (activated/deactivated);
- Full name;
- Lists to which profiles are assigned.

5.3.4. FILTER BY A LIST OF PROFILES

To view a list of profiles in the table click on the «Filter». The filter window is expanded. See (Figure 73***).***

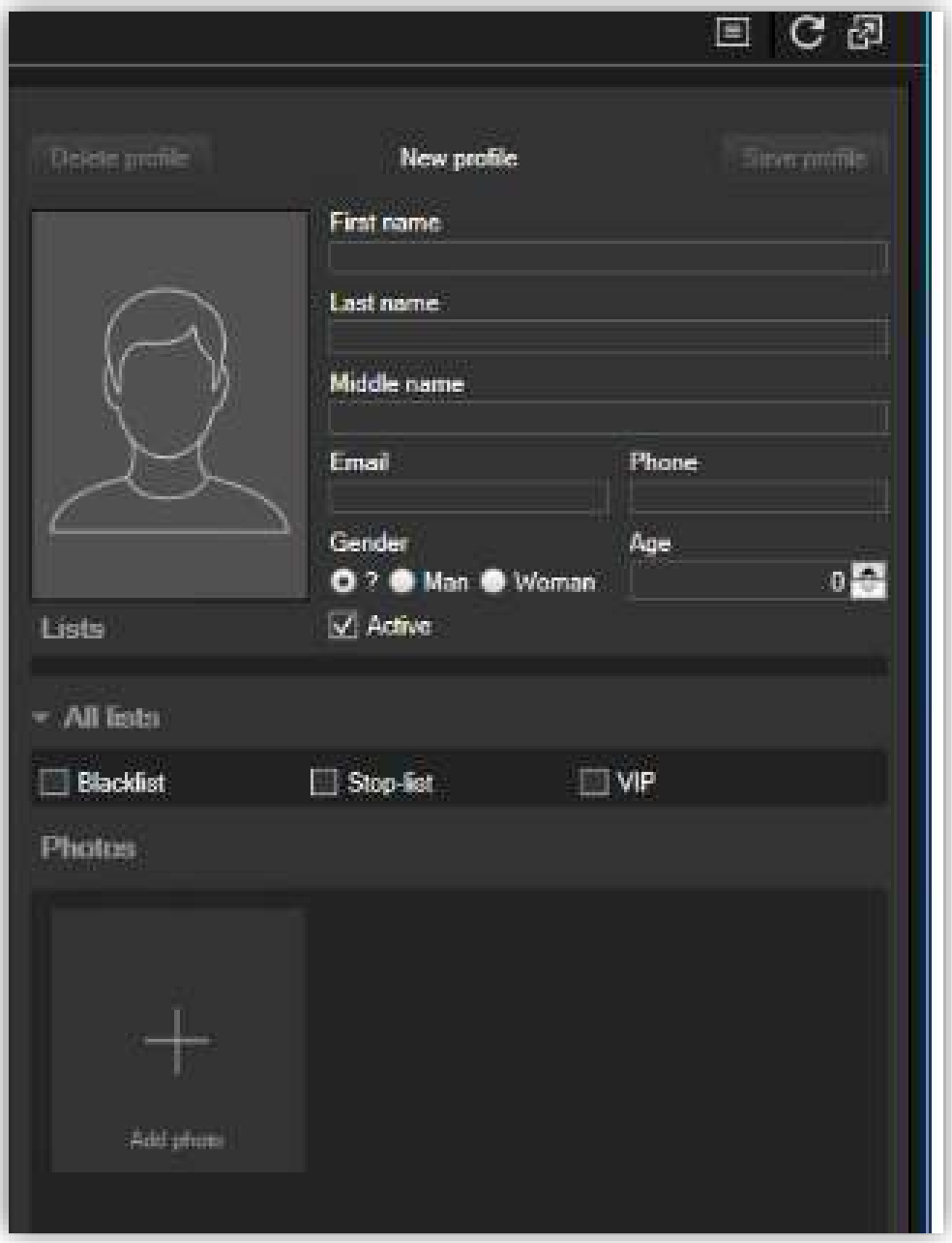

Figure 73. Creating a profile

1. Fill in the new profile fields. To add a photo, you should press "Add photo" and select a photo to add. Select the lists in which the new profile should be included.

2. Press the "Save profile" button. The new profile will be saved and displayed in the list of profiles.

5.3.5. DELETING PROFILE

1. To delete a profile, you should choose a profile in the list and click on the line. The window with profile information will be opened. (Figure 71).
2. Click the "Delete profile" button. A window with confirmation of deletion will be displayed. (Figure 74**)**.

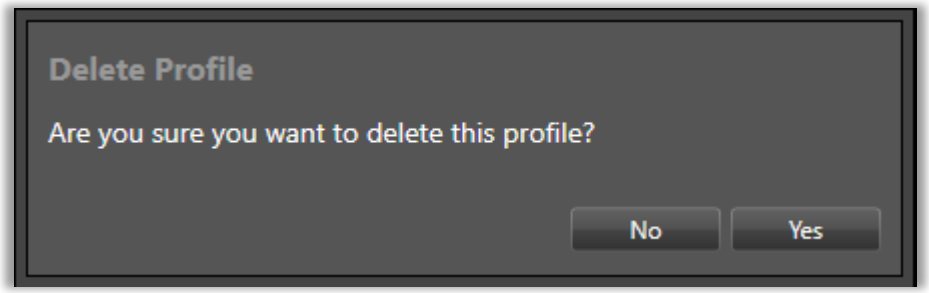

Figure 74. Deleting profile

To confirm the deletion of the profile, press "Yes". In order to return to the window of profile editing, you should press "No".

5.3.6. EXPORT A LIST OF PROFILES

1. To export a list of profiles to the .xslx file format, click on the «To Excel» button in the profiles list's configuration. A window of the file saving directory will open.
2. Set the file saving directory and click on the «Save» button. The list of profiles is saved in the .xslx format.

5.3.7. CONTEXT MENU

To call the context menu in the "Profiles" tab, press the button .(Figure 75)

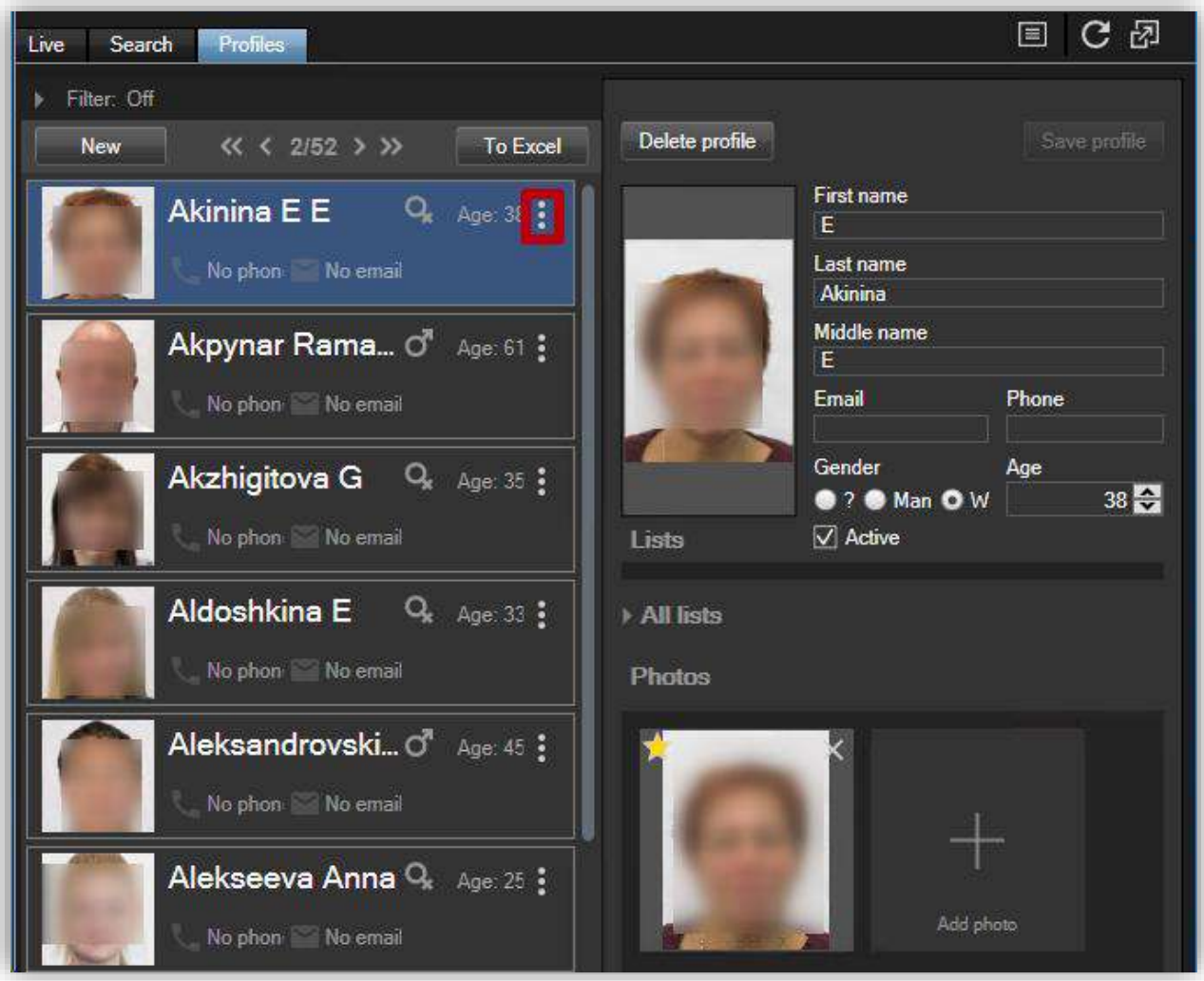

Figure 75. Context menu button

A menu will open with the following commands:

- *Refresh* – update the page manually (in case the system settings were changed);
- *Delete profile* - delete the selected profile, confirm deleting (Yes/No);
- *Add to list* - a dialog window will appear to assign lists to the profile;
- *Search by photo* - search by the main photo of profile in the archive (go to the "Search" tab);
- *Search by profile* - new search by profile in the archive (go to the "Search" tab);
- *Save photos* - save photos to disk.