

Video analytics system for cities
and business

VEZHA

Two light gray L-shaped corner brackets, one on the left and one on the right, framing the word "VEZHA".

VEZHA

User Guide for Face Recognition Plugin

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VEZHA Face Recognition Description

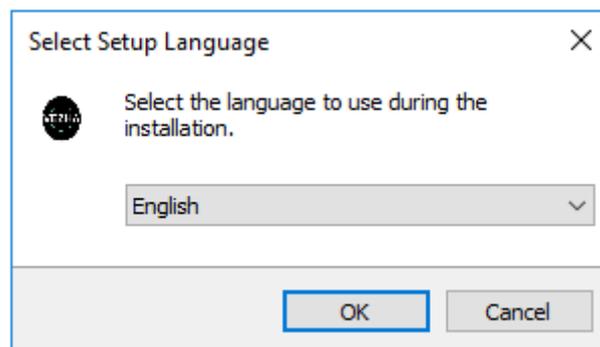
VEZHA Face Recognition Plugin is used for simultaneous analysis of data from cameras and instant allocation, as well as saving frames with people's faces.

Main functional possibilities:

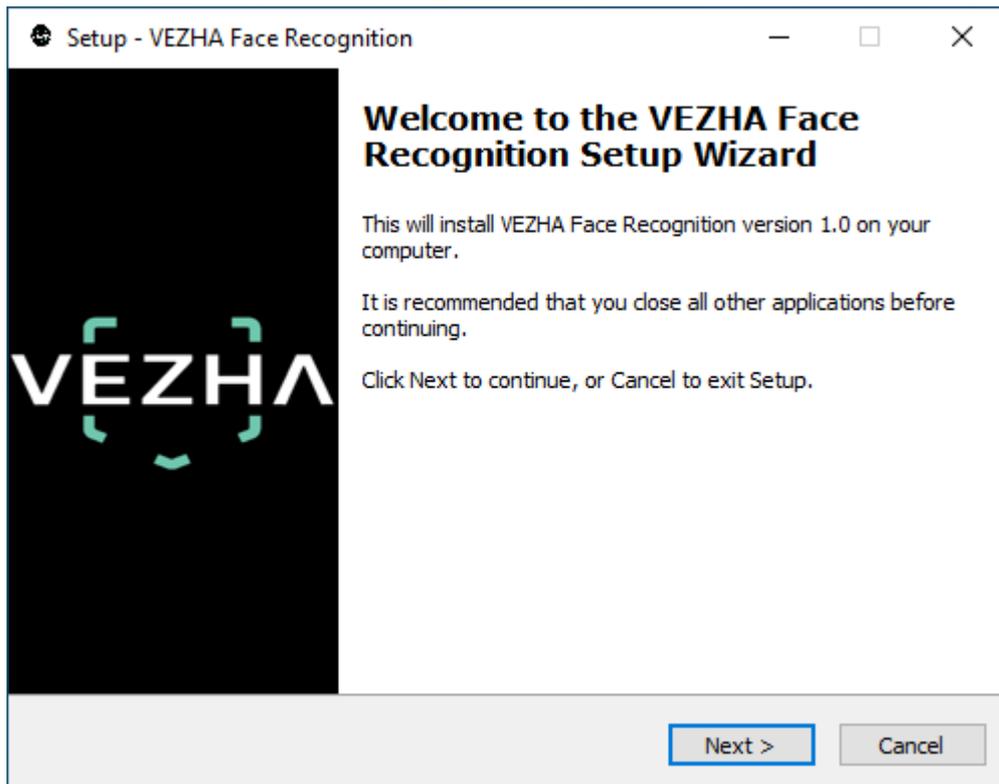
- 1) Detecting people from the video stream.
- 2) Verification and identification of persons.
- 3) Definition of additional characteristics (gender, age, etc.).
- 4) Work with lists - the ability to create white / black lists. To identify new customers, VIP customers, criminals.

1. Installation

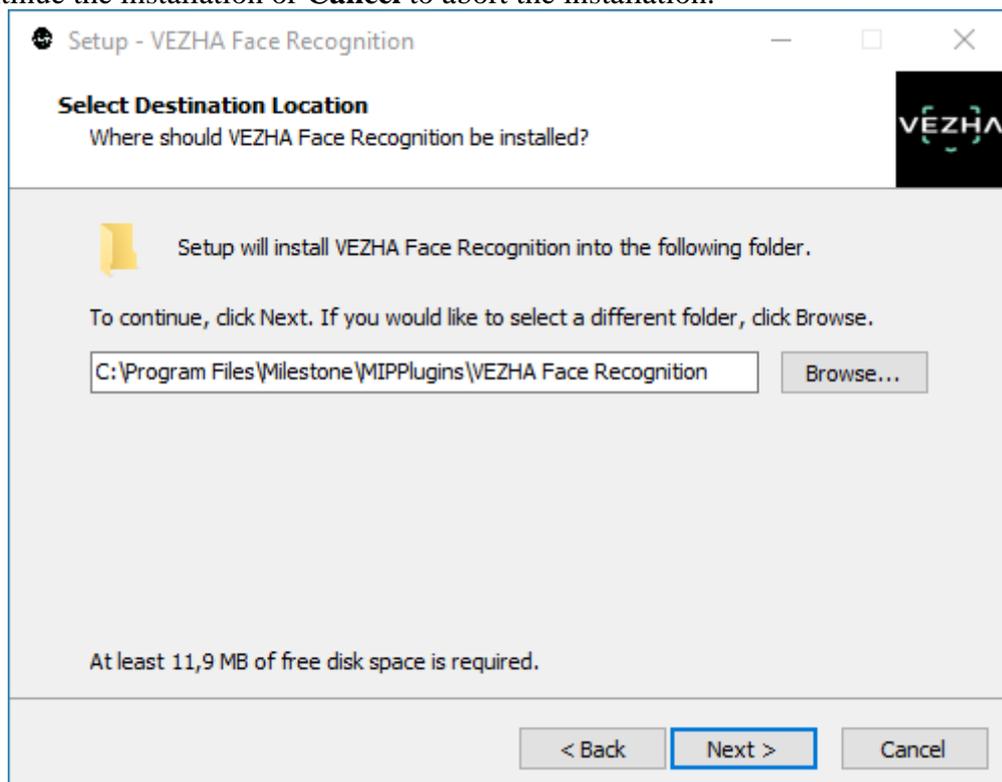
- 1) Launch the installer by double clicking on the downloaded file **FACE_REC_Setup**.
- 2) In the opened window, select the language that will be used during the installation process. To go further, click **OK**. To abort the installation, click **Cancel**.



- 3) In a new window, read the installation recommendations and click **Next** to continue the installation, or the **Cancel** button to abort the installation.

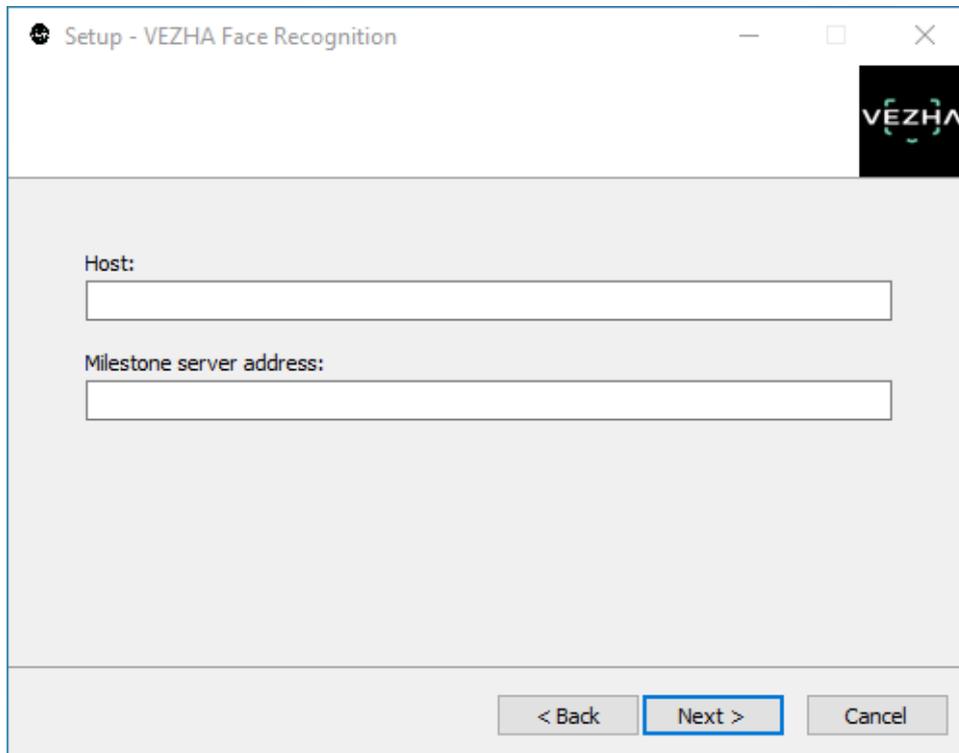


- 4) In the **Select Destination Location** window using the **Browse** button, specify the location where you want to install the plugin. The plugin must be installed in the Milestone folder with other plugins. After selecting the desired folder, click **Next** to continue the installation or **Cancel** to abort the installation.

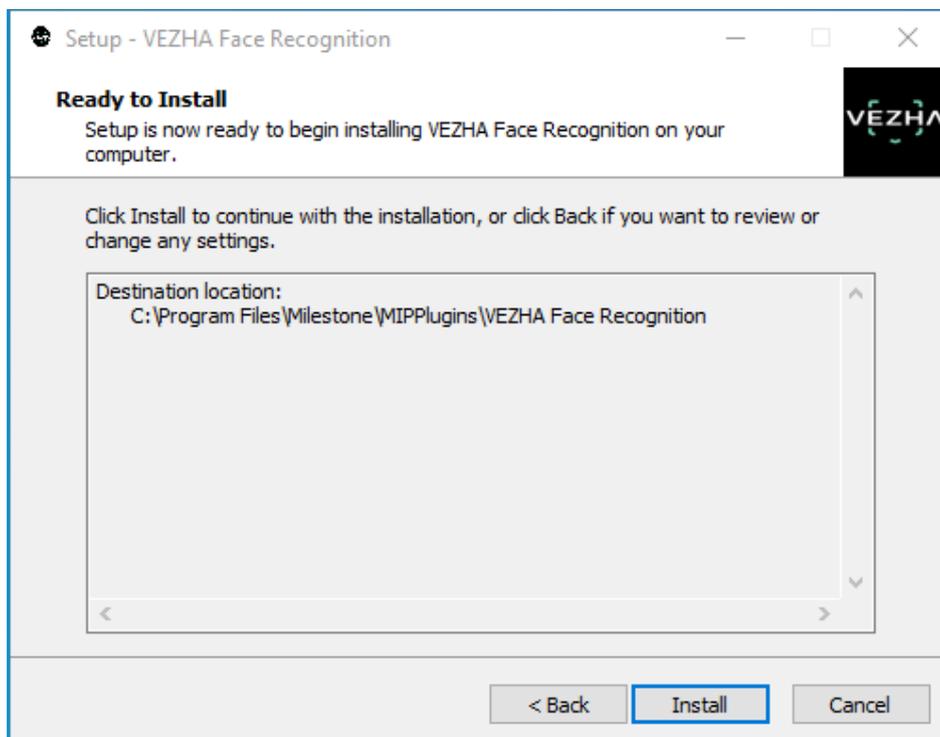




- 5) In this window, for the program to work correctly, you need to fill in all the fields correctly and click **Next** to continue the installation or **Cancel** to abort the installation.



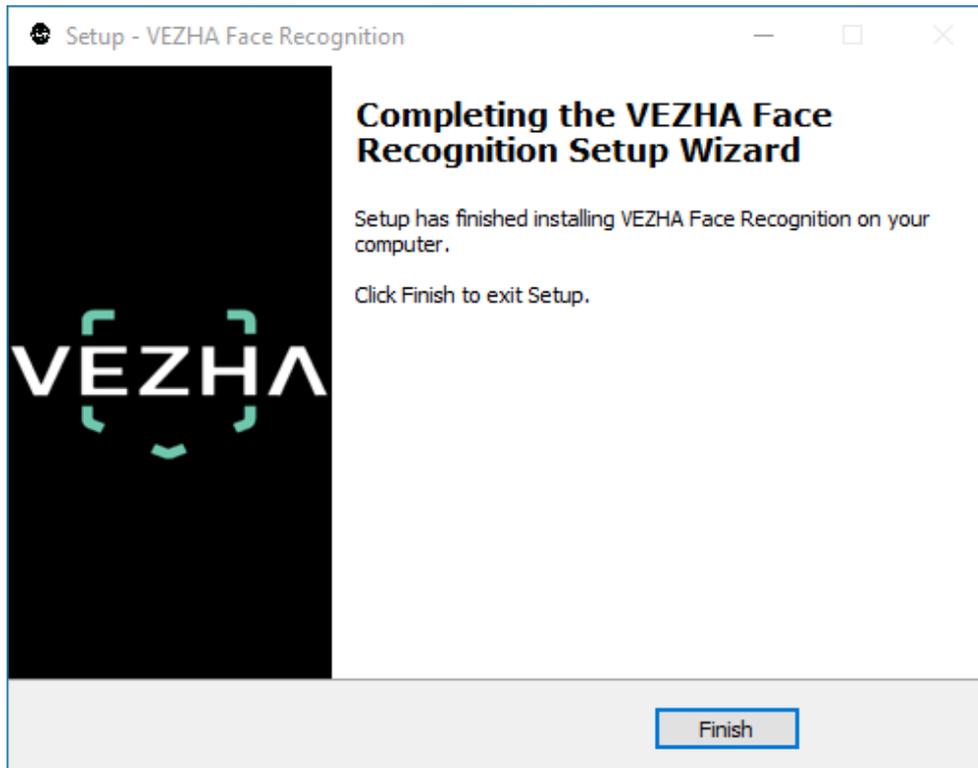
- 6) Click "**Install**" to start the installation.





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7) After the installation is completed, click **Finish**.



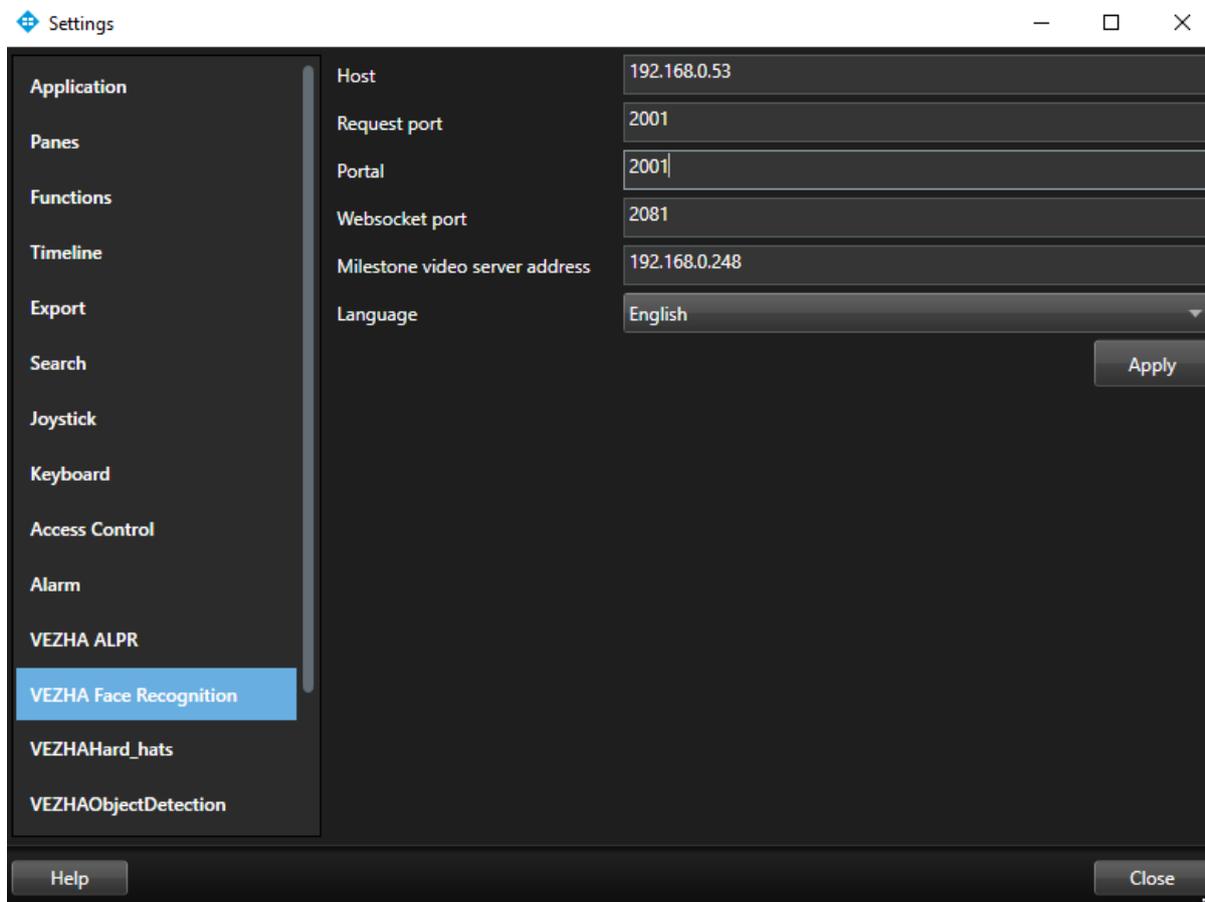
2. Log In

To enter the system you need to go through authorization. To do this, enter the **Login** and **Password** in the appropriate fields of the modal window and click **Login**.

A dark-themed modal window titled "Authorization". It features a horizontal line at the top. Below it, the word "Login" is followed by a text input field. Underneath, the word "Password" is followed by another text input field. At the bottom, there is a large "Sign in" button.

3. Settings

In order to find **VEZHA Face Recognition** settings, click the icon  in the upper right corner of the screen. Select and click **Settings**. In the window that opens, select the **VEZHA Face Recognition** tab.



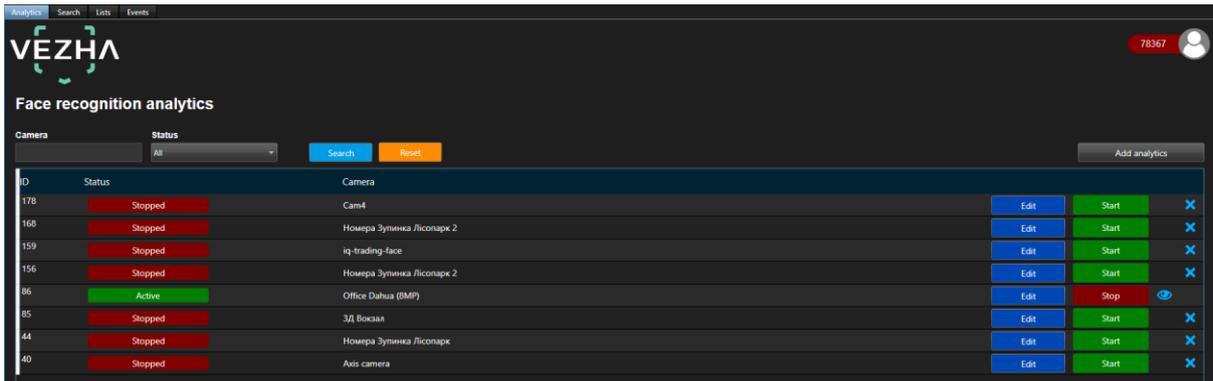
To change the server settings in the VEZHA Face Recognition tab, you can edit the following fields: **Host, Port, Portal, Websocket port, Milestone video server address**.

To change the language, use the Language field and select from the list the most convenient for you.

To save the changes, click **Apply** and restart the plugin.

4. Face recognition analytics

This tab is intended for adding, editing, viewing, deleting and changing the status of analytics.



4.1. Analytics Search

At the top of analytics page are located search fields.

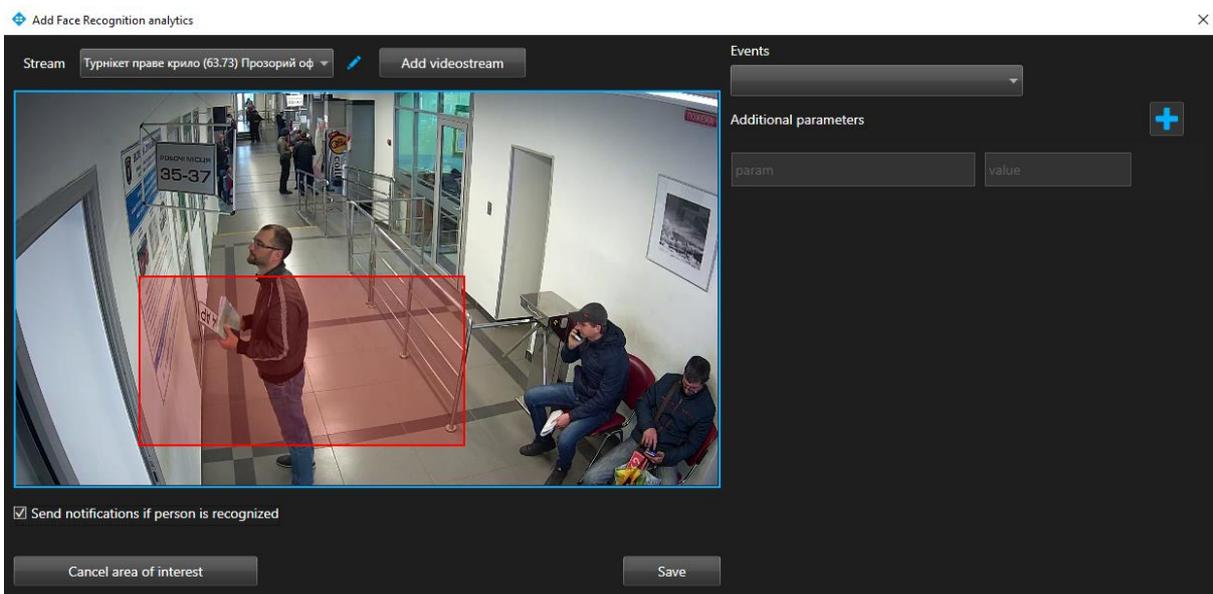


To find the desired analytics, enter the name or status of the analytics.
To start the search, click the **Search** button.

4.2. Adding of analytics

To add a new face analytics, click **Add analytics** in the upper right corner of the screen.

In the opened window, fill the fields:

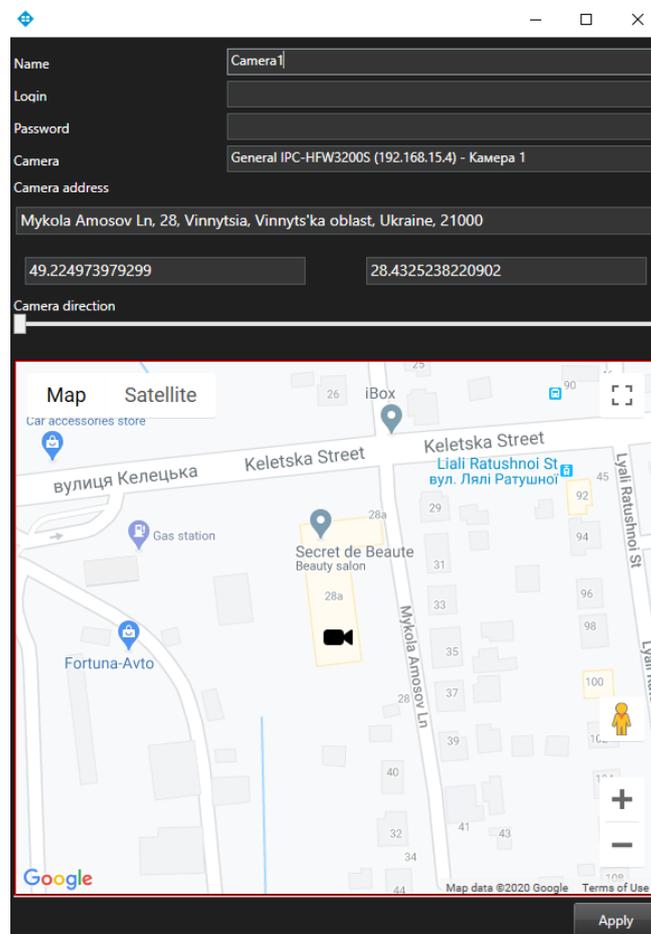




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Field name	Recommended Value
Stream	Click on the field and select a camera name from the drop-down list. The video stream will be used to create analytics.
Send notifications if person is recognized	Check the box “Send notifications if person is recognized” to create your own event for sending notifications. Event manager is designed to create notifications about found persons (depends on incoming parameters)
Events	Выберете события из выпадающего списка. По данному событию будут приходить уведомления на указанные в события сервисы
Additional parameters	If necessary, you can add additional parameters for their further usage when creating an event. Fill in the parameter fields. To add parameters, click  . To remove the parameters, click  .

To edit analytics, click  right of analytics records. To create a new video stream, click **Add Video Stream**.



In the window that opens, fill the following fields:



- a. **Name** - enter the name of the video stream in the field. This field will be displayed in all components of the program that use video streams.
- b. **Login** - enter the name of the current Milestone user in the field.
- c. **Password** - enter the password of the current Milestone user.
- d. **Camera** - choose a camera from the drop-down list.
- e. **Camera address** - enter the address in the field, or select on the map below the location of the camera (drag the camera icon). The system will automatically determine the location coordinates.
- f. **Camera direction** - drag the slider to change the direction of the camera. Indication of camera rotation helps in determining the direction of movement of a person. To save the changes, click **Apply**.

Add area of interest:

1. Add a camera into a field **Video stream**.
2. A video from the added camera will appear below the **Video Stream** field.
3. Add area of interest.

Click in the area where the video from the camera is located and set the area of interest.

Face recognition will take place in the exposed area.

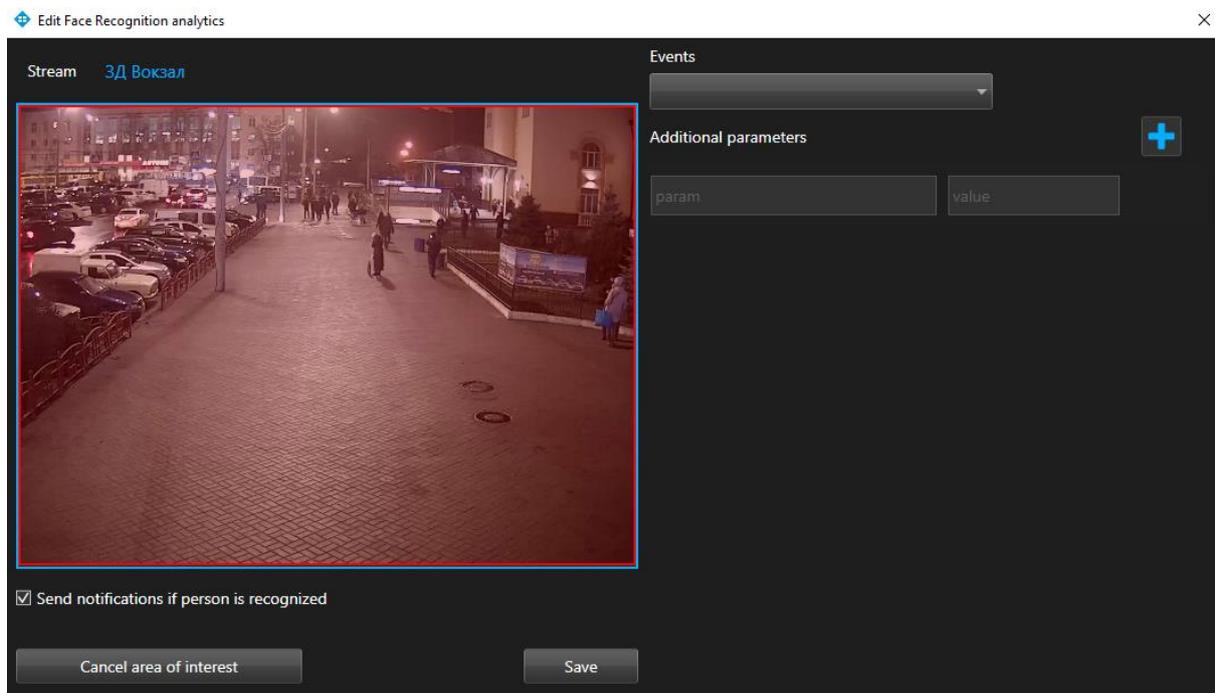
To cancel a region of interest, click **Cancel** area of interest.

For analytics to be created, click **Save**.

4.3. Editing, changing status, viewing and deleting analytics

To edit analytics, click the **Edit** button on the right side of the record.

In the opened window fill the fields:



Field name	Recommended Value
Send notifications if person is recognized	Check « Send notifications if person is recognized » to create your own event for sending notifications. Event manager is designed to create notifications about found persons (depending on incoming parameters)
Events	Select events from the drop-down list. For this event, notifications will be sent to the services indicated in the events.
Additional parameters	If necessary, you can add additional parameters for their further use when creating an event. Fill in the parameter fields. To add parameters, click  . To remove the parameters, click  .

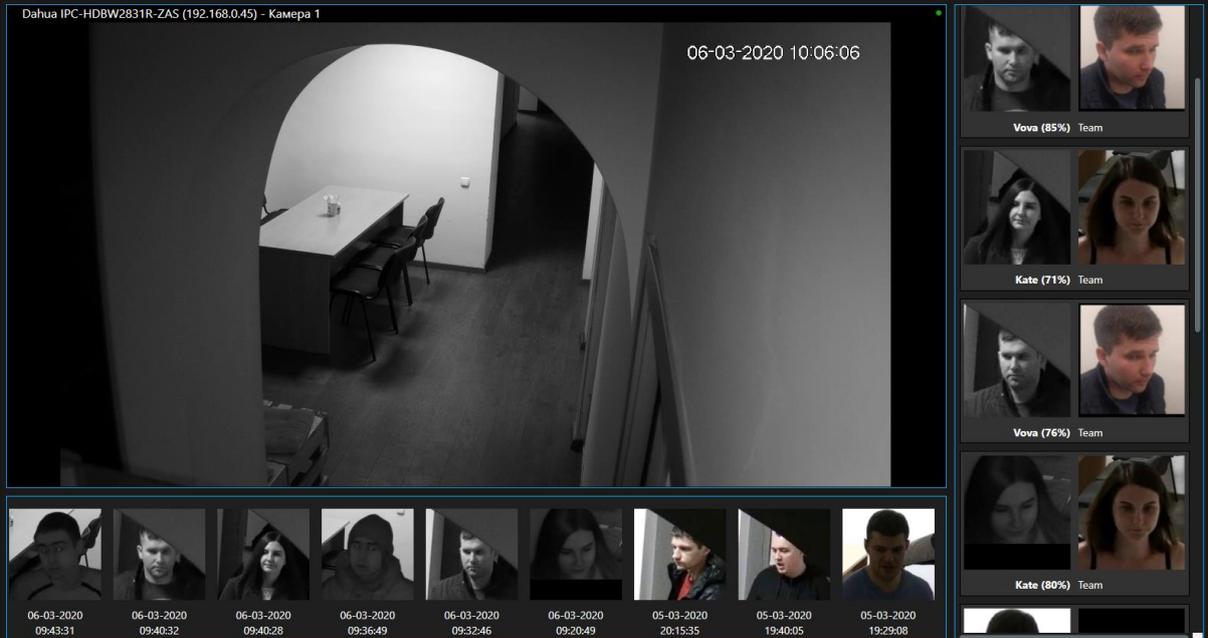
Edit area of interest:

1. Change camera in the field **Video stream**.
2. Below the field **Video stream** will appear video from a new camera.
3. Change the area of interest. Click in the area where the video from the camera is located and set the area of interest. Face recognition will take place in the exposed area. In way to cancel area of interest click **Cancel area of interest**.
In way to create analytics click **Save**.

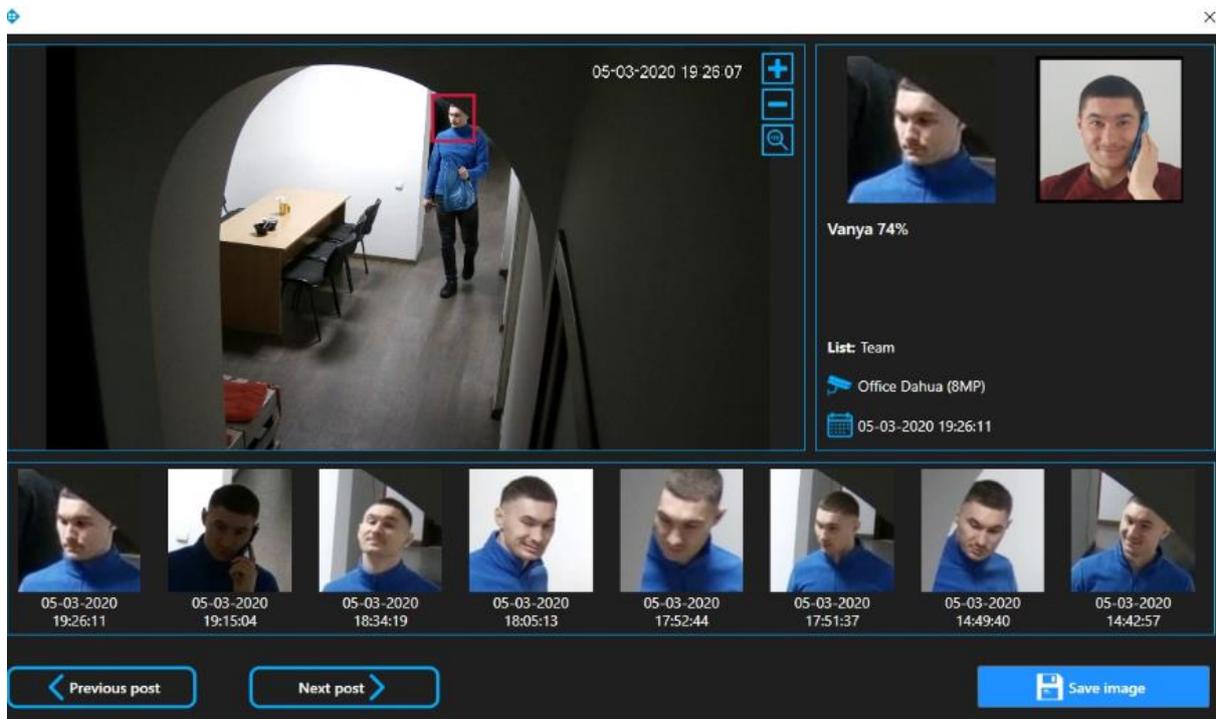
To start or stop analytics click **Start/Stop**.

To delete analytics click .

To view analytics click the icon .

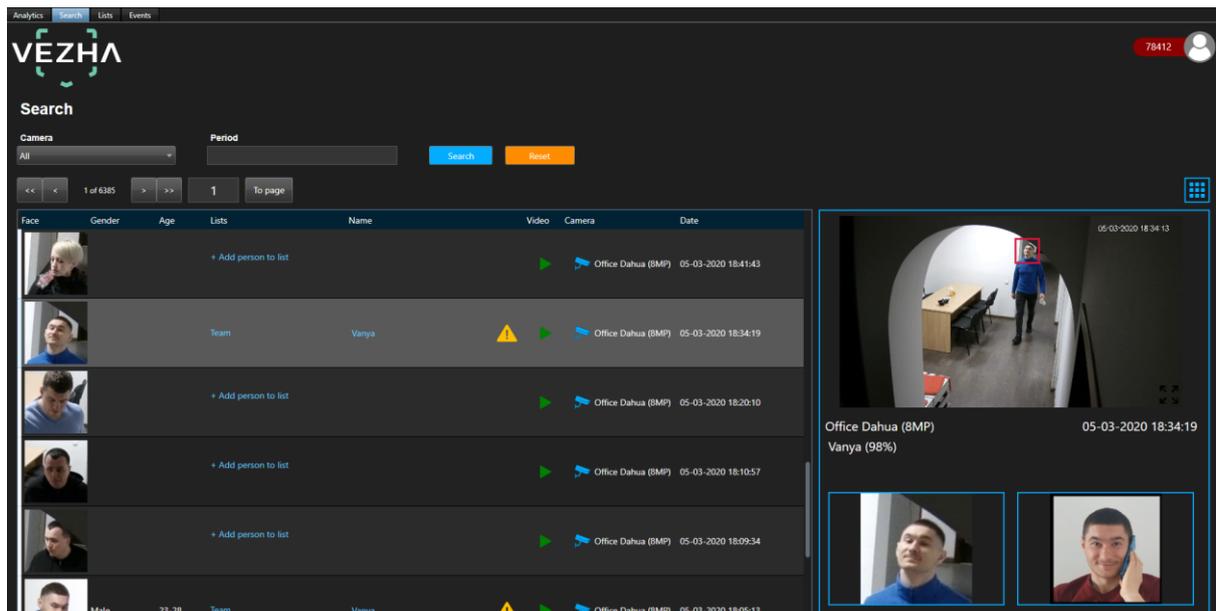


In the analytics viewing window, click on the person's image to view the extended frame from the camera and information about the person.



Click **Save Image** to download the image to your computer.
Click the **Previous Post** button to view the previous captured frame from the camera.
Click the **Next Post** button to view the next captured frame from the camera.

5. Search



In way to find necessary person choose:

1) Period

Click on the field and choose a period.

2) Camera

Click on the field and choose a camera.



Click **Search** to display the search results. Click **Reset** to clear the input fields.
Search results are shown in the table below:

The screenshot shows the VEZHA search interface. At the top, there are navigation tabs for 'Analytics', 'Search', 'Lists', and 'Events'. The 'Search' tab is active. Below the navigation, there is a search bar with 'Office Dahua (8MP)' selected in the camera dropdown and a date range of '01-02-2020 00:00:00 - 29-02-2020 23:59:59'. There are 'Search' and 'Reset' buttons. Below the search bar, there is a table with the following columns: Face, Gender, Age, Lists, Name, Video, Camera, and Date. The table contains six rows of data. The first row has a face image, a '+ Add person to list' button, a play icon, a camera icon, 'Office Dahua (8MP)', and '28-02-2020 19:01:27'. The second row has a face image, '47-56', 'Team', 'Cepriř', a warning icon, a play icon, a camera icon, 'Office Dahua (8MP)', and '28-02-2020 19:01:09'. The third row has a face image, a play icon, a camera icon, 'Office Dahua (8MP)', and '28-02-2020 19:00:20'. The fourth row has a face image, a play icon, a camera icon, 'Office Dahua (8MP)', and '28-02-2020 18:58:58'. The fifth row has a face image, 'Igor', a warning icon, a play icon, a camera icon, 'Office Dahua (8MP)', and '28-02-2020 18:58:35'. The sixth row has a face image, '23-28', 'Igor', 'Slava', a warning icon, a play icon, a camera icon, 'Office Dahua (8MP)', and '28-02-2020 18:58:30'. To the right of the table is a video player showing a video frame with a red bounding box around a person's face. Below the video player, there is a caption: 'Office Dahua (8MP) 28-02-2020 18:58:30 Slava (87%)'. Below the caption are two smaller video frames showing close-ups of the person's face.

5.1. Work with face recognition records

The list of face recognition records consists of the following fields: face, gender, age, lists, name, video, camera, date.

If person isn't in the list click **Add person to list**.

The screenshot shows a form for adding a person to the list. It features a video frame on the left showing a person's face. To the right of the video frame, there is a '+ Add person to list' button, a camera icon, 'Office Dahua (8MP)', and a calendar icon, '06-03-2020 15:06:00'.

By clicking on the **Add to list** button, opens a form for adding a person to the list.

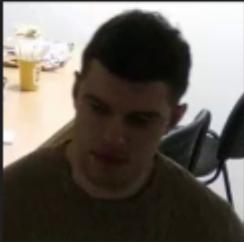


+ Add person to list ×

Name

Comment

List



Save

1) Name

Enter a name of person which you want to find. The search will go through the cameras that were selected when the list was created.

2) Comment

Enter the text of the notification that will be received when a person is found.

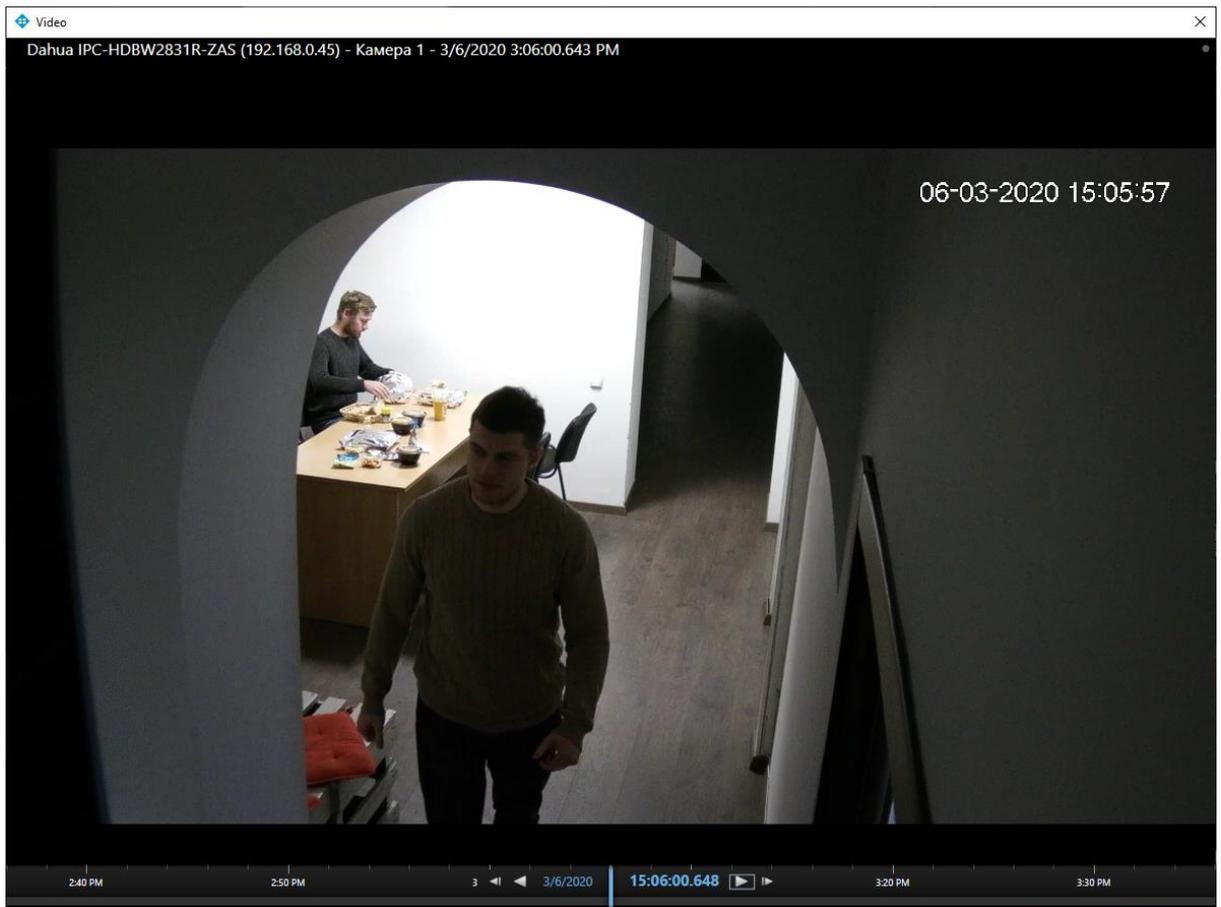
3) List

From the drop-down list, select the name of the list, you want to add a person.

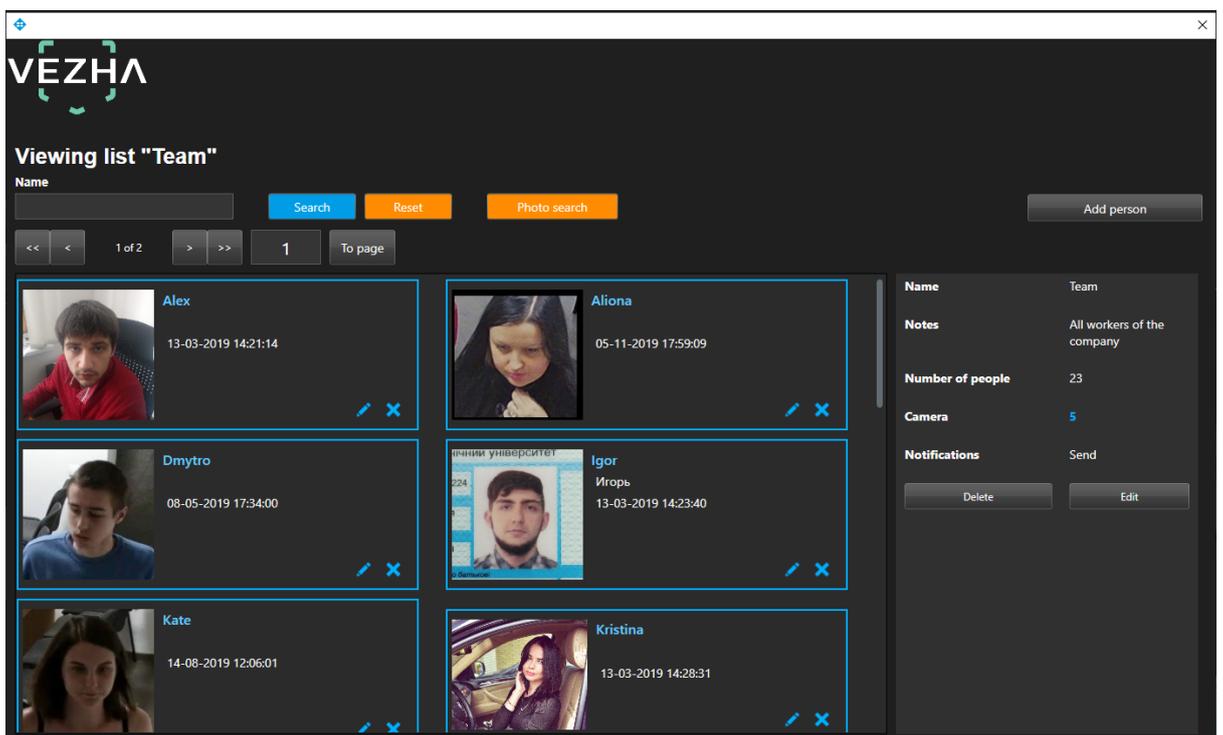
4) Upload photo

Upload a photo of the person. This photo will be used to recognize the person. In order for the changes to be accepted, click **Save**.

By clicking on  you can watch the video stream in real time.



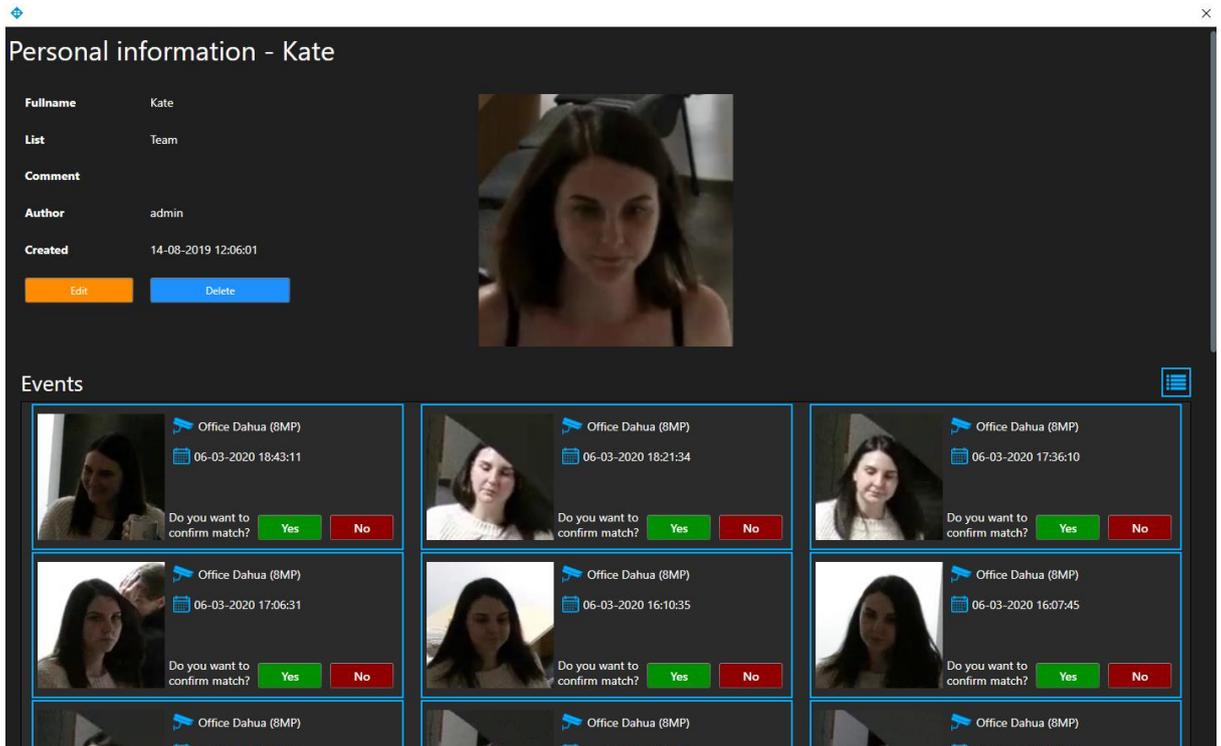
When you click on a list name, a list view window will appear.



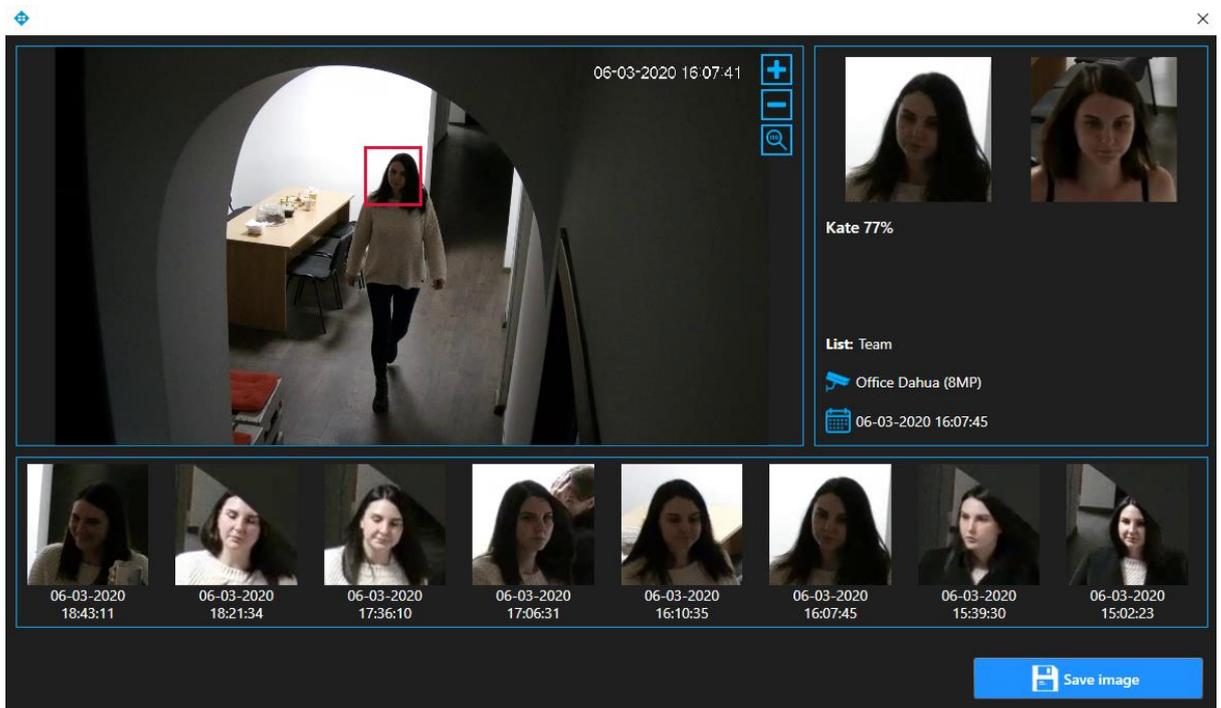


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When you click on the person's name, will open the window with the **Personal information**.



Click on the image zoom button in the image to the right of the record to view detailed information about the person in a new window.



To change the format of records click on .



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Analytics Search Lists Events

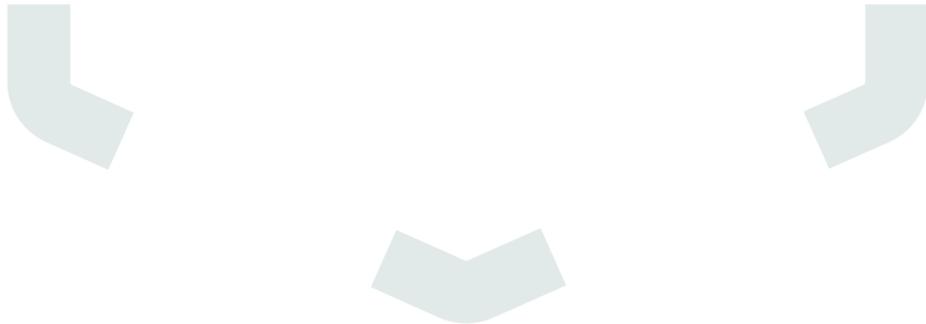
VEZHA 78626

Search

Camera: All Period: Search Reset

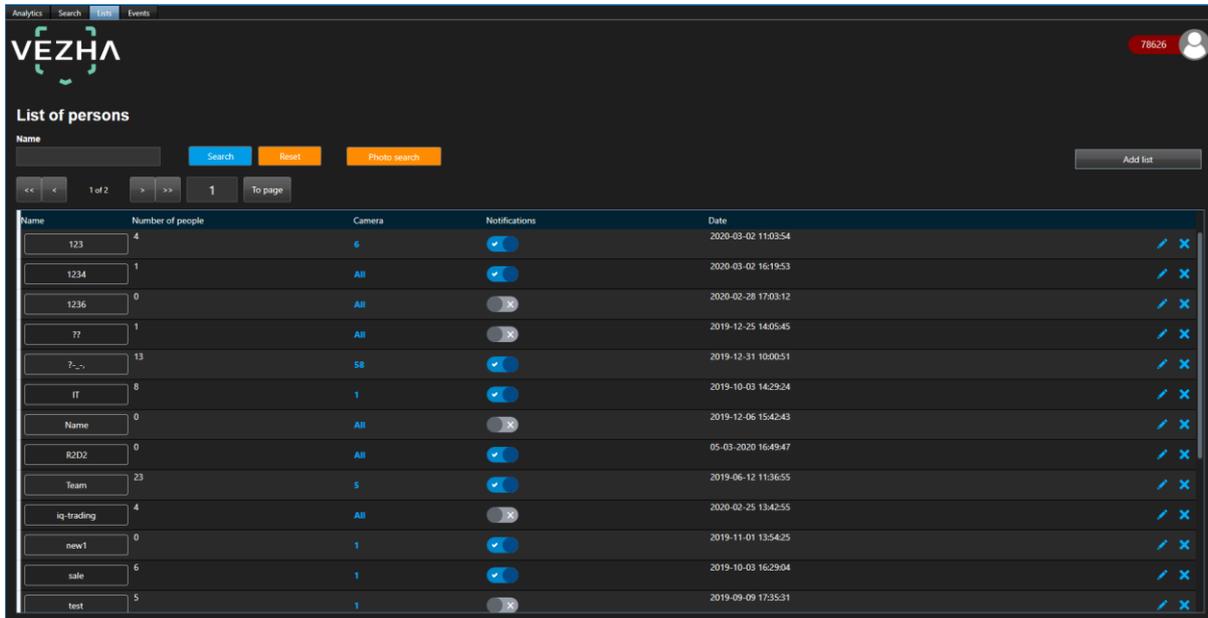
<< < 5 of 6396 >> >> 1 To page

 + Add person to list Office Dahua (BMP) 06-03-2020 17:04:55	 + Add person to list Office Dahua (BMP) 06-03-2020 17:04:34	 yyy test1 Office Dahua (BMP) 06-03-2020 17:02:41	 y.Bane Team Office Dahua (BMP) 06-03-2020 17:01:13
 Age: 57-65 + Add person to list Office Dahua (BMP) 06-03-2020 16:58:49	 Vanya Team Office Dahua (BMP) 06-03-2020 16:57:44	 + Add person to list Office Dahua (BMP) 06-03-2020 16:57:36	 Dmytro Team Office Dahua (BMP) 06-03-2020 16:57:35
 Сергей практикант Team Office Dahua (BMP) 06-03-2020 16:55:41	 + Add person to list Office Dahua (BMP) 06-03-2020 16:54:09	 Age: 5-7 y.Bane Team Office Dahua (BMP) 06-03-2020 16:51:14	 + Add person to list Office Dahua (BMP) 06-03-2020 16:38:43



6. Lists

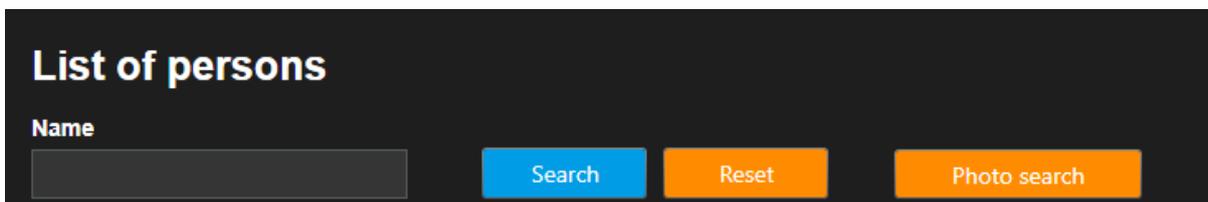
This section is intended to create a database of persons and to divide them into convenient categories.



Name	Number of people	Camera	Notifications	Date
123	4	6	<input checked="" type="checkbox"/>	2020-03-02 11:03:54
1234	1	All	<input checked="" type="checkbox"/>	2020-03-02 16:19:53
1236	0	All	<input type="checkbox"/>	2020-02-28 17:03:12
??	1	All	<input type="checkbox"/>	2019-12-25 14:05:45
7--	13	SB	<input checked="" type="checkbox"/>	2019-12-31 10:00:51
IT	8	1	<input checked="" type="checkbox"/>	2019-10-03 14:29:24
Name	0	All	<input type="checkbox"/>	2019-12-06 15:42:43
P2D2	0	All	<input checked="" type="checkbox"/>	05-03-2020 16:49:47
Team	23	5	<input checked="" type="checkbox"/>	2019-06-12 11:36:55
iq-trading	4	All	<input type="checkbox"/>	2020-02-25 13:42:55
new1	0	1	<input checked="" type="checkbox"/>	2019-11-01 13:54:25
safe	6	1	<input checked="" type="checkbox"/>	2019-10-03 16:29:04
test	5	1	<input type="checkbox"/>	2019-09-09 17:35:31

6.1. Lists search

At the top of the screen is located a search field



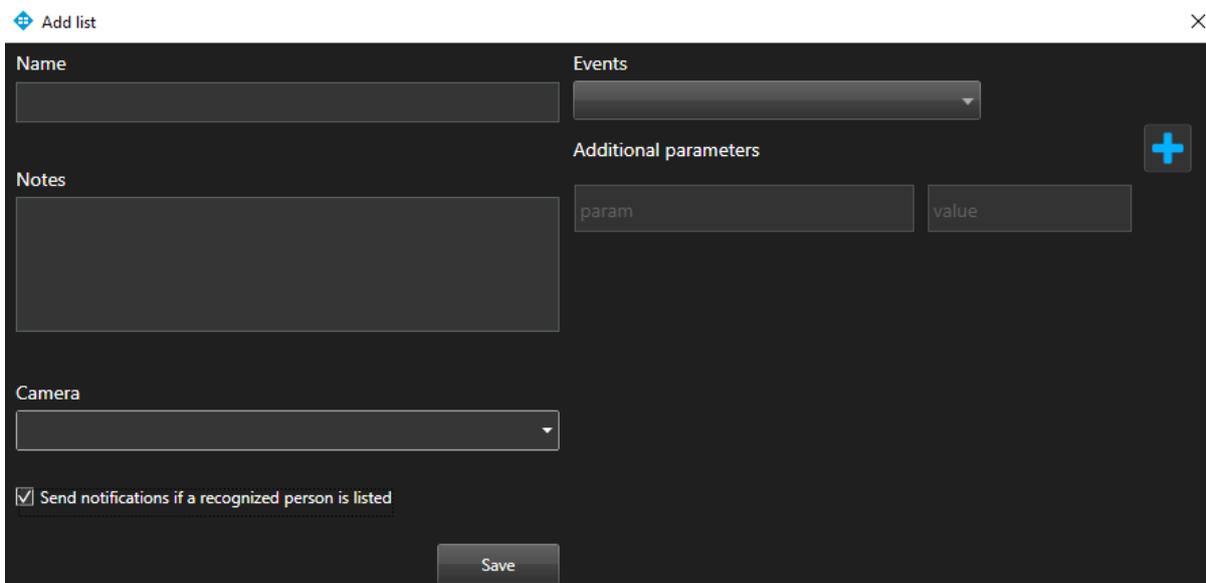
List of persons

Name

In order to find the desired list of the **Lists** section, enter its name in the search field. Click **Search** to display the results. Click **Reset** to clear the input fields. To find a person by image, click **Search by photo**. Upload the photo you want to search.

6.2. Adding and editing of lists

To add a new record, click **Add List** in the upper right corner of the screen. In the window that opens, fill the fields:



Field name	Recommended value
Name	Enter a name for the record in the field. This field will be displayed in all components of the program that use this record.
Notes	This field is intended to describe the purpose of the created record. Enter a description of the record in the Notes field
Camera	Click on the field and select cameras from the drop-down list. The selected cameras will be used to search for faces.
Send notifications if a recognized person is listed	Fill checkbox " Send notifications if a recognized person is listed " to create your own event for sending notifications. Event manager is designed to create notifications about found faces (depends on incoming parameters)
Events	Select events from the drop-down list. For this event, notifications will be sent to the services indicated in the events.
Additional parameters	If necessary, you can add additional parameters for their further use when creating an event. Fill the parameters fields. To add parameters click button  . To remove parameters click button  .

In way to create record click **Save**.

In way to edit record click  on the right of the record.

In the opened window fill the fields:



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Edit list [Close]

Name: 123

Events: B5AB

Notes: [Text area]

Camera: selected 6 items

Send notifications if a recognized person is listed

Additional parameters: param, value [+]

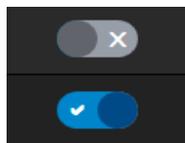
Save

Name	Recommended Value
Name	Enter a name for the record in the field. This field will be displayed in all components of the program that use this record.
Notes	This field is intended to describe the purpose of the created record. Enter a description of the record in the Notes field.
Camera	Click on the field and select cameras from the drop-down list. The selected cameras will be used in search for faces.
Send notifications if recognized person is listed	Fill checkbox Send notifications if a recognized person is listed to create your own event to send notifications. Event manager is used for creating notifications about recognized persons (depends on incoming parameters)
События	Select events from the drop-down list. For this event, notifications will be sent to the services indicated in the events.
Дополнительные параметры	If necessary, you can add additional parameters for their further use when creating an event. Fill the parameters fields. In way to add parameters click . In way to remove parameters click .

In way to apply changes click **Save**.

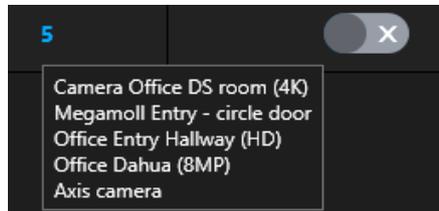
In way to remove record click in the right side of the record.

In way to stop or activate sending notifications put the status slider in the appropriate position:



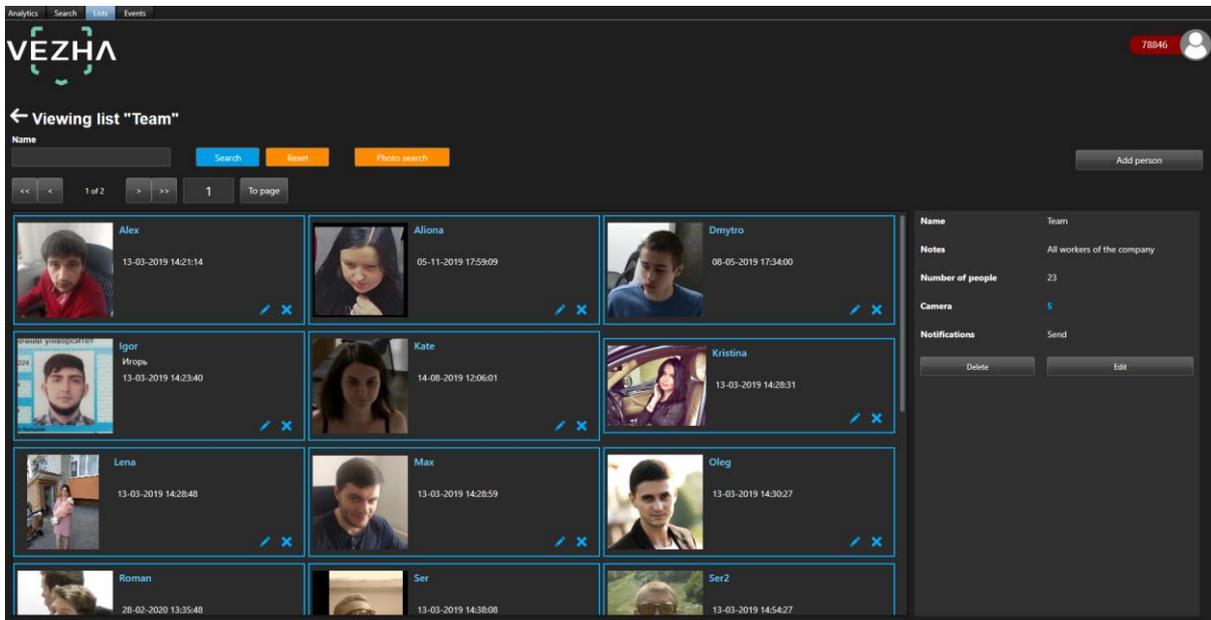
6.3. Viewing Lists

In way to view information about the cameras used for monitoring of lists, hover over the number of cameras in the list record.

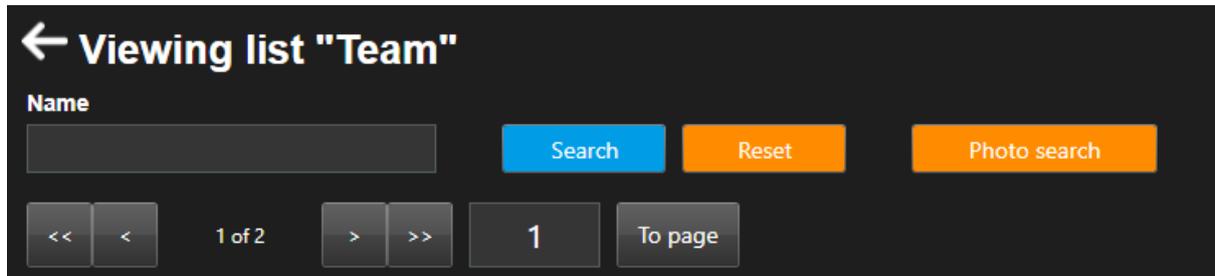


To view information about the list, click on its name.

When clicked on the name, you will go to the list view tab. In way to return back click  to the left of tab name.



6.3.1. Adding and editing of person



← Viewing list "Team"

Name

Search Reset Photo search

<< < 1 of 2 > >> 1 To page

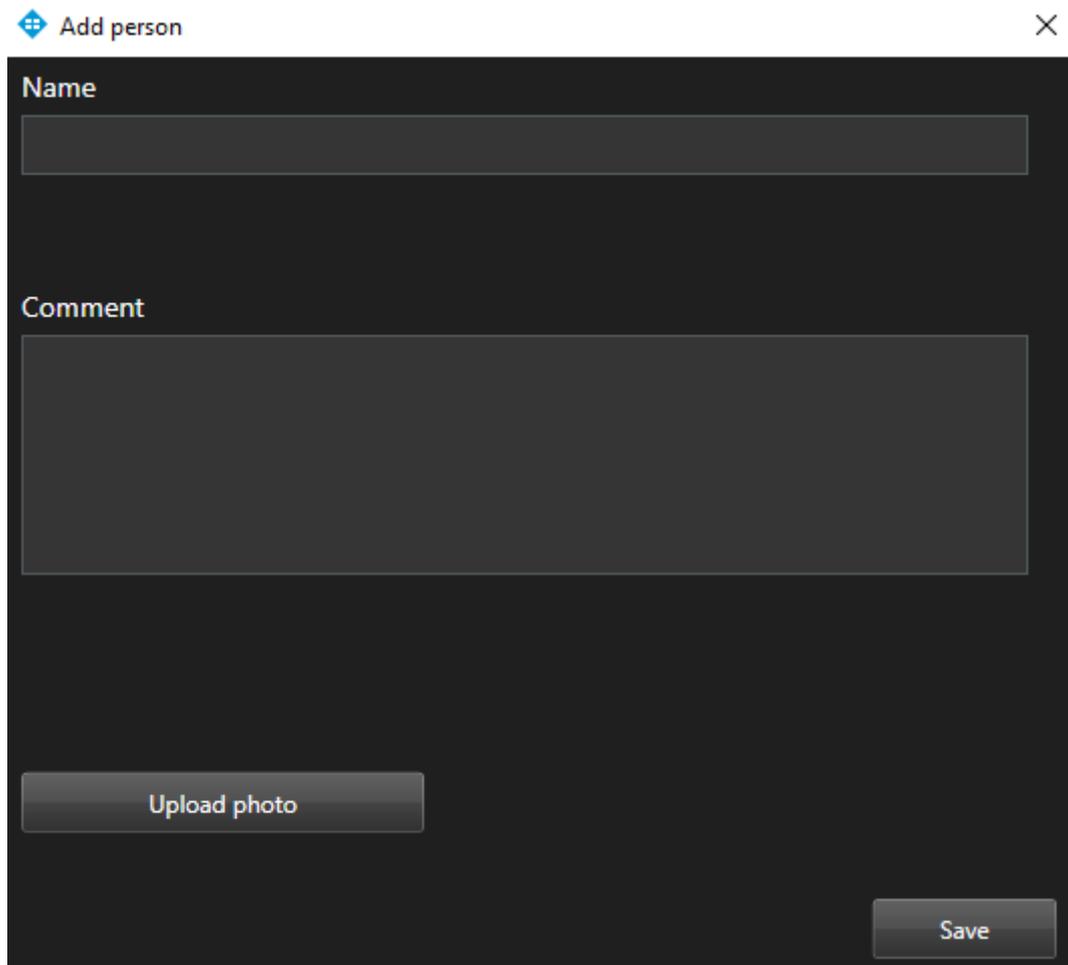
In order to find a person, enter her name in the search field.

Click **Search** to display the results. Click **Reset** to clear the input fields.

To find a person by image, click **Search by photo**. Upload the photo you want to search.

To add a new record to the list, click **Add Person** in the upper right corner of the screen.

In the window that opens, fill the fields:



◆ Add person ×

Name

Comment

Upload photo

Save

1) Name

Enter the name of the person you want to find in the field. The search will go through the cameras that were selected when creating the list.

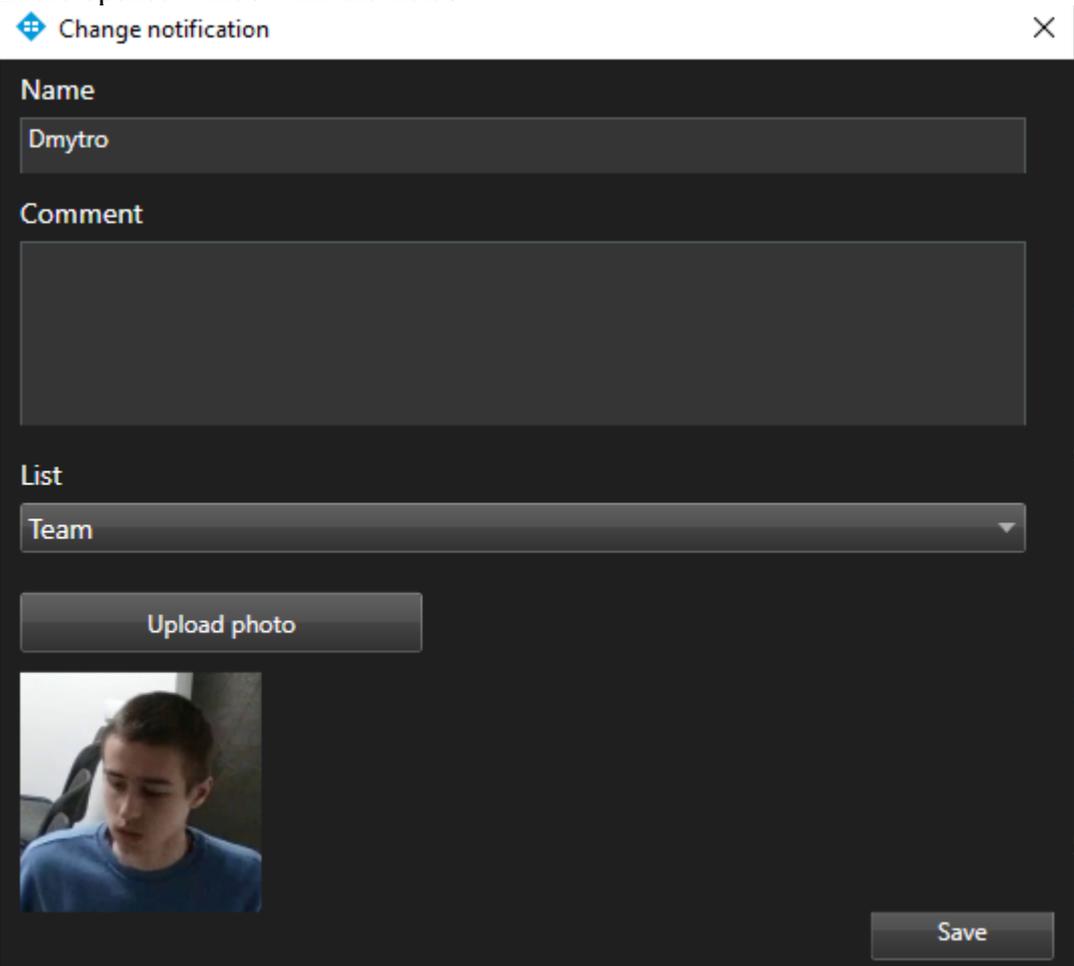
2) Message

This field is intended to describe the purpose of the created record. Enter a description of the record in the **Message** field.

3) Upload photo

Upload a photo of the person. This photo will be used to recognize the person. In order for the record to be created, click **Save**.

To edit the record click  right of the record. In the opened window fill the fields:



Change notification

Name

Dmytro

Comment

List

Team

Upload photo

Save

1) Name

Enter a new name for the person in the field. The search will take place on the cameras that were selected when creating the list.

2) Message

Enter the message that will be received when a person is found.

3) List

Choose a list name from the drop-down list to move the person to another list.

4) Upload photo

Upload a photo of the person. This photo will be used to recognize the person.
In order for the changes to be accepted, click **Save**.

To delete the list, click **Delete**.

In way to remove record click  in the right side of the screen.

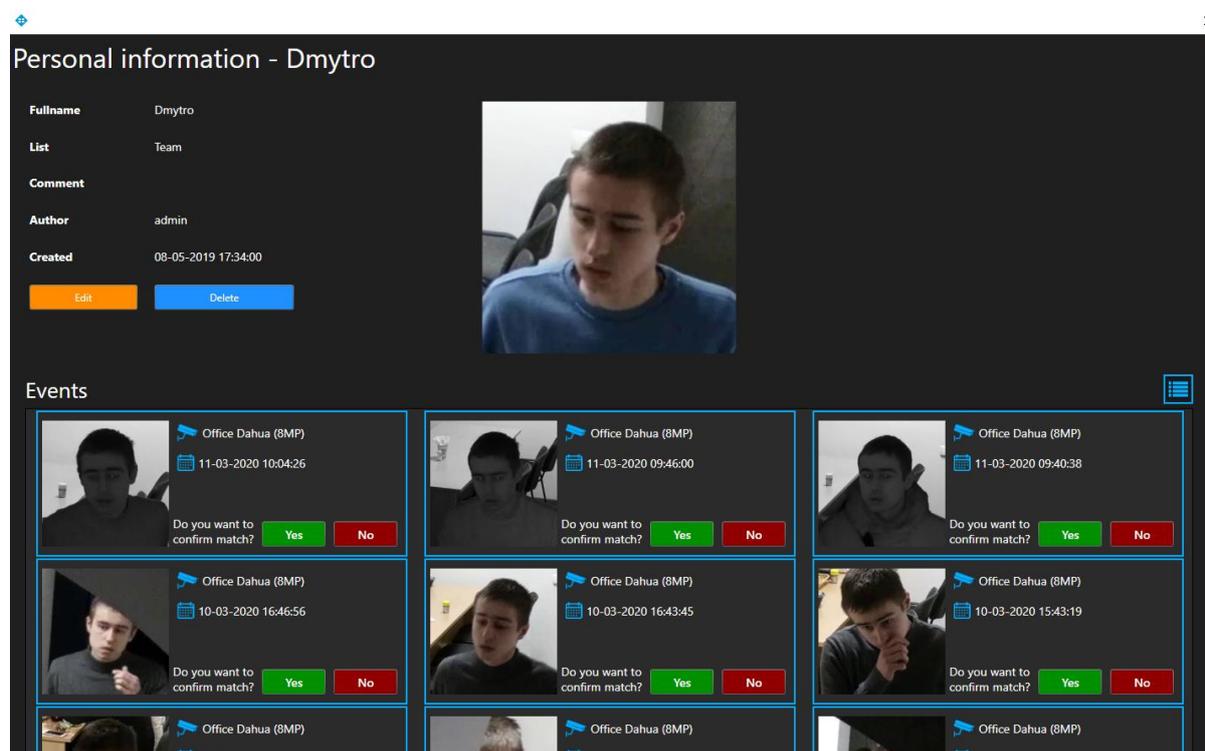
In way to move to **List** page click .

In way to remove list from the list page click **Delete**.

In way to delete list on page view click **Edit**.

6.3.2. View list record

To view information about a person, click on her name in the list record.



Personal information - Dmytro

Fullname: Dmytro

List: Team

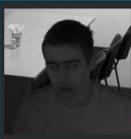
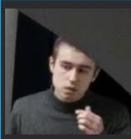
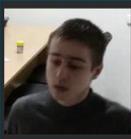
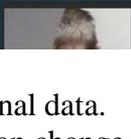
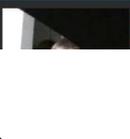
Comment:

Author: admin

Created: 08-05-2019 17:34:00

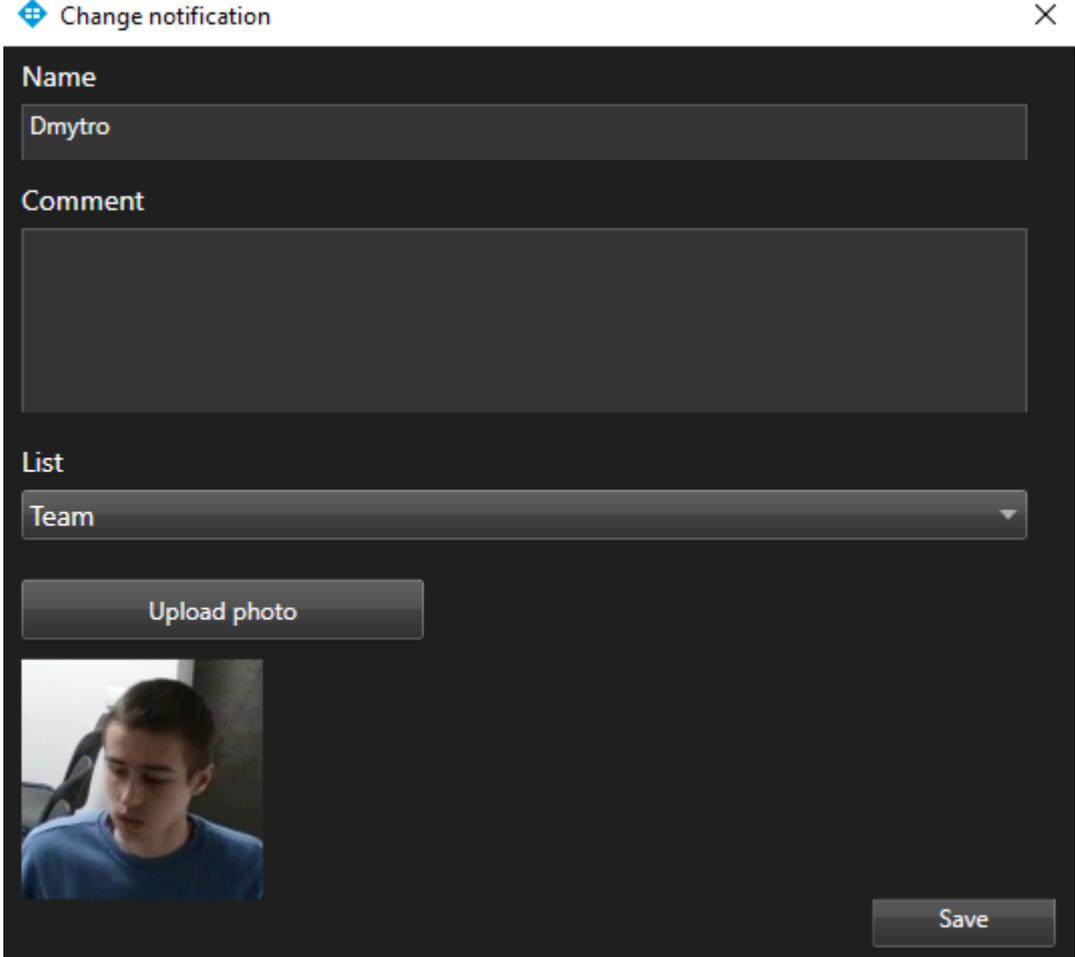
Buttons: Edit, Delete

Events:

 Office Dahua (8MP) 11-03-2020 10:04:26 Do you want to confirm match? Yes No	 Office Dahua (8MP) 11-03-2020 09:46:00 Do you want to confirm match? Yes No	 Office Dahua (8MP) 11-03-2020 09:40:38 Do you want to confirm match? Yes No
 Office Dahua (8MP) 10-03-2020 16:46:56 Do you want to confirm match? Yes No	 Office Dahua (8MP) 10-03-2020 16:43:45 Do you want to confirm match? Yes No	 Office Dahua (8MP) 10-03-2020 15:43:19 Do you want to confirm match? Yes No
 Office Dahua (8MP) 10-03-2020 14:25:12 Do you want to confirm match? Yes No	 Office Dahua (8MP) 10-03-2020 14:25:03 Do you want to confirm match? Yes No	 Office Dahua (8MP) 05-03-2020 10:02:21 Do you want to confirm match? Yes No

Click **Edit** to change your personal data.

In the window that opens, you can change the following fields:



Change notification

Name
Dmytro

Comment

List
Team

Upload photo

Save

1) Name

Enter a new name for the person in the field. The search will take place on the cameras that were selected when creating the list.

2) Comment

Enter the text of the notification that will be received when a person is found.

3) List

Choose a list name from the drop-down list to move the person to another list.

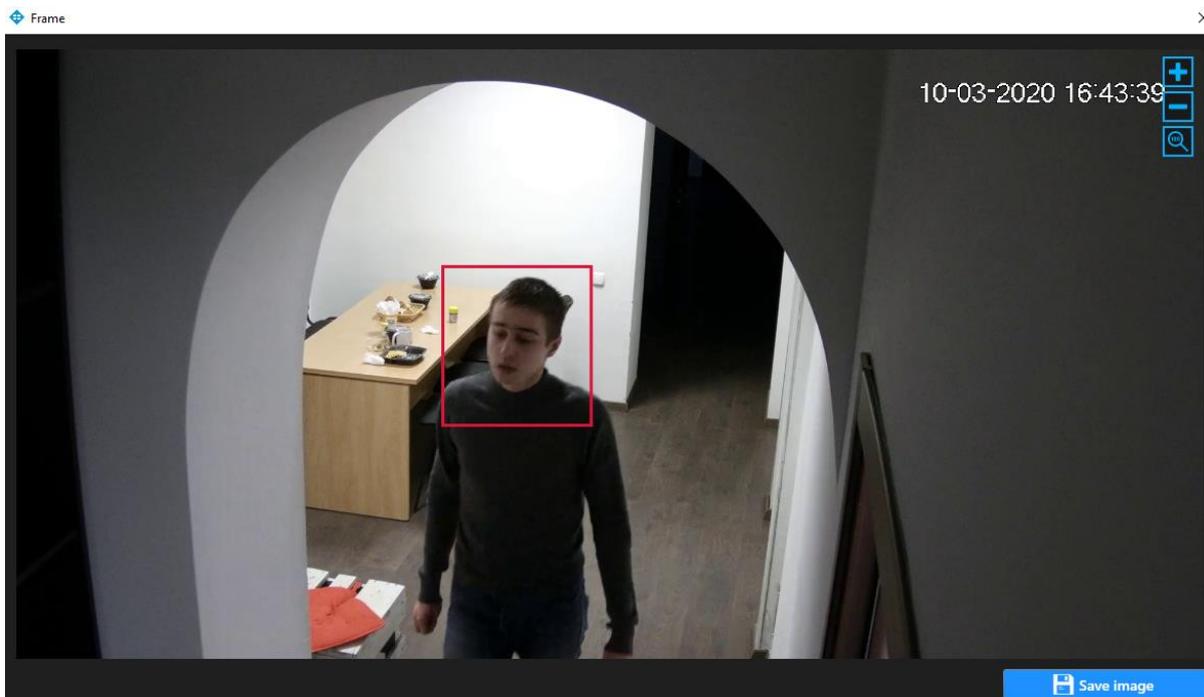
4) Upload photo

Upload a photo of the person. This photo will be used to recognize the person. In order for the changes to be accepted, click **Save**.

To view a frame from a recording, click on the **Frame** on the right side of the record or on the



icon  at photo.



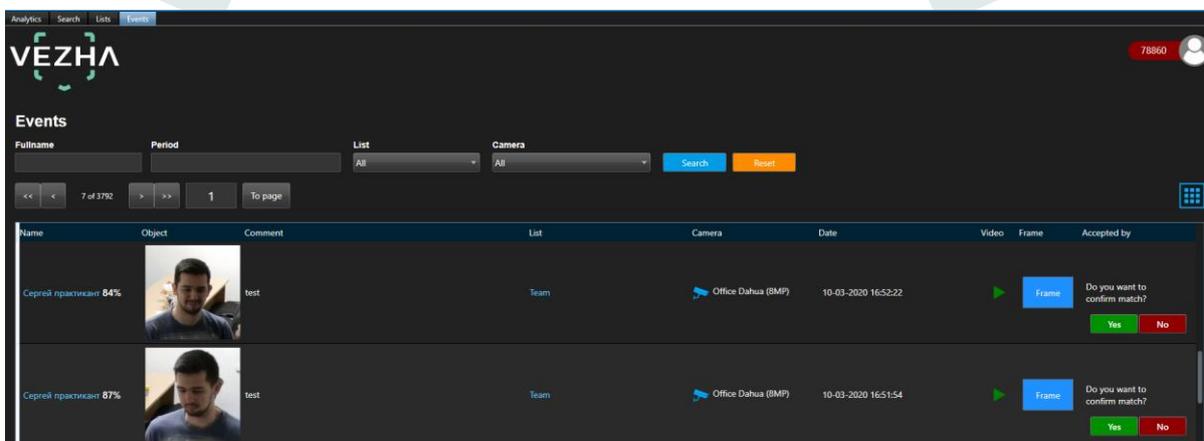
Click **Save image**, in way to download the image of person.

In way to change the record format **Personal information**, click .

To confirm that the exact person is recognized by the specific frame, click **Yes** from the right of the inscription **Confirm match?** If another person is shown on the frame, click **No**.

7 Events

This section is intended for viewing the history of notifications about persons.



7.1. Event search

At the top of the screen are located search fields



In way to find appropriate event you can use such fields:

1) Name

Enter the name of person.

2) Period

Click on the field and select the desired time period.

3) List

Click on the field and select the desired list.

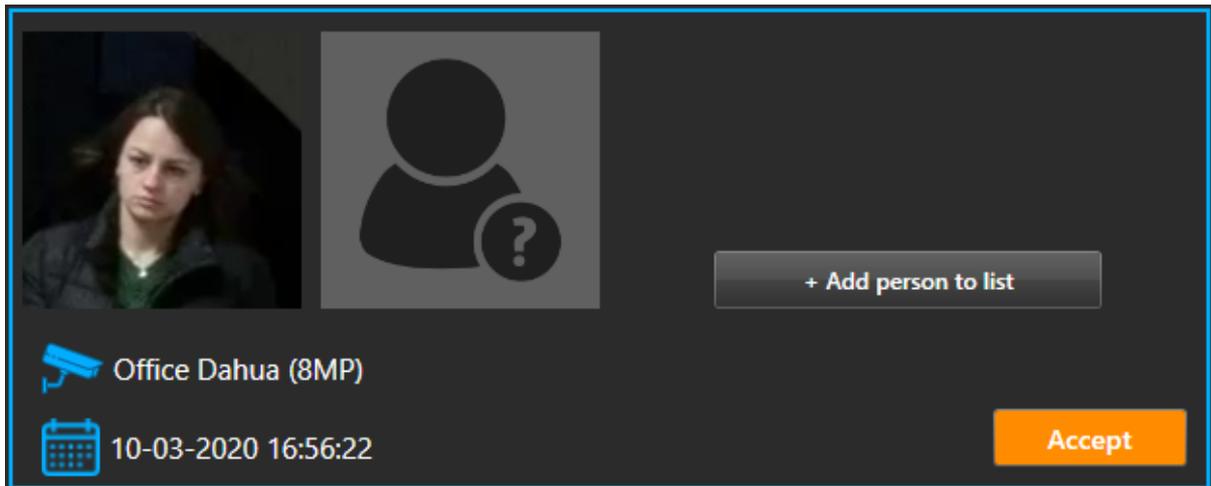
4) Camera

Click on the field and select the desired camera.

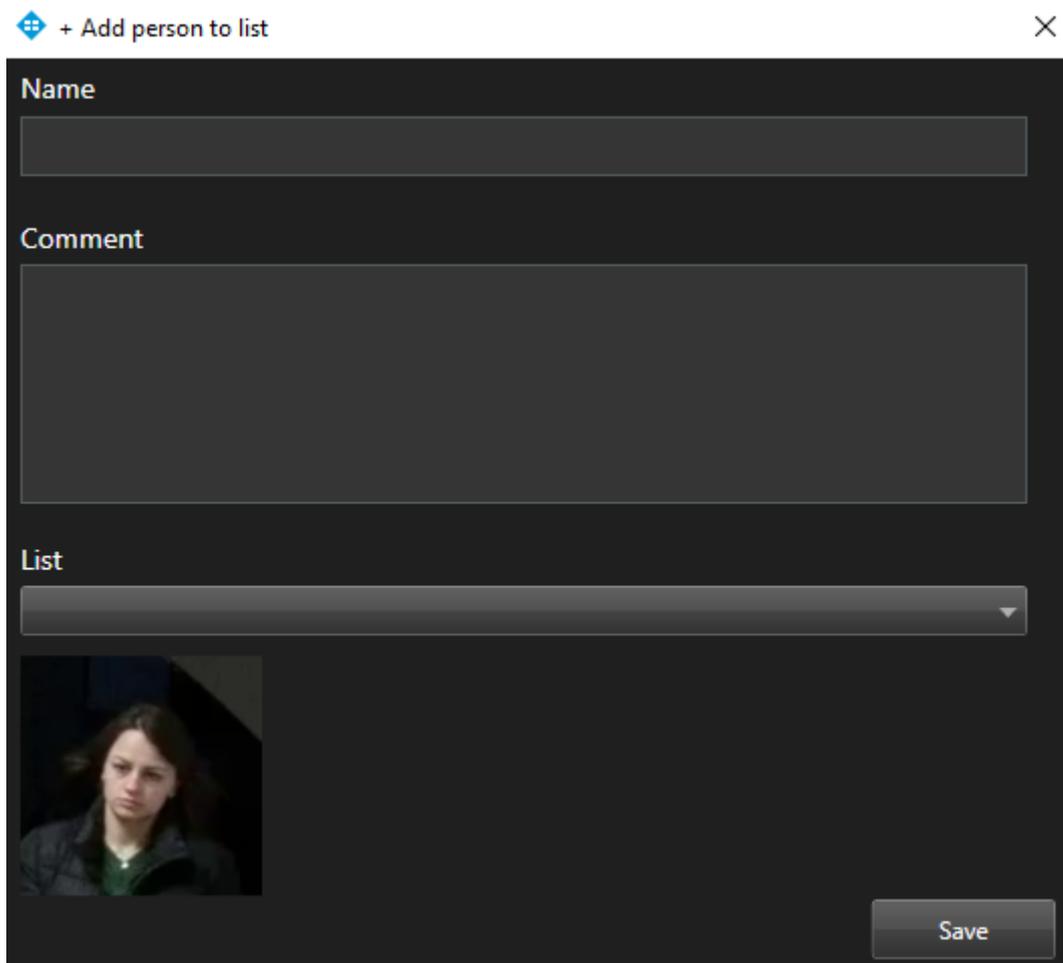
Click **Search** to display the search results. Click **Reset** to clear the input fields.

7.2. Work with face recognition records

If a person is not in list, click **Add person to list**.



While clicking **Add person to list** opens the window of adding person to list.



1) Name

Enter the name of the person you want to find in the field. The search will take place on the cameras that were selected when creating the list.

2) Comment

Enter the text of the notification that will come when a person is found.

3) List

From the drop-down list, select the name of the list to which you want to add a person.

4) Upload photo

Upload a photo of the person. This photo will be used to recognize the person.

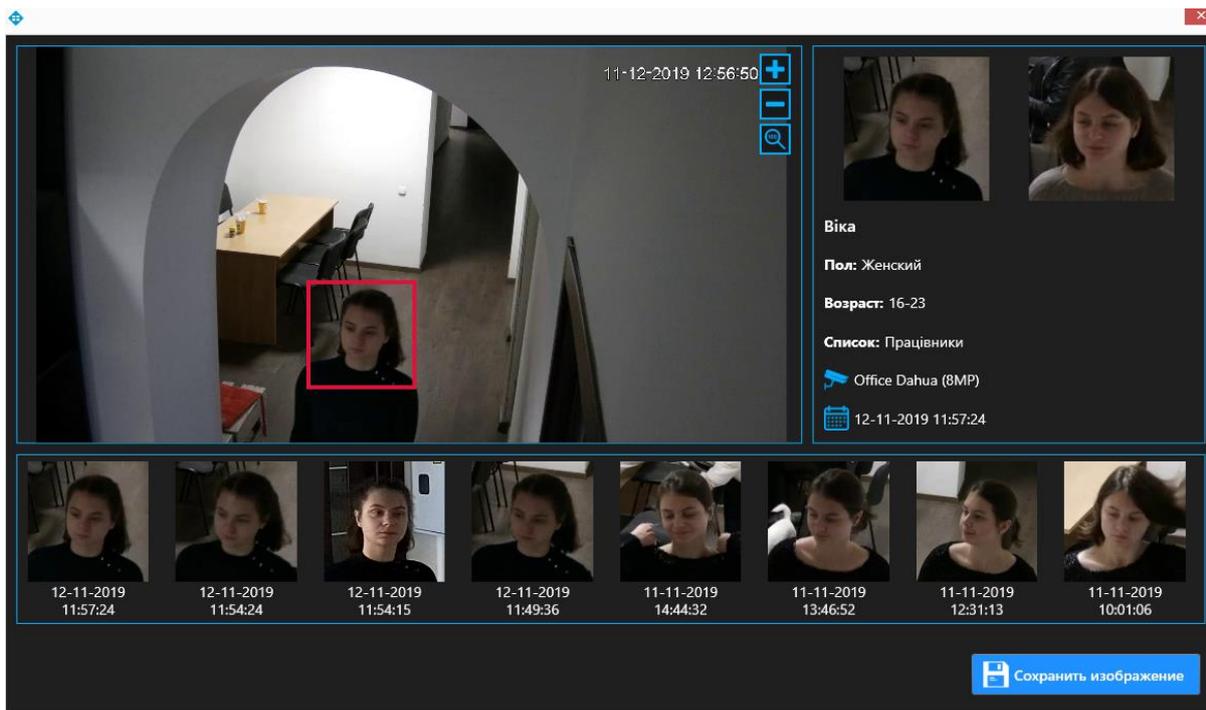
In order for the changes to be accepted, click **Save**.



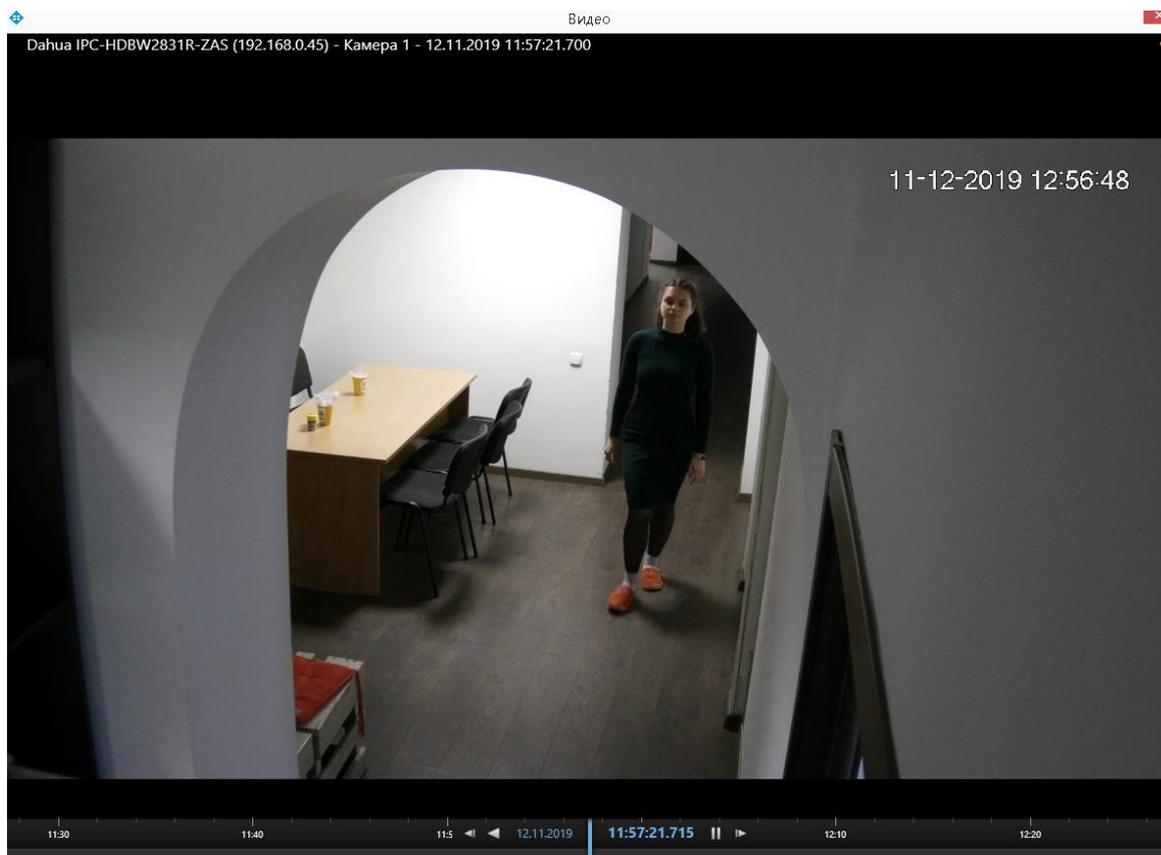
In way to change format record click

The list of notification records consists of the fields: name, object, message, list, camera, date, video, frame, accepted by.

When you click on the **Frame**, will open a window with a picture of a person.

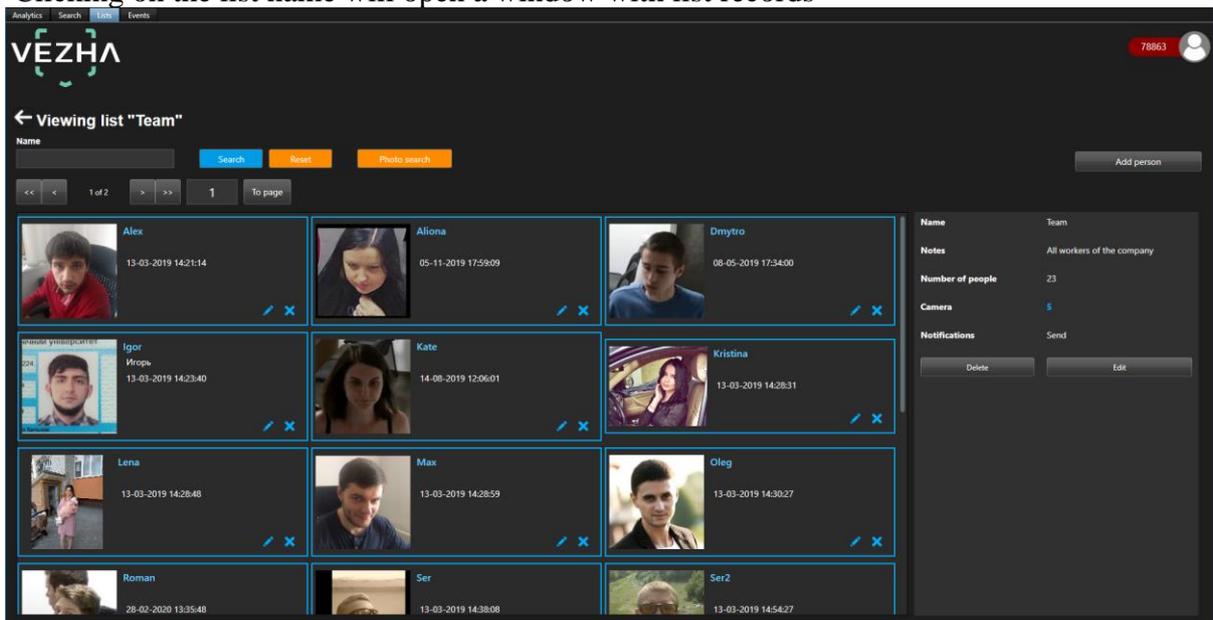


Click on the icon , in way to watch video with recognized person.



Click on the icon play to reproduce video.

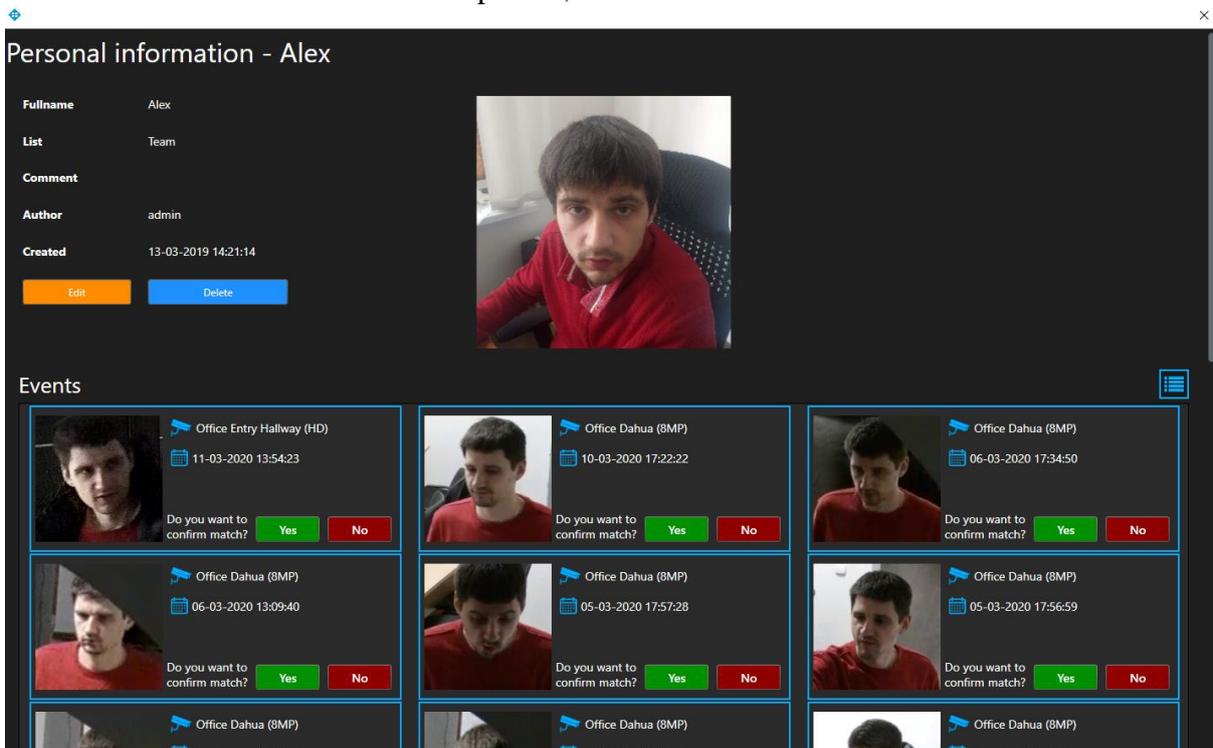
Clicking on the list name will open a window with list records



To accept the notification, click **Accept** or **Yes**, **No** - depending on whether the person is on the list or not.

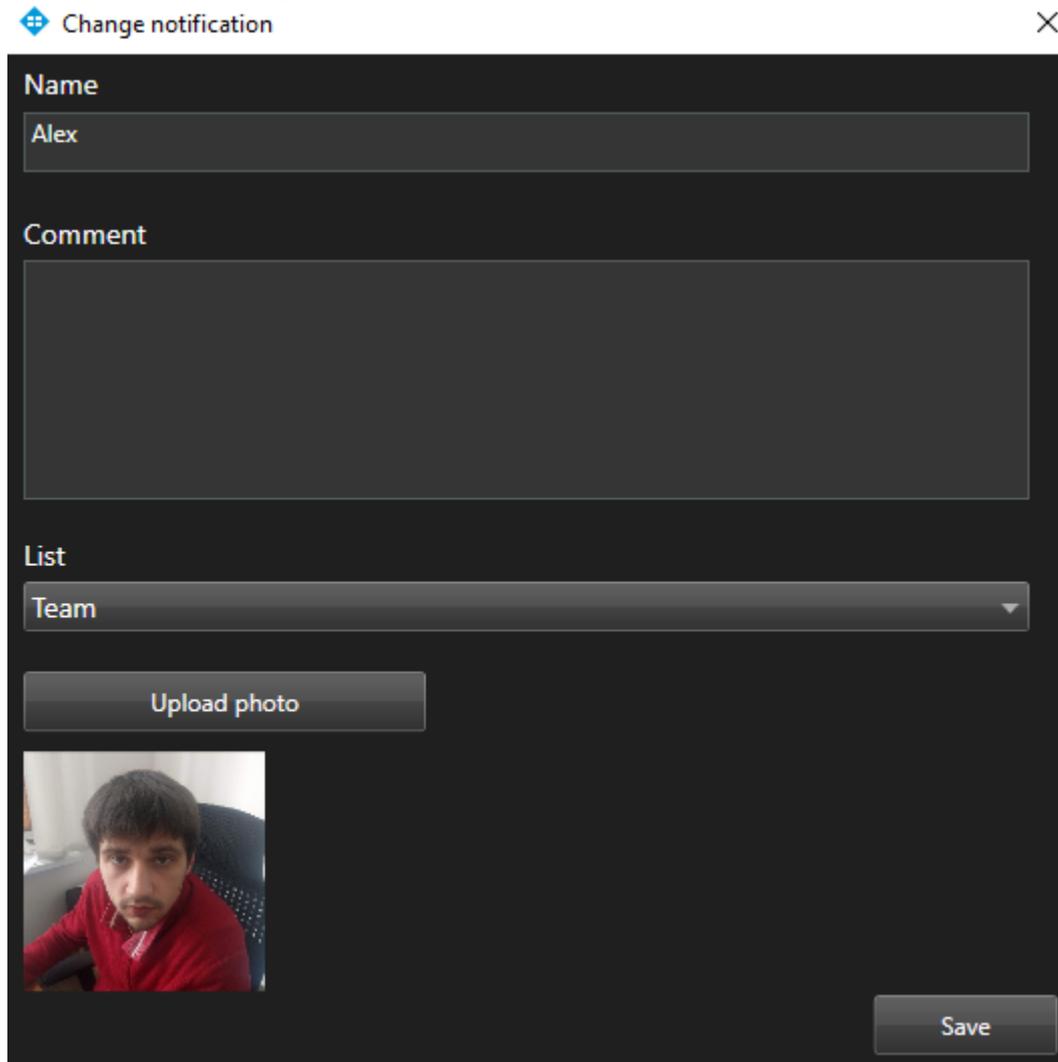
7.2.1. View face recognition records

To view information about a person, click on name in the list record.



Click **Edit**, in way to change personal information.

In the opened window change the next fields:



Change notification

Name

Alex

Comment

List

Team

Upload photo

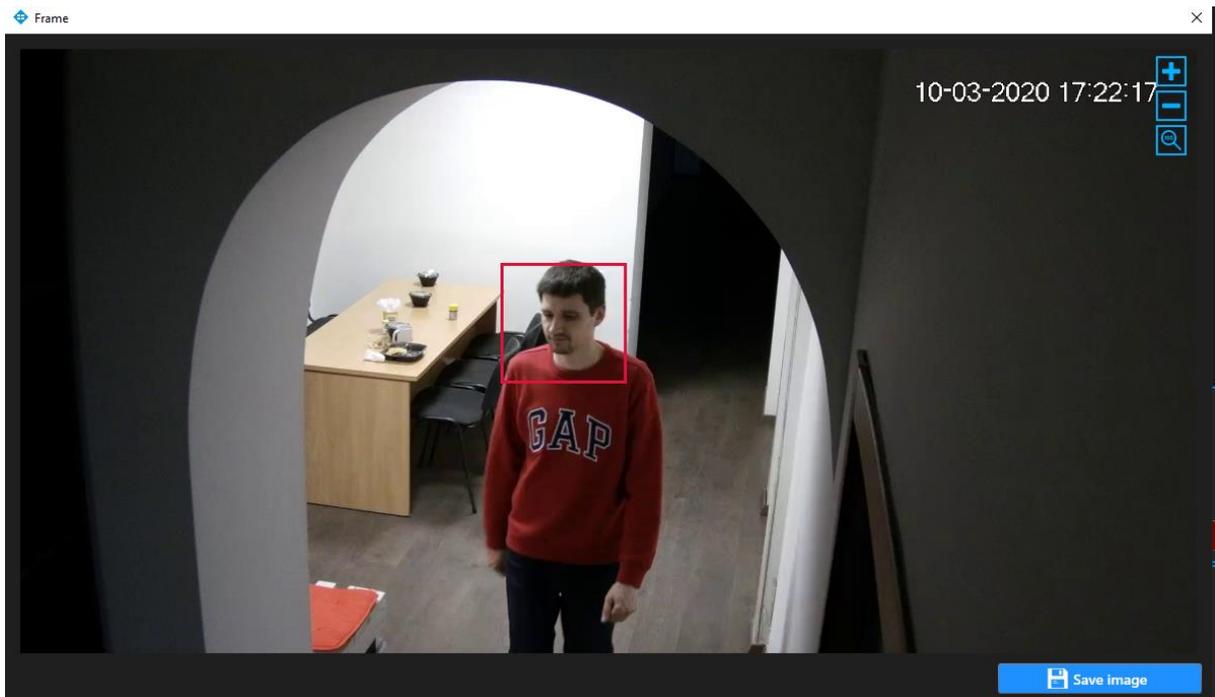
Save

- 1) Name**
Enter the name of the person you want to find in the field. The search will go through the cameras that were selected when creating the list.
- 2) Comment**
Enter the text of the notification that will be received when a person is found.
- 3) List**
Choose a list name from the drop-down list to move the person to another list.
- 4) Upload photo**
Upload a photo of the person. This photo will be used to recognize the person. In order for the changes to be accepted, click **Save**.

To view a frame from a recording, click on the **Frame** on the right side of the record or on the



icon   on photo.



Click **Save image**, in way to download the image of person.

In way to change format of the records in **Personal Information**, click .

In way to accept notification click **Accept** or **Yes, No** - depending on whether the person is in the list or not.

About VEZHA:

Our mission is to create a safe environment
for residents of cities of all sizes
and to help Ukrainian businesses optimize their security
and safety management processes.

For more information visit: <https://vezha.io/>



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