

FACE RECOGNITION PLUGIN

Incoresoft VEZHA Milestone

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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.

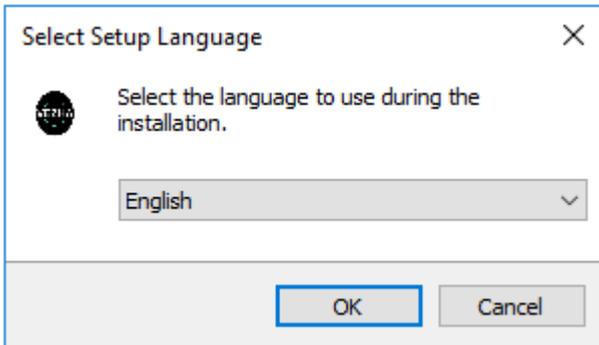
Main functional possibilities:

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

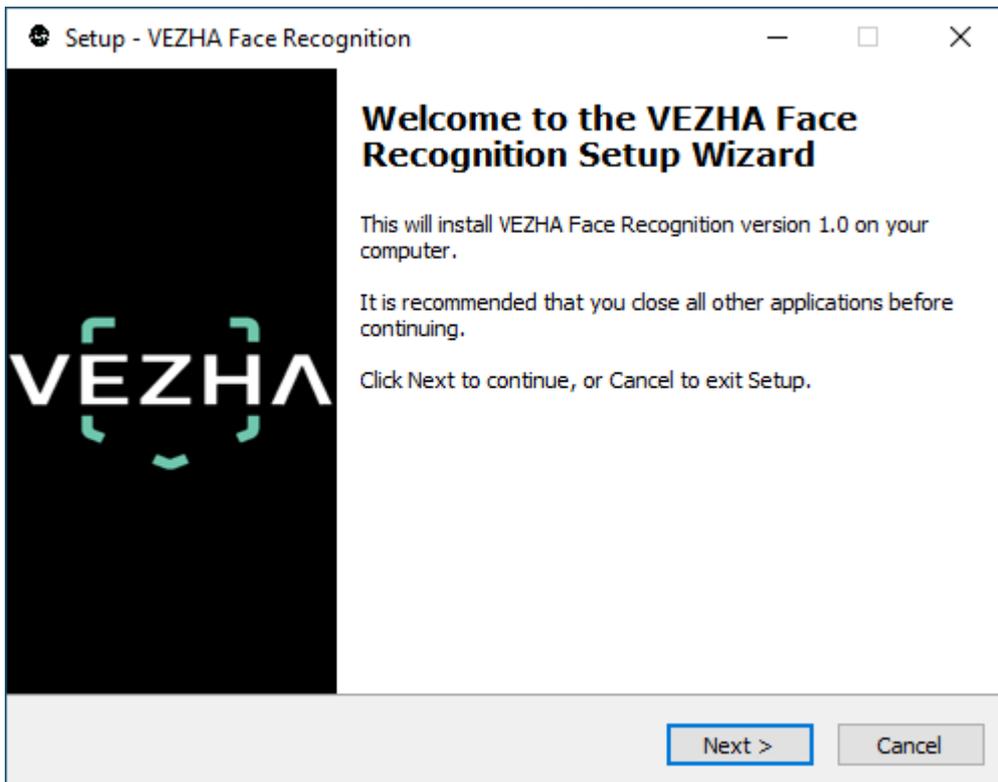
Installation

Launch the installer by double-clicking on the downloaded file **FACE_REC_Setup**.

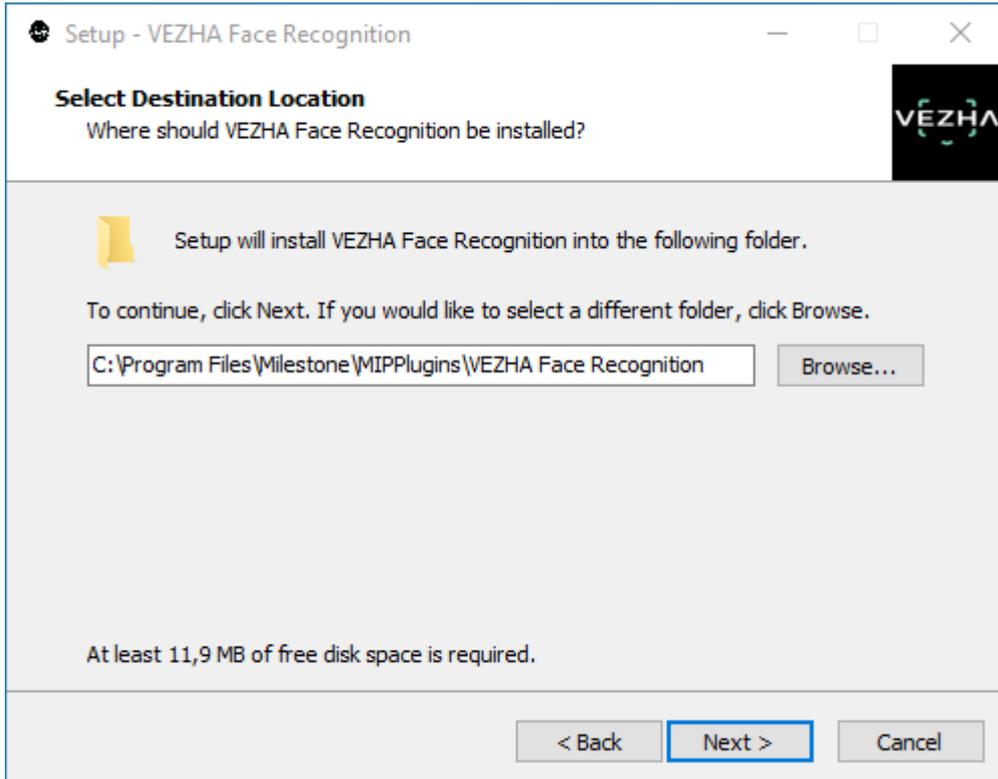
In the opened window, select the language that will be used during the installation process. To go further, click **OK**. To abort the installation, click **Cancel**.



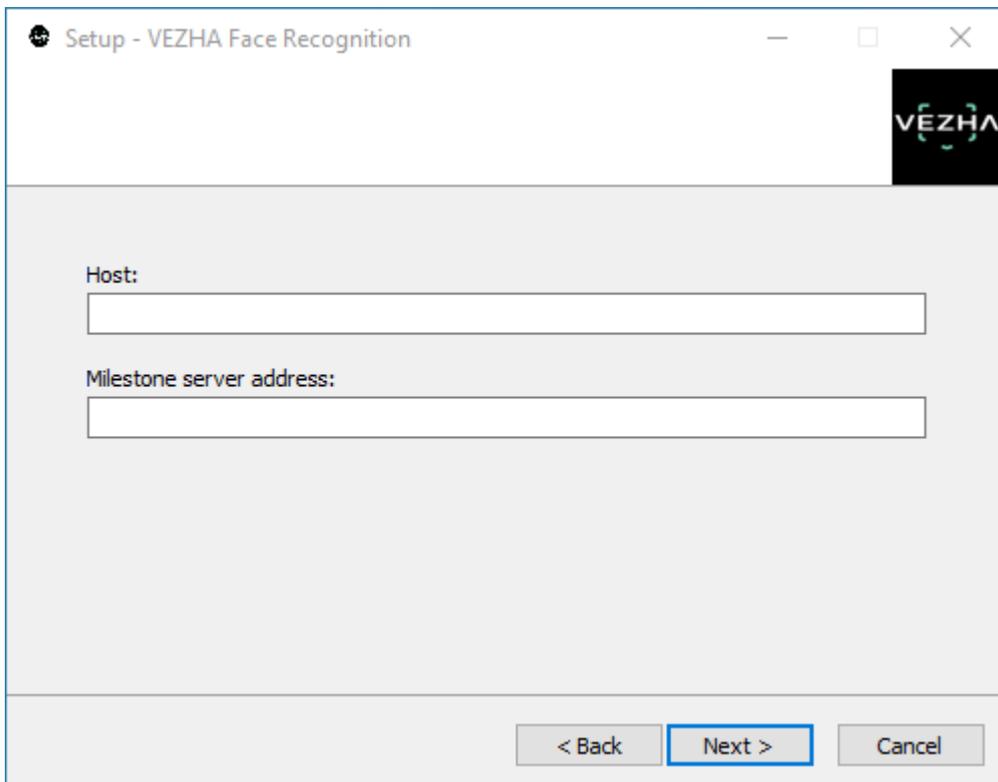
In a new window, read the installation recommendations and click **Next** to continue the installation, or the **Cancel** button to abort the installation.



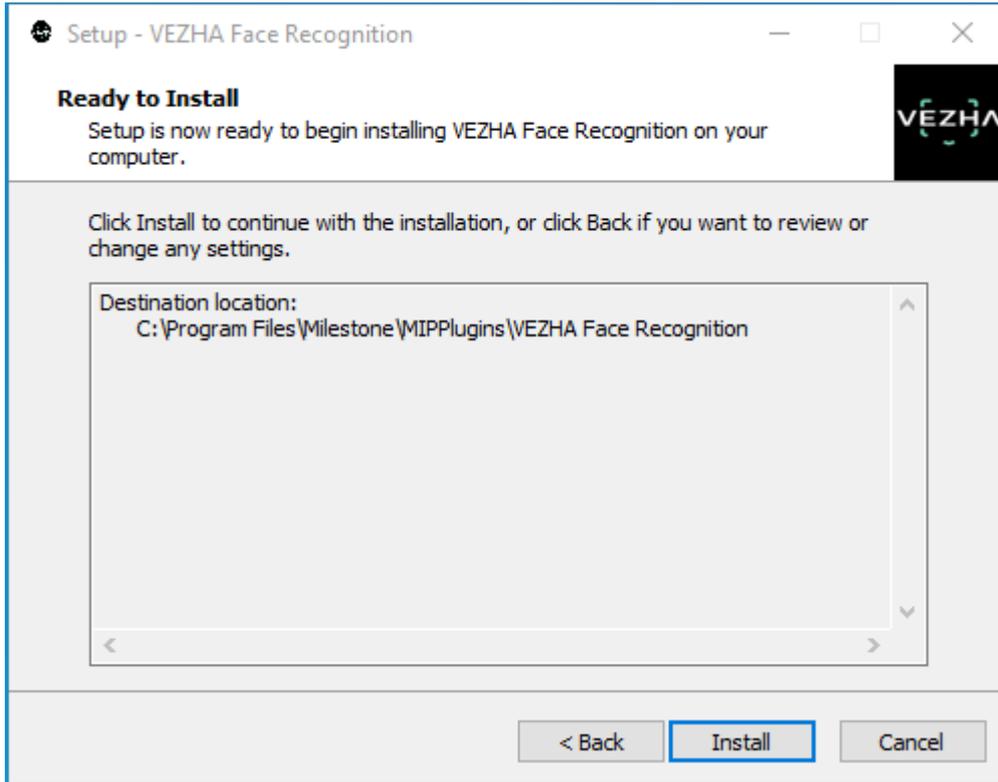
In the **Select Destination Location** window using the **Browse** button, specify the location where you want to install the plugin. The plugin must be installed in the **Milestone** folder with other plugins. After selecting the desired folder, click **Next** to continue the installation or **Cancel**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



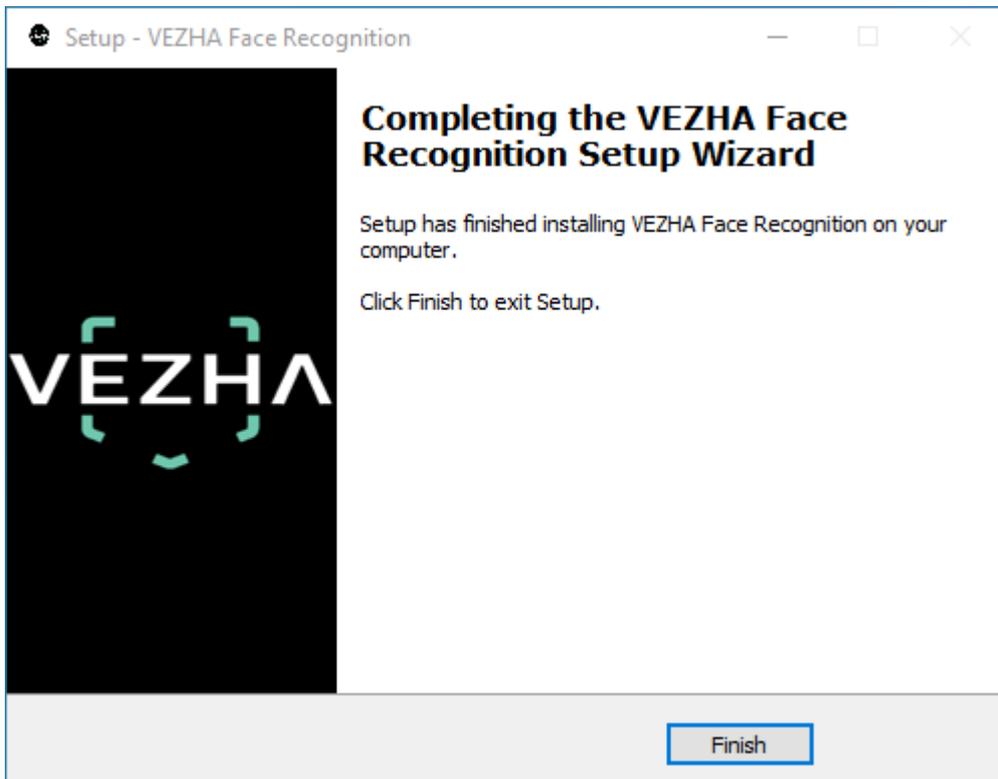
In this window, for the program to work correctly, you need to fill in all the fields correctly and click **Next** to continue the installation or **Cancel** to abort the installation.



Click **Install** to start the installation.

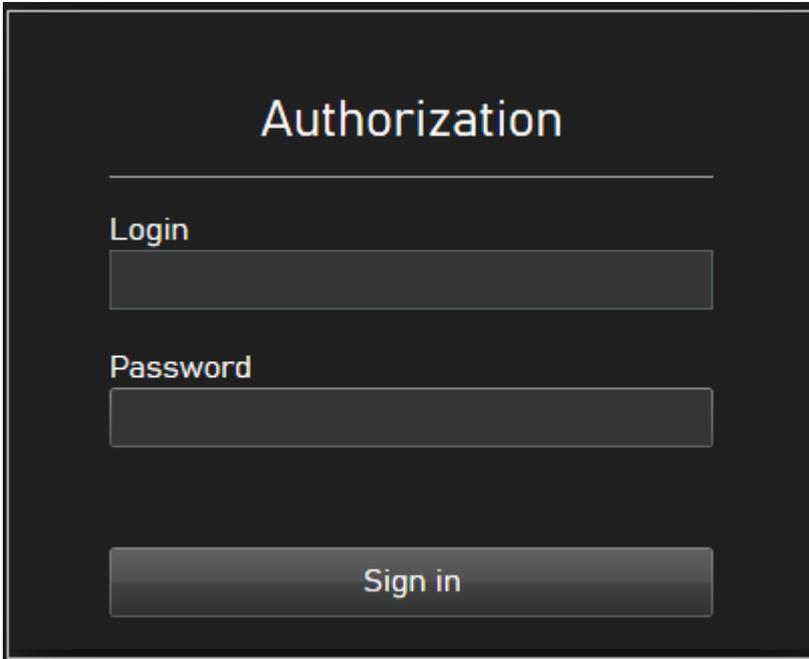


After the installation is completed, click **Finish**.

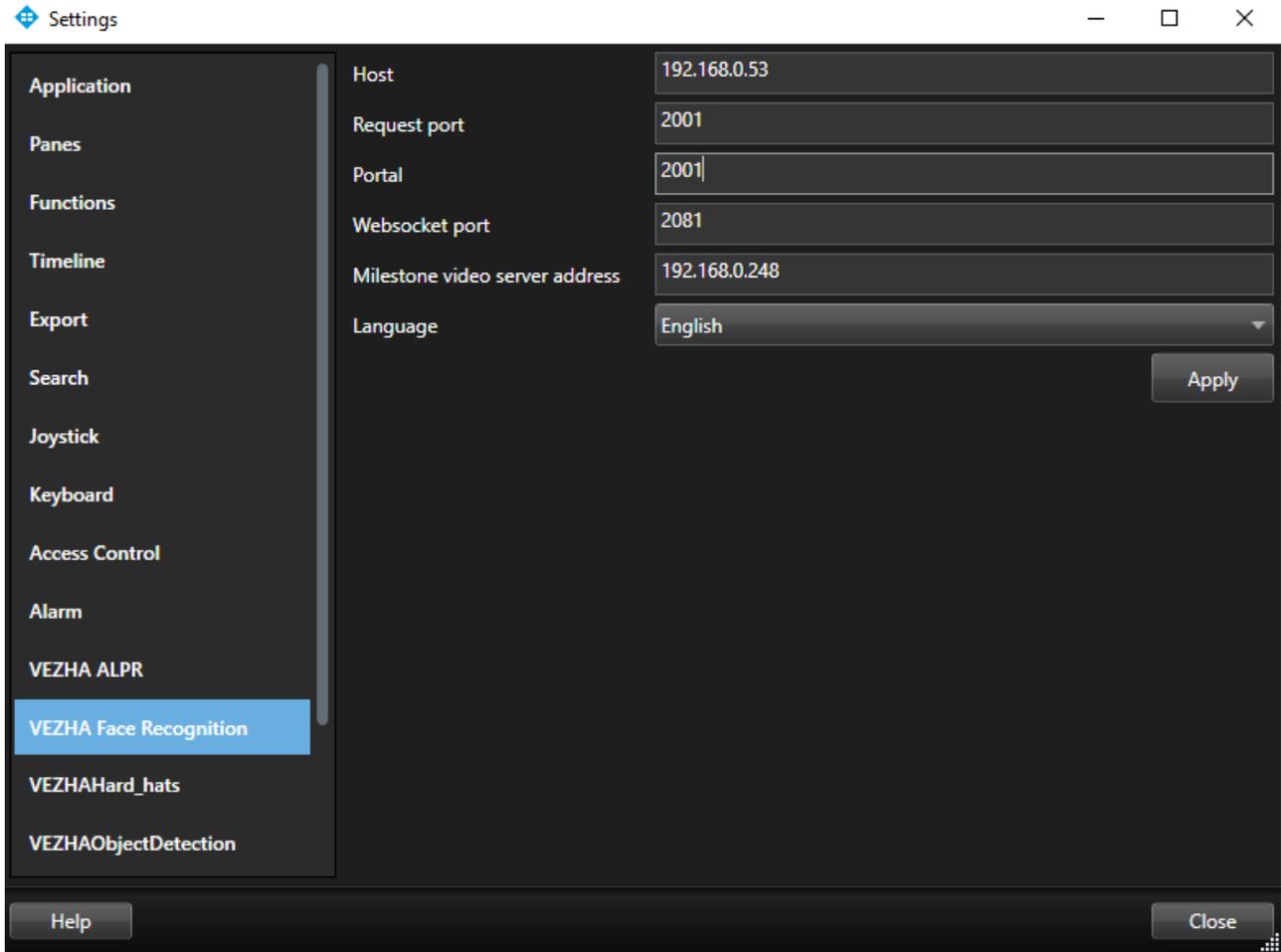


Log In

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 **Sign in**.

A dark-themed modal window titled "Authorization". It contains two input fields: "Login" and "Password". Below the input fields is a "Sign in" button.

In order to open the **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.**

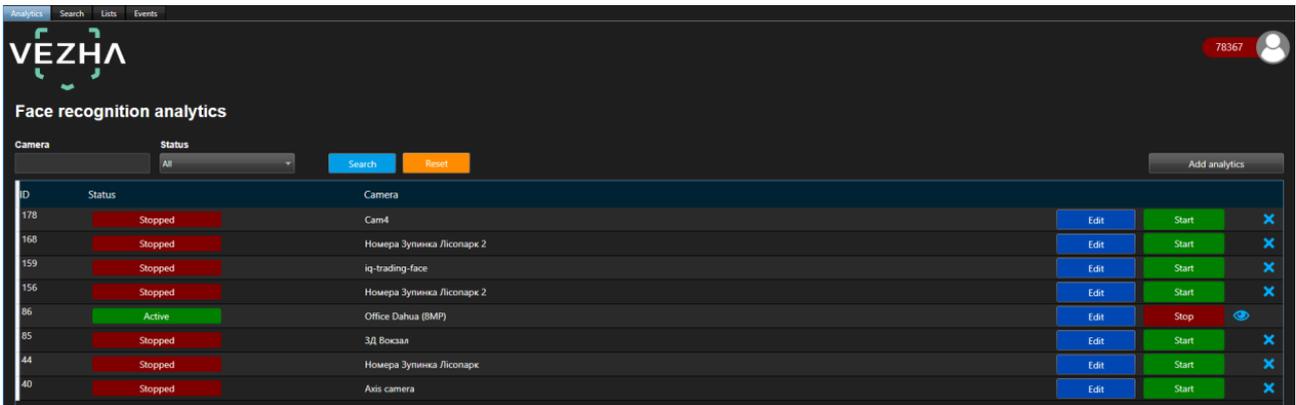
To change the language, use the **Language** field and select from the list the most convenient for you.

To make changes, click **Apply** and **reload** the plugin.

- [Installation](#) (see page 4)
- [Log In](#) (see page 7)

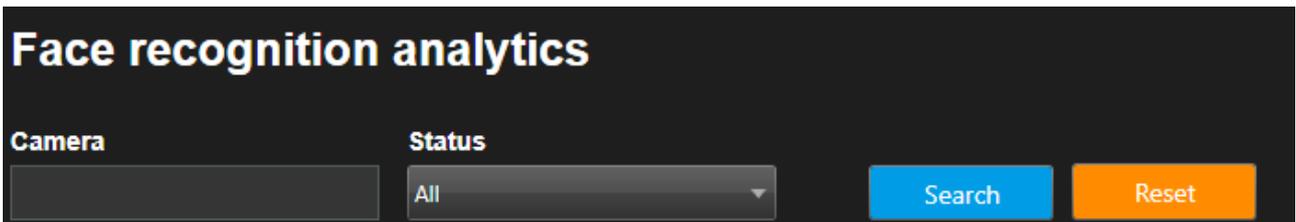
Face Recognition - Analytics

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



Analytics Search

At the top of the **Analytics** page, search fields are located.

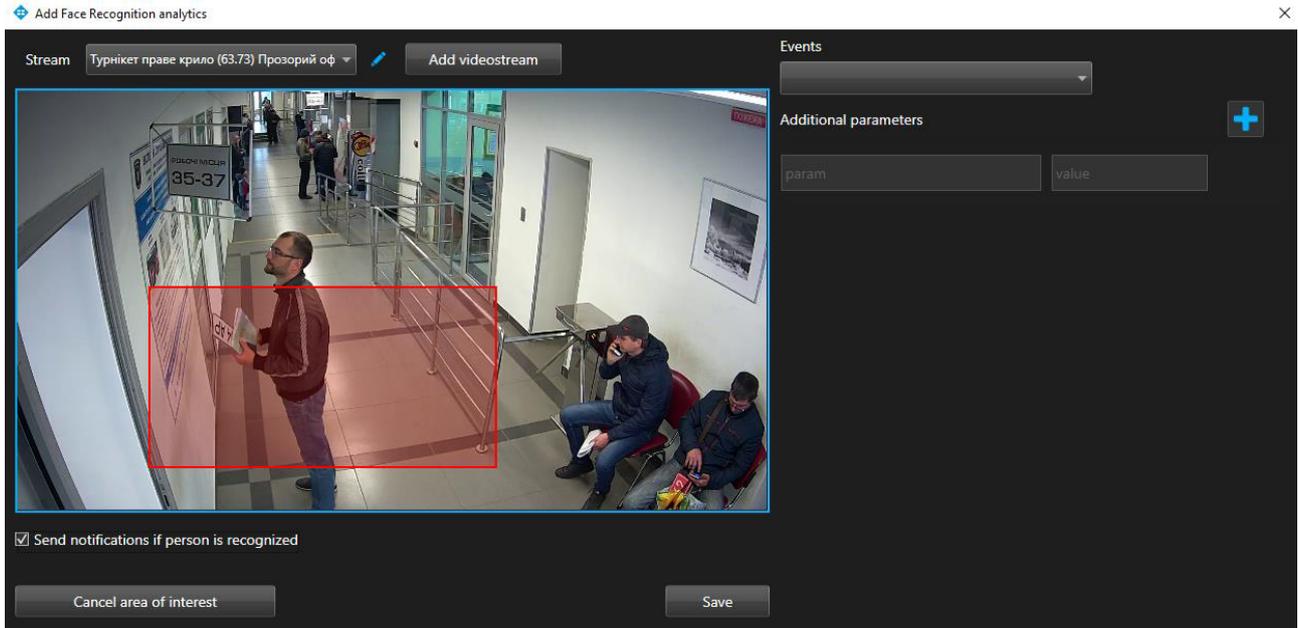


To find the desired analytics, enter the name or status of the analytics. To start the search, click the **Search** button.

Analytics Adding

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

In the opened window, fill the fields:



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. The Event Manager is designed to create notifications about found persons (depending on incoming parameters)
Events	Select events from the dropdown list. For this event, notifications will be sent to the services specified in the events
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 the **Edit** button right of analytics records. To create a new video stream, click **Add Video Stream**.

FIELD NAME	DESCRIPTION
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.
Login	Enter the name of the current user in the field.
Password	Enter password.
Camera	Select a camera from the drop-down list.
Camera address	Enter the address in the field, or select on the map below the location of the camera. The system will automatically determine the location coordinates.
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 an area of interest:

- Add a camera into a field Video stream.
- A video from the added camera will appear below the Video Stream field.
- Add an 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**.

Analytics Editing, Changing Status, Viewing, and Deleting

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 the box “Send notifications if person is recognized” to create your own event for sending notifications. The Event Manager is designed to create notifications about found persons (depending on incoming parameters)
Events	Select events from the dropdown list. For this event, notifications will be sent to the services specified in the events

FIELD NAME	RECOMMENDED VALUE
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 "-".

Edit an area of interest:

- Below the field Video stream will appear video from a new camera.
- Change the area of interest.

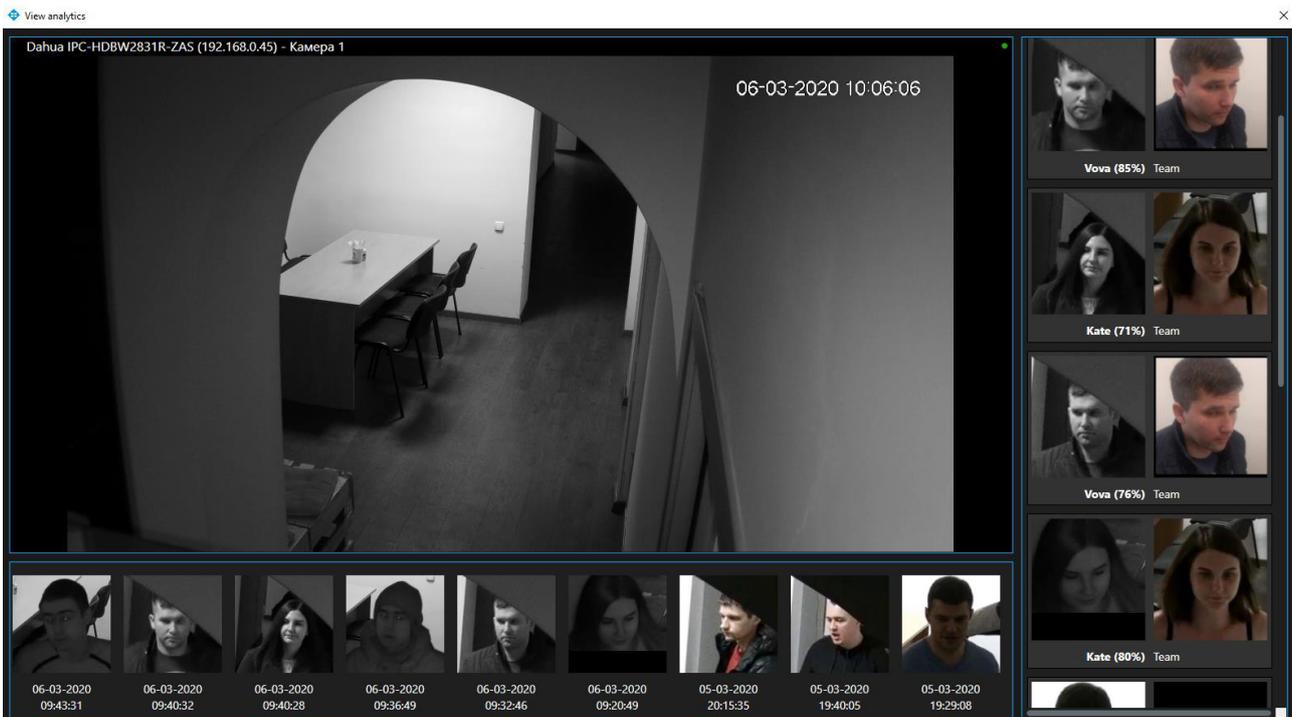
Click in the area where the video from the camera is located and set the area of interest. Face recognition will take place in the exposed area. In a way to cancel the area of interest click **Cancel area of interest**.

In the way to create analytics click **Save**.

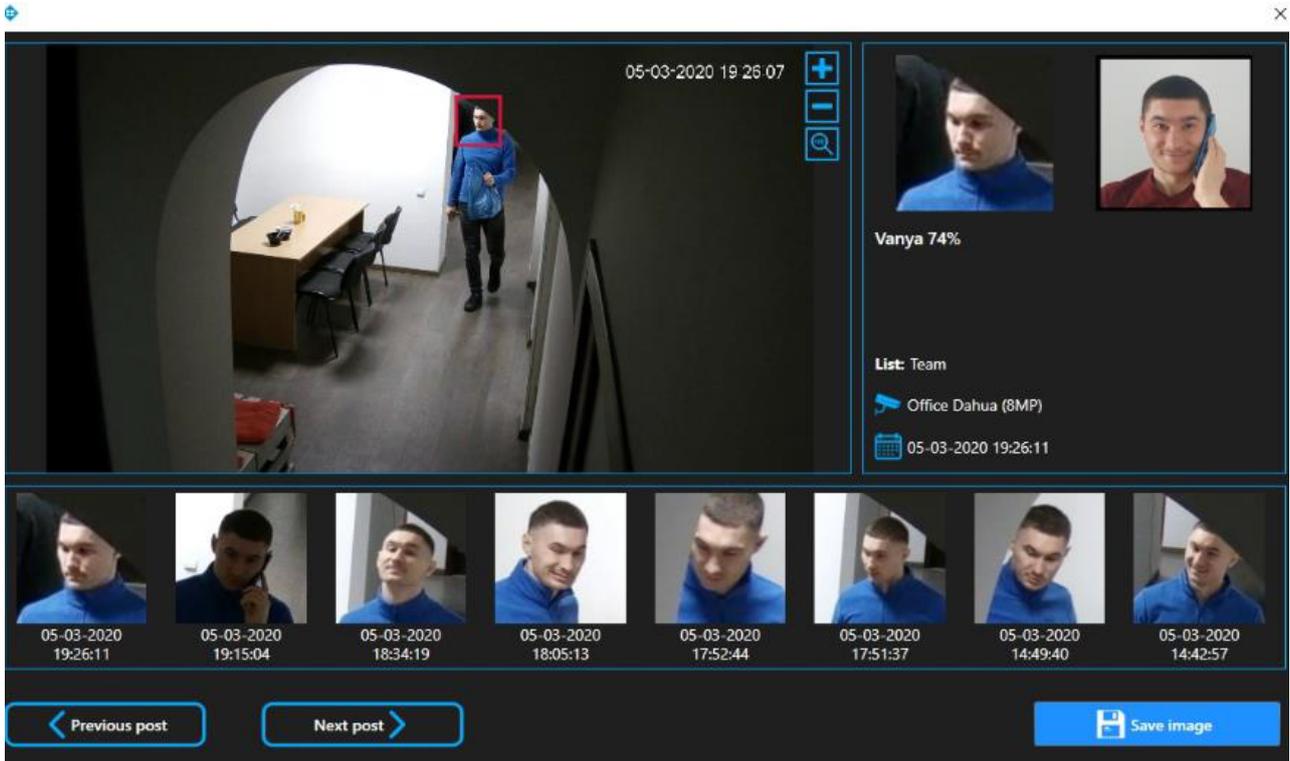
To start or stop analytics click **Start/Stop**.

To delete analytics click the **Delete** button.

To view analytics click the **View** button.



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

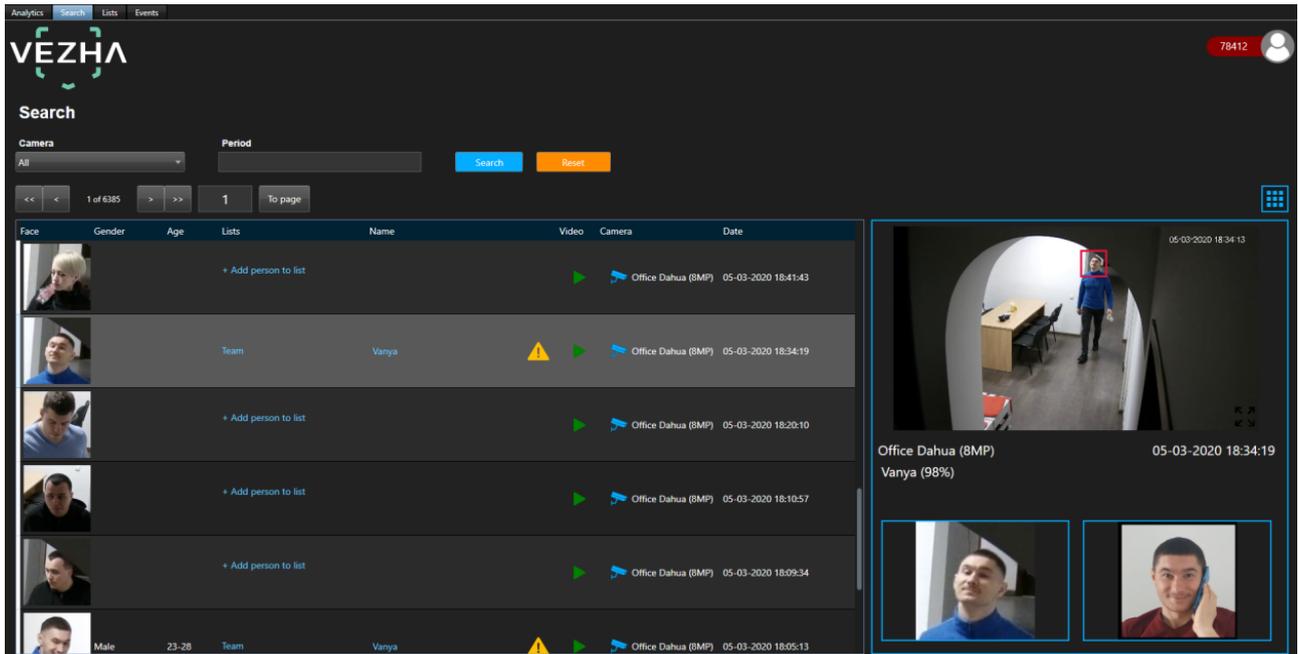


Click **Save Image** to download the image to your computer.

Click the **Previous Post** button to view the previously captured frame from the camera. Click the **Next Post** button to view the next captured frame from the camera.

- [Analytics Search](#) (see page 9)
- [Analytics Adding](#) (see page 9)
- [Analytics Editing, Changing Status, Viewing, and Deleting](#) (see page 12)

Face Recognition - Search

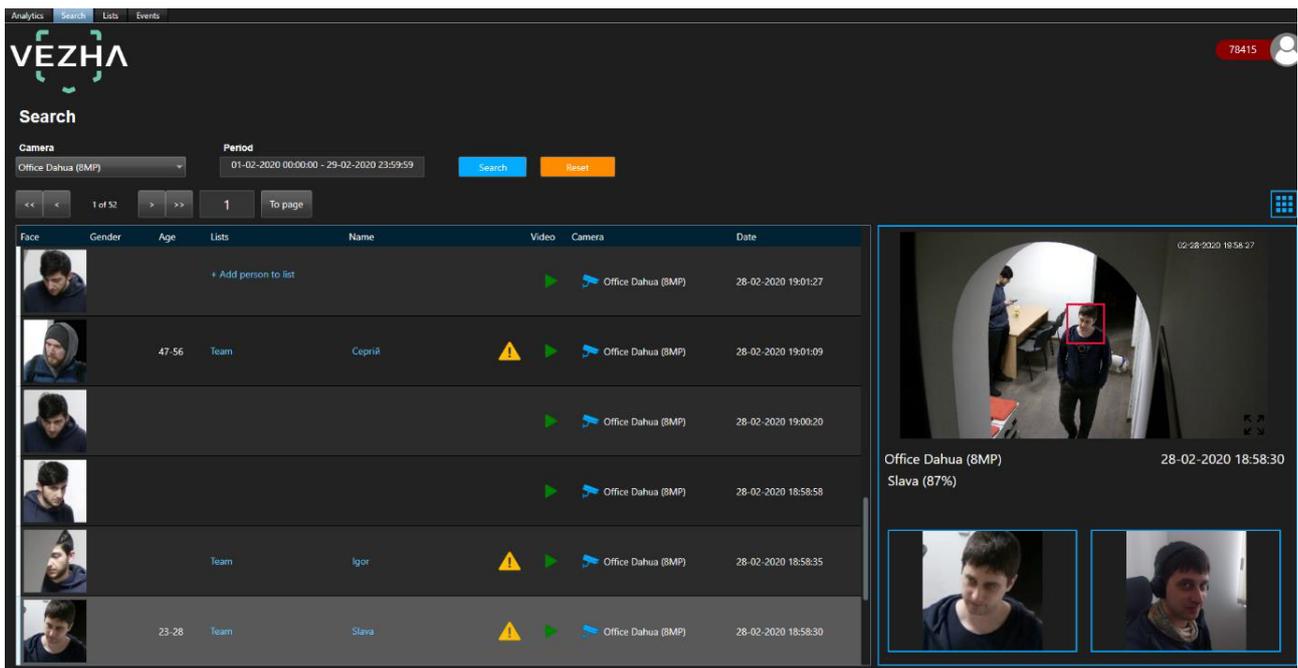


In order to find a person fill in the fields:

FIELD NAME	DESCRIPTION
Period	Click on the field and choose a time period.
Camera	Click on the field and select a camera.

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

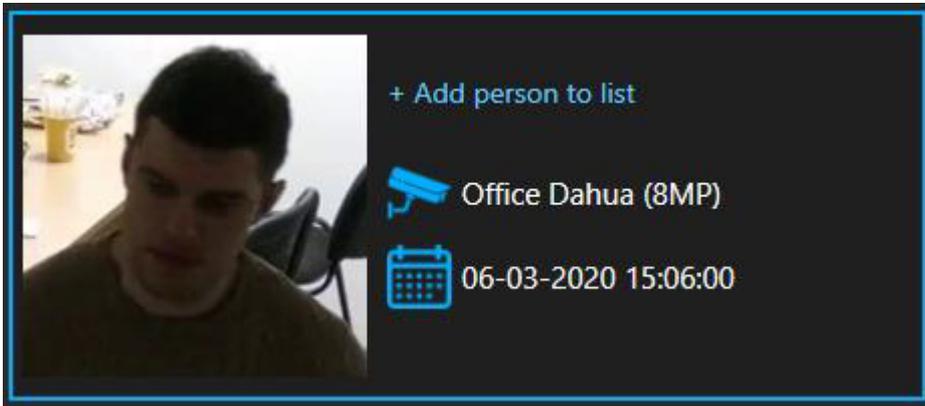
Search results are shown in the table below:



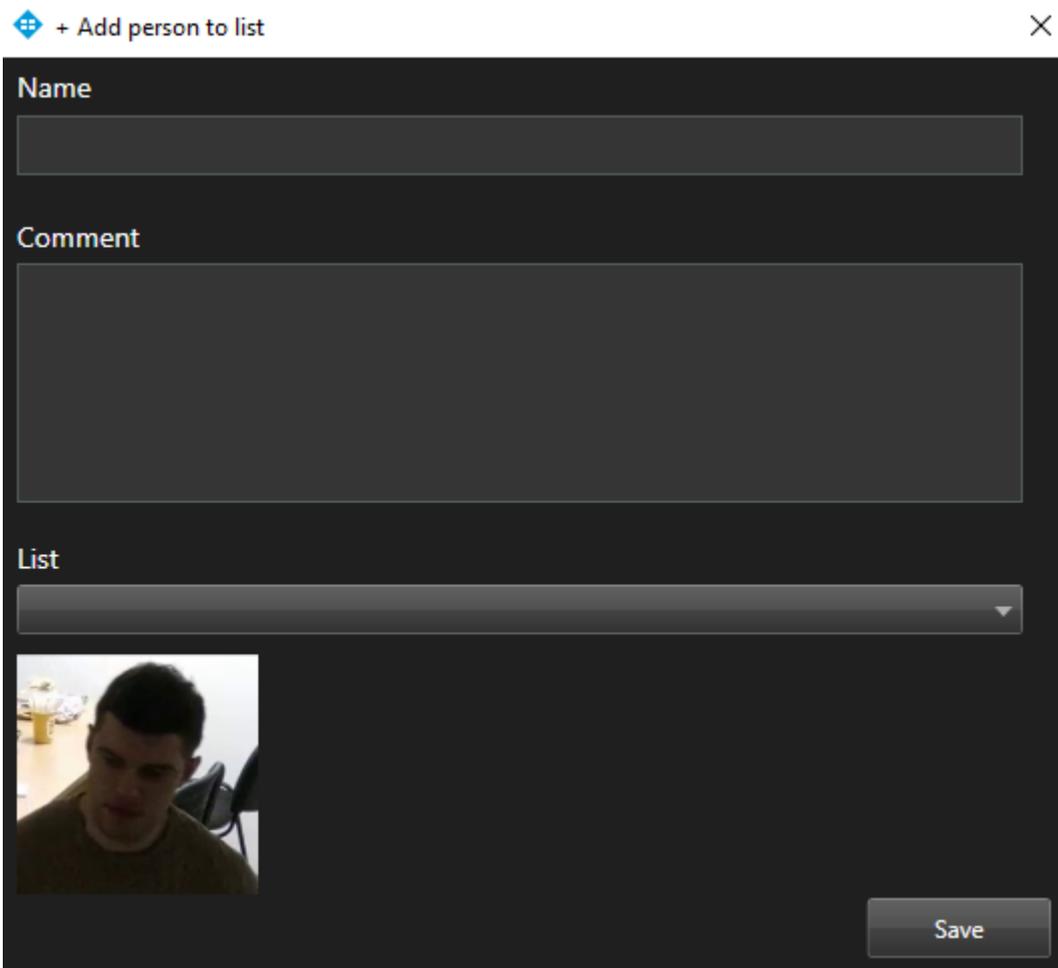
Work with Face Recognition Records

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.**



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

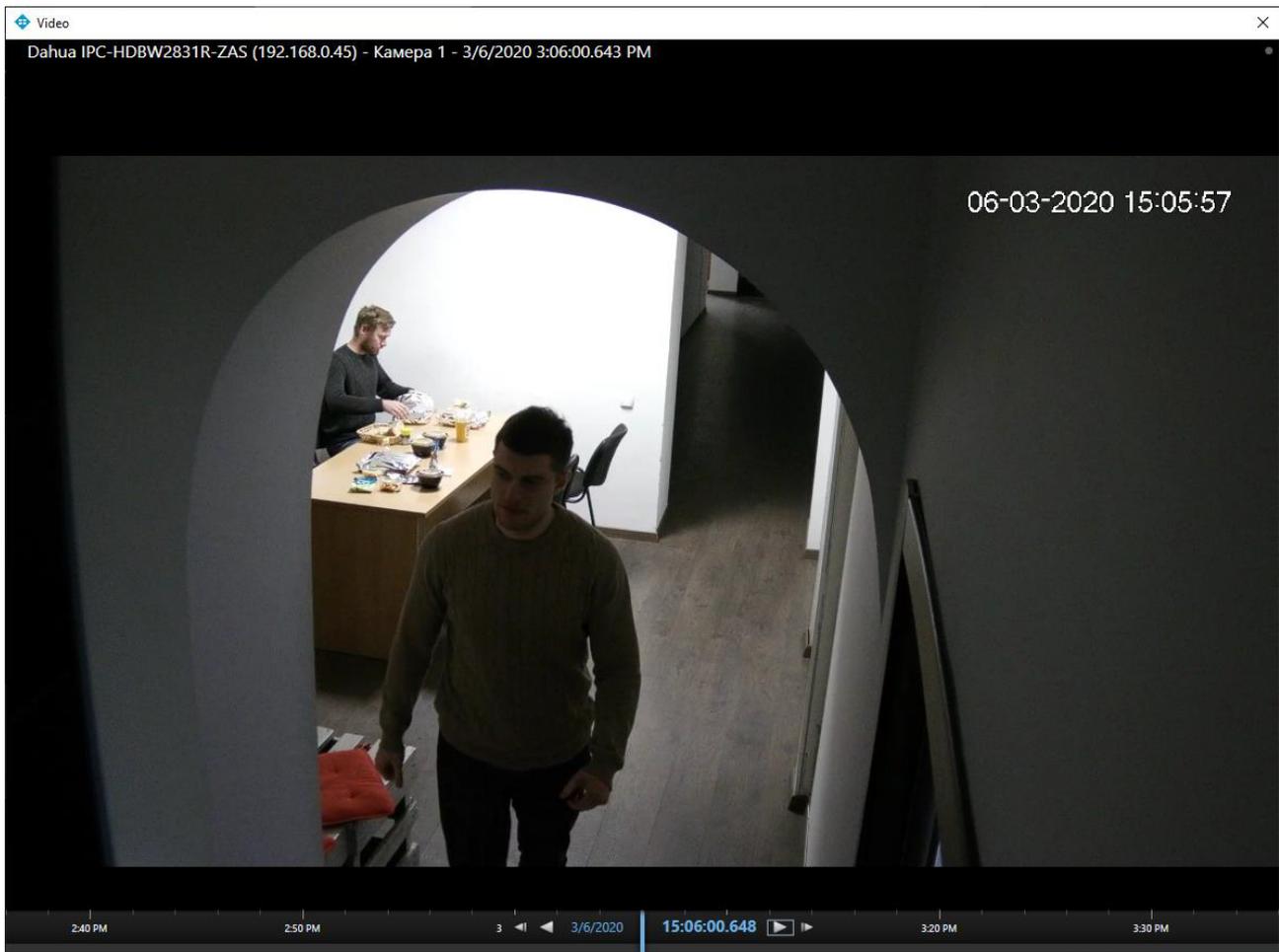
A screenshot of a modal form titled '+ Add person to list'. The form has a dark background and contains the following elements: a 'Name' label above a text input field; a 'Comment' label above a larger text area; a 'List' label above a dropdown menu; a small video frame showing the same man's face as in the previous image; and a 'Save' button at the bottom right. A close button (X) is located in the top right corner of the modal.

FIELD NAME	DESCRIPTION
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.
Comment	Enter the text of the notification that will be received when a person is found.
List	From the drop-down list, select the name of the list, you want to add a person.
Upload photo	Upload a photo of the person. This photo will be used to recognize the person.

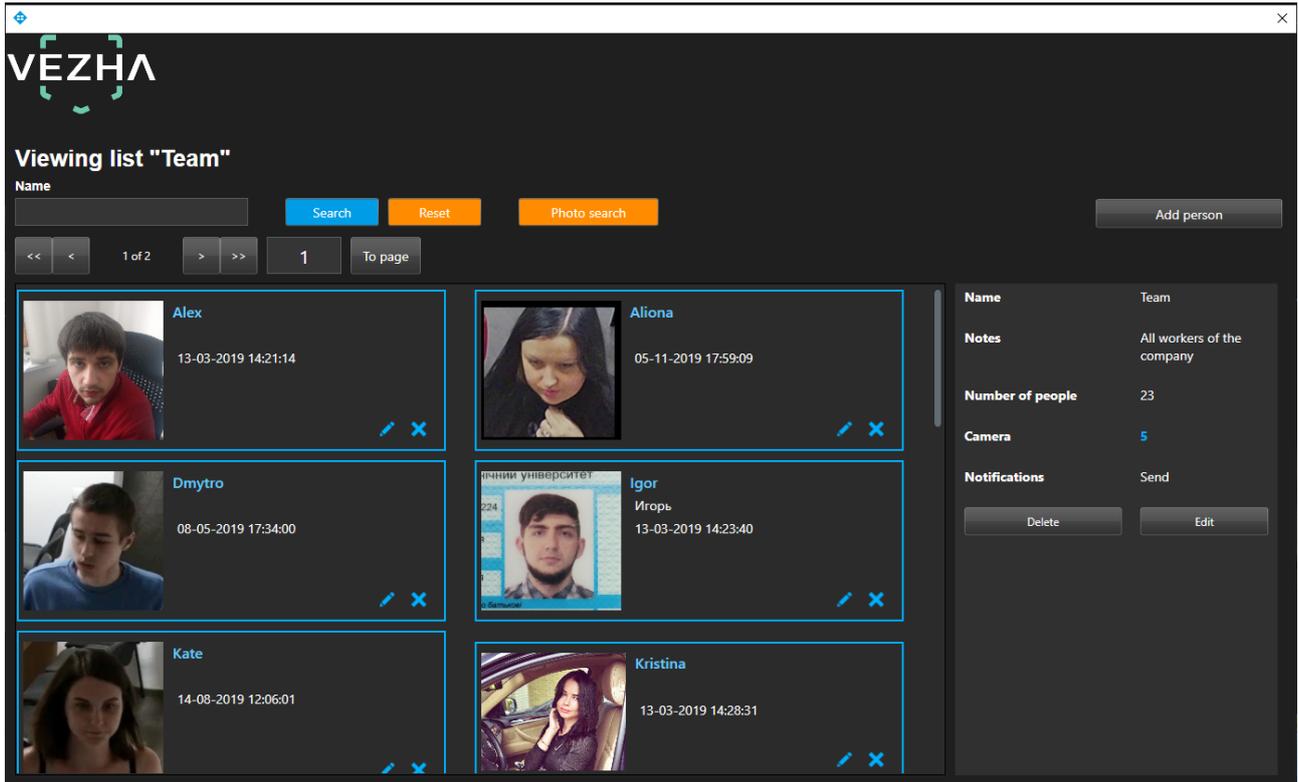
In order for the changes to be accepted, click **Save**.



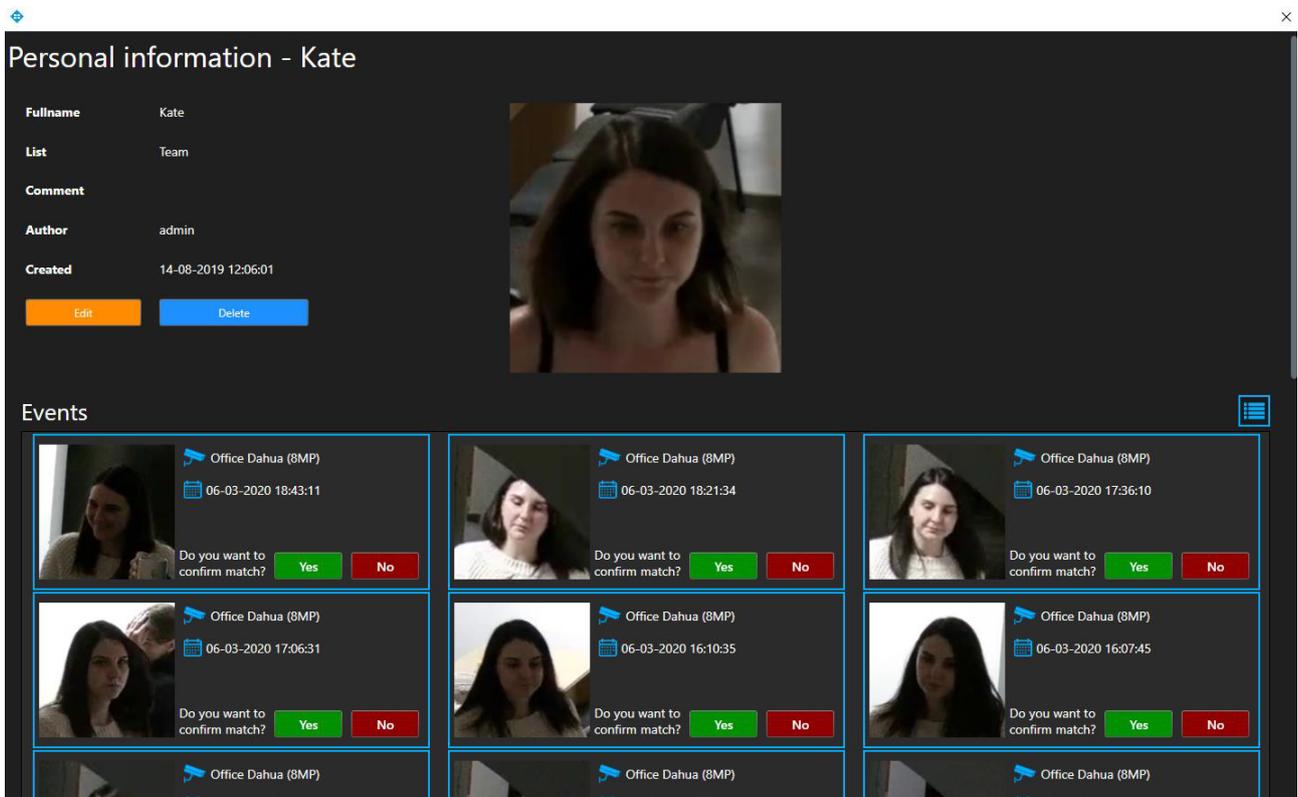
By clicking on you can watch the video stream in real time.



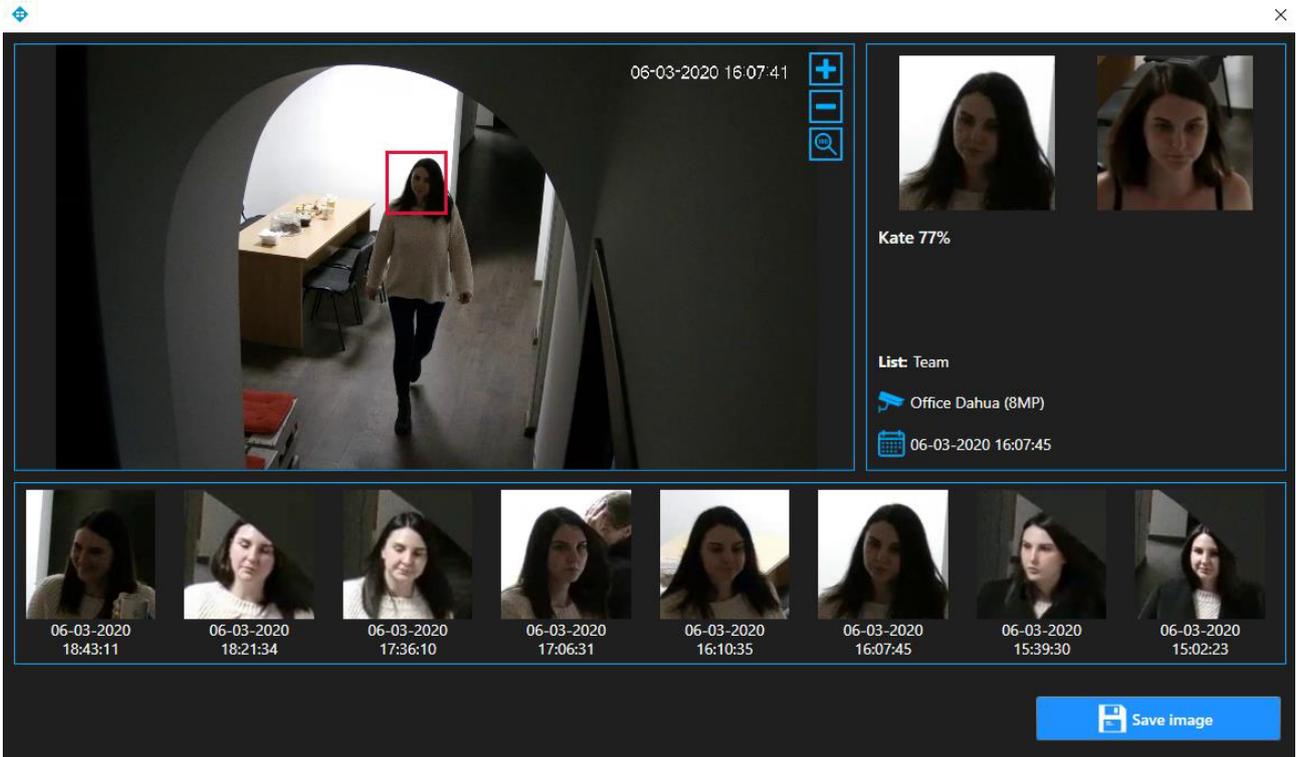
When you click on a list name, a list view window will appear.



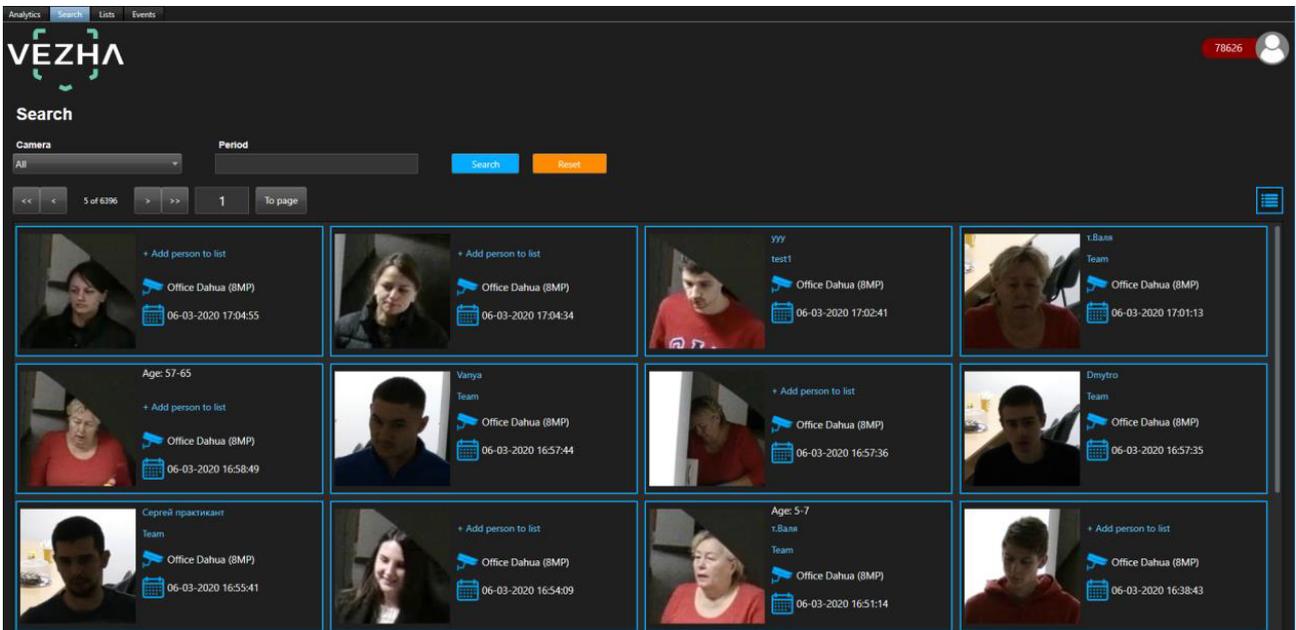
When you click on the person's name, will open the window with the **Personal information**.



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



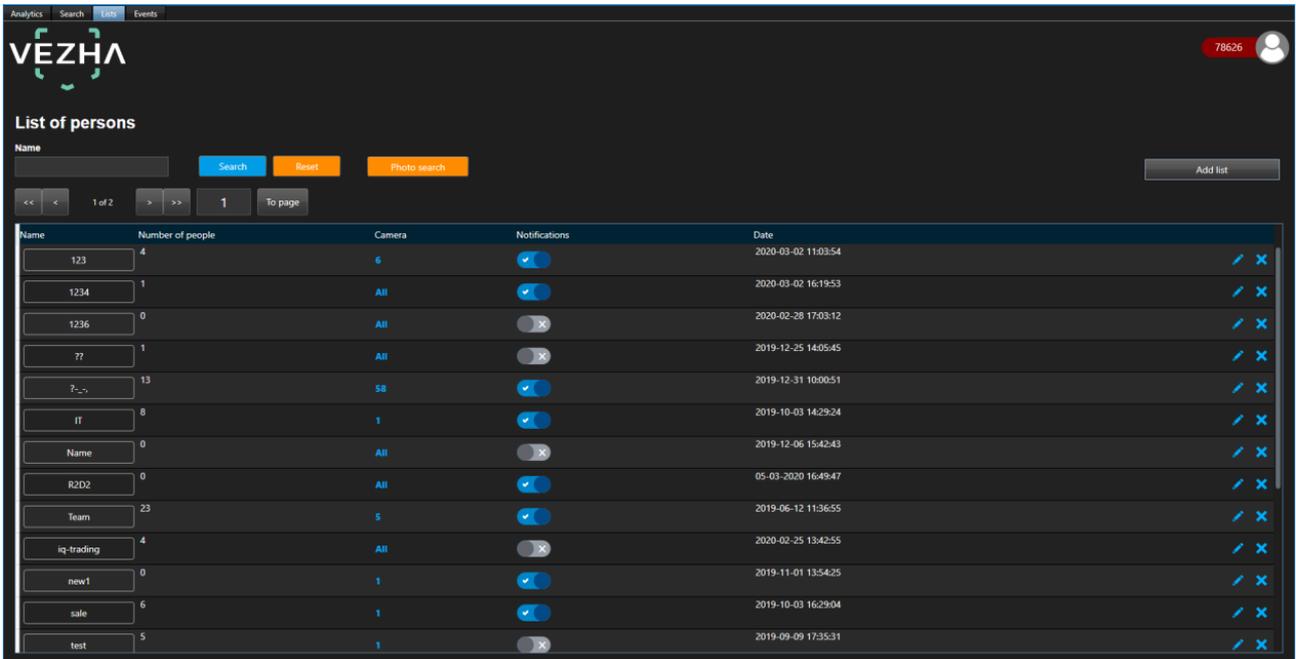
To change the format of records click on



- [Work with Face Recognition Records \(see page 16\)](#)

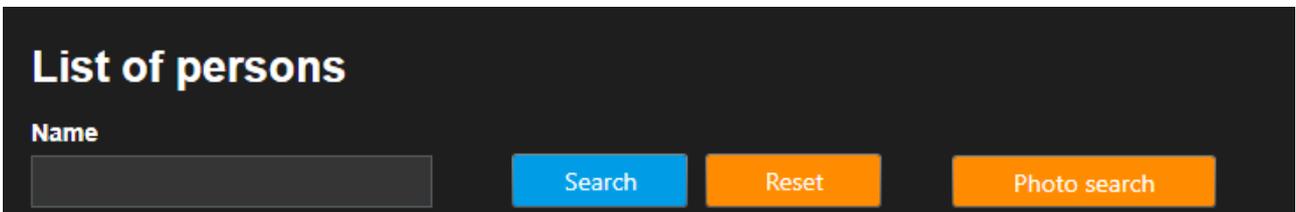
Face Recognition - Lists

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



Lists Search

At the top of the screen is located a search field.



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.

Lists Adding and Editing

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

In the window that opens, fill the fields:

✚ Add list
✕

Name

Events

▼

Notes

Additional parameters

param

value

+

Camera

▼

Send notifications if a recognized person is listed

Save

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. The Event Manager is designed to create notifications about found faces (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 parameters fields. To add parameters click the button "+". To remove parameters click the button "-".

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

In the way to edit the record click on the **Edit** button right of the record.

In the opened window fill the fields:

✚ Edit list
✕

Name

Events

Notes

Additional parameters

Camera

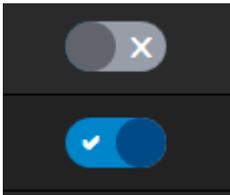
Send notifications if a recognized person is listed

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. The Event Manager is designed to create notifications about found faces (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 parameters fields. To add parameters click the button "+". To remove parameters click the button "-".

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

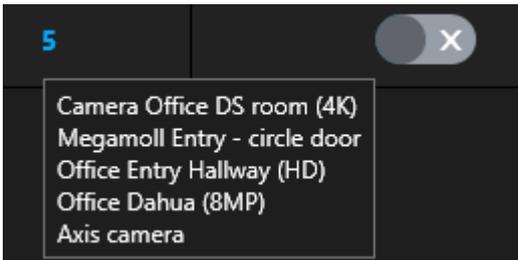
In a way to remove the record click the **Delete** button on the right side of the record.

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



Viewing Lists

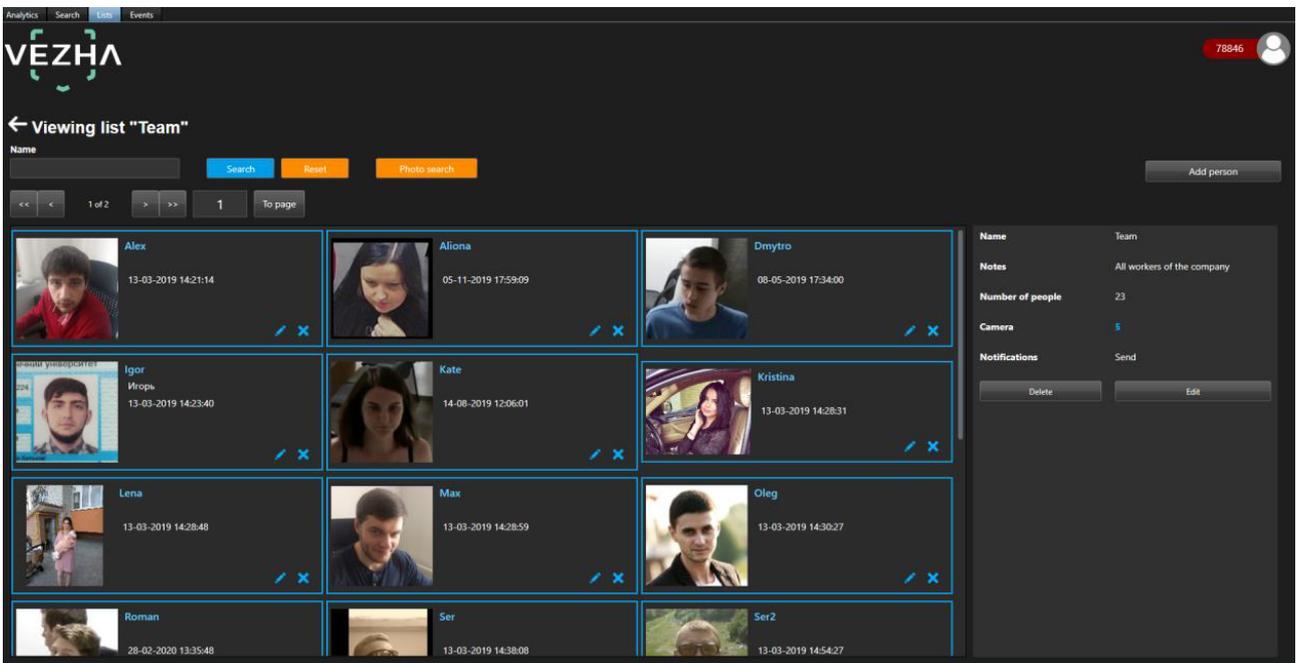
In a way to view information about the cameras used for monitoring lists, hover over the number of cameras in the list record.



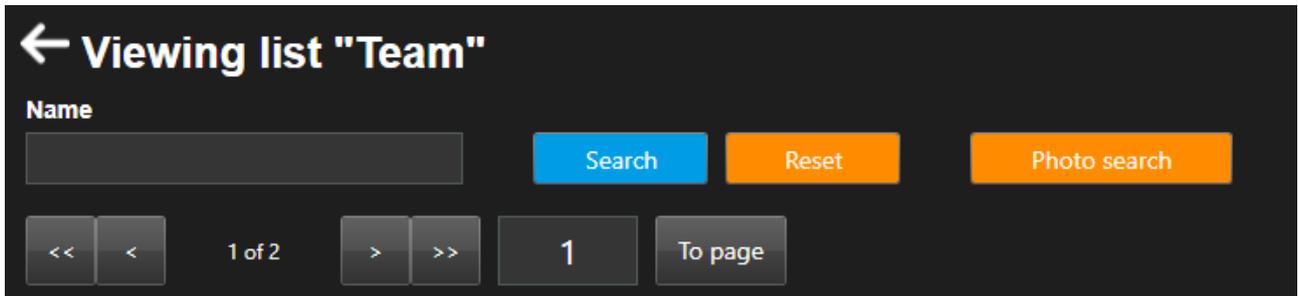
To view information about the list, click on its name. When clicked on the name, you will go to the list



view tab. In the way to return back click to the left of the tab name.



Person Adding and Editing



← Viewing list "Team"

Name

Search Reset Photo search

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

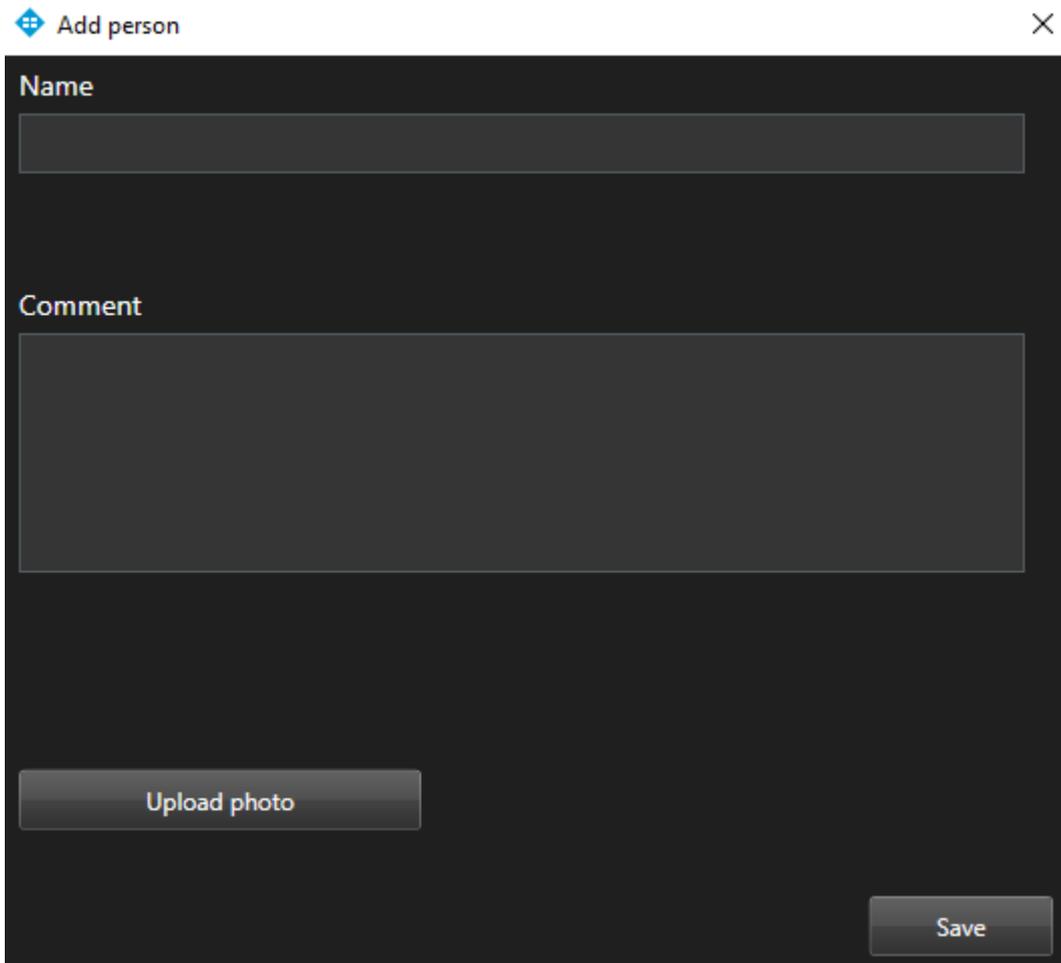
In order to find a person, enter the person's name in the search field.

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

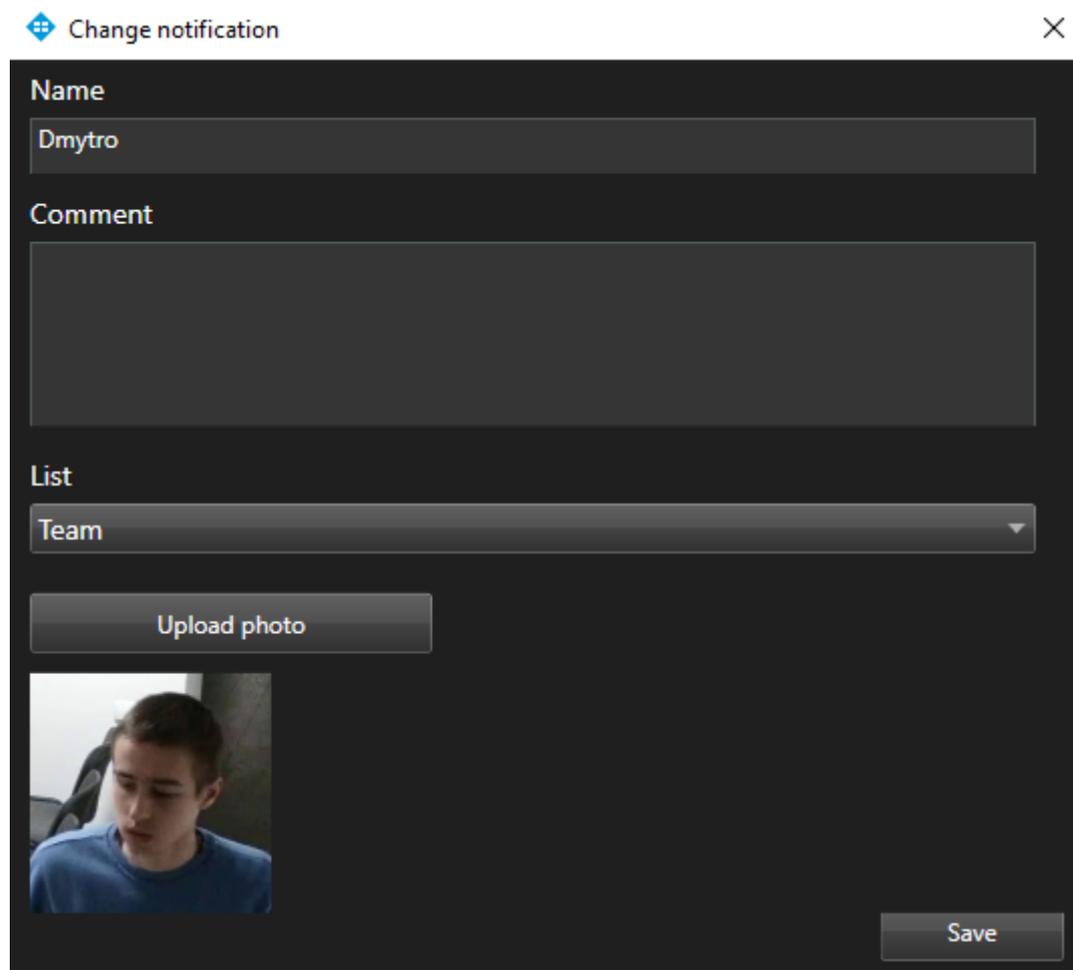
Save

FIELD NAME	DESCRIPTION
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.
Comment	This field is intended to describe the purpose of the created record. Enter a description of the record in the Message field.
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 the **Edit** button right of the record.

In the opened window fill the fields:



FIELD NAME	DESCRIPTION
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.

FIELD NAME	DESCRIPTION
Comment	Enter the message that will be received when a person is found.
List	Choose a list name from the drop-down list to move the person to another list.
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 a way to remove the record click  on the right side of the screen.



In the way to move to List page click .

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

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

View List Record

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

The screenshot shows a record for a person named Dmytro. The 'Personal information' section includes fields for Fullname (Dmytro), List (Team), Comment, Author (admin), and Created (08-05-2019 17:34:00). Below this are 'Edit' and 'Delete' buttons. A photo of the person is displayed. The 'Events' section shows a grid of nine event cards, each with a photo, a timestamp, and a 'Do you want to confirm match?' prompt with 'Yes' and 'No' buttons.

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

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

✚ Change notification
✕

Name

Comment

List

Team
▼

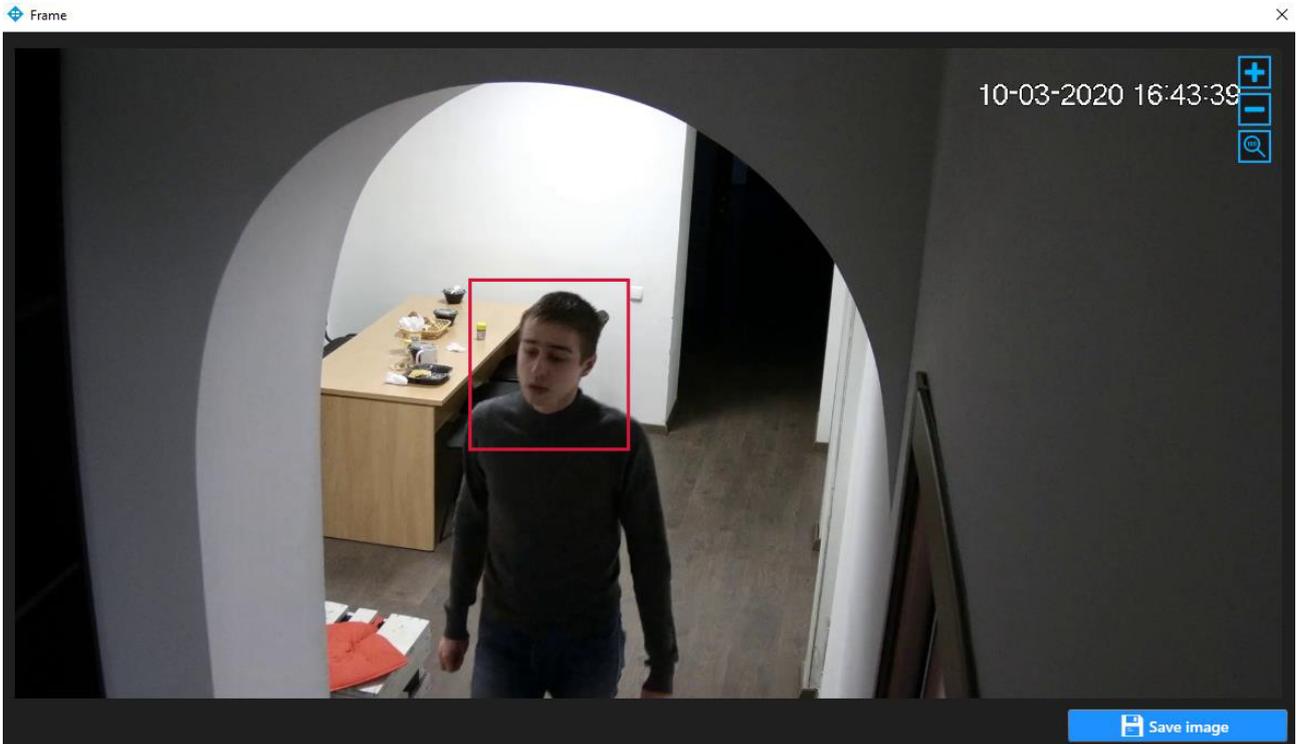
Upload photo



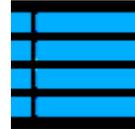
Save

FIELD NAME	DESCRIPTION
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.
Comment	Enter the message that will be received when a person is found.
List	Choose a list name from the drop-down list to move the person to another list.
Upload photo	Upload a photo of the person. This photo will be used to recognize the person.

To view a frame from a recording, click on the **Frame** on the right side of the record or on the **Expand** icon at the photo.



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



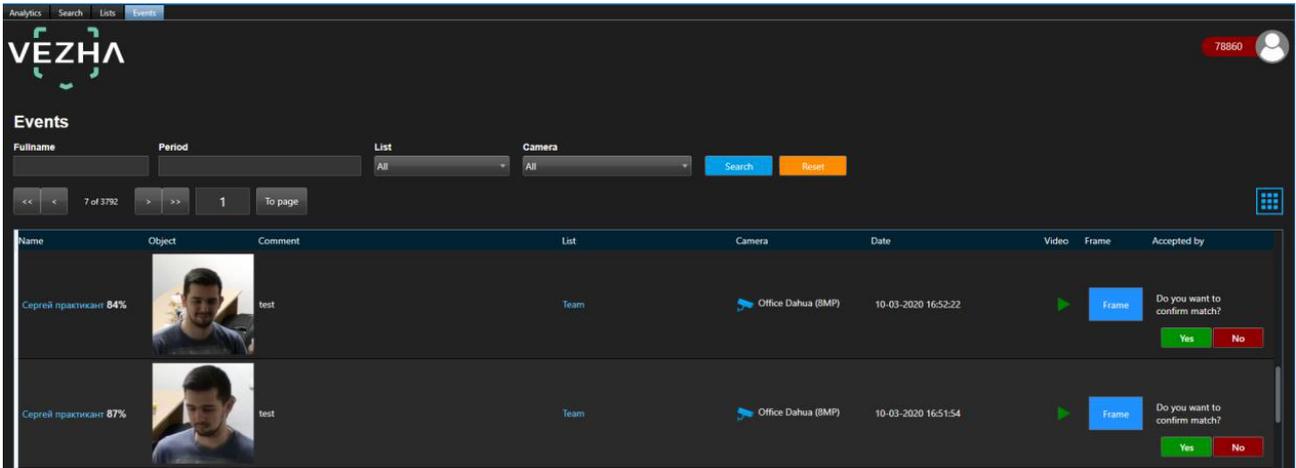
In a way to change the Personal information record format, click

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**.

- [Lists Search](#) (see page 20)
- [Lists Adding and Editing](#) (see page 20)
- [Viewing Lists](#) (see page 23)
- [Person Adding and Editing](#) (see page 24)
- [View List Record](#) (see page 26)

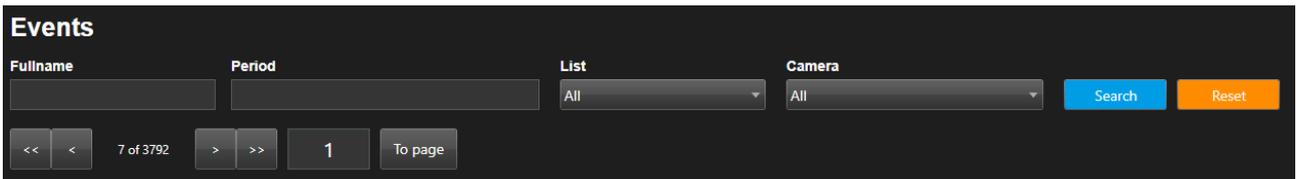
Face Recognition - Events

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



Event Search

At the top of the screen are located search fields.

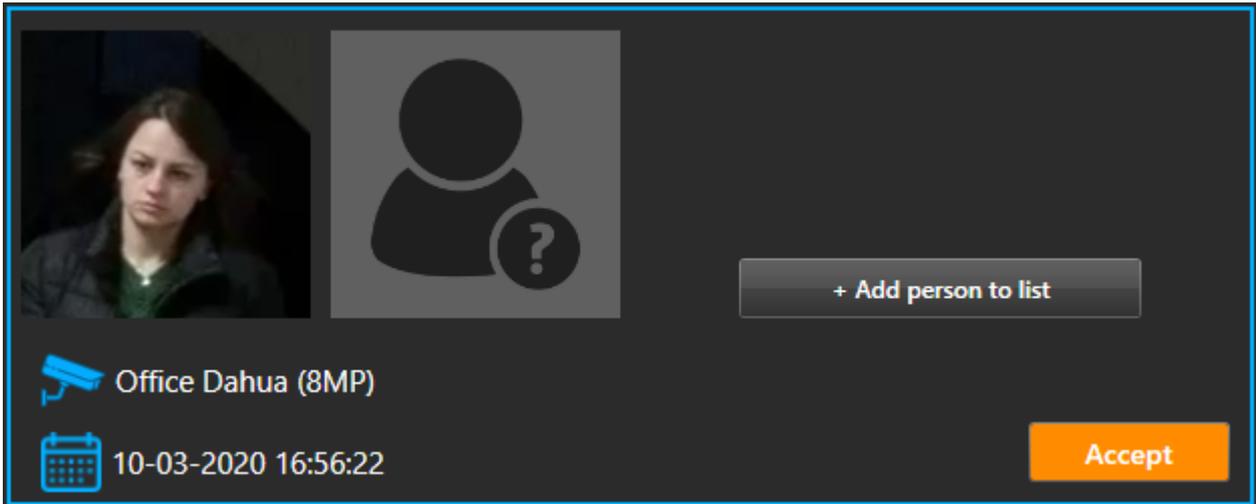


FIELD NAME	DESCRIPTION
Name	Enter the name of a person.
Period	Click on the field and select the desired time period.
List	Click on the field and select the desired list.
Camera	Click on the field and select the desired camera.

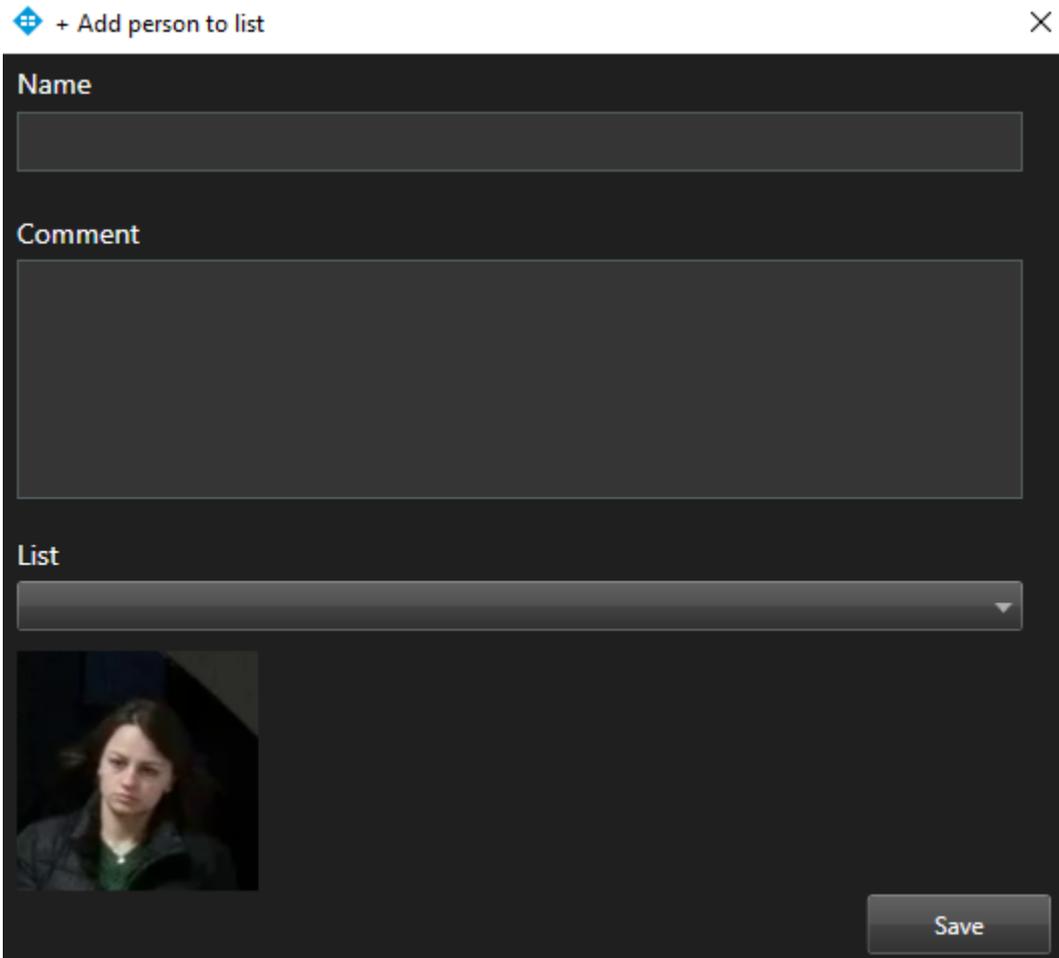
Click **Search** to display the search results. Click **Reset** to clear the input fields.

Work with Face Recognition Records

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



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



FIELD NAME	DESCRIPTION
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.

FIELD NAME	DESCRIPTION
Comment	Enter the message that will be received when a person is found.
List	Choose a list name from the drop-down list to move the person to another list.
Upload photo	Upload a photo of the person. This photo will be used to recognize the person.

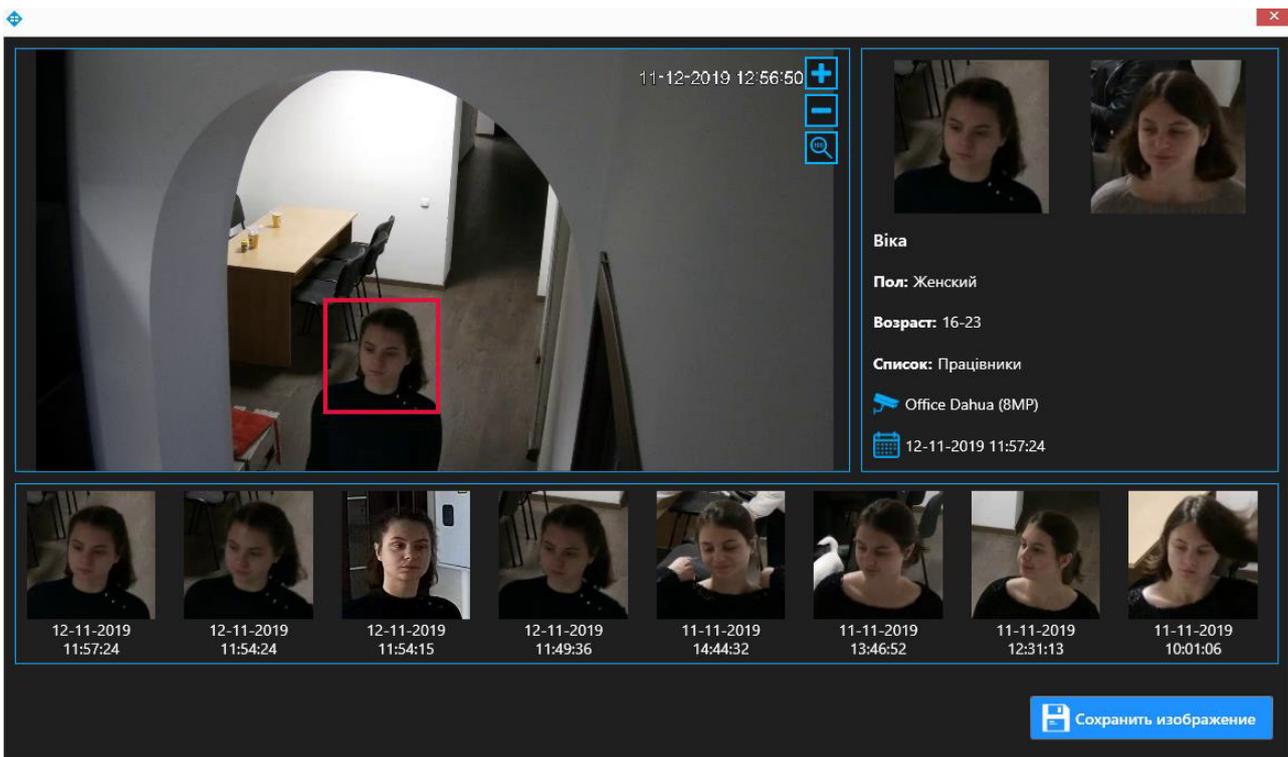
In order for the changes to be accepted, click **Save**.



In the way to change record format 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.

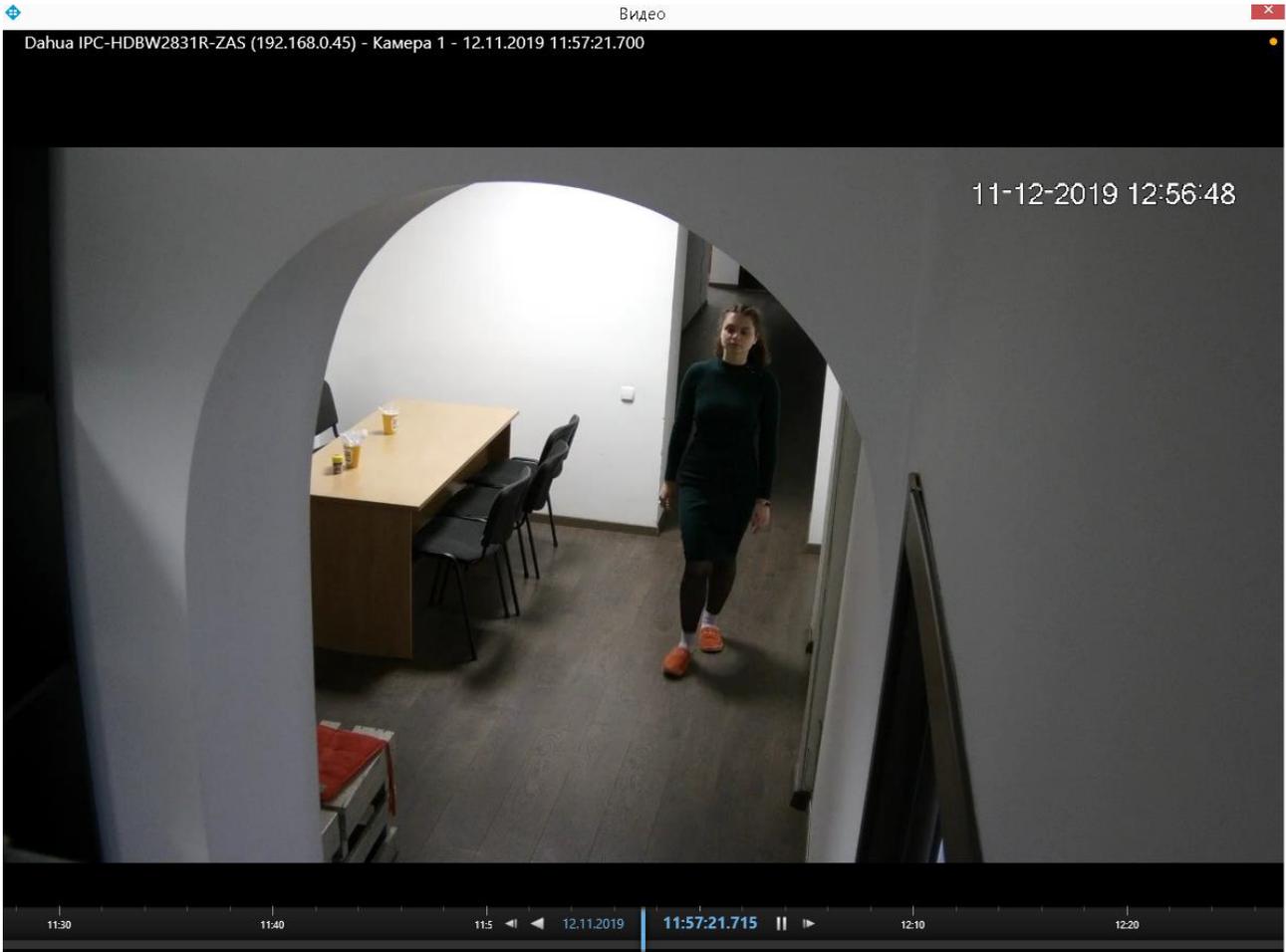


The screenshot shows a video window with a timestamp of 11-12-2019 12:56:50. A red box highlights a person's face in the video. To the right, a metadata panel displays the following information:

- Віка
- Пол: Женский
- Возраст: 16-23
- Список: Працівники
- Office Dahua (8MP)
- 12-11-2019 11:57:24

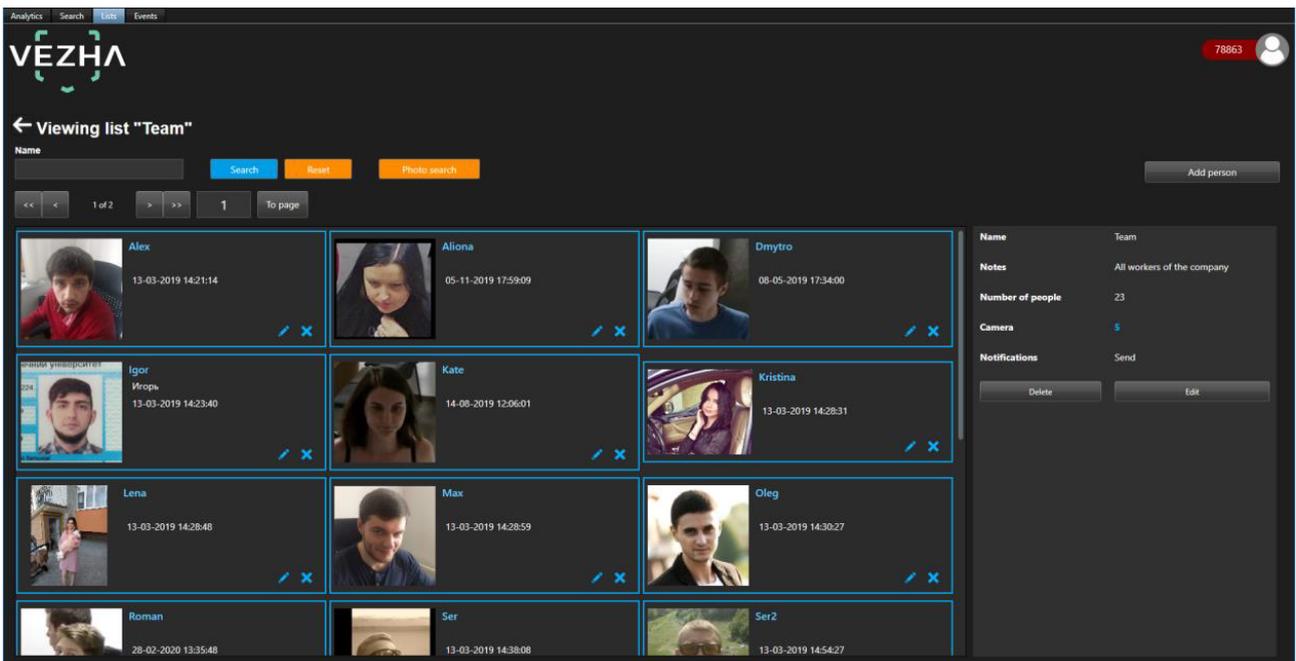
Below the video, a timeline shows eight frames with timestamps: 12-11-2019 11:57:24, 12-11-2019 11:54:24, 12-11-2019 11:54:15, 12-11-2019 11:49:36, 11-11-2019 14:44:32, 11-11-2019 13:46:52, 11-11-2019 12:31:13, and 11-11-2019 10:01:06. A blue button at the bottom right says "Сохранить изображение".

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



Click on the icon **Play** to reproduce video.

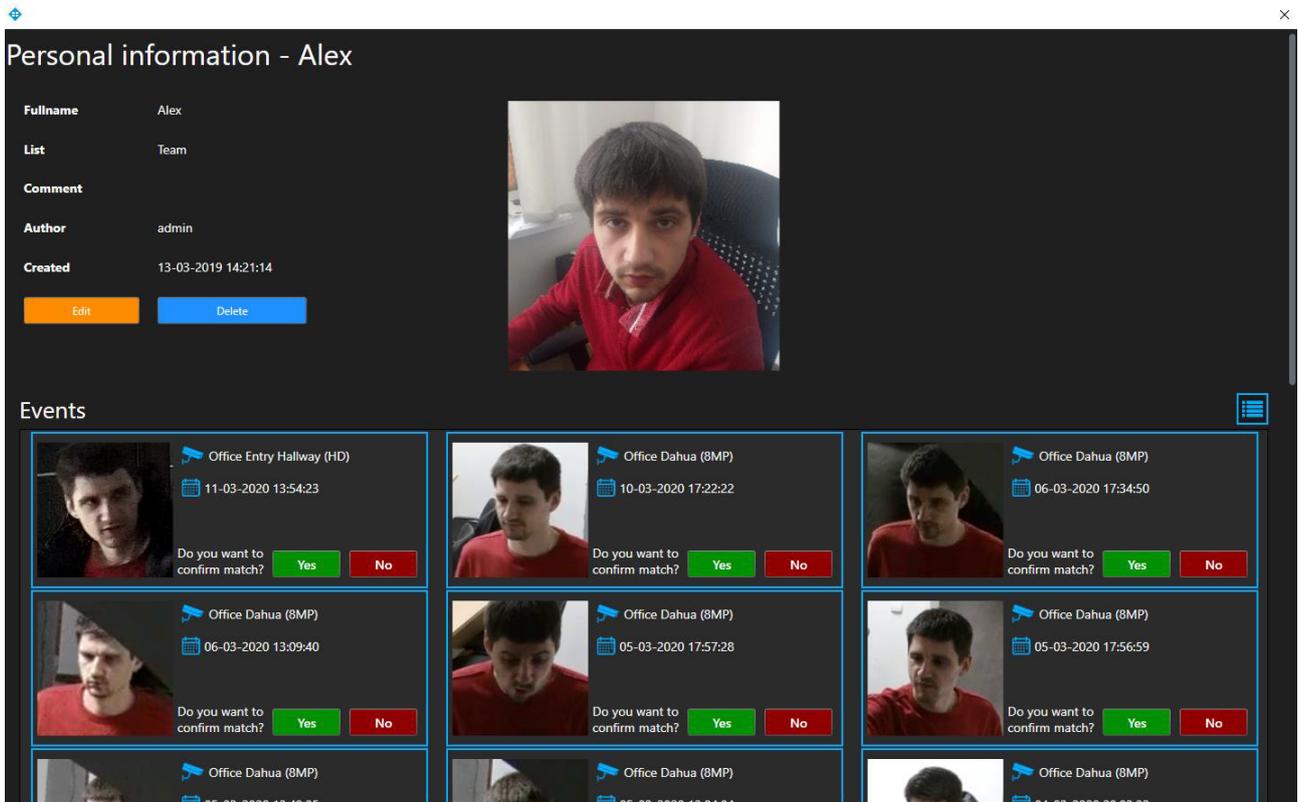
Clicking on the list name will open a window with list records.



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

View Face Recognition Records

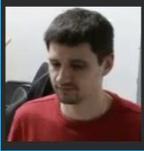
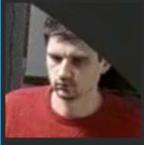
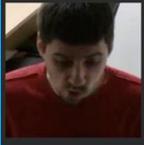
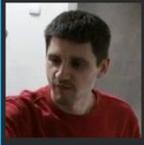
To view information about a person, click on a name in the list record.



Personal information - Alex

Fullname Alex
List Team
Comment
Author admin
Created 13-03-2019 14:21:14
[Edit](#) [Delete](#)

Events

 Office Entry Hallway (HD) 11-03-2020 13:54:23 Do you want to confirm match? Yes No	 Office Dahua (8MP) 10-03-2020 17:22:22 Do you want to confirm match? Yes No	 Office Dahua (8MP) 06-03-2020 17:34:50 Do you want to confirm match? Yes No
 Office Dahua (8MP) 06-03-2020 13:09:40 Do you want to confirm match? Yes No	 Office Dahua (8MP) 05-03-2020 17:57:28 Do you want to confirm match? Yes No	 Office Dahua (8MP) 05-03-2020 17:56:59 Do you want to confirm match? Yes No
 Office Dahua (8MP) 05-03-2020 13:09:35 Do you want to confirm match? Yes No	 Office Dahua (8MP) 05-03-2020 13:09:35 Do you want to confirm match? Yes No	 Office Dahua (8MP) 05-03-2020 13:09:35 Do you want to confirm match? Yes No

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

In the opened window edit the next fields:

Change notification
✕

Name

Comment

List

Team
▾

Upload photo

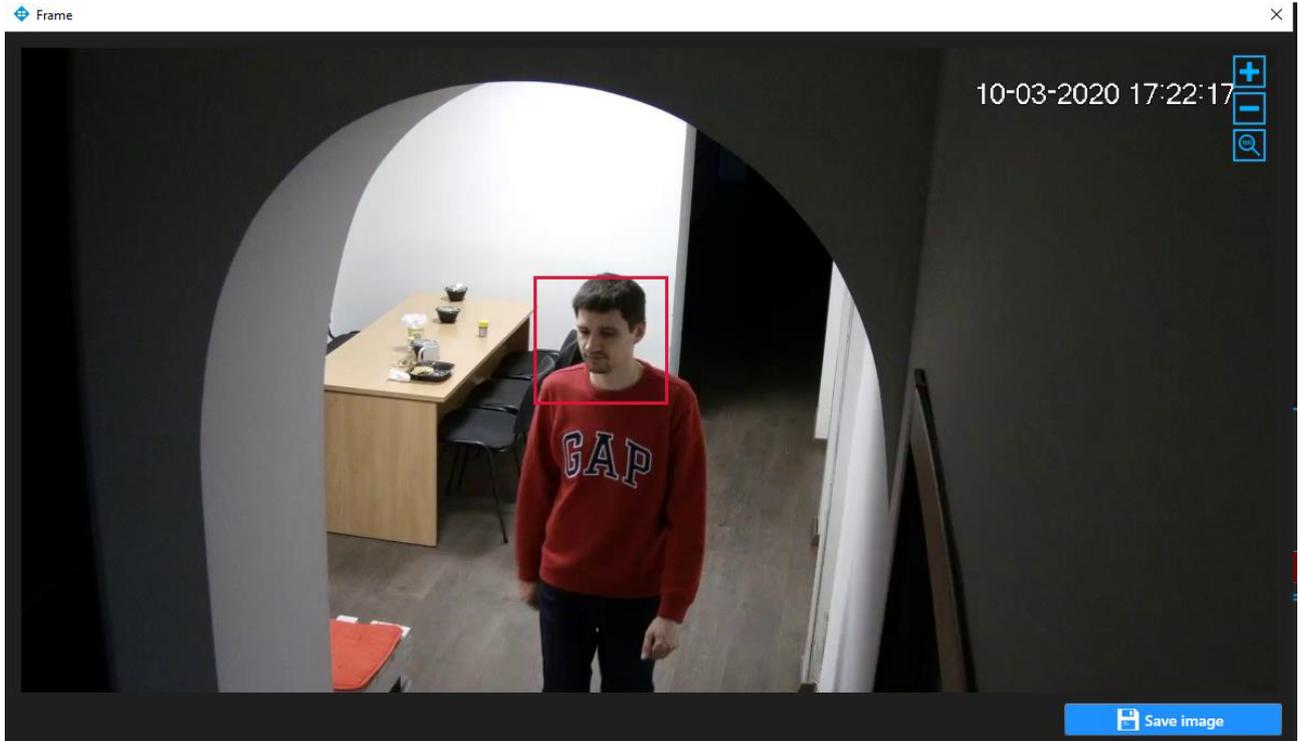


Save

FIELD NAME	DESCRIPTION
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.
Comment	Enter the message that will be received when a person is found.
List	Choose a list name from the drop-down list to move the person to another list.
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 **Expand** icon at the photo.



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



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

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

- [Event Search](#) (see page 29)
- [Work with Face Recognition Records](#) (see page 29)
- [View Face Recognition Records](#) (see page 33)

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