

Video analytics system for cities
and business

VEZHA

VEZHA

User Guide for VEZHA Queue Detection Plugin

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Description of Queue Detection:

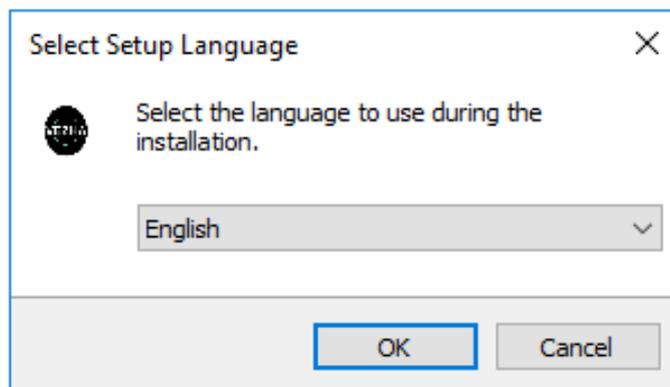
- Control of queue in shopping centers, educational institutions, supermarkets, airport halls and train stations.
- Automatic detection of queues in stores, restaurants, banks, and public institutions.
- Informing of the security services or administration department employees about queues formation at a certain location.

1. Installation

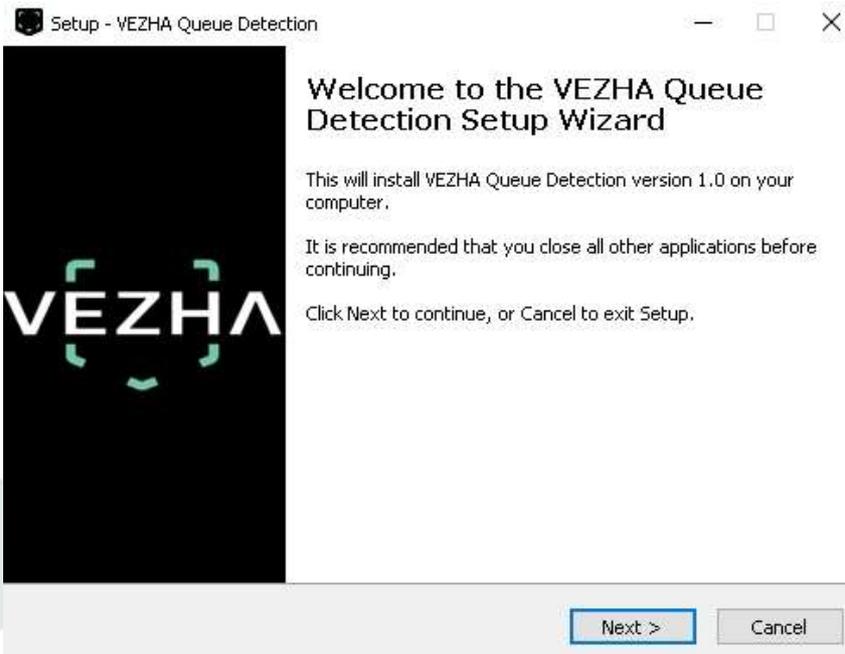
- 1) Launch the installer by double-clicking the downloaded file with the left mouse button

Vezha_QueueDetection_Setup.exe.

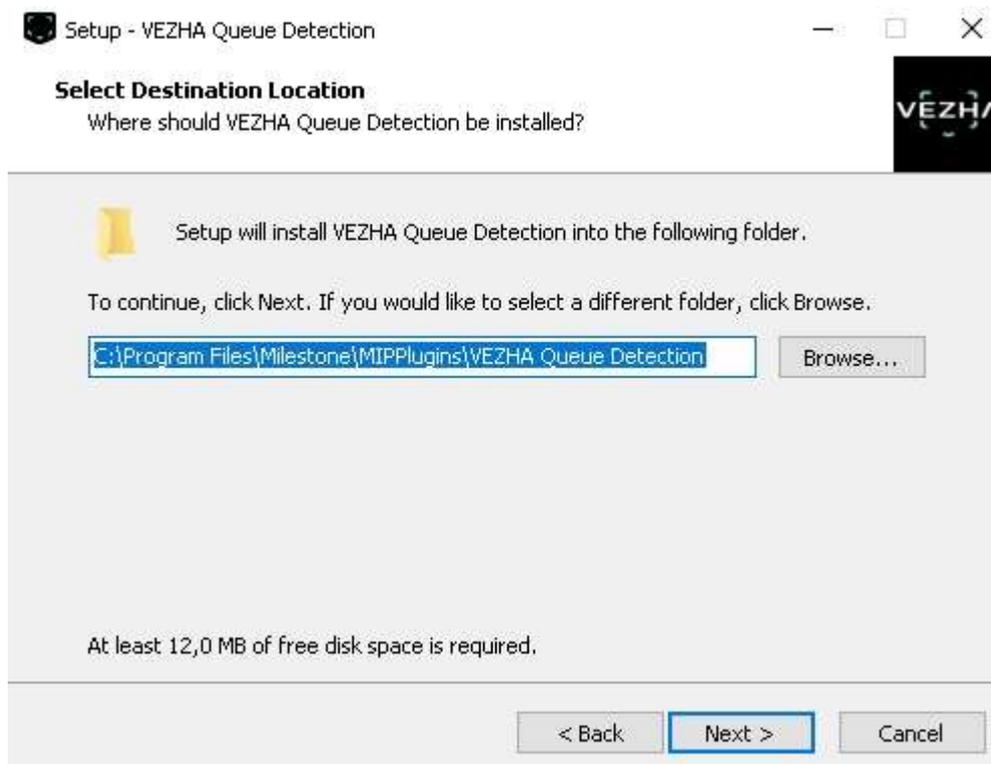
- 2) In the window that opens, select the language that will be used during the installation process. To go further, click **OK**. To abort the installation, click **Cancel**.



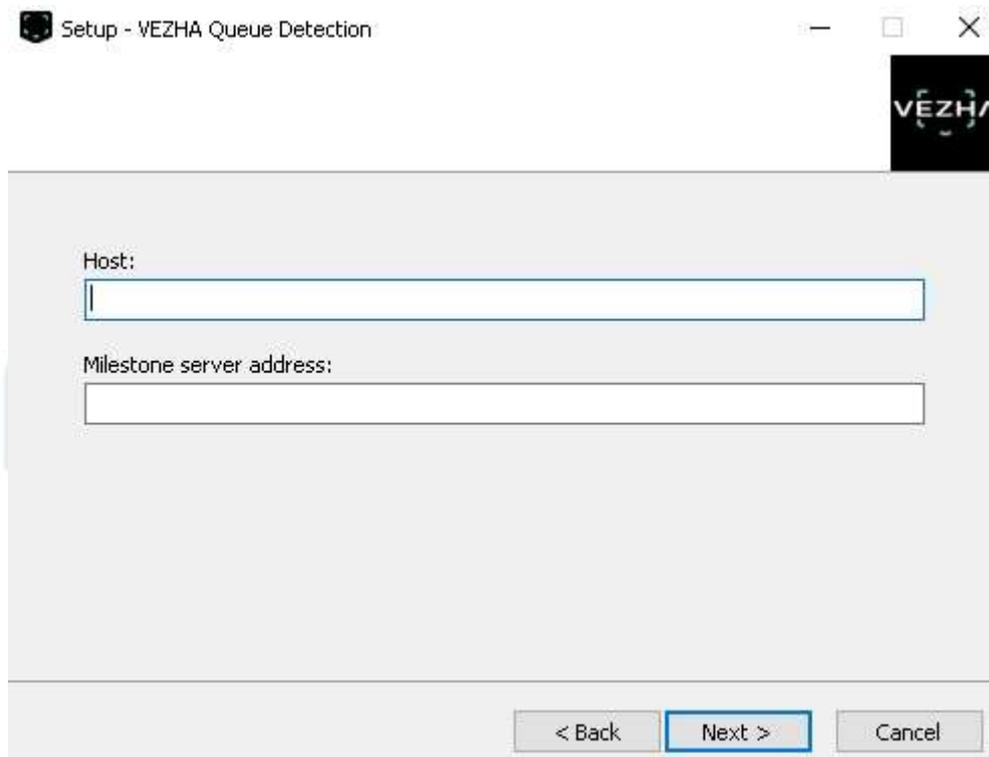
- 3) In a new window, read the installation recommendations and click **Next** to continue the installation, or the **Cancel** button to abort the installation.



- 4) In the **Select Destination Location** window using the **Browse** button, specify the place 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.

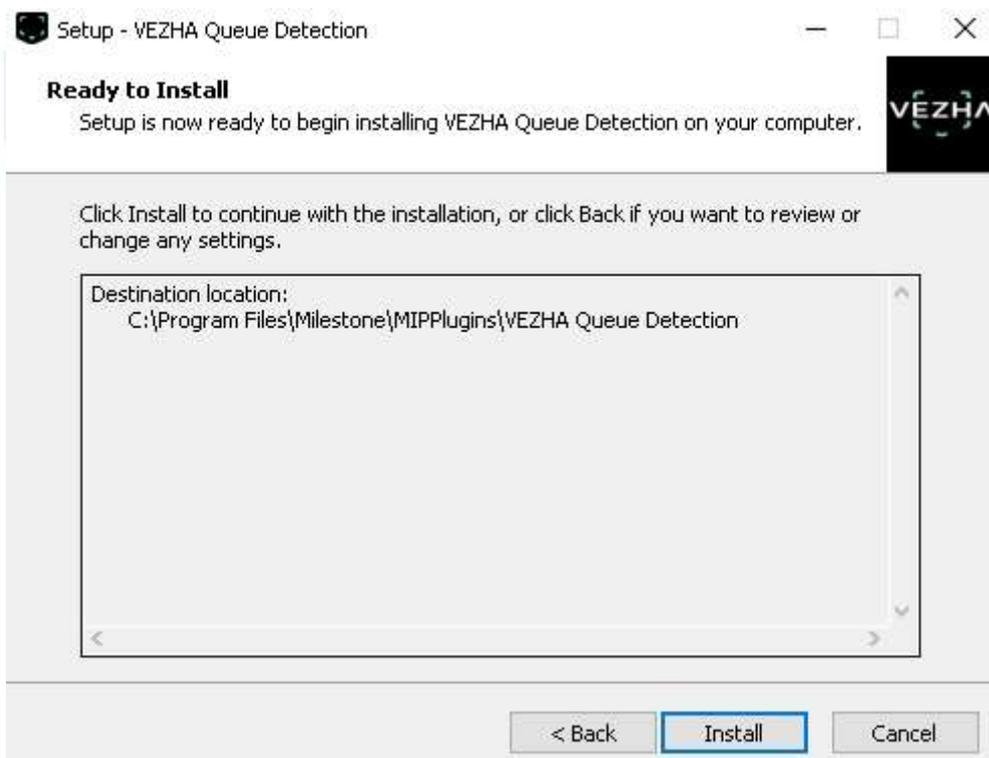


- 5) In this window, for correctly program work, you must correctly fill the fields and click **Next** to continue the installation or **Cancel** to abort the installation.



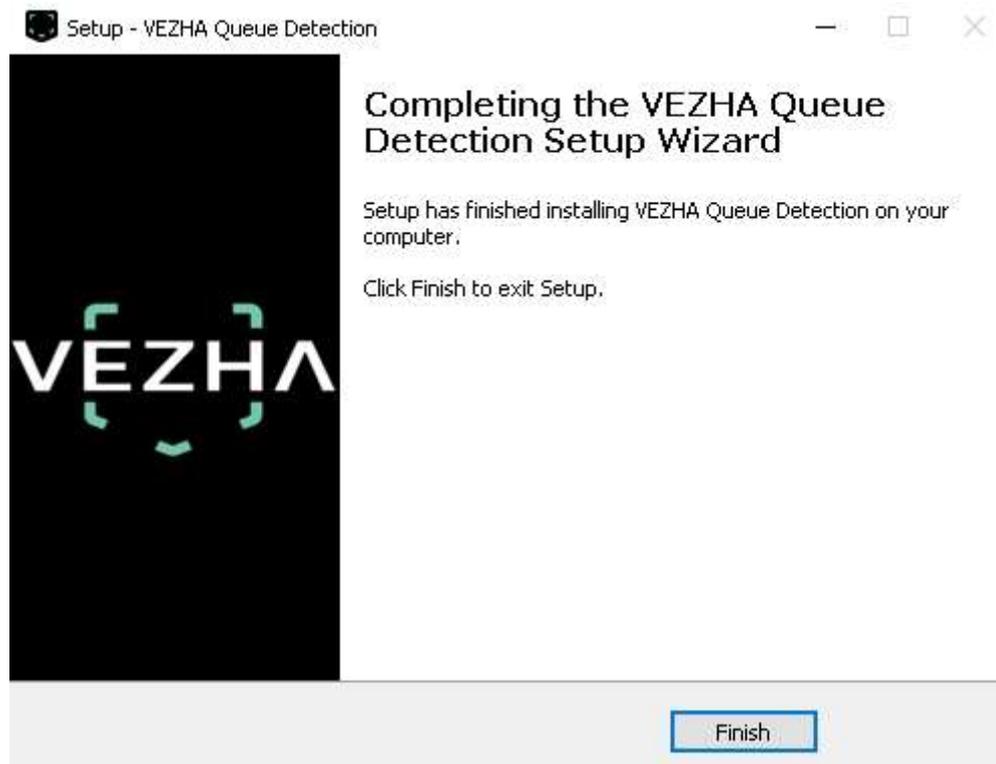
The screenshot shows a window titled "Setup - VEZHA Queue Detection". It contains two input fields: "Host:" and "Milestone server address:". Below the fields are three buttons: "< Back", "Next >", and "Cancel". The "Next >" button is highlighted with a blue border.

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



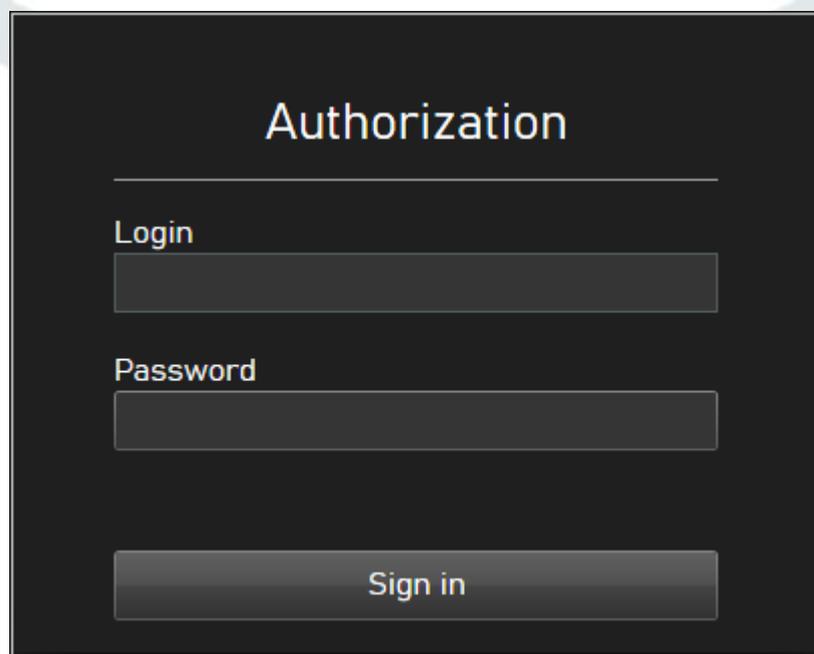
The screenshot shows a window titled "Setup - VEZHA Queue Detection" with the heading "Ready to Install". Below the heading, it says "Setup is now ready to begin installing VEZHA Queue Detection on your computer." There is a paragraph of text: "Click Install to continue with the installation, or click Back if you want to review or change any settings." Below this is a text box containing the destination location: "C:\Program Files\Milestone\MIPPlugins\VEZHA Queue Detection". At the bottom, there are three buttons: "< Back", "Install", and "Cancel". The "Install" button is highlighted with a blue border.

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



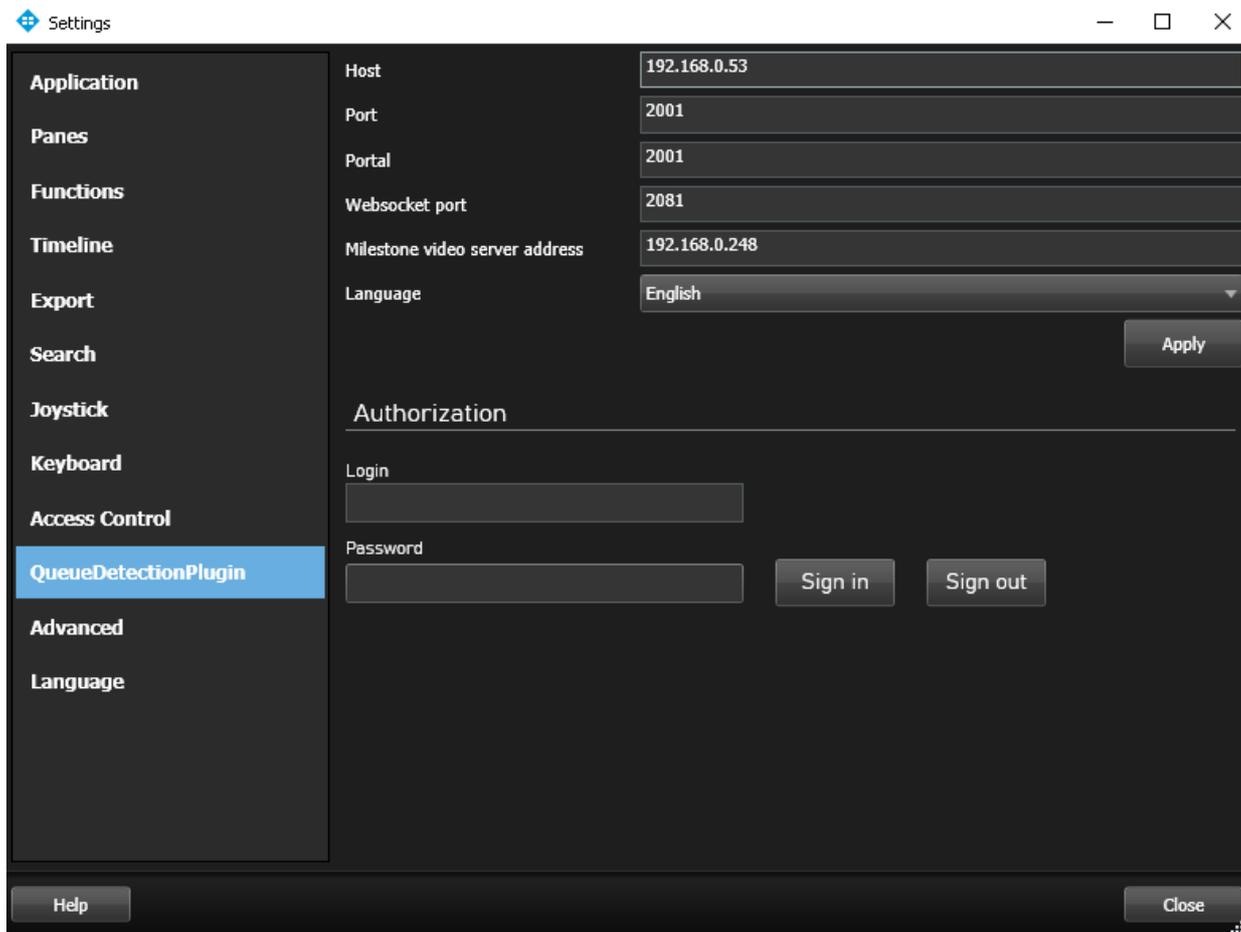
2. Log In

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

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

3. Settings

In order to open Queue Detection settings, click the icon  in the upper right corner of the screen. Select and click **Settings**. In the window that opens, select the **QueueDetectionPlugin** tab.



The screenshot shows a settings window titled "Settings" with a sidebar on the left containing the following menu items: Application, Panes, Functions, Timeline, Export, Search, Joystick, Keyboard, Access Control, QueueDetectionPlugin (highlighted), Advanced, and Language. The main content area is divided into two sections: "Application" and "Authorization".

Field	Value
Host	192.168.0.53
Port	2001
Portal	2001
Websocket port	2081
Milestone video server address	192.168.0.248
Language	English

The "Authorization" section includes fields for "Login" and "Password", along with "Sign in" and "Sign out" buttons. An "Apply" button is located at the bottom right of the settings area. A "Help" button is at the bottom left, and a "Close" button is at the bottom right of the window.

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

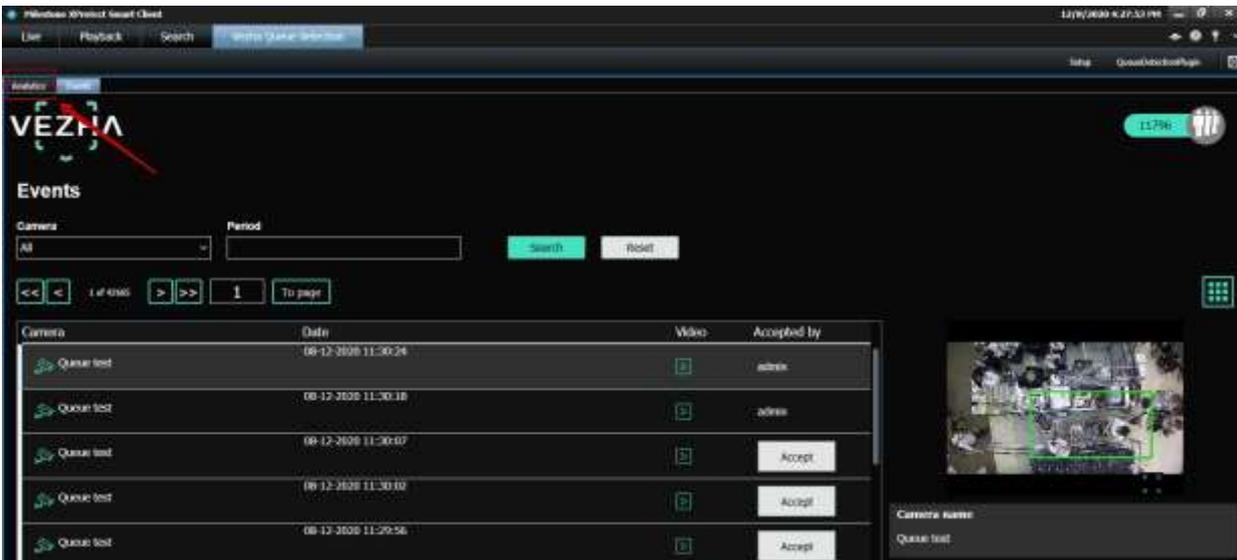
To change the language, use the **Language** field and select from the list the most convenient for you.

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

4.1 Queues - Analytics

- [Adding of New Queue Analytics](#)
- [Editing of New Queue Analytics](#)

In order to view queue detection analytic select **Queue** in the left menu and pass into section **Analytics**.

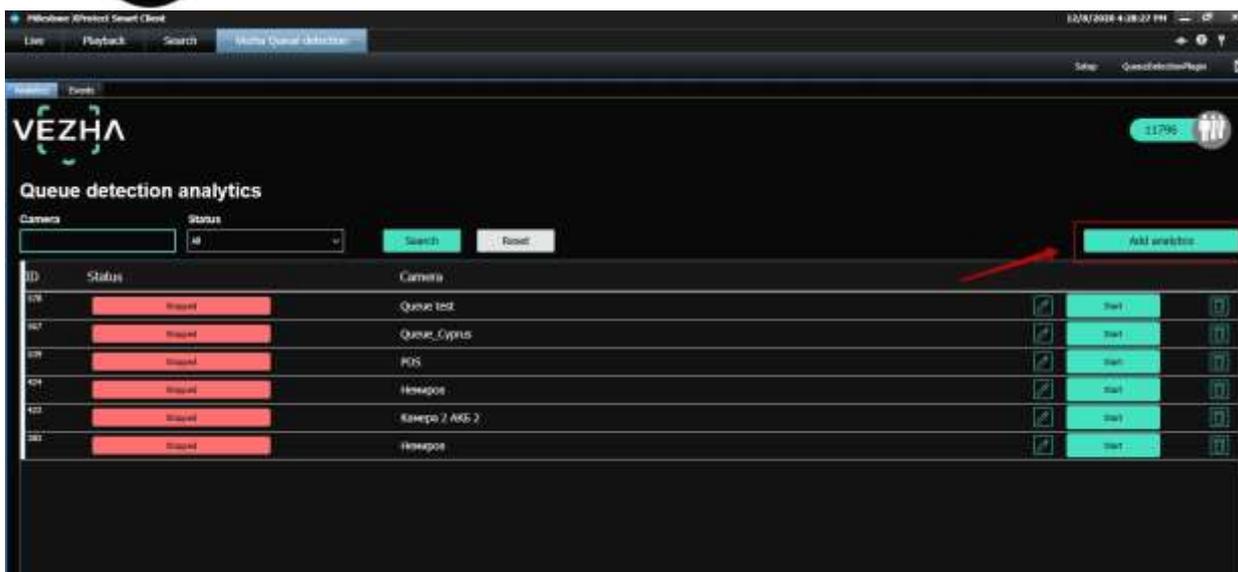


The screenshot displays the VEZHA Analytics interface. At the top, there is a navigation bar with 'Live', 'Playback', and 'Search' options. Below this, the 'Events' section is visible, featuring a search bar and a 'Search' button. A table lists several 'Queue lost' events with columns for 'Camera', 'Date', 'Video', and 'Accepted by'. The 'Accepted by' column contains 'Accept' buttons for each event. On the right side, there is a video preview window showing a street scene with a green bounding box around a queue area. The camera name 'Queue lost' is displayed below the video.

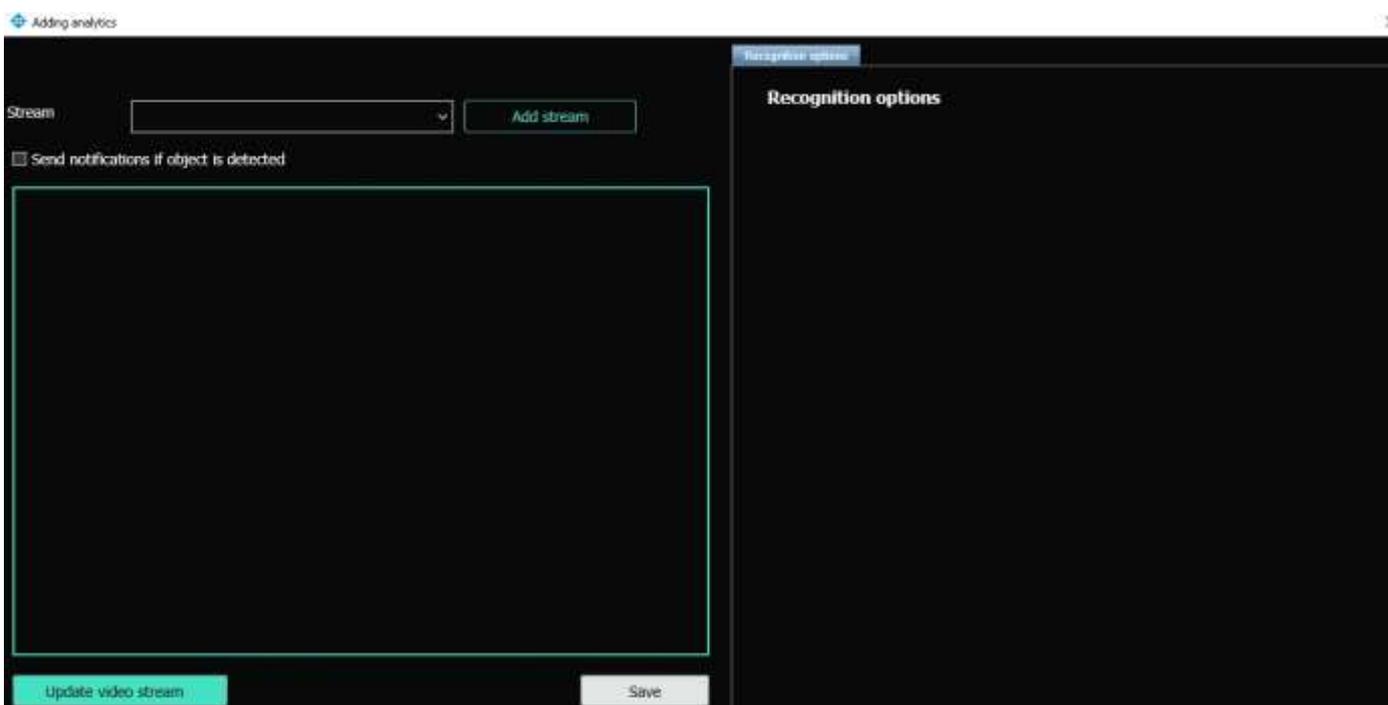
Camera	Date	Video	Accepted by
Queue lost	08-12-2020 11:30:24		admin
Queue lost	08-12-2020 11:30:18		admin
Queue lost	08-12-2020 11:30:07		Accept
Queue lost	08-12-2020 11:30:02		Accept
Queue lost	08-12-2020 11:29:56		Accept

4.1.1 Adding of New Queue Analytics

In order to add a new queue detection analytics, press **Add Analytics** in the upper-right corner of the screen.



When press **Add Analytics** the form of analytic adding is opened.



By pressing **Update Video Frame** button you can see a frame in real time in the field of frame addition. It is possible if video stream was selected.

For adding of queue analytics it is necessary to fill the following fields:

Field Name	Values for Input
Videostream	Press in the field and select the videostream from a drop-down list. In the selected video stream the area where the queue of people detection will be displayed.
Delay between notifications	In the field, enter the frequency with which the system will send notifications about exceeding the allowed number of people in the queue, in seconds.
Send notification if queue is detected	To send notifications about detected crowds to external resources (Telegram, Email, etc.), check the box.
Events	Select the event for which notifications will be sent from the drop-down list.
Additional Parameters	If necessary, it is possible to add additional parameters for further use when event creating. Fill in the parameter fields. To add parameters, press "+" button. To remove parameters, press "-".

Adding of Object Detection Area

- Add camera to **Video Stream** field
- Frame from the added camera will appear below **Videostream** field.
- Add an area for objects detecting in the frame.

a) When press the frame, a dot appears. When move the mouse cursor, a line appears. When press on the frame again, a second point appears that is connected by a line to the first point. To create an area, it is necessary to connect three or more points. To close the region, it is necessary to press twice with the mouse in the same place.



The created area displays starting points that are shaped like white squares and points in the middle of lines that are shaped like red circles. If hold down the left mouse button on the white dot, it is possible to change the zone shape by moving the mouse cursor. When hold the red dot, it is possible to stretch or compress the area strictly along the line where the point is located. If press on the red dot twice with the left mouse button, the red dot will turn white.

b) Form will appear on the right side of the screen. Fill in the form fields:

Time Period	Press on the field and set the time period during which the queues recognition will be performed.
Minimum of people	Enter the minimum number of persons in the area of interest. If a large number of people is detected in the displayed area, the system will send a notification.

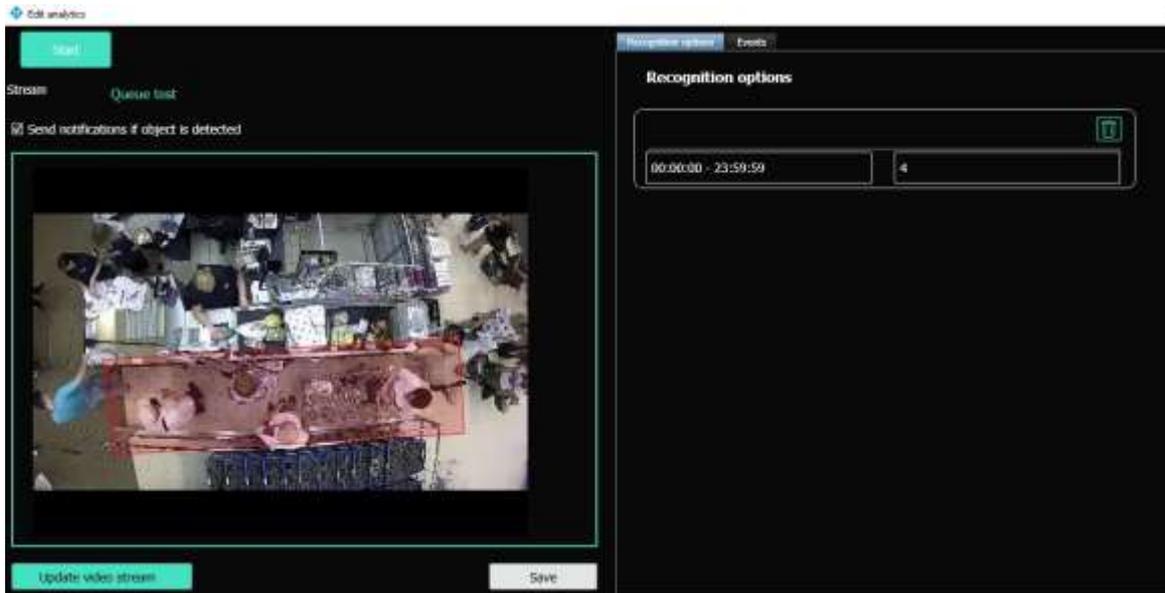
To create the analytics, press **Save**.

4.1.2 Editing of New Queues Analytics

To open queues detection analysis editing window, press **Editor** button on the right side of queue detection analytic record.



By clicking **Editor** button the form of queues detection analytic editing is opened.



It is possible to change the analytic if the analytic is not started.

By pressing **Update Video Frame** button you can see a frame in real time in the field of frame addition. It is possible if video stream was selected.

In order to run analytics, press **Start**. To stop analytics, press **Stop**.

System user can change the following fields:

Field Name	Values for Input
Delay between notifications	In the field, enter the frequency with which the system will send notifications about exceeding the allowed number of people in the queue, in seconds.
Send notification if queue is detected	To send notifications about detected crowds to external resources (Telegram, Email, etc.), check the box.
Events	Select the event for which notifications will be sent from the drop-down list.
Additional Parameters	If necessary, it is possible to add additional parameters for further use when event creating. Fill in the parameter fields. To add parameters, press "+" button. To remove parameters, press "-".

Adding (Changing) of Object Detection Area

- Add or change the object detection area.

a) When press the frame, a dot appears. When move the mouse cursor, a line appears. When press on the frame again, a second point appears that is connected by a line to the first point. To create

an area, it is necessary to connect three or more points. To close the region, it is necessary to press twice with the mouse in the same place.



The created area displays starting points that are shaped like white squares and points in the middle of lines that are shaped like red circles. If hold down the left mouse button on the white dot, it is possible to change the zone shape by moving the mouse cursor. When hold the red dot, it is possible to stretch or compress the area strictly along the line where the point is located. If press on the red dot twice with the left mouse button, the red dot will turn white.

b) Form will appear on the right side of the screen. Fill in the form fields:

Field Name	Values for Input
Time Period	Press on the field and set the time period during which the queues recognition will be performed.
Minimum of people	Enter the minimum number of persons in the area of interest. If a large number of people is detected in the displayed area, the system will send a notification.

To change the analytics, press **Save**.

4.1.3 Working with Queue Analytics

Search field is located at the top of the Analytics page

Analytic Search

Queue detection analytics

Camera

Status

Search

Reset

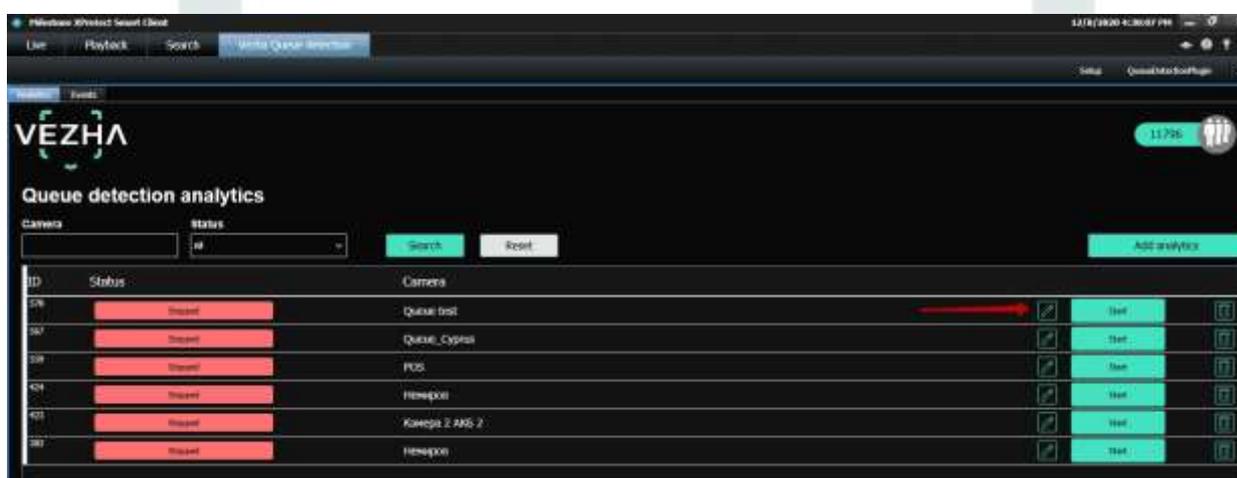
To find the necessary analytics, enter camera name or status.

To start the search press **Search Button**, press **Reset** to clear the input fields.

Search Field	Parameters
Camera	Camera name can be entered in this field
Status	Select the Analytics status from the drop-down list

Analytics Start and Delete

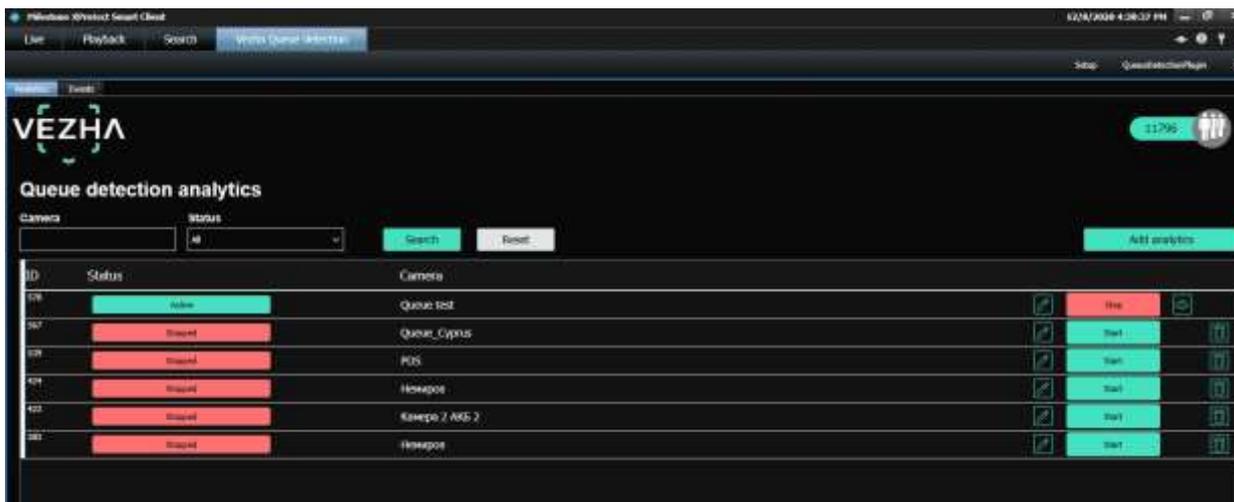
To start analytics, press **Start** button on the right side of analytics field.



The screenshot shows the 'Queue detection analytics' interface. At the top, there are search fields for 'Camera' and 'Status', along with 'Search' and 'Reset' buttons. Below the search fields is a table with columns for ID, Status, and Camera. Each row in the table has a 'Start' button and a 'Stop' button. A red arrow points to the 'Start' button of the first row.

ID	Status	Camera	Start	Stop
016	Started	Queue_0101	Start	Stop
017	Started	Queue_Cyral	Start	Stop
018	Started	POS	Start	Stop
019	Started	Henep001	Start	Stop
020	Started	Kamera 2 AMS 2	Start	Stop
021	Started	Henep001	Start	Stop

To stop analytics, press **Stop** button.



To delete the queue control analytics, press the delete icon on the right side of the record.



In opened window press **Yes** to confirm the deletion or **No** to cancel the deletion.

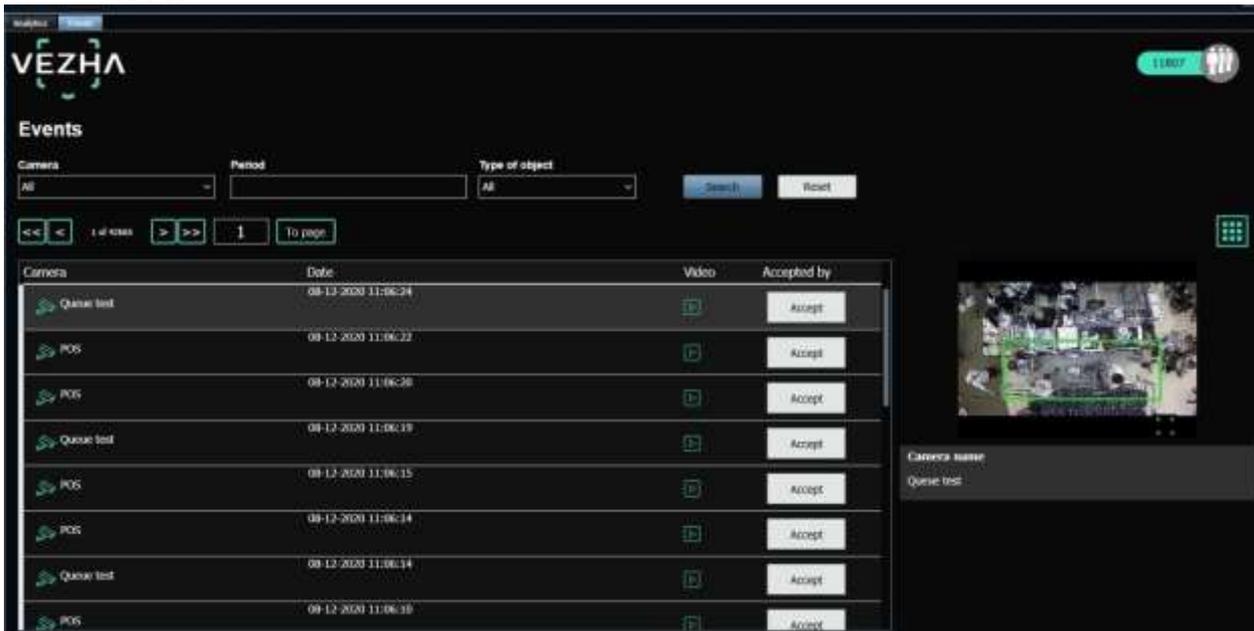
Deleting analytics

Да

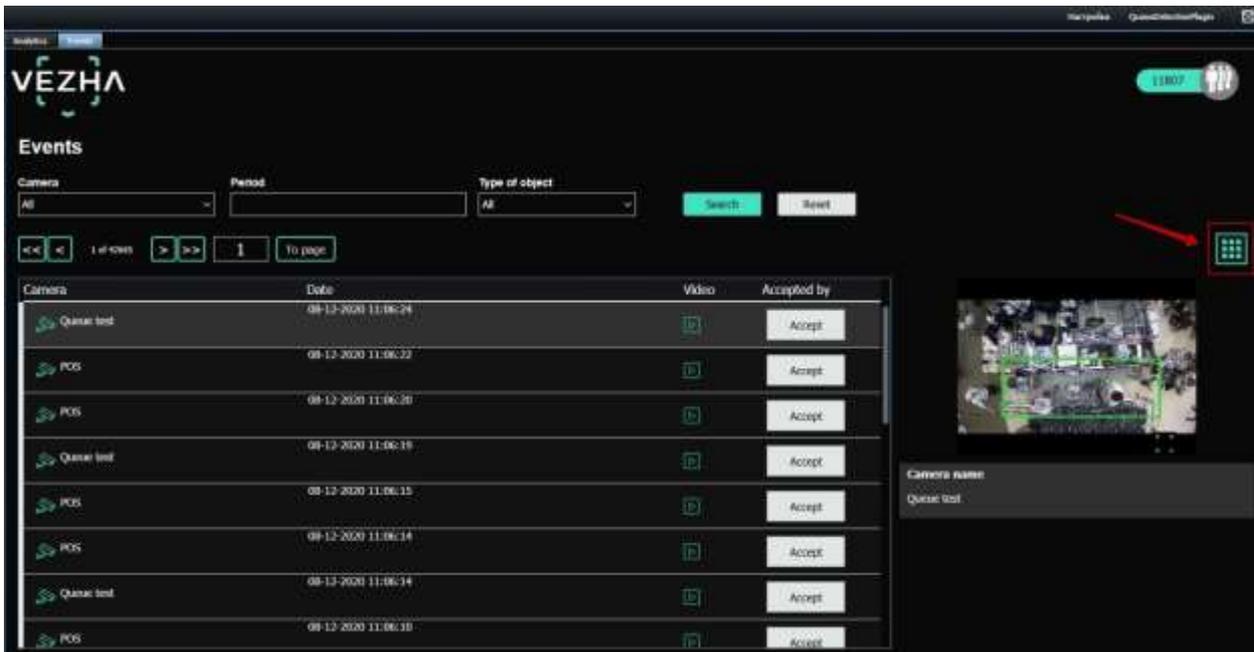
Нет

4.2 Queues - Events

In order to view queue notifications history, select **Queue** in the left menu and pass into section **Events**.



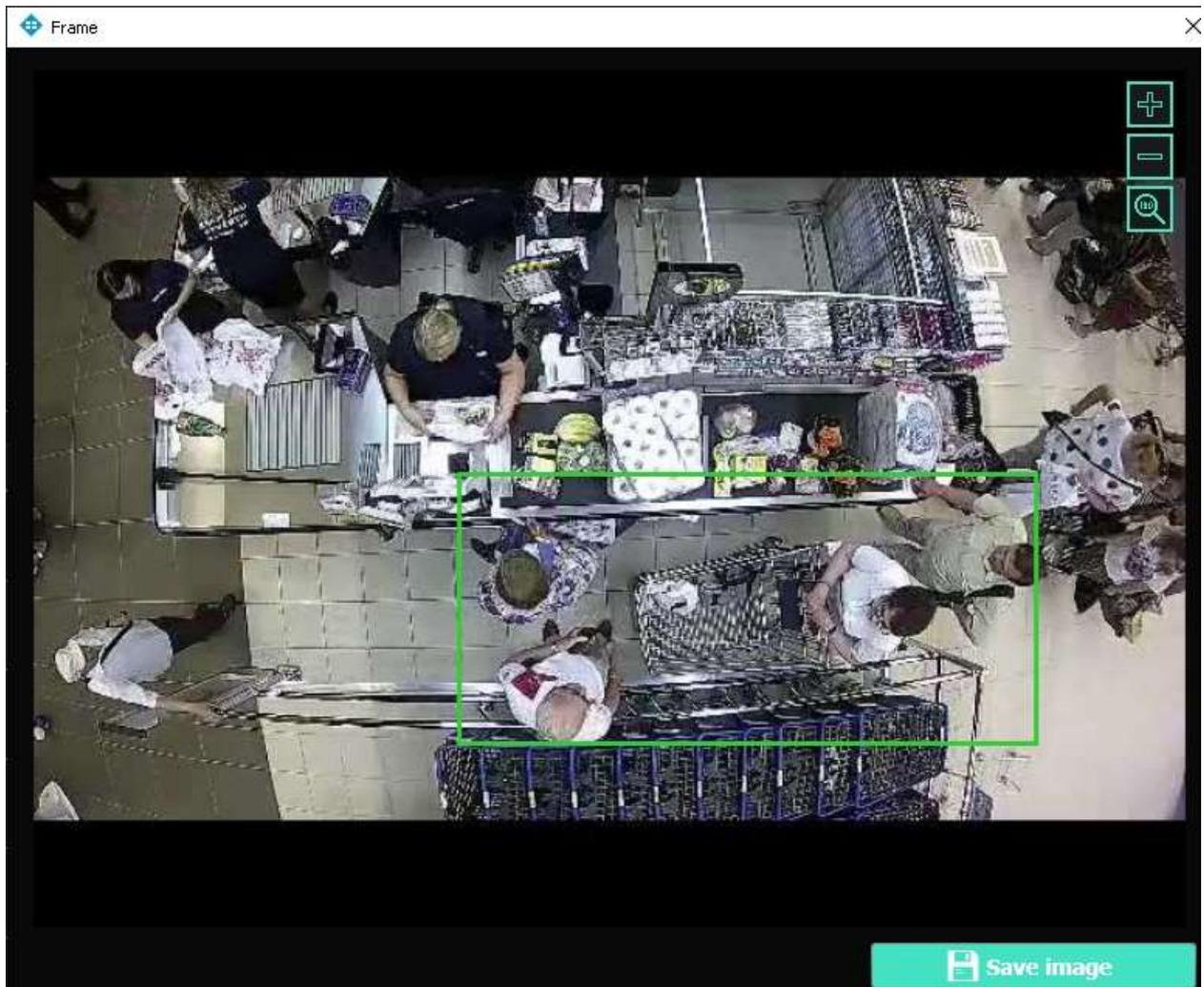
To change the view of queue list, press the change list view button in the upper-right corner of the screen.



To accept a notification about a new crowd, press **Accept** next to the notification entry. Click **Yes** to confirm.

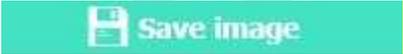
The user name appears in the corresponding column or under the frame when using the grid view.

To enlarge the image of the desired frame, left-click on it or press on the icon  when using the list view.



To zoom in or out of the image, use the navigation buttons in the upper-right corner of the photo.

To save the image, click on the corresponding button in the lower-right corner of the image.

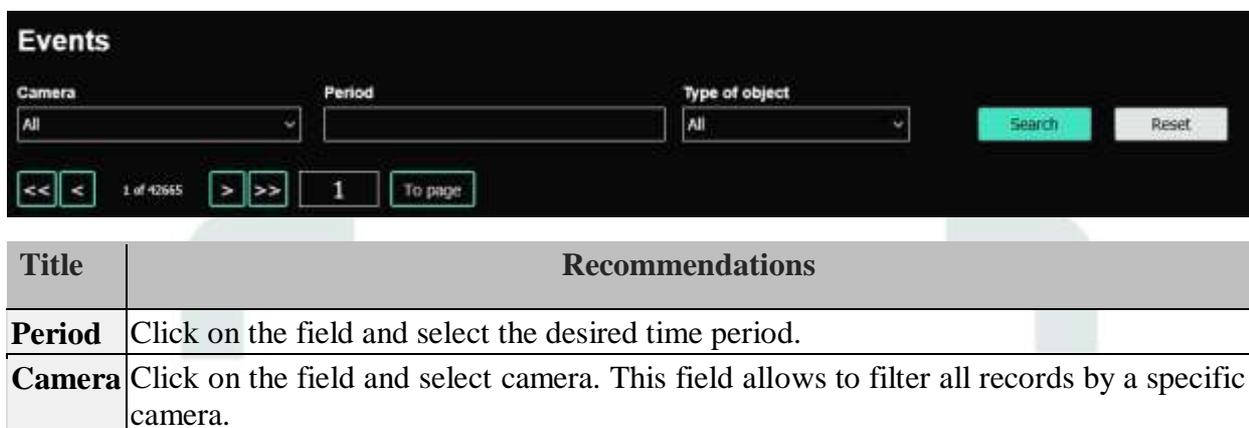
 Save image

To determine the camera location where the image was taken, press the interactive icon  under the desired frame.

Data on the right of the icon  shows the date and time of the image taken.

4.2.1 Search of Crowds History

There is a search field at the top of the screen



Title	Recommendations
Period	Click on the field and select the desired time period.
Camera	Click on the field and select camera. This field allows to filter all records by a specific camera.

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

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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