Video analytics system for cities
and business

VEZHA

IncoreSoft

VEZHA

Video analytics system
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VEZHA

User Guide for VEZHA License Plate Recognition Plugin

IncoreSoft

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Description of VEZHA ALPR

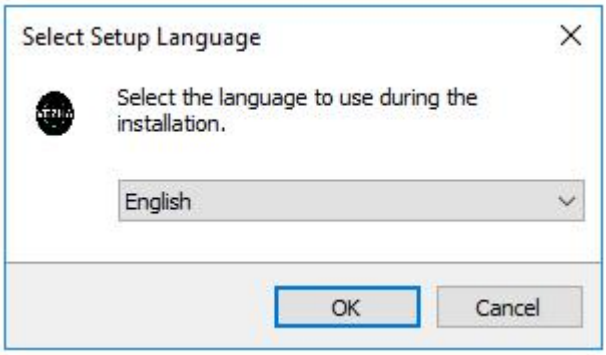
VEZHA ALPR is developed to collect and store a number of data about vehicles:

1) Date and time of stay of vehicles in a certain area;
2) A frame with a vehicle as evidence (photo fixation);
3) Number and make of the car or other vehicle, its color;
4) Vehicle direction and route determination.

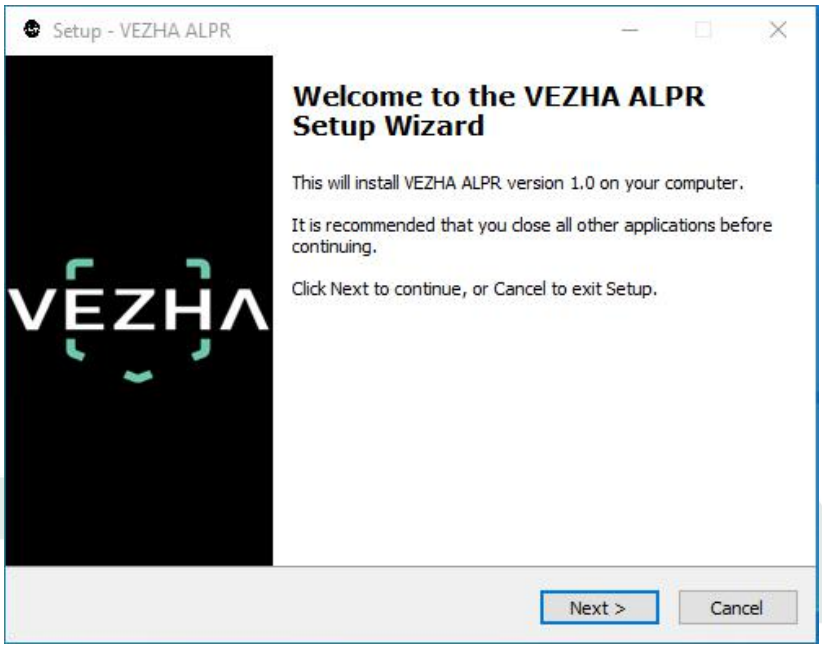
1.Installation

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

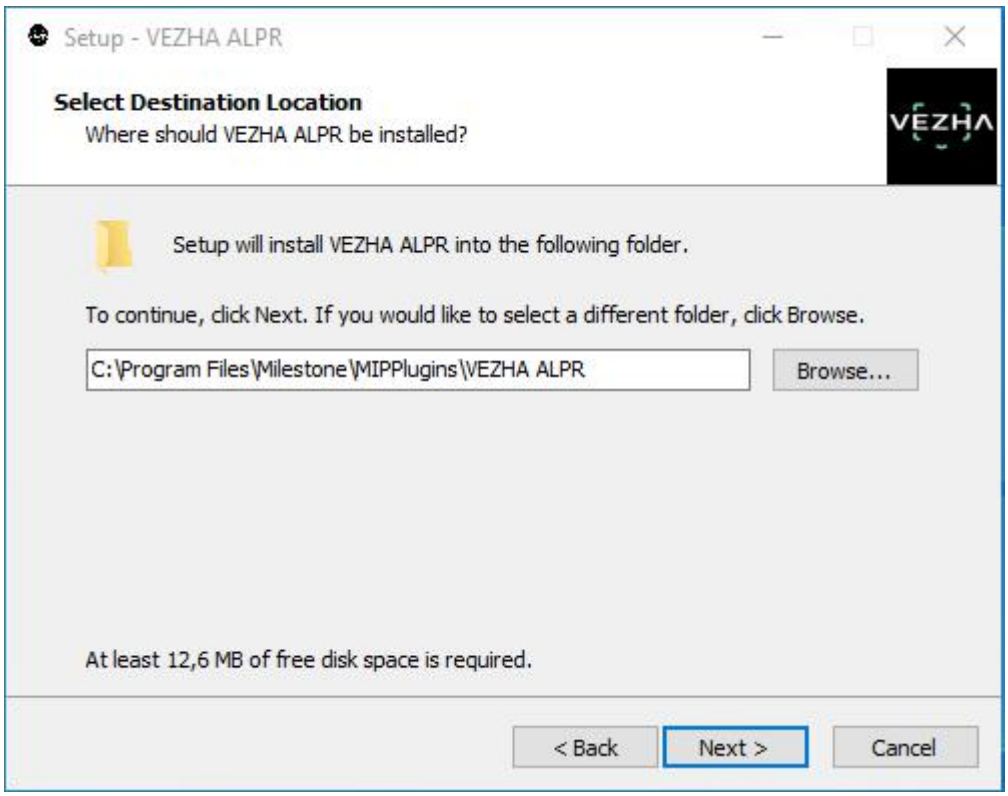
2) In the window that opens, select the language that will be used during the installation process. To go further, click **OK**. To abort the installation, click **Cancel**.



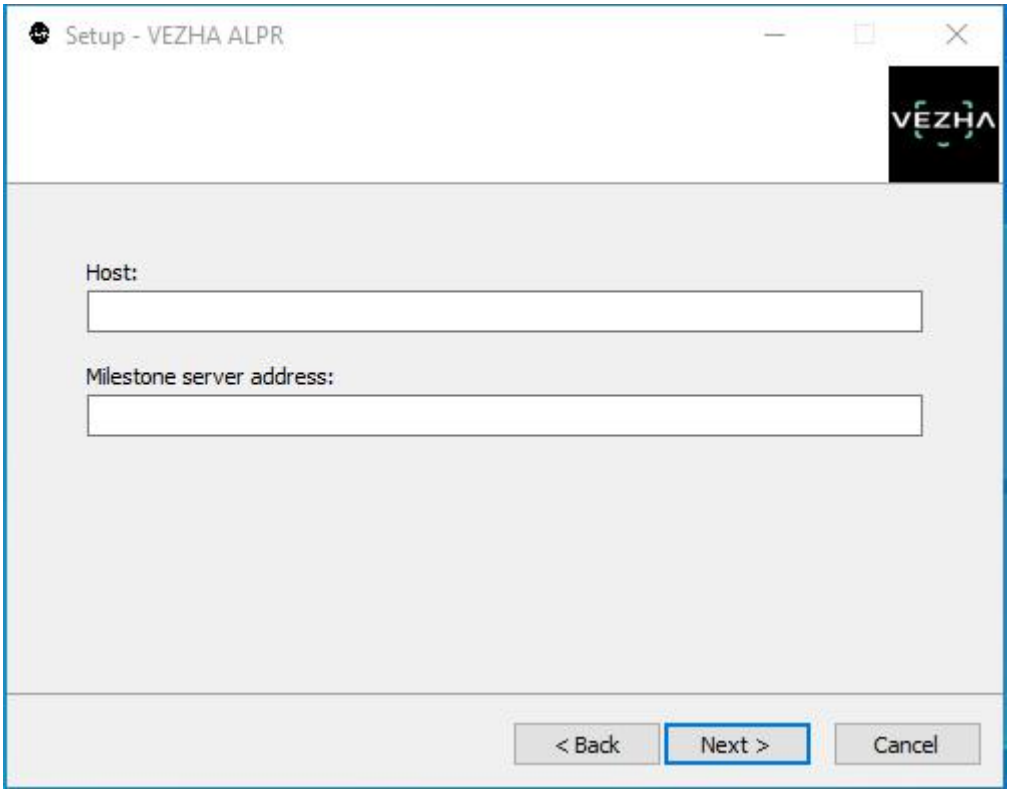
3) In a new window, read the installation recommendations and click **Next** to continue the installation, or the **Cancel** button to abort the installation.



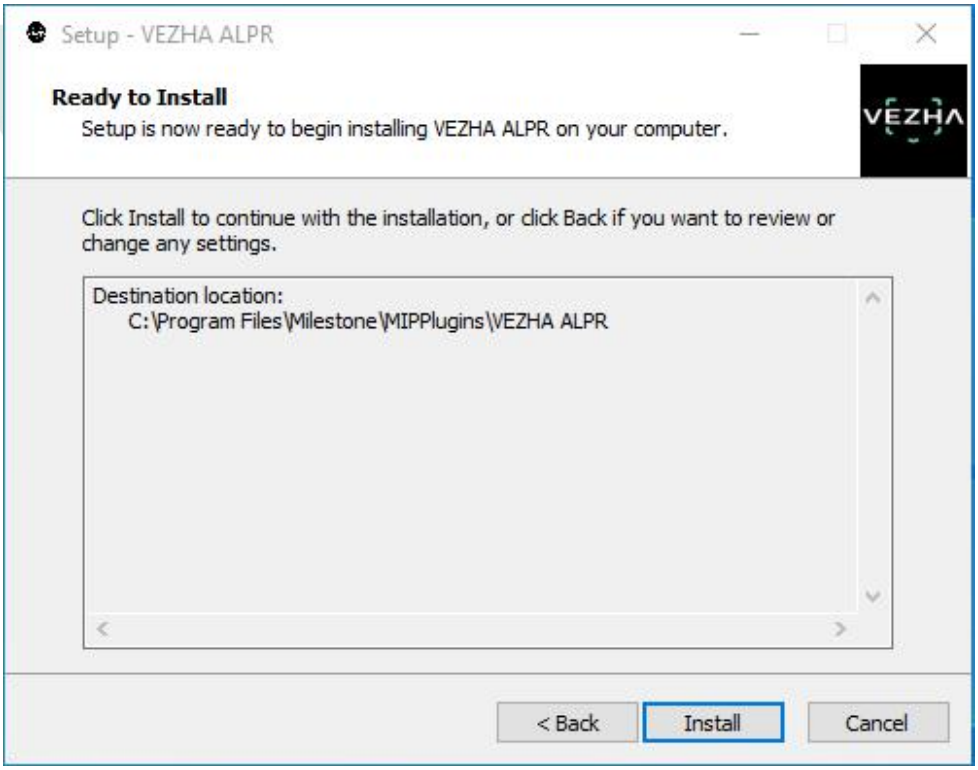
4) In the **Select Destination Location** window using the **Browse** button, specify the place where you want to install the plugin. The plugin must be installed in the **Milestone** folder with other plugins. After selecting the desired folder, click **Next** to continue the installation or **Cancel**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



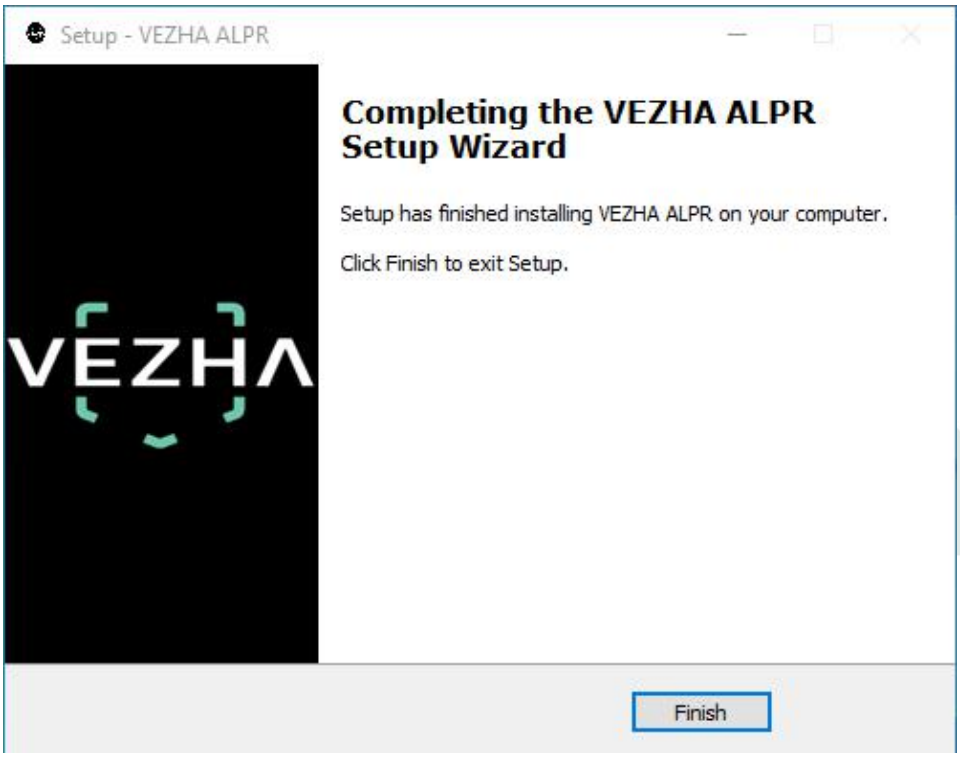
5) In this window, for correctly program work, you must correctly fill the fields and click **Next** to continue the installation or **Cancel** to abort the installation.



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

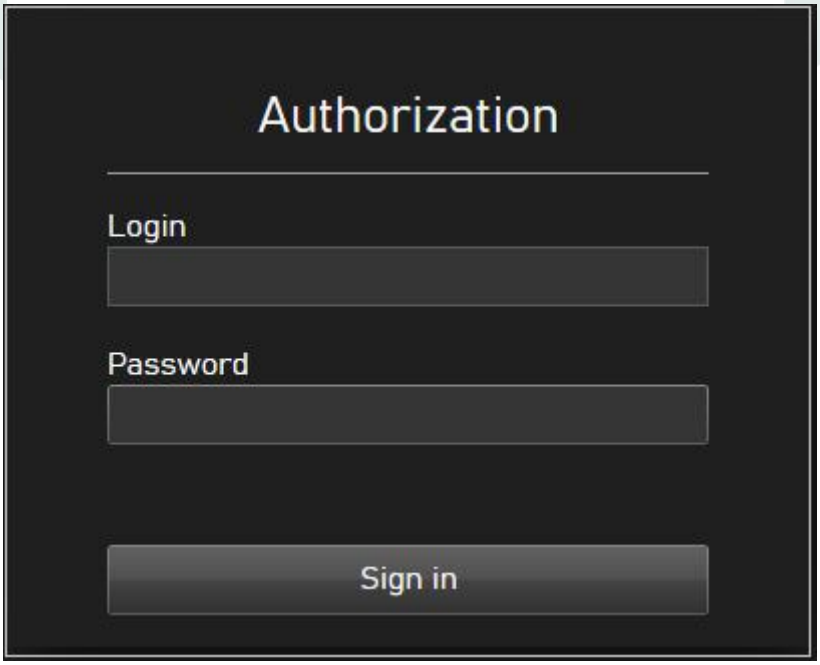


After the installation is completed, click **Finish**.



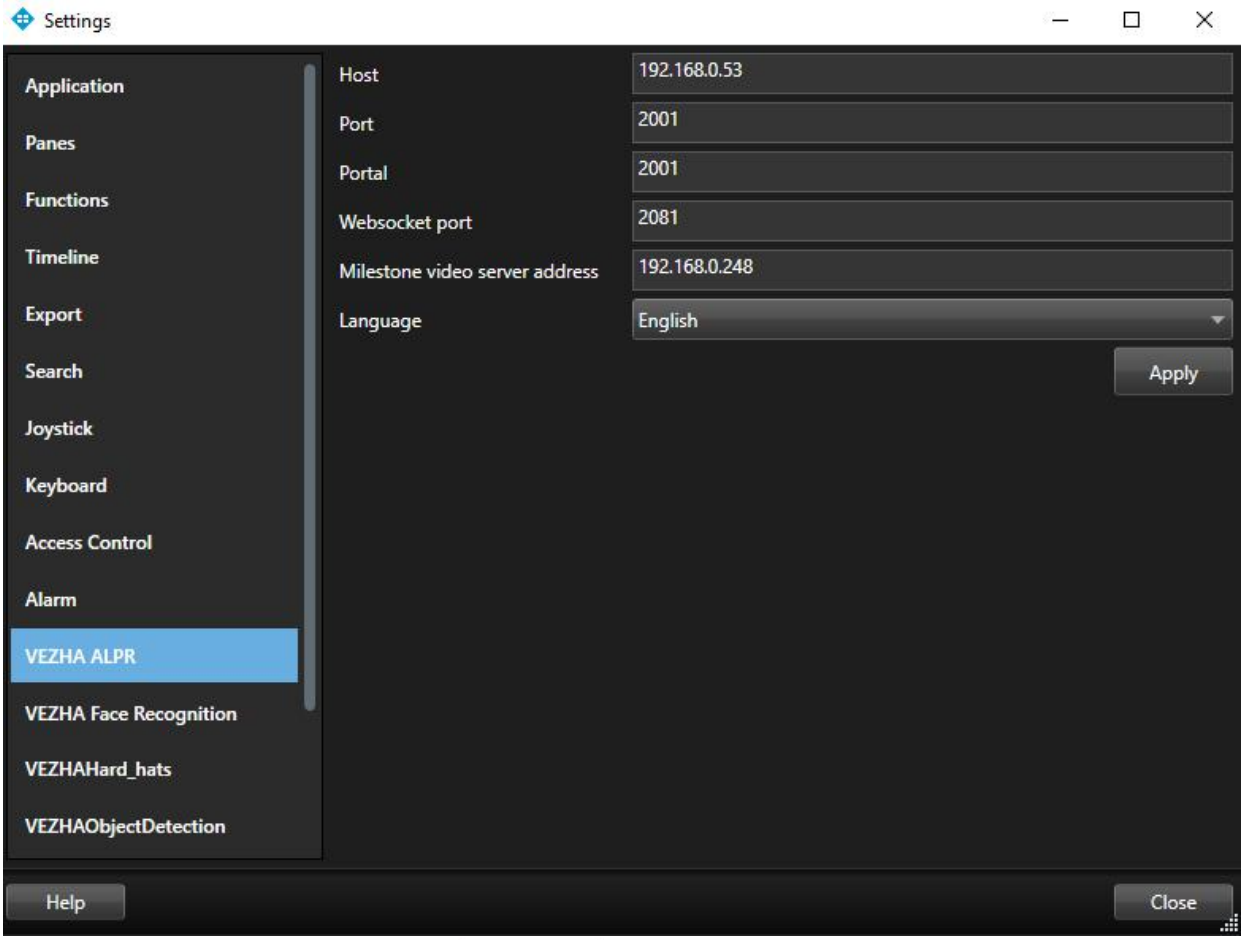
2. Log In

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**.



3. Settings

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



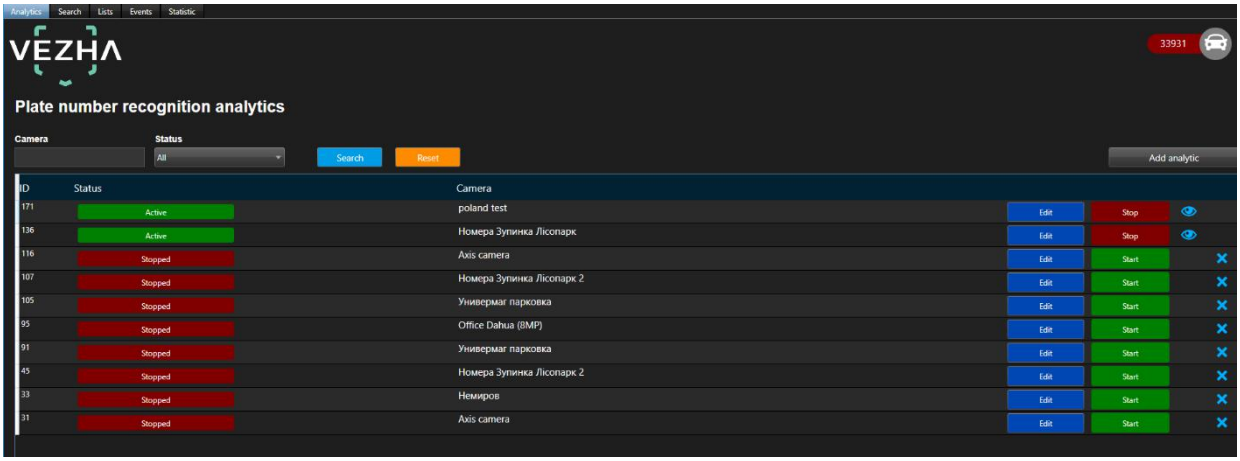
To change the server settings in the **VEZHA ALPR** tab, you can edit the following fields: **Host, Port, Portal, Websocket port, Milestone video server address**.

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.

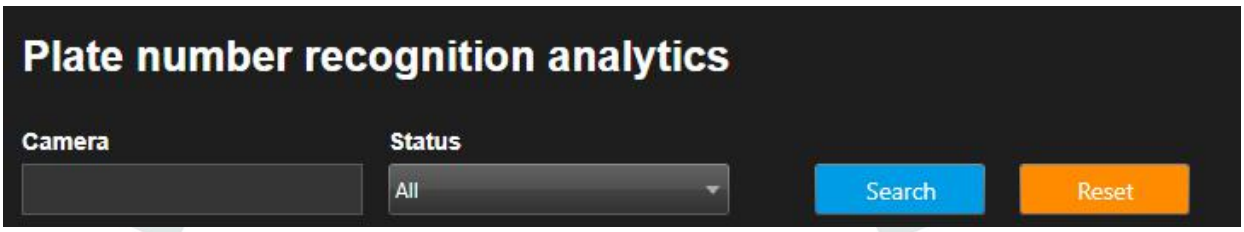
4. ALPR Analytics

This tab is developed to view the list of analytics with the ability to add, edit, delete analysts, view video from active analysts in real time.



4.1 Analytics Search

At the top of the screen is a search field.



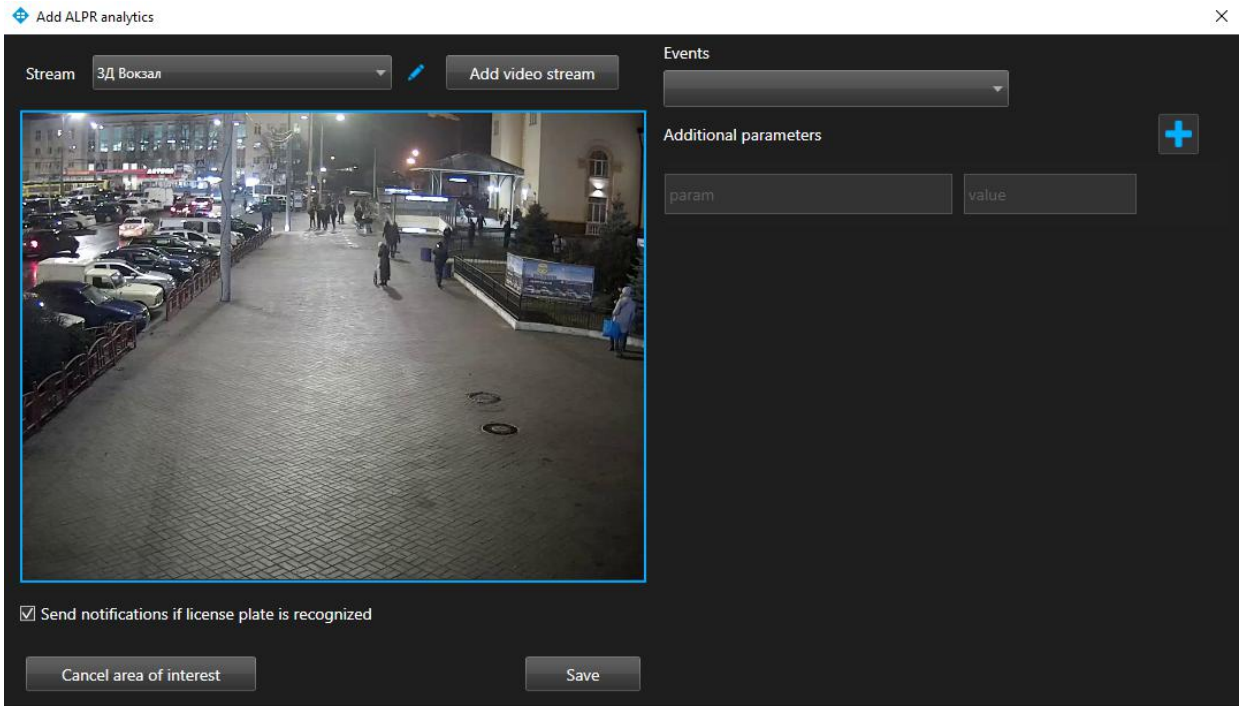
To find the analytics you need, enter the name of the camera or select the analytics status.

To start the search, click the **Search** button.

4.2 Adding of analytics

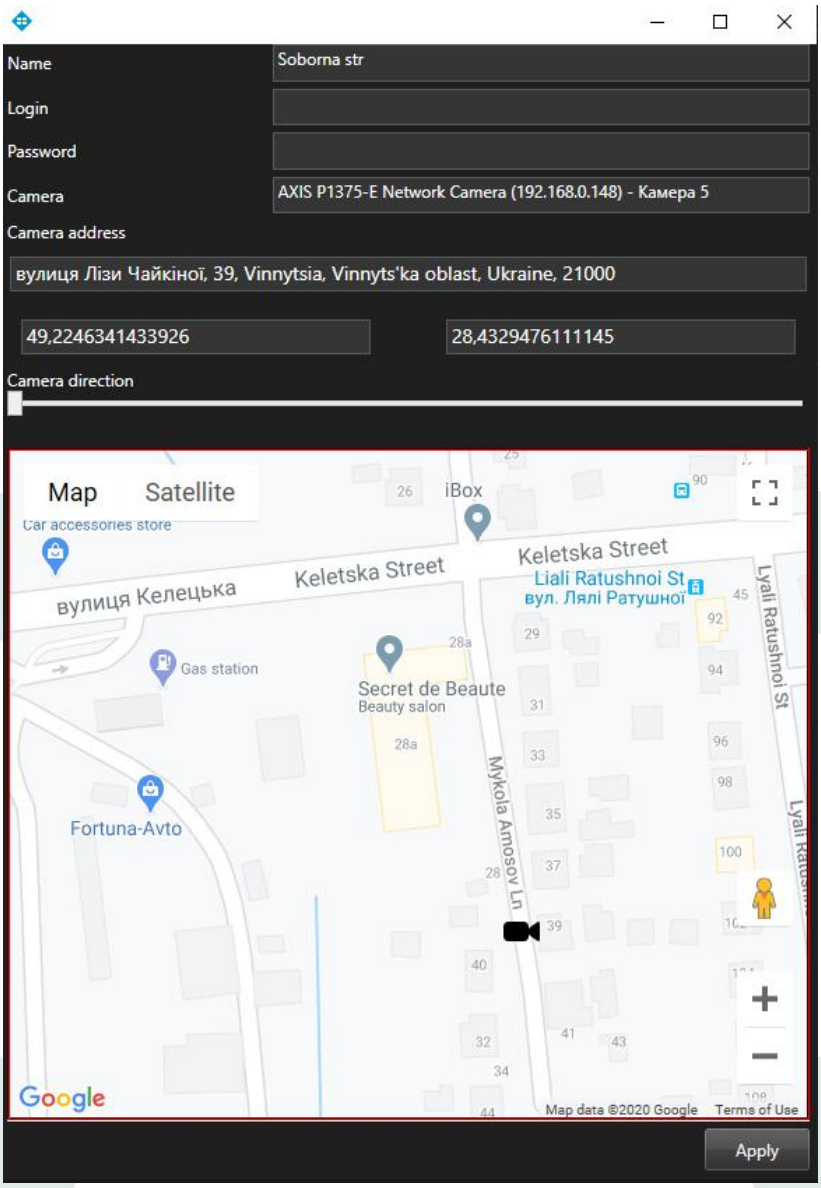
To add a new license plate analytics, click **Add analytics** in the upper right corner of the screen.

In the window that opens, fill the fields:



Field name	Recommended value
Stream	Click on the field and select a name from the drop-down list cameras. The video stream will be used to create analytics.
Send notifications if license plate is recognized	Check the box **"Send notifications if license plate is recognized** "to create your own event to send notifications. Event manager is designed to create vehicle notifications (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 the parameter fields. To add parameters press button . In way to remove parameters press .

In way to edit analytics to the right of the analytics name. In order to create new analytics click **Add video** stream.



In the opened window fill the fields:

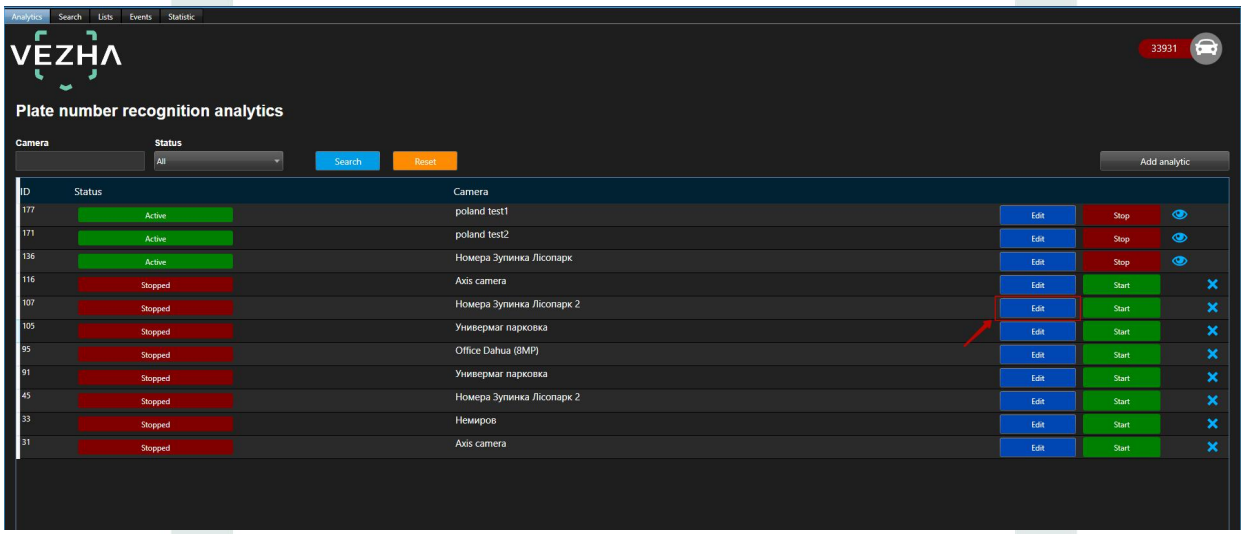
a. **Name** - enter the name of the video stream in the field. This field will be displayed in all components of the program that use video streams.
b. **Login** - enter the name of the current user in the field.
c. **Password** – enter password.
d. **Camera** - select a camera from the drop-down list.
e. **Camera address** - enter the address in the field, or select on the map below the location of the camera. 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 the vehicle.
To save the changes, click **Apply**.

Add area of interest

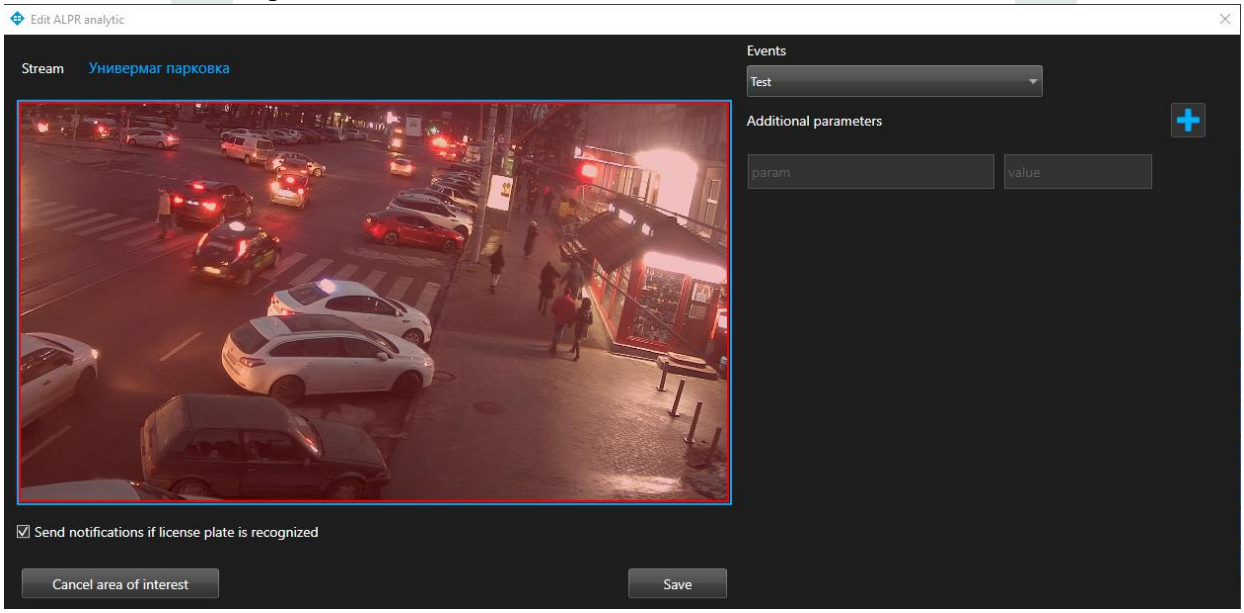
1. Add a camera into a field **Video stream**.
2. A video from the added camera will appear below the **Video Stream** field.
3. **Add area of interest**.
   License plate recognition will take place in the exposed area.
   To cancel a area of interest, click **Cancel area of interest**.
   In way to create analytics, 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.



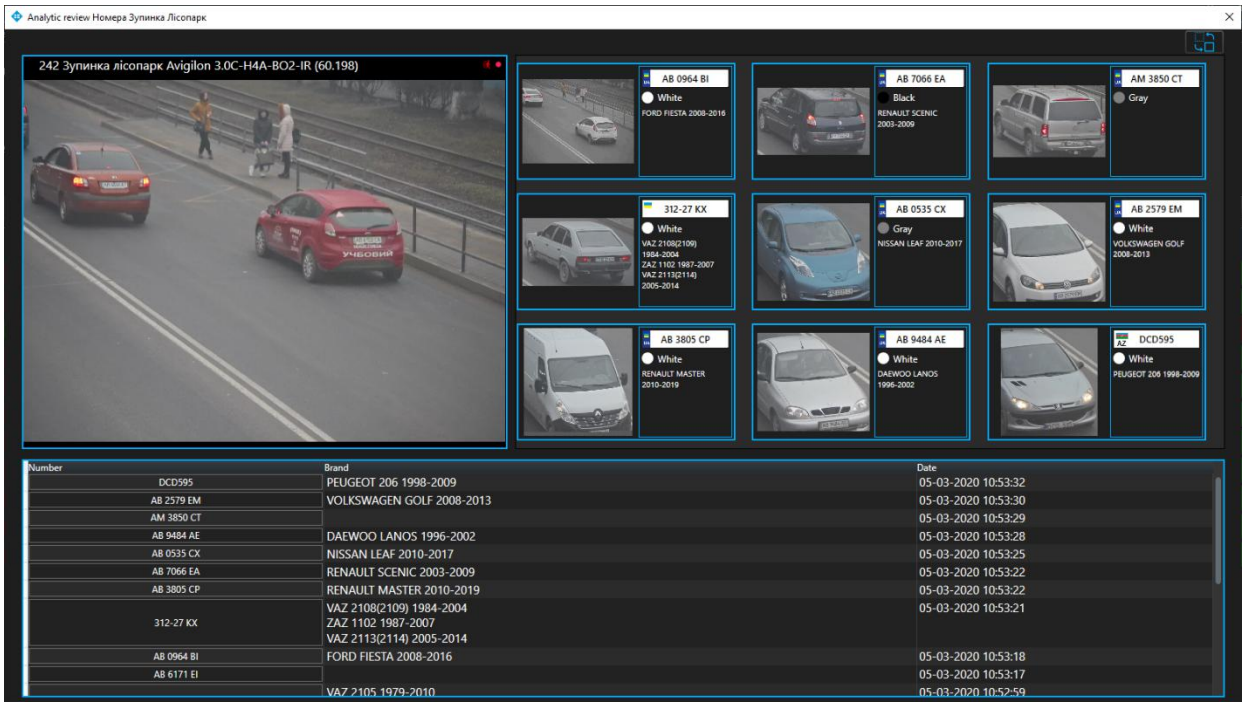
In the window that opens, fill the fields:



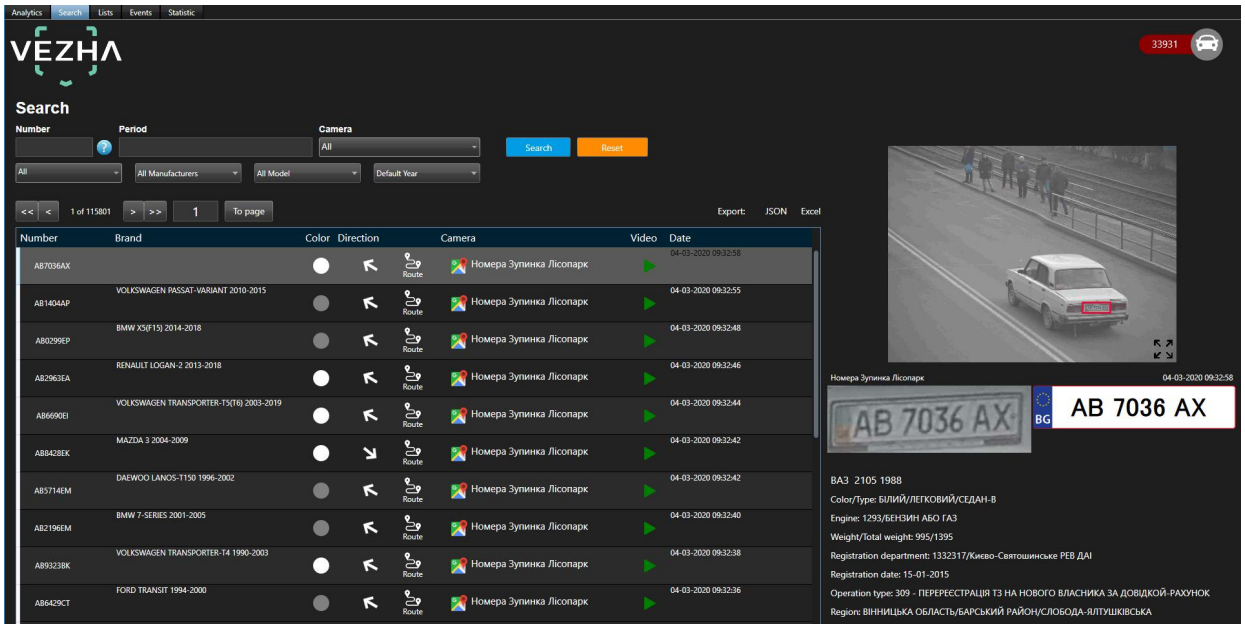
Field name	Recommend value
Send notification if license plate is recognized	Fill checkbox "**Send notifications if license plate is recognized"** to create your own event to send notifications. Event manager is developed to send vehicle notifications (depending on incoming parameters)
Events	Select events 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 the fields with parameters, to add a parameter click on button . To remove parameters click .

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 an area of interest**. Click in the area where the video from the camera is located and set the area of interest. License plate recognition will take place in the exposed area. To cancel area of interest, click **Cancel area of interest**.
   To create analytics, click **Save**.
   To start / stop the video stream, press the **Start / Stop** button.
   To delete a video stream, click .
   To view video stream, click .



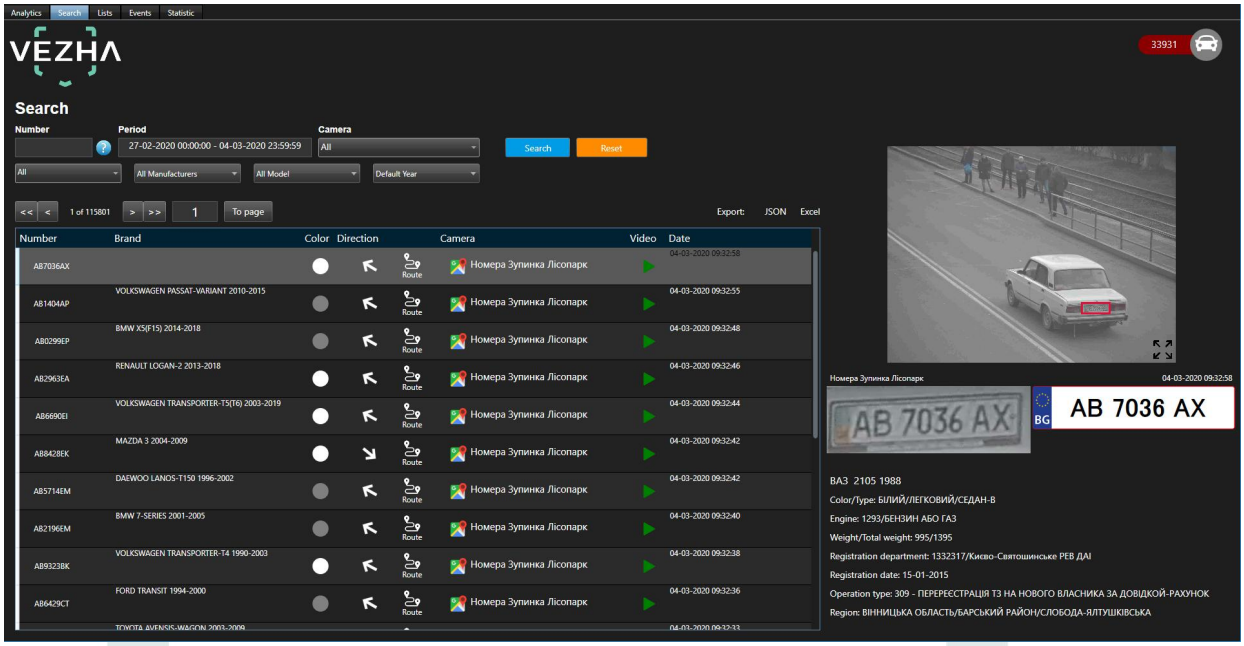
5.Search



In order to find the right vehicle, fill the fields:

1.**Number** - enter the vehicle number in the field.
2. **Period** - select the time period for which you want to search.
3. **Camera** – mark the cameras that will be used for a search.
4. **Color** - select the required color of the vehicle in the field.
5. **Make** - select the brand of vehicle you want to find.
6. **All models** - choose the necessary vehicle model.
7. **All years** - choose the year of the vehicle.

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

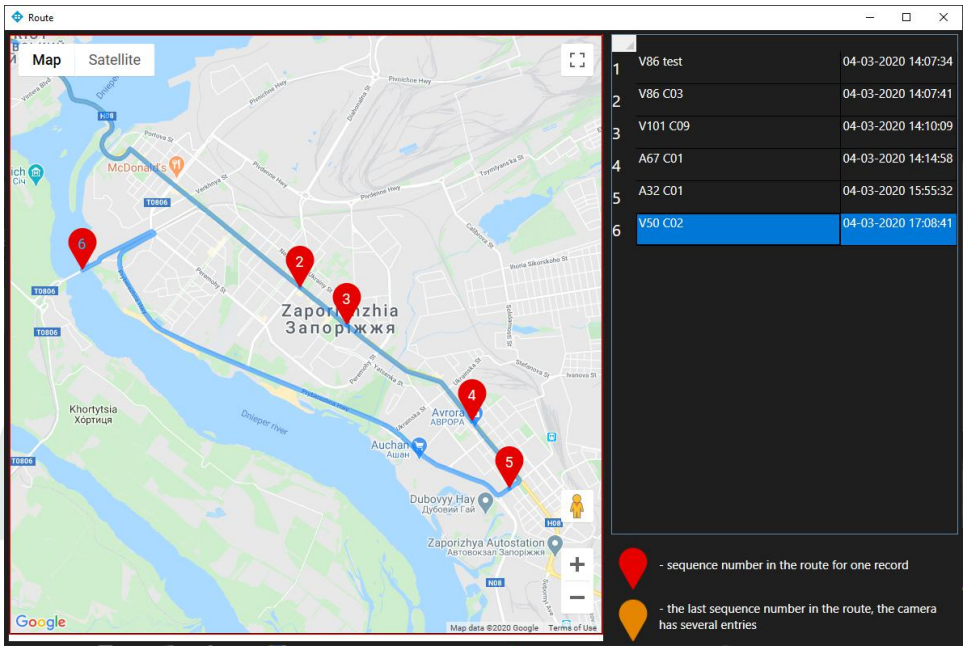


5.1 Work with license plate records

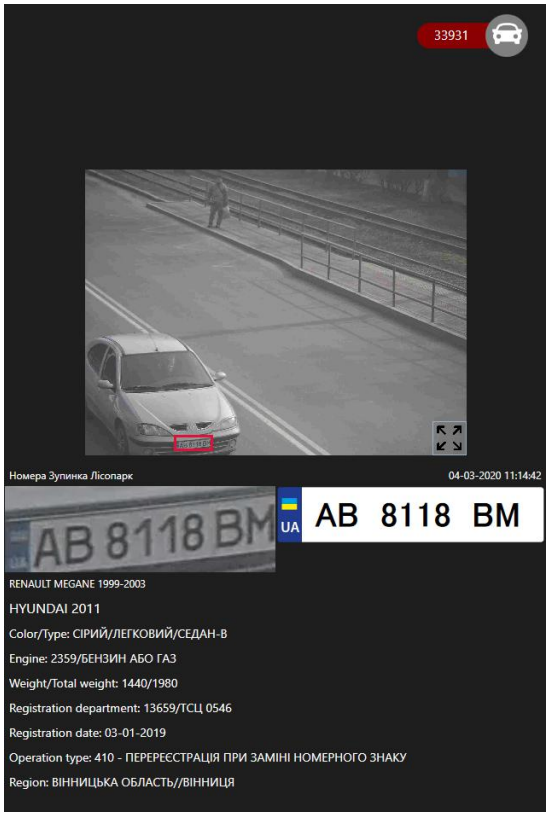
The list of vehicle records consists of the fields: number, make, color, direction, camera, video, date.

After pressing

will be shown the route of vehicle.

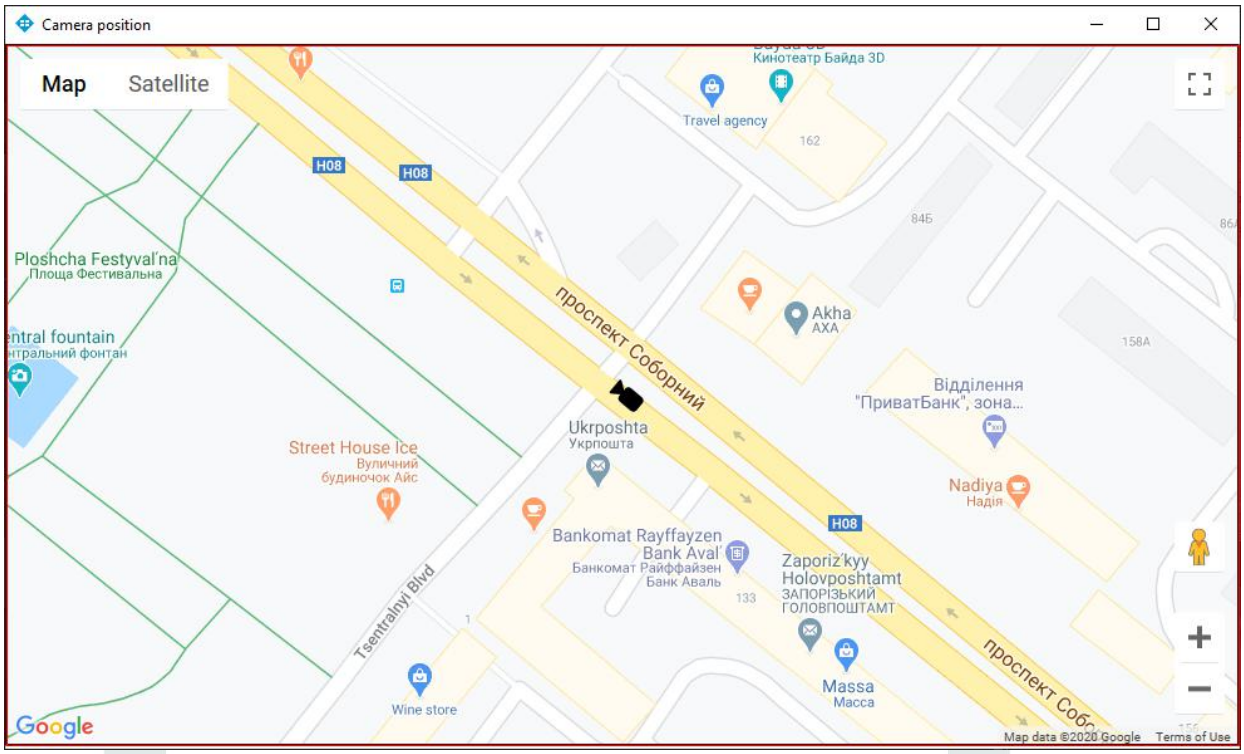


When you click on the vehicle's record, a picture of the vehicle from the camera and information about the vehicle are displayed on the right side of the screen.



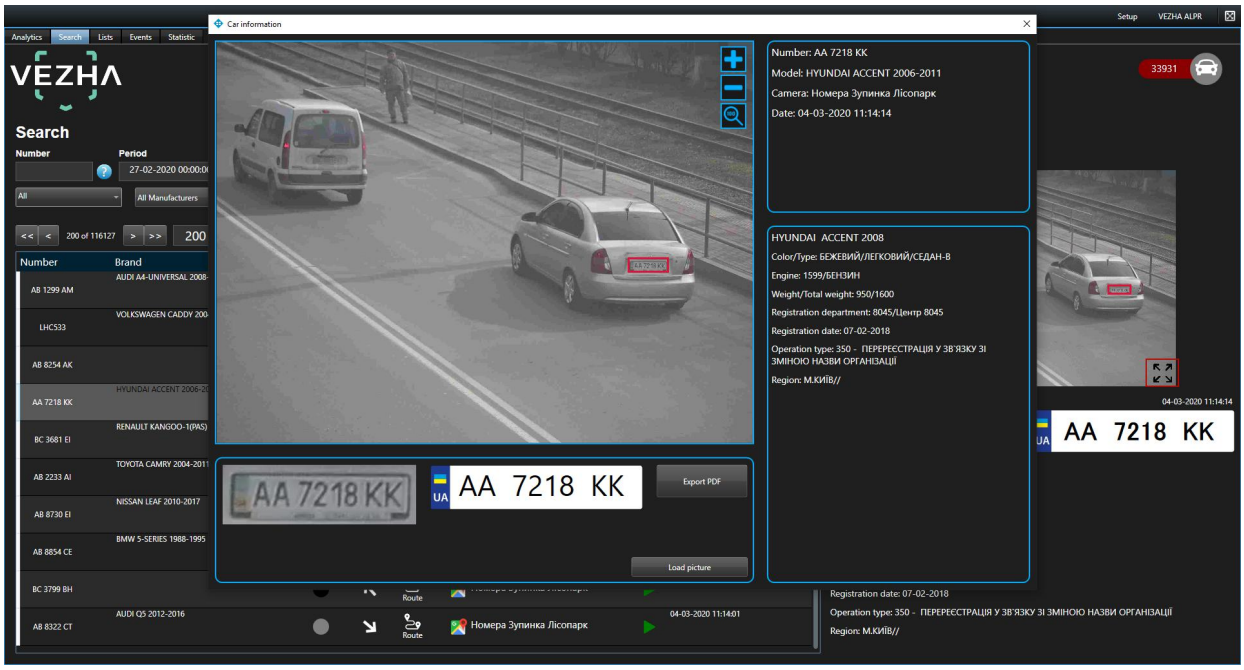
By clicking on , you can view the record of vehicle movement from the camera.

When you click on , a window appears showing the location of the camera.



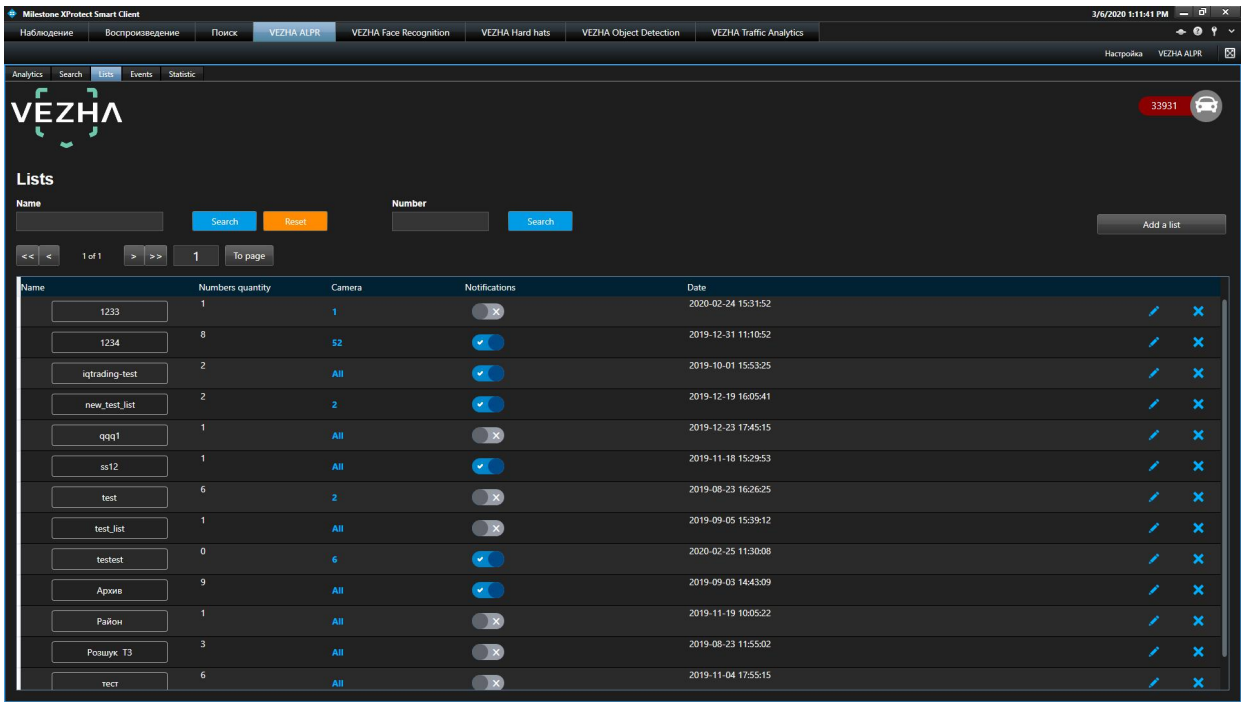
The list of found records can be exported in **JSON** or **Excel** format. To do this, click **JSON** or **Excel**.

Click on the image zoom button to view detailed information about the vehicle in a new window.



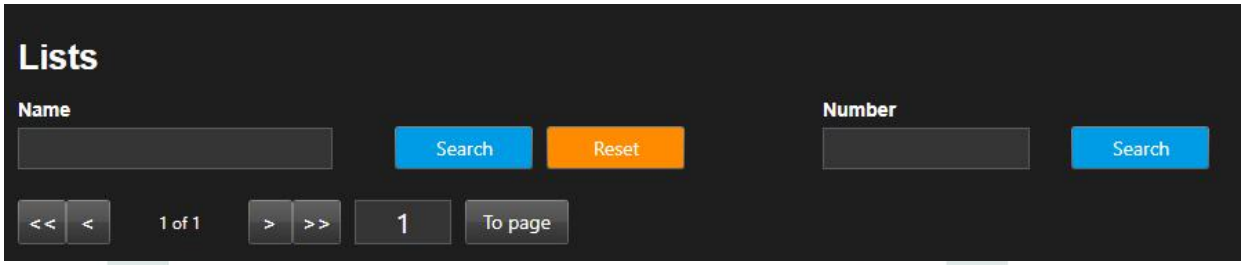
6.Lists

This section is intended to create a registration database of vehicles for their subsequent recognition.



6.1 Lists Search

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



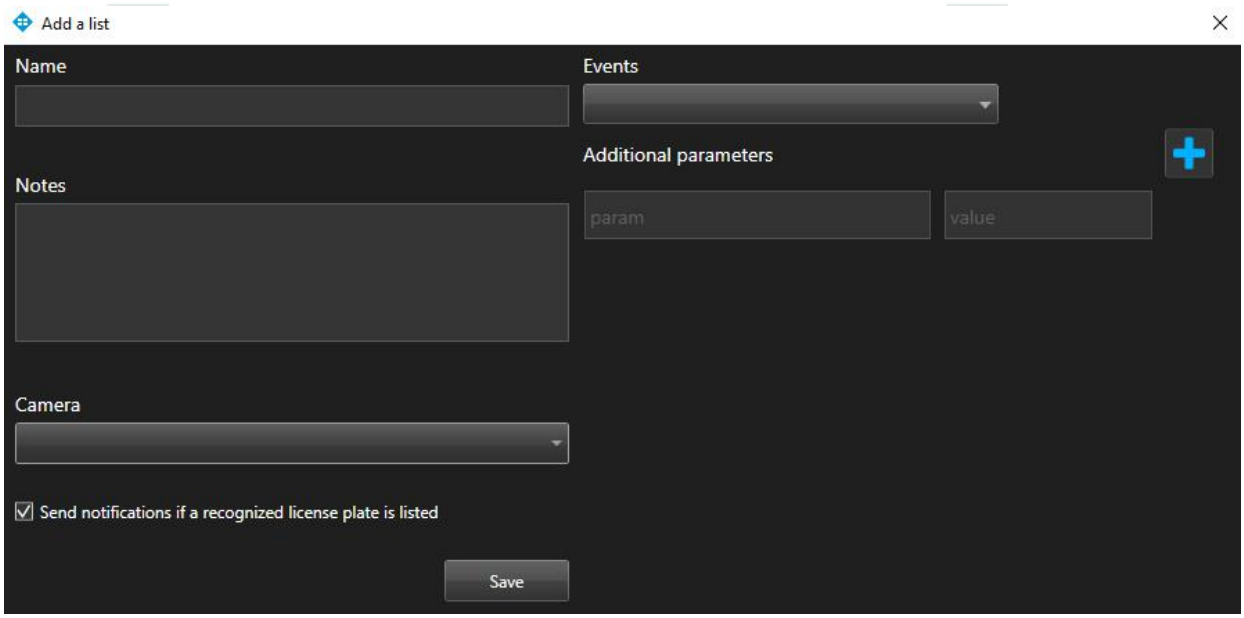
In order to find the desired list of the lists section, enter its name in the search field.

Click **Search** to display the results.

To find the desired number from the lists, enter it in the **Number** field and click **Search**. Click **Reset** to clear the input fields.

6.2 Adding and editing of lists

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

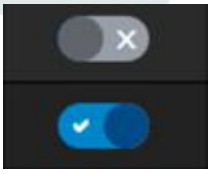


In the opened window fill the fields:

Field name	Recommended Value
Name	Enter a name for the entry 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 creating records. 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 search for vehicles funds with the specified number.
Send notifications if a recognized license plate is listed	Check the box “Send notifications if recognized number "to create your own event (event) to send notifications. Event manager is designed to create vehicle notifications (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 parameters. To add parameter click button add To remove parameter click .

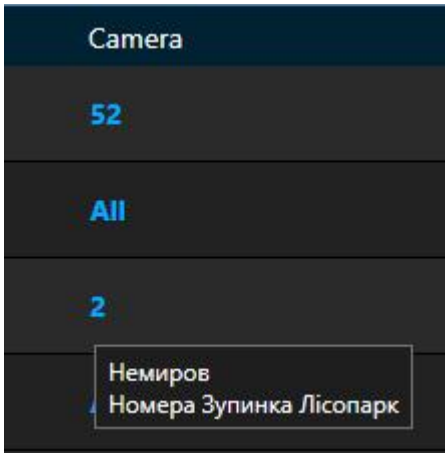
In way to apply changes click **Save**.

To remove record click in the right side of the screen.
To stop or activate a notification, set the status slider to the appropriate position.



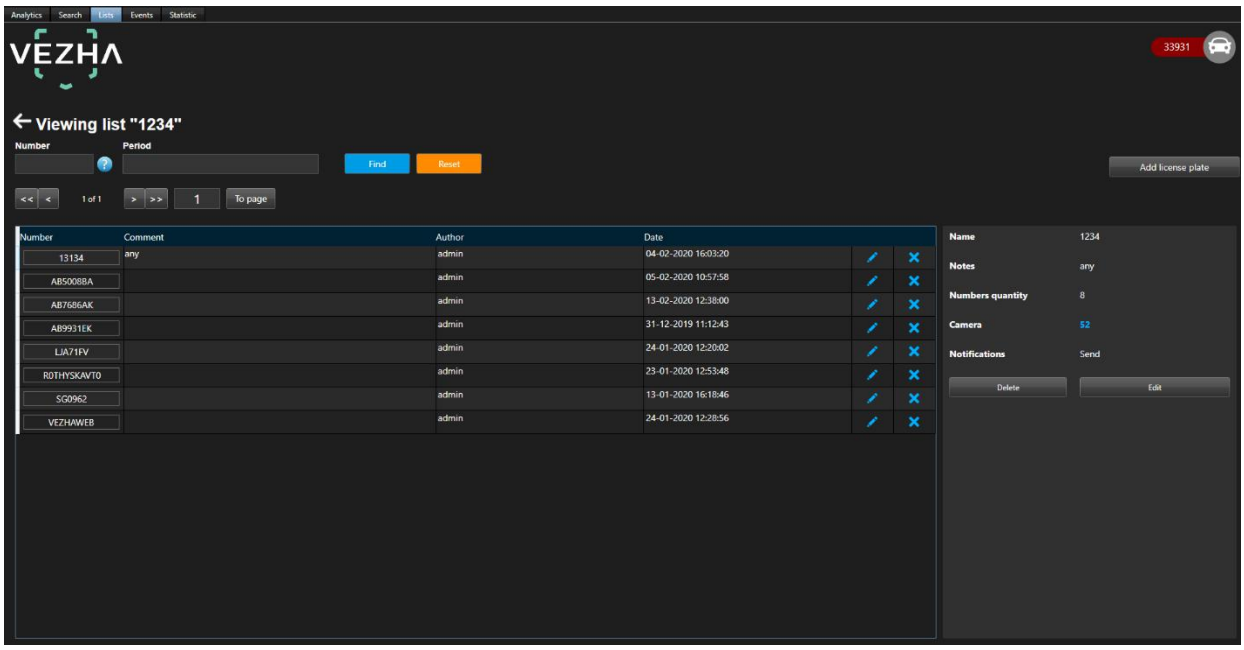
6.3 View Lists

To view information about the cameras that are being monitored in the list, move the mouse over the number of cameras in the list record.



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

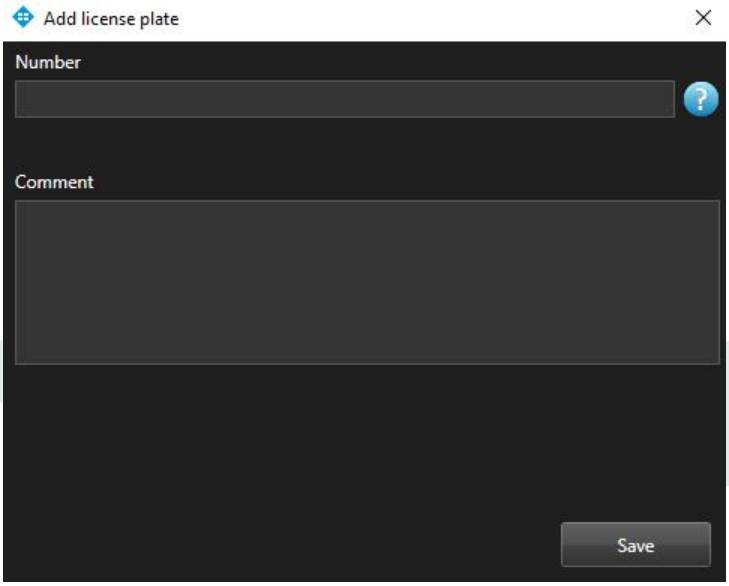
When clicked, you will go to the list view tab. To go back click at the left side of the tab.



6.3.1 Add and edit license plate number

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

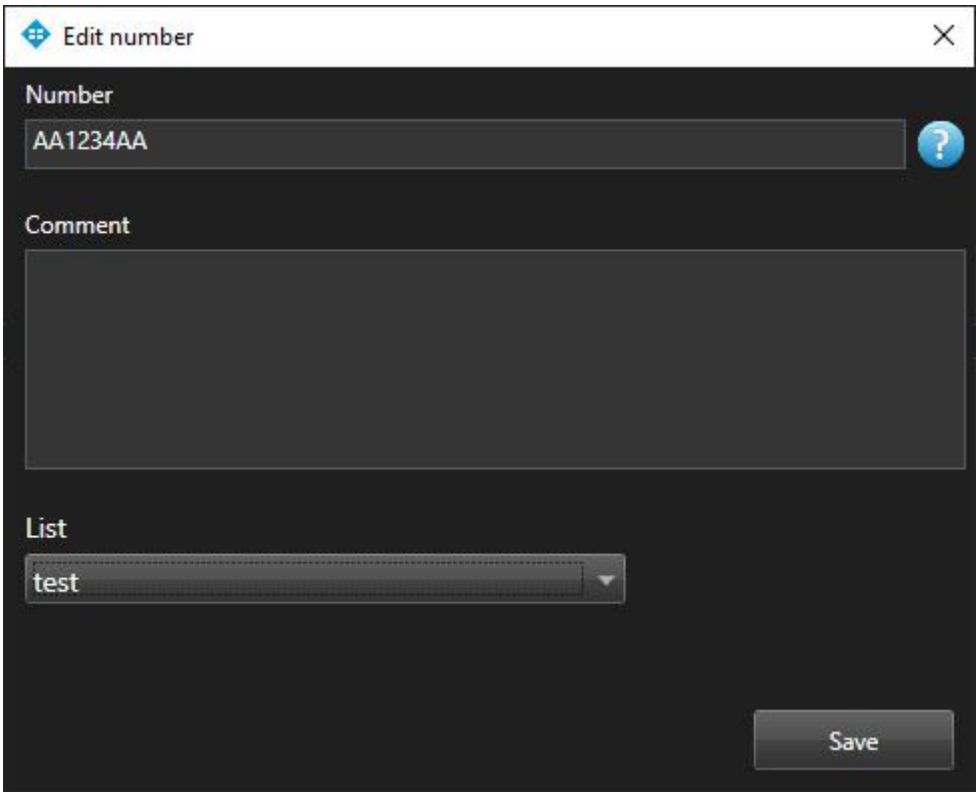
In the window that opens, fill the fields:



Field name	Recommended value
Number	Enter the number of the vehicle you want to find in the field. Search will done using the cameras that were selected when creating the list.
Comment	Enter the text of the notification that will be received upon detection of vehicle.

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

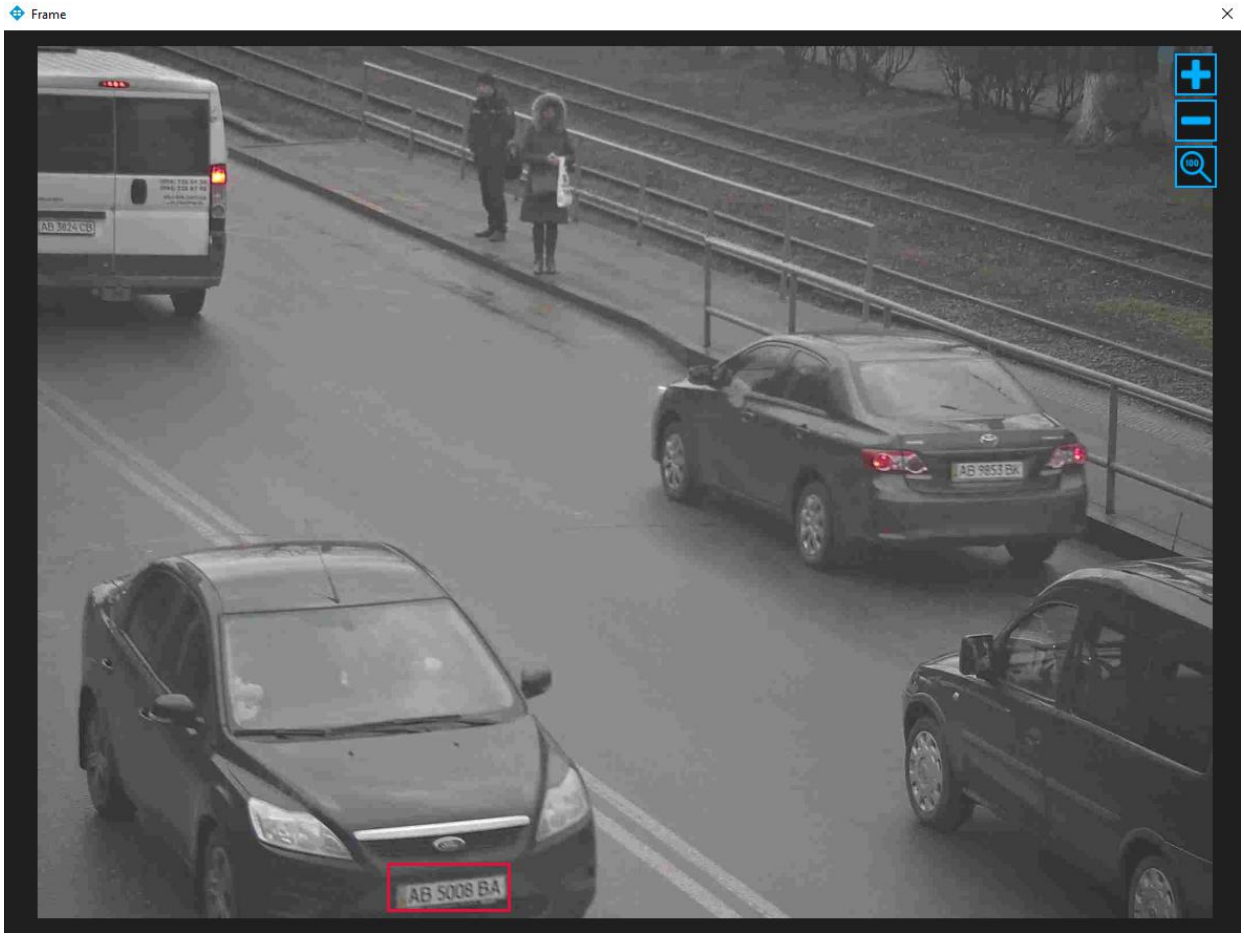
To edit record click at the right side of the record.
In the window that opens fill the fields:



Field name	Recommended value
Number	Enter the number of the vehicle you want to find in the field. The search will take place on the cameras that were selected during creating a list.
Comment	Enter the text of the notification that will be used after vehicle detection.
List	To change the list in which the number is located, select another list.

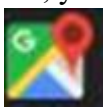
In way to apply changes click **Save**.
In way to export card of license plate number into pdf click **Export to PDF**.

To view a frame from a recording, click on the **Frame** in the right part of the recording.



To accept the notification on yourself, click **Accept** on the right side of the record.

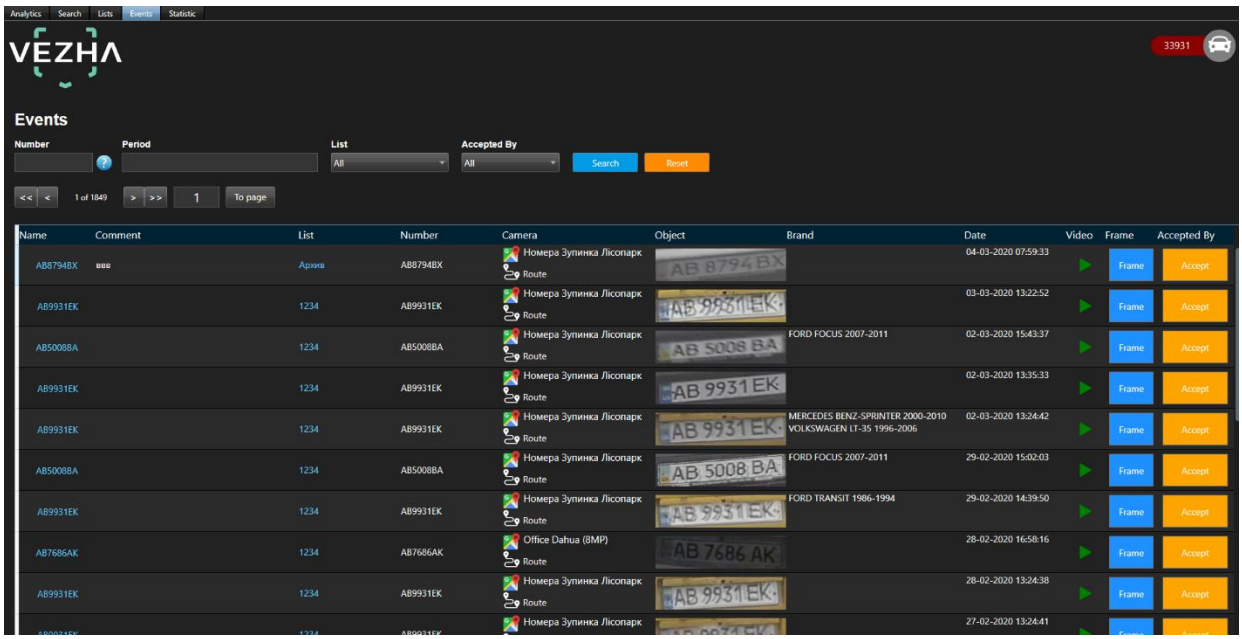
By clicking on , you can view the record of vehicle movement from the camera.

When you click on  window will appear showing the location of the camera.

When you click on window will appear on which the vehicle path is displayed.
Click the zoom icon to view a larger image.

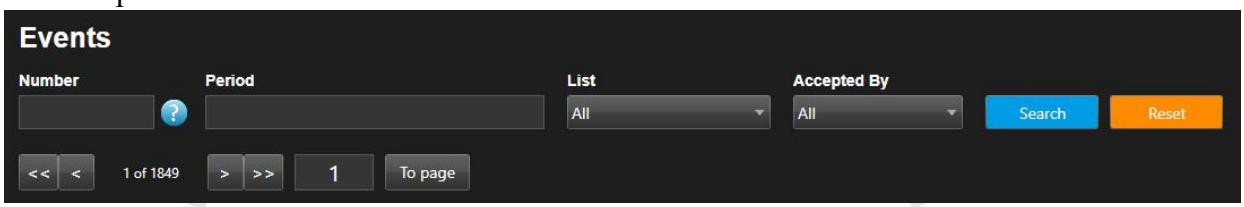
7. Events

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



7.1 Event search

At the top of the screen are located search fields:



In order to find the necessary notifications you can use these fields:

1) **Number** – enter license plate number of vehicle.
2) **Period** – click on the field and select the desired time period.
3) **List** – click on the field and select the desired list.
4) **Accepted By** – click on the field and select the user who received the notifications.

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

7.2 Work with vehicle event records

The list of notification record consists of the fields: name, comment, list, camera, object, number, brand, date, video, frame, accepted by.

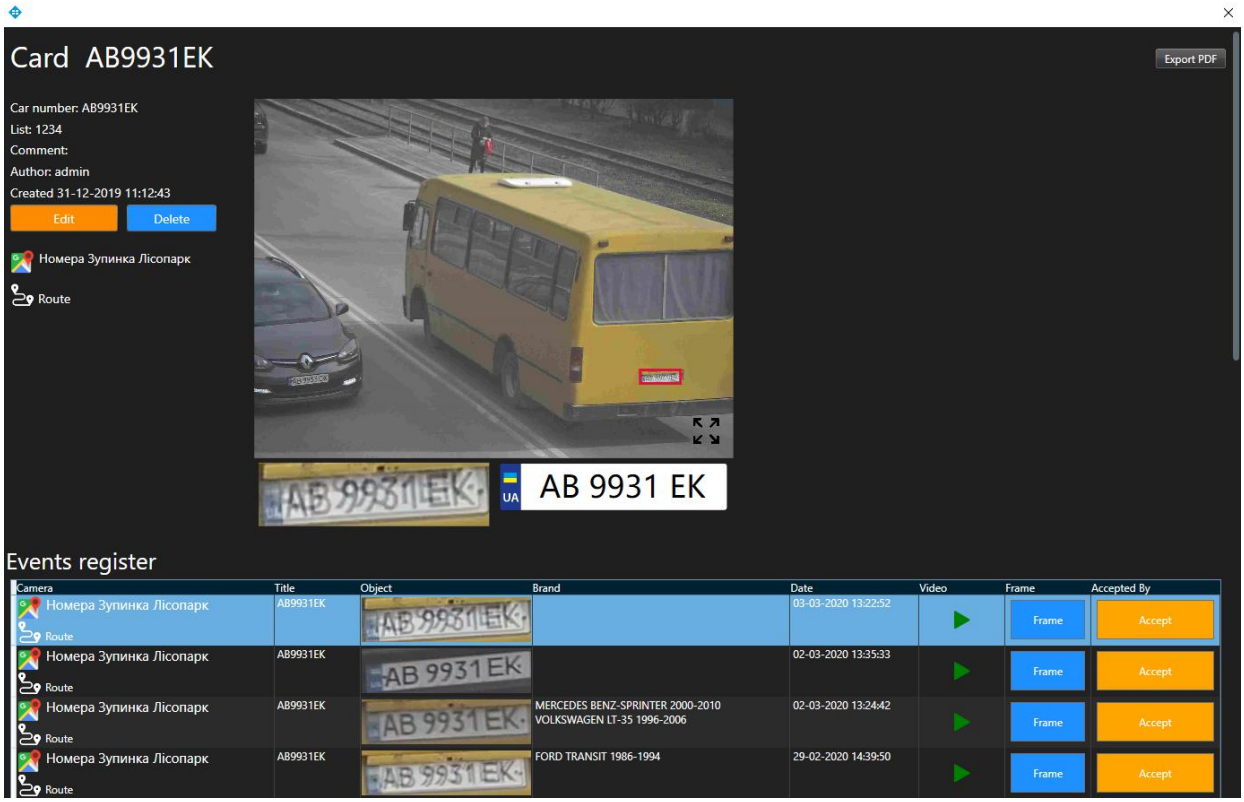
When you click on

, a window will appear showing the vehicle route.
When you click **Frame**, a window opens with a snapshot of the found vehicle.

Click on the icon to view the video with the detected vehicle.

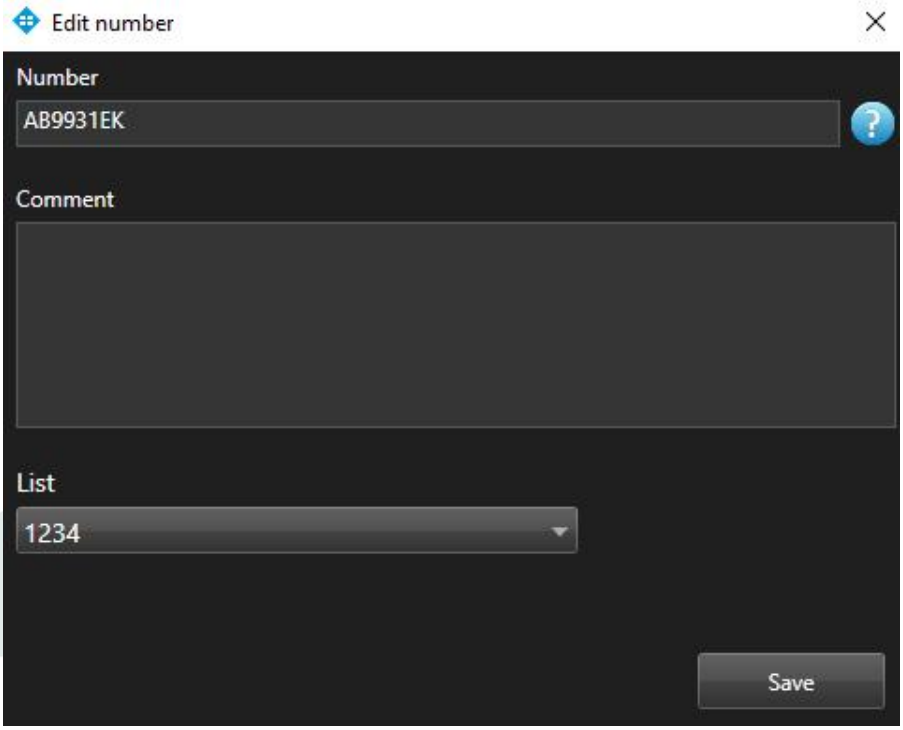
To accept the notification click on **Accept.**

When you click on the number in the title of the notification record, you will go to the section for viewing information about this number.



Click on **Edit** to modify the vehicle record.

In the opened window, you can change the following fields:



Field name	Recommended value
Number	Enter the number of the vehicle you want to find in the field. Search will be done using the cameras that were selected when creating list.
Comment	Enter the text of the notification that will be received upon detection vehicle.
List	To change the list in which the number is located, select another list.

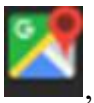
In order to accept changes, click **Save**.

In order to export the card of this vehicle number in PDF format, click on **Export PDF**.

To view a frame from the record, click on the **Frame** in the right part of the record.

To accept the notification on yourself, click **Accept** on the right side of the record.

By clicking on , you can view the record of vehicle movement from the camera.

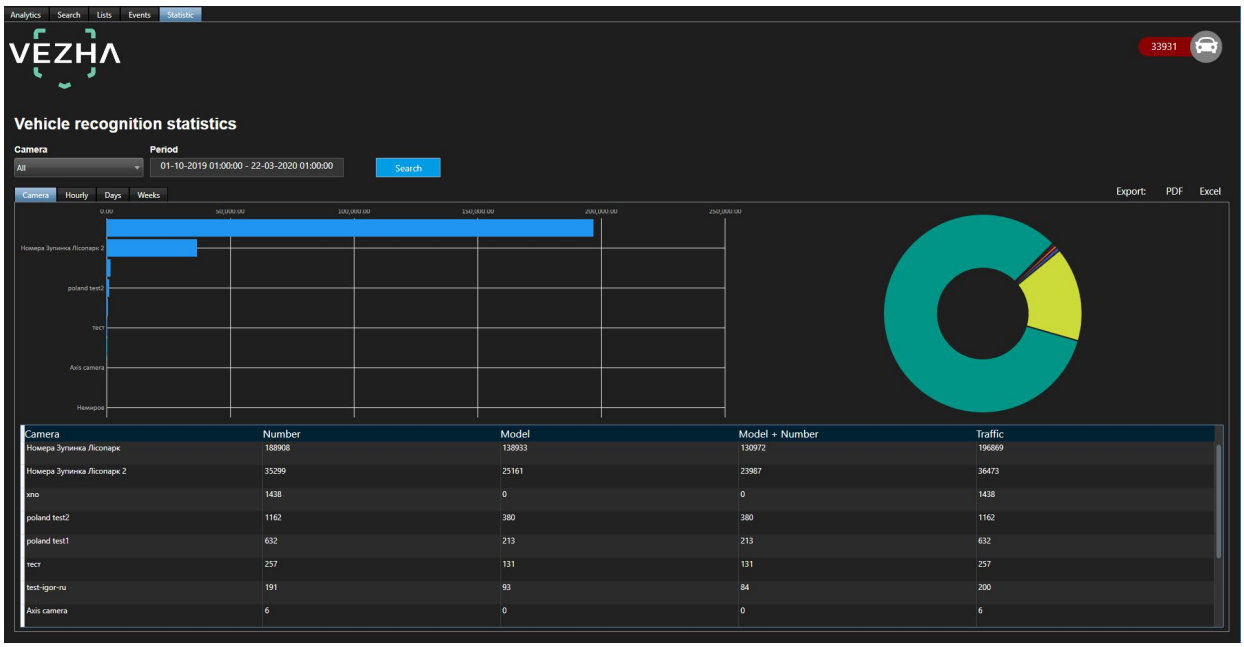
When you click on  , will open the window showing the location of the camera.

When you click on

, will be opened the window, where the vehicle route is displayed.
Click the icon to view a larger image.

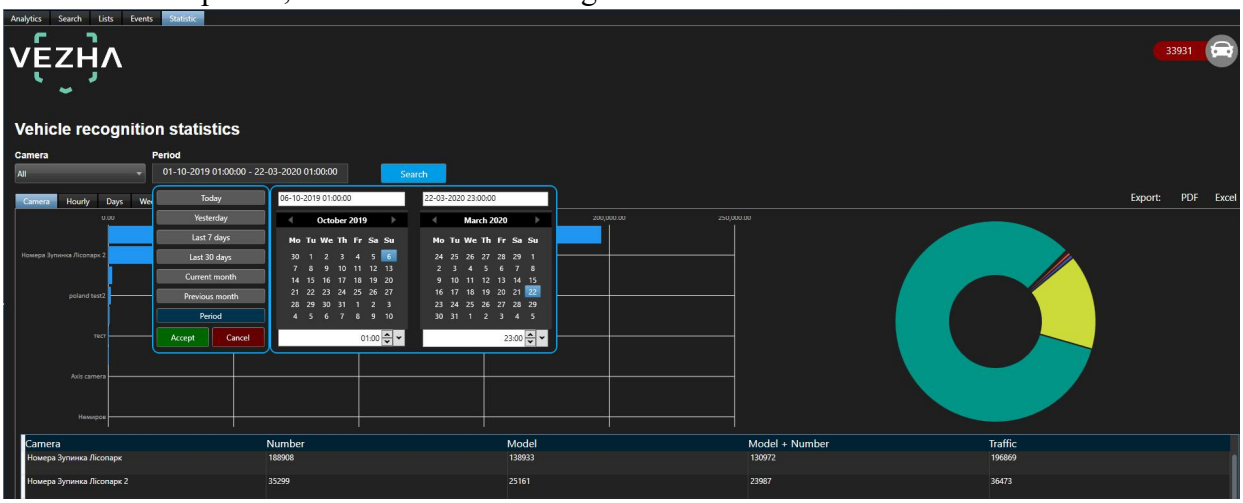
8. Statistics

Vehicle recognition statistics is developed to generate and create reports on recognized vehicles. Reports are generated by camera, hours, days and weeks.

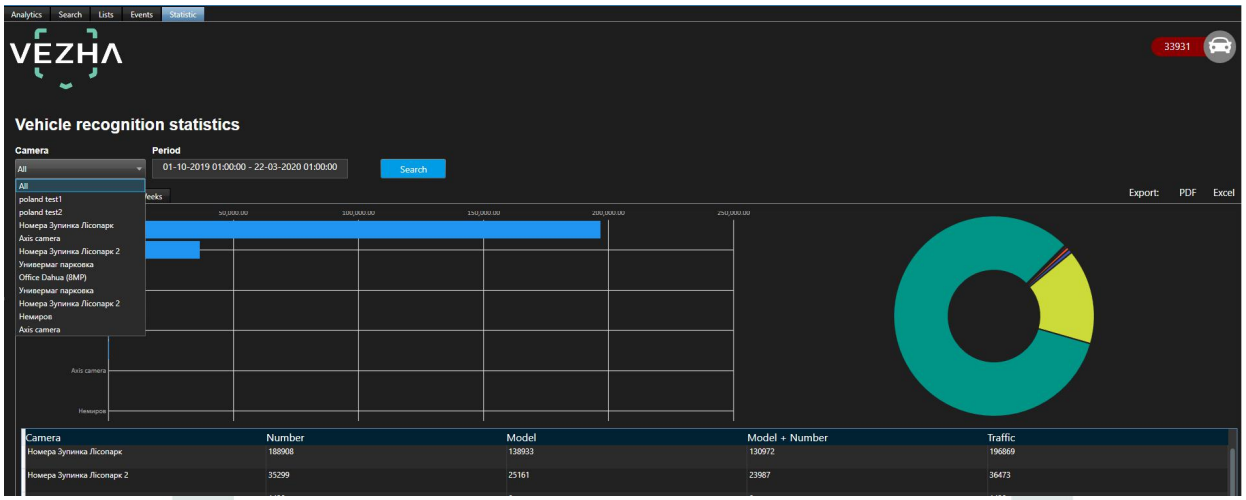


In order to filter statistics of vehicle recognition, you need:

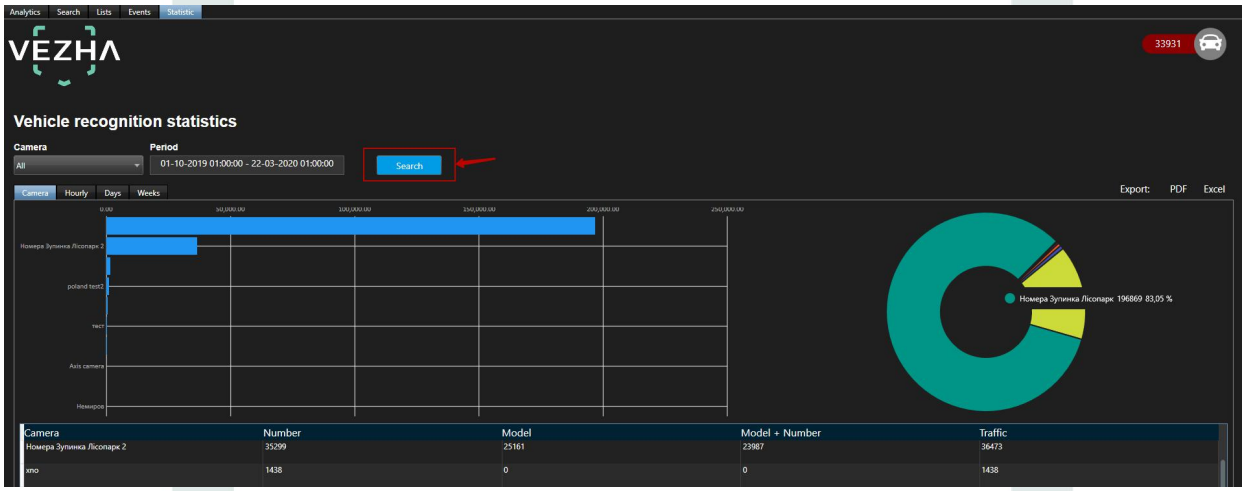
1. Select the time period, which will be used to generate statistics.



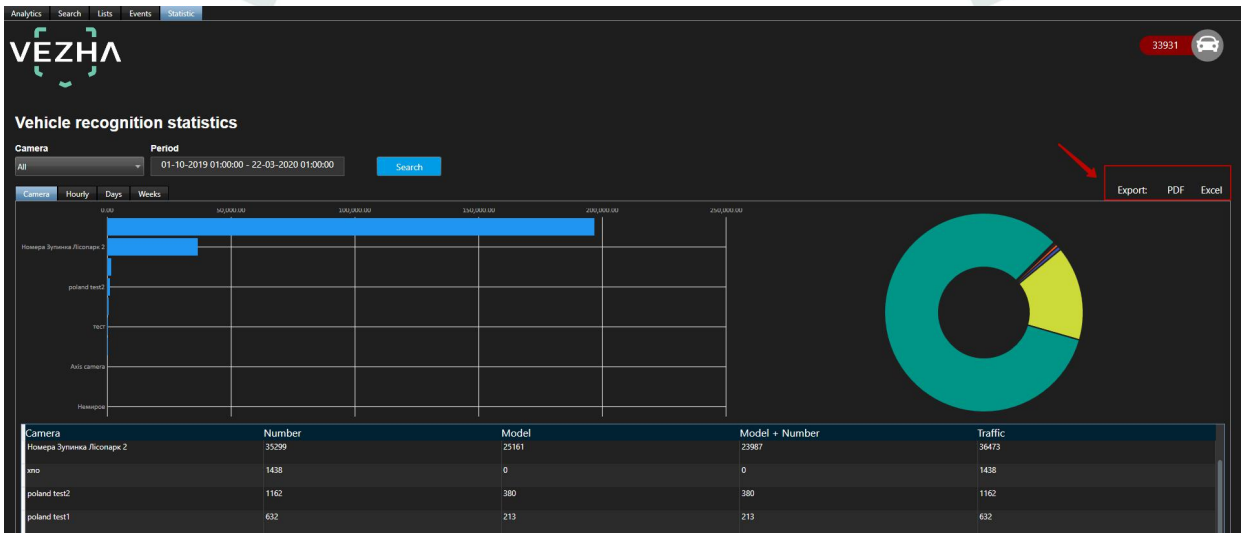
   To select a period, one of the values is indicated: today. yesterday, last 30 days, this month, previous month, manually selected period (the range of days and time is indicated using the calendar).
2. Select the camera with which the video stream is taken. You can select **All cameras**, or you can select a specific camera.



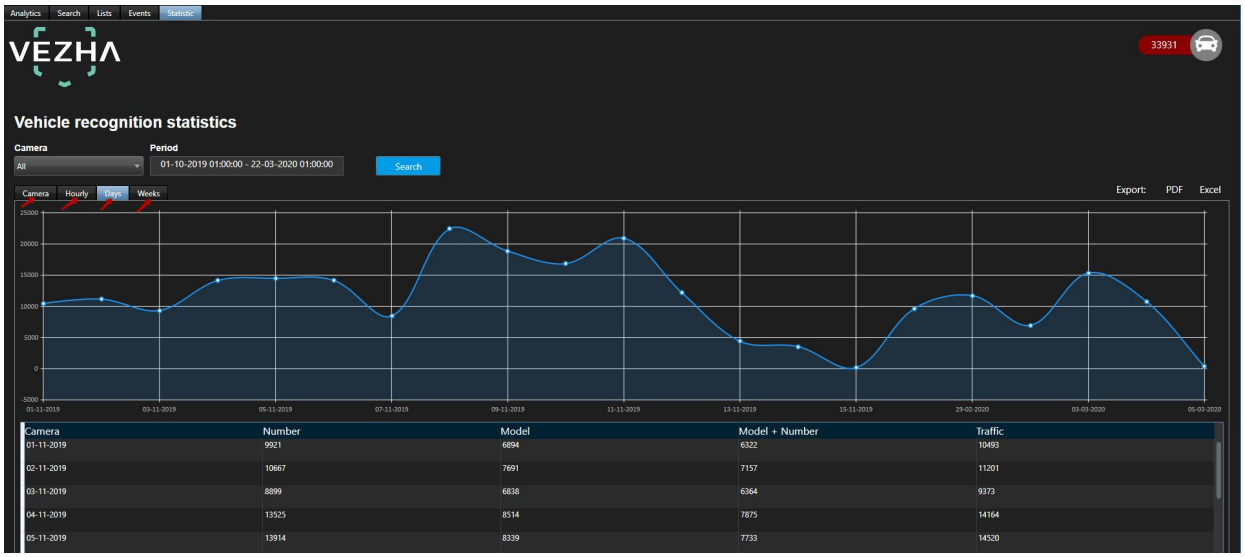
3. Click button **Search**.



To export statistics in PDF or Excel format, click **PDF** or **Excel** in the upper right corner.



To see statistics on cameras, hours, days, weeks, select the appropriate tab.



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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