Operator's Guide

Auto Intellect 6.0 (english)

Last update 02/03/2023

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1 The list of terms used

1. The Guide – this document.
2. The system – the *Auto-Intellect* software system.
3. Server - computer with installed *Auto-Intellect* software package.
4. Traffic – the flow of vehicles.
5. Vehicle Tracer – the interface object designed for viewing the recognized LP numbers, the types and speeds of vehicles, as well as for searching the LPR database and creating reports for specific time periods.
6. Traffic Monitor – the interface object designed for monitoring vehicle movement.
7. fps - frame frequency. Number of video stream frames processed by software per 1 second.

2 Operator's Guide. Introduction

On page:

2.1 The purpose and structure of the Guide

The Guide is an informational reference designed for users of the *Auto-Intellect* system with Operator access rights responded for operation with *Auto-Intellect* software and corresponding interface objects.

The Guide contains the following material:

1. General description of the *Auto-Intellect* software system.
2. How to use the *Auto-Intellect* software system.
3. Description of the user interface of the *Auto-Intellect* system.

2.2 The purpose of the Auto-Intellect system

The *Auto-Intellect* software system is designed for automated traffic monitoring and control, and has the following functionality:

1. License plate number recognition.
2. Centralized events registration and processing, generation of notifications and control commands according to flexible algorithms.
3. Searching matches between the recognized plate number and the numbers in the database connected to *Auto-Intellect.*
4. Creating the photo and video archive.
5. Determining the overall traffic parameters and the parameters of individual vehicles.
6. Software scalability.

2.3 Recommendations for using the Auto-Intellect system

The *Auto-Intellect* software is installed as an extension to the Intellect software package.

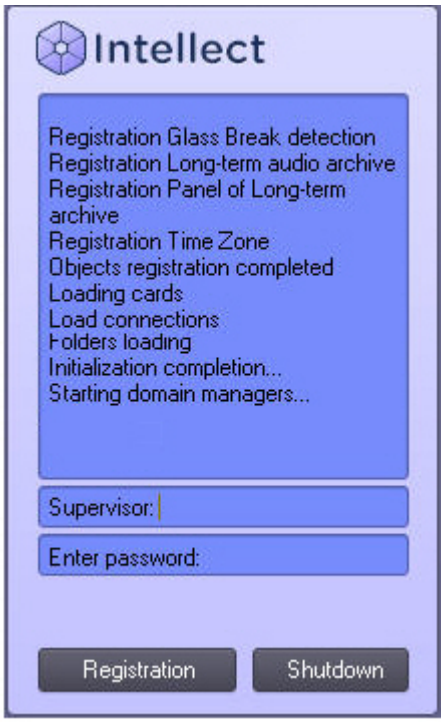
For proper operation of the *Auto-Intellect* system, please follow these recommendations:

1. Follow the job description accurately.
2. Use the system for the intended purpose only.
3. Do not use the computer with *Intellect* installed, to run other software which is not part of the *Intellect* package.

3 Using the Auto-Intellect software system

3.1 Starting and closing the system

Please check the working condition of all hardware components – connections, cameras, etc – prior to starting the system.



The system can be started using one of the following methods:

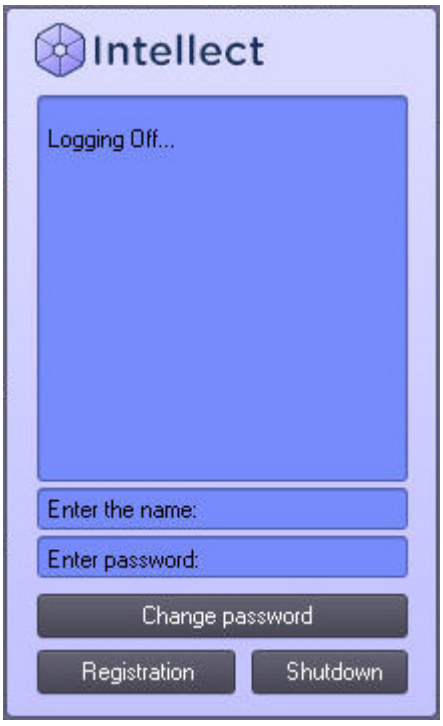
1. Automatically. The system starts automatically after the operating system boots up.
2. Manually. To start the system manually, in the **Start** menu, select **Programs** -> **Intellect** -> **Client Workstation**, or use the corresponding shortcut on the Desktop.

Access to the system can be protected by a password. In this case, enter your password to start the system.

To shut down the system, do the following:

1. Point the mouse to the upper right corner of the screen, the main control panel will open.
2. Click the  icon on the panel.
3. Select **Shutdown** in the menu that opens.

The shut down process will start, the password will be required if set.



Note.

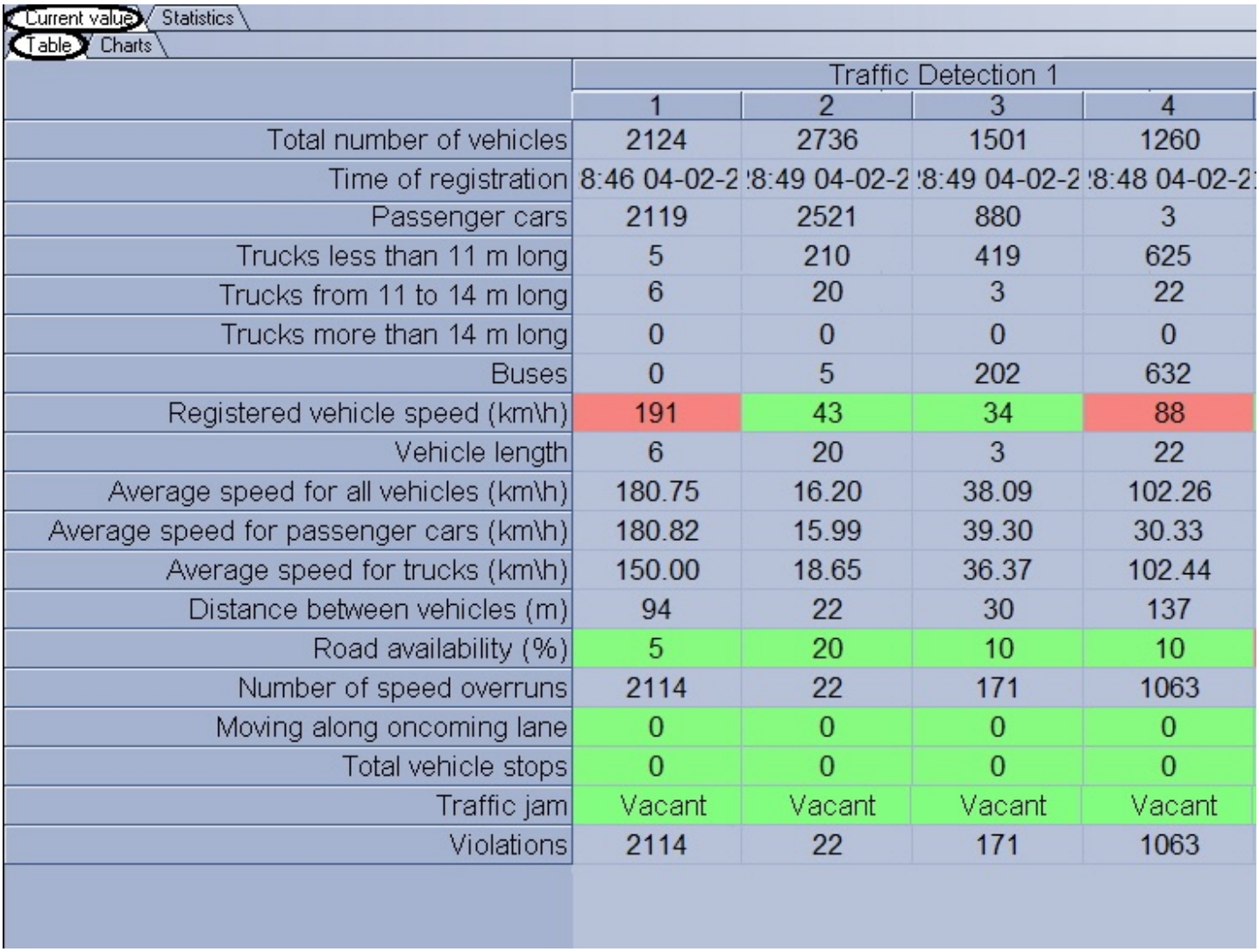
The system can be set up to forbid the shut down. Then, the **Shutdown** item is not present in the menu.

3.2 Using the Traffic Monitor interface object

3.2.1 Displaying the current traffic information in table form

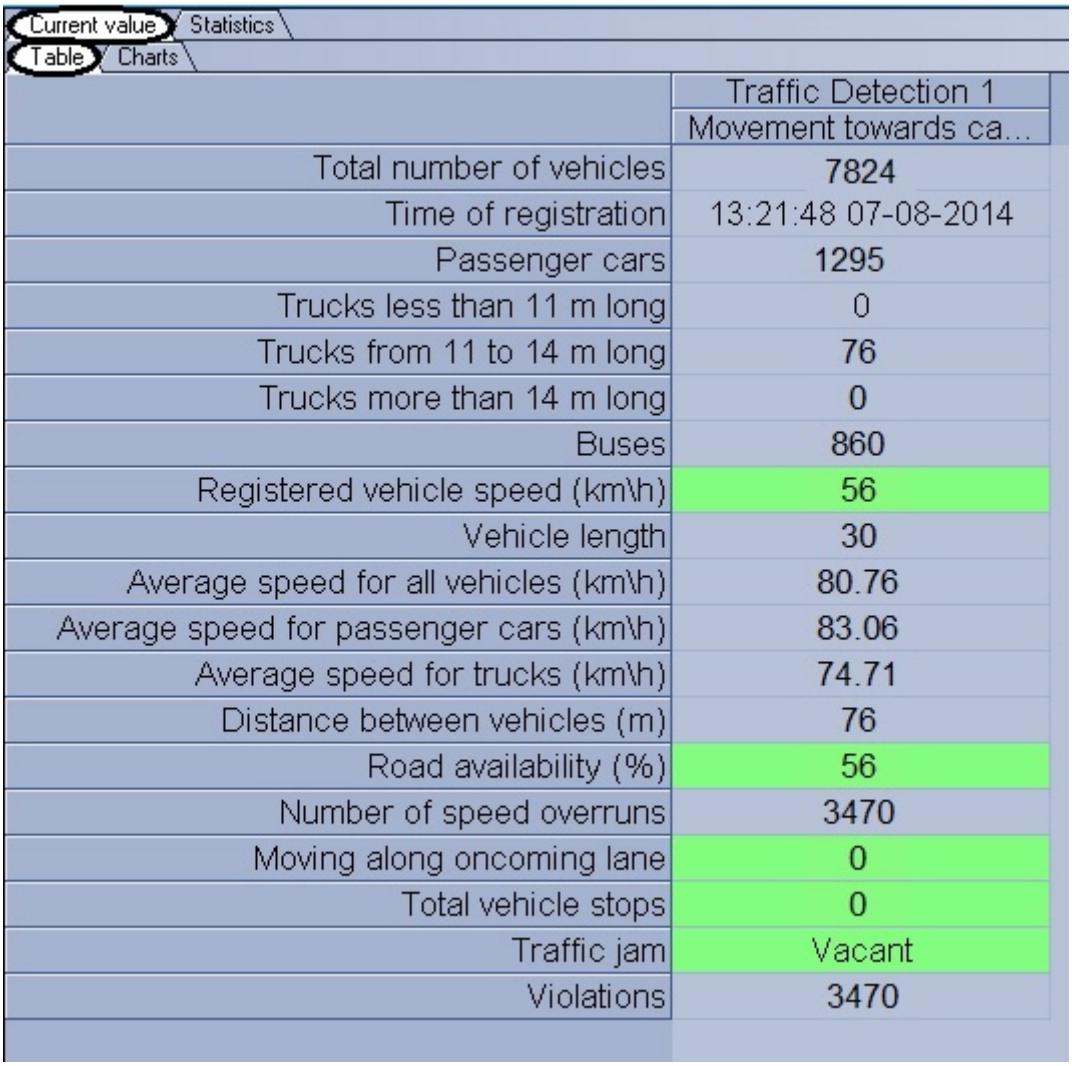
The table with current traffic parameters is shown in the **Table** sub-tab of the **Current value** tab.

Displaying the current traffic parameters by lane in a table.



	Traffic Detection 1			
	1	2	3	4
Total number of vehicles	2124	2736	1501	1260
Time of registration	8:46 04-02-2	8:49 04-02-2	8:49 04-02-2	8:48 04-02-2
Passenger cars	2119	2521	880	3
Trucks less than 11 m long	5	210	419	625
Trucks from 11 to 14 m long	6	20	3	22
Trucks more than 14 m long	0	0	0	0
Buses	0	5	202	632
Registered vehicle speed (km\h)	191	43	34	88
Vehicle length	6	20	3	22
Average speed for all vehicles (km\h)	180.75	16.20	38.09	102.26
Average speed for passenger cars (km\h)	180.82	15.99	39.30	30.33
Average speed for trucks (km\h)	150.00	18.65	36.37	102.44
Distance between vehicles (m)	94	22	30	137
Road availability (%)	5	20	10	10
Number of speed overruns	2114	22	171	1063
Moving along oncoming lane	0	0	0	0
Total vehicle stops	0	0	0	0
Traffic jam	Vacant	Vacant	Vacant	Vacant
Violations	2114	22	171	1063

Displaying the current traffic parameters by direction in a table.



	Traffic Detection 1 Movement towards ca...
Total number of vehicles	7824
Time of registration	13:21:48 07-08-2014
Passenger cars	1295
Trucks less than 11 m long	0
Trucks from 11 to 14 m long	76
Trucks more than 14 m long	0
Buses	860
Registered vehicle speed (km\h)	56
Vehicle length	30
Average speed for all vehicles (km\h)	80.76
Average speed for passenger cars (km\h)	83.06
Average speed for trucks (km\h)	74.71
Distance between vehicles (m)	76
Road availability (%)	56
Number of speed overruns	3470
Moving along oncoming lane	0
Total vehicle stops	0
Traffic jam	Vacant
Violations	3470

The system can be set up to display the traffic parameters by lane or by traffic movement direction. In case of the by-lane display, the columns correspond to traffic lanes, and rows correspond to traffic parameters. In case of the by-direction display, the columns correspond to traffic directions, and rows correspond to traffic parameters.

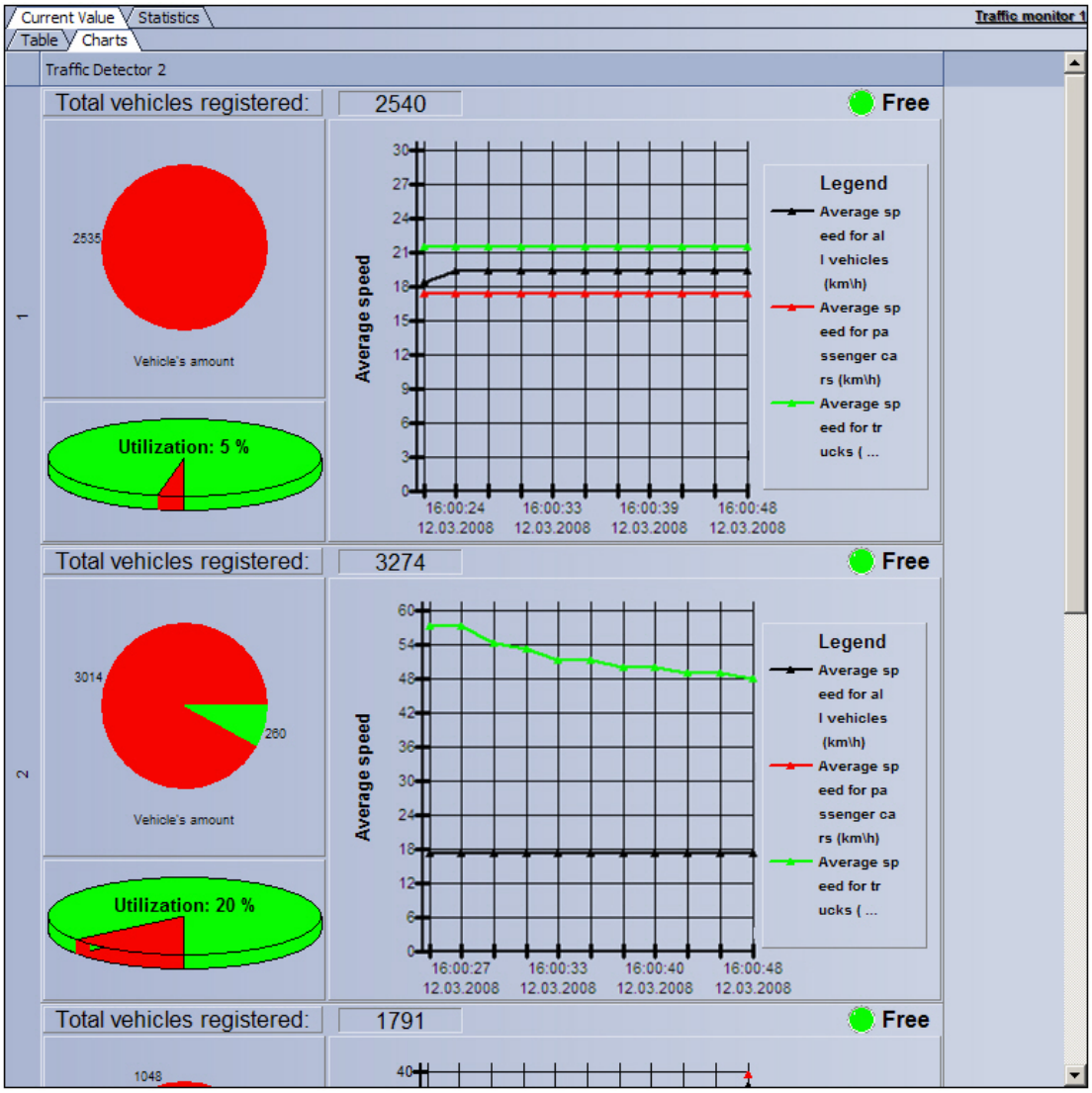
Note.

The **Time of registration** parameter for each lane corresponds to the time when the last vehicle passed. The **Time of registration** minus the **Statistics update period** is taken as the beginning of the period to base the statistics on, while the current moment is taken for the end of the statistics period.

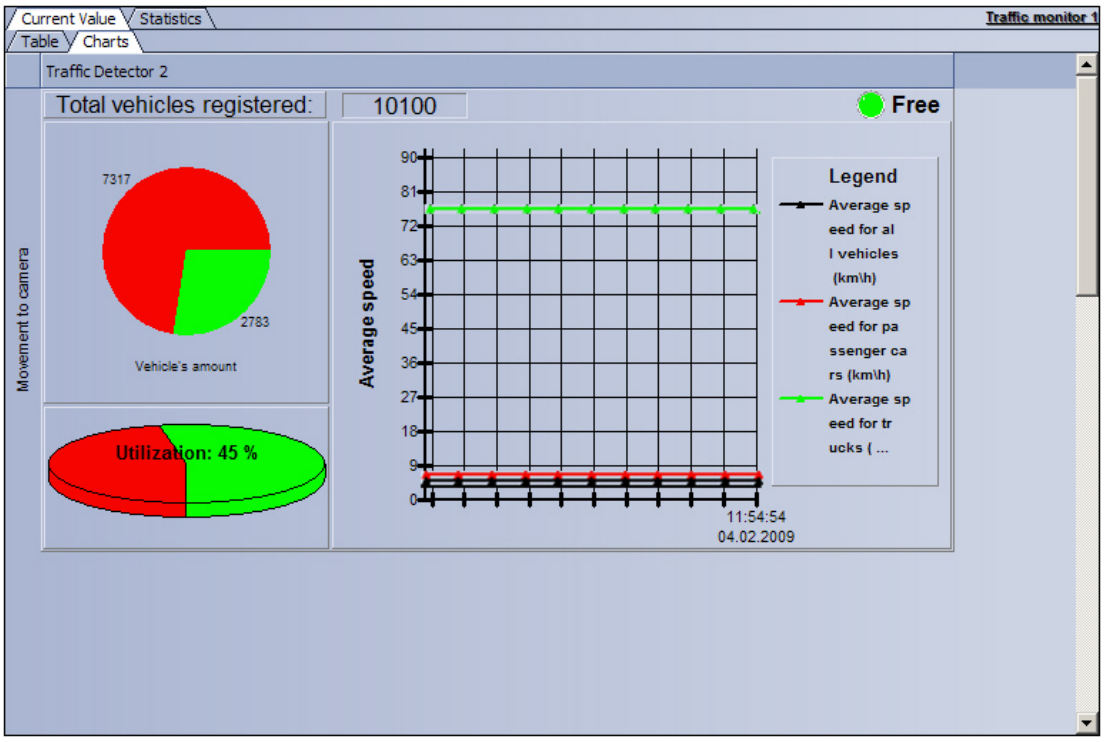
3.2.2 Displaying the current traffic information in graphic form

The charts with current traffic parameters are displayed in the **Charts** sub-tab of the **Current value** tab.

Displaying the charts of current traffic parameters by lane.



Displaying the charts of current traffic parameters by direction.

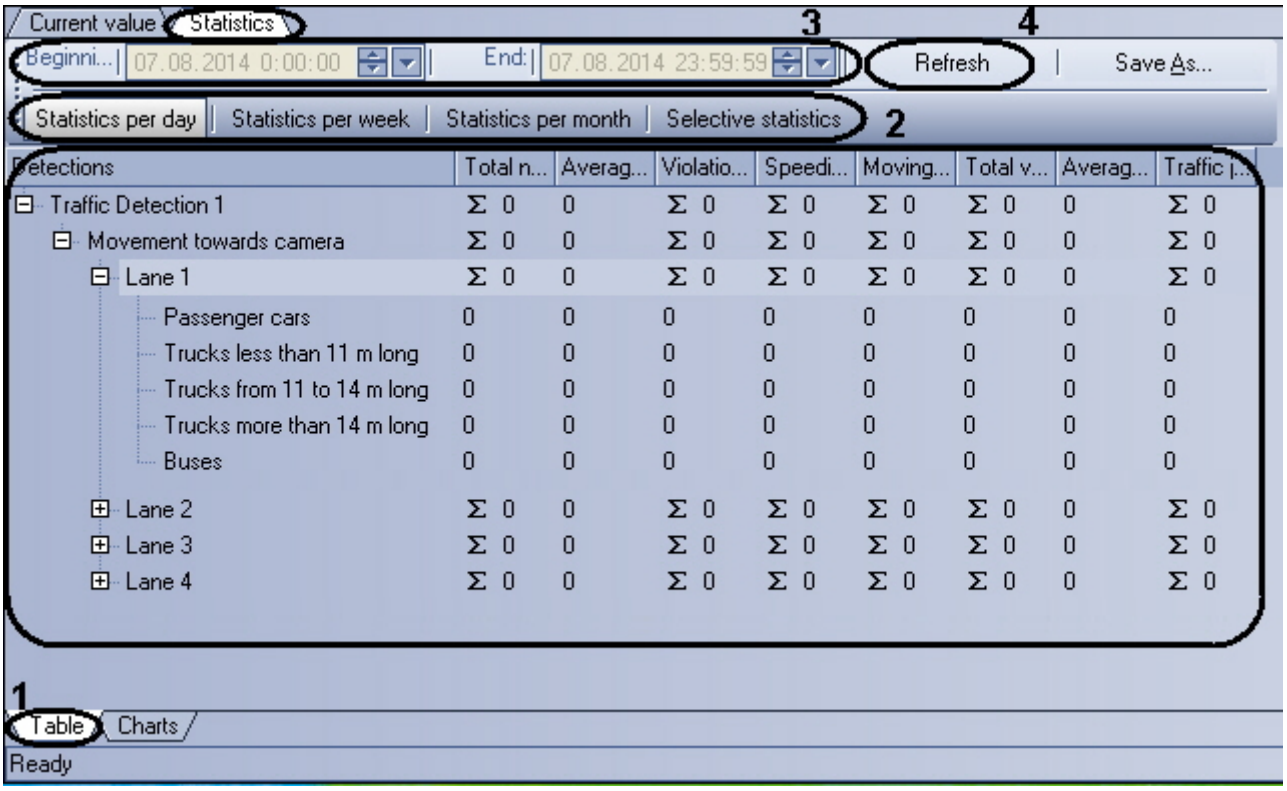


The system can be set up to display the traffic parameters by lane or by traffic movement direction.

The **Charts** tab consists of several sections corresponding to the lanes or the traffic movement directions. Each section consists of several subsections displaying some particular sets of traffic parameters in graphic form.

3.2.3 Creating a request for traffic statistics

To create a request for traffic statistics, use the **Statistics** tab.

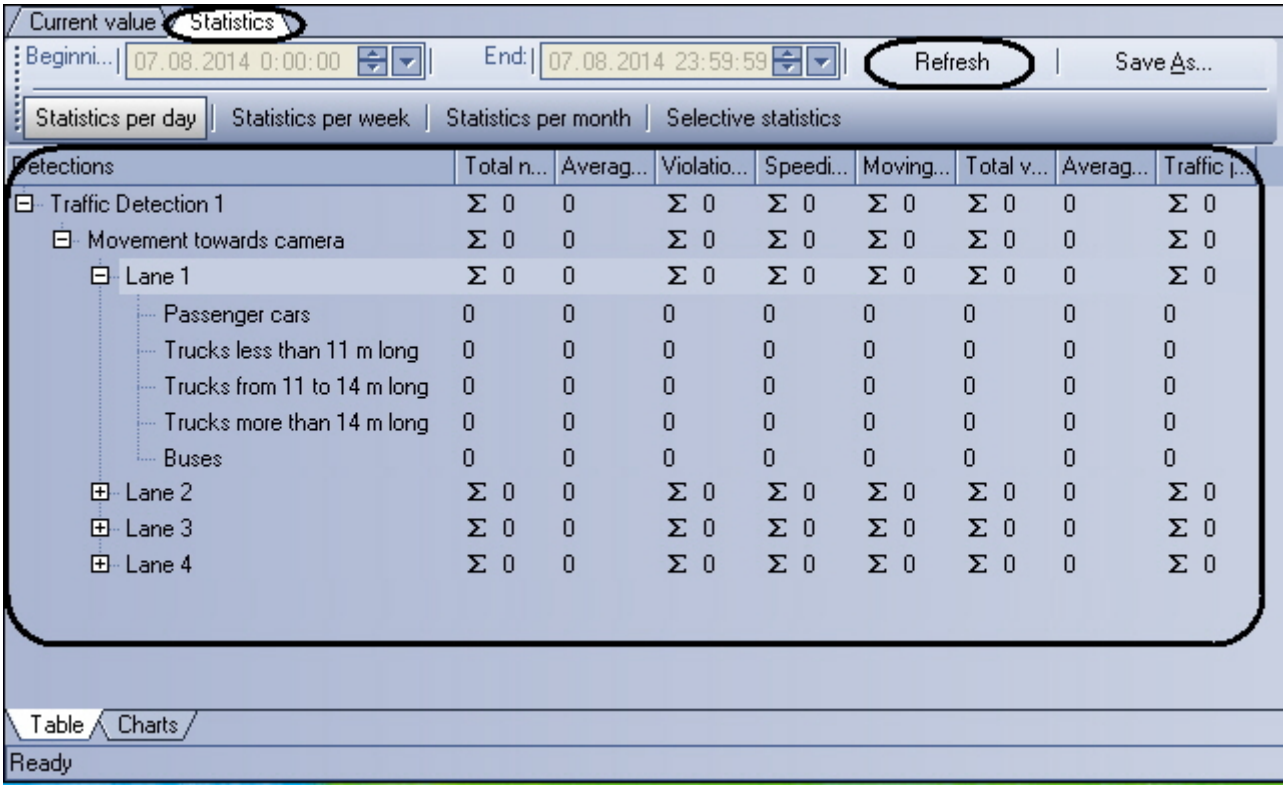


To create a request for traffic statistics, do the following:

1. Select the preferred type of statistics presentation by clicking the **Table** or the **Charts** tab.
2. Select the sampling period – **Day**, **Week**, **Month**, or **Specific time period** (specify the period manually).
3. If **Specific time period** is chosen, enter the beginning and the end date/time of the statistics period in the **Beginning** and the **End** fields.
4. Click the **Refresh** button to create or update the statistics.

3.2.4 Displaying traffic statistics in table form

The traffic statistics in table form are displayed in the **Table** sub-tab of the **Statistics** tab.

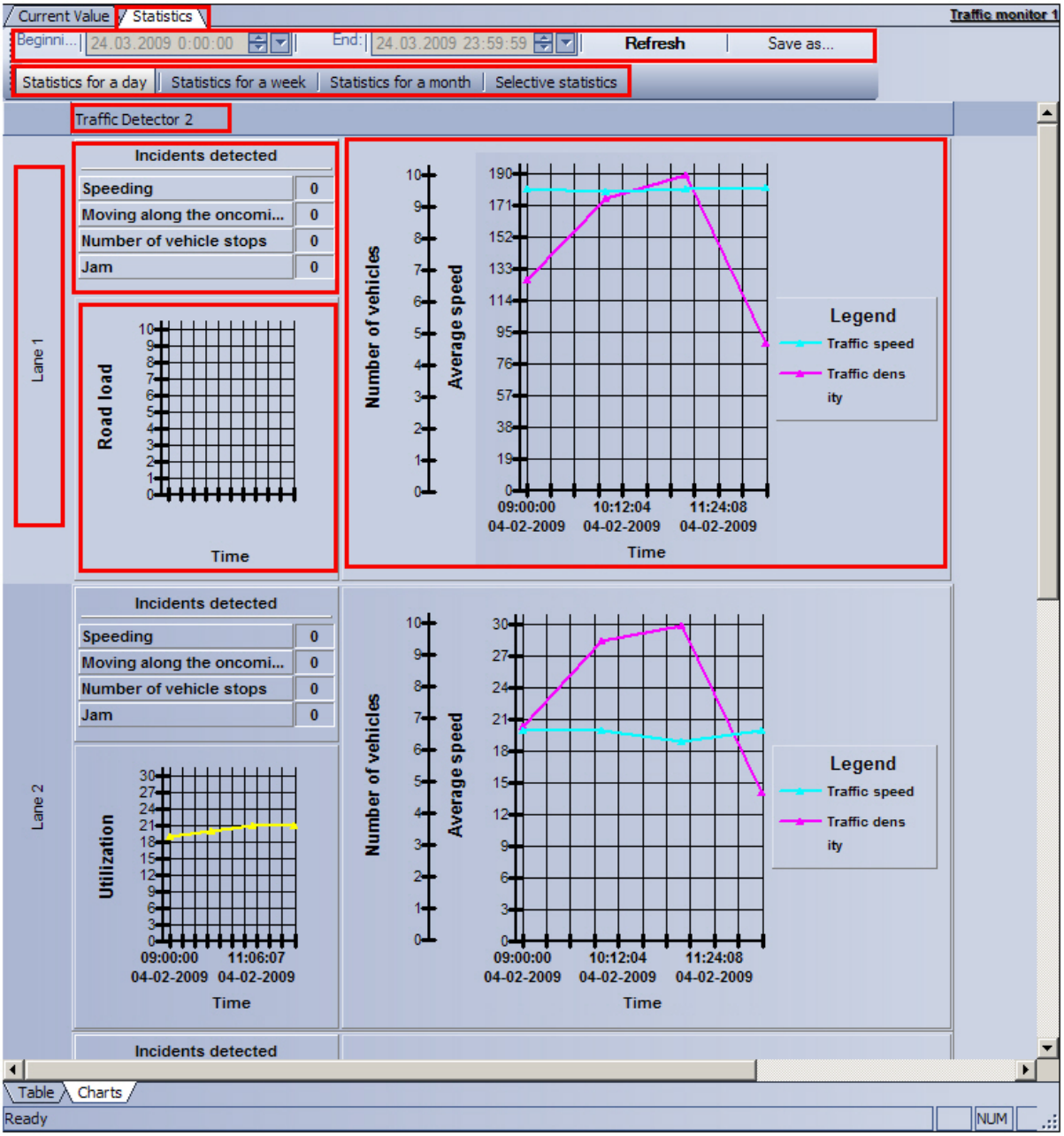


The traffic statistics are displayed in the following tree structure: **Recognizer name** -> **Movement direction** -> **Lane** -> **Vehicle type**. The statistics data for each level of the tree is shown.

> **Note.**
>
> To refresh the displayed statistics, click the **Refresh** button.

3.2.5 Displaying traffic statistics in graphic form

The traffic statistics in graphic form are displayed in the **Charts** sub-tab of the **Statistics** tab.

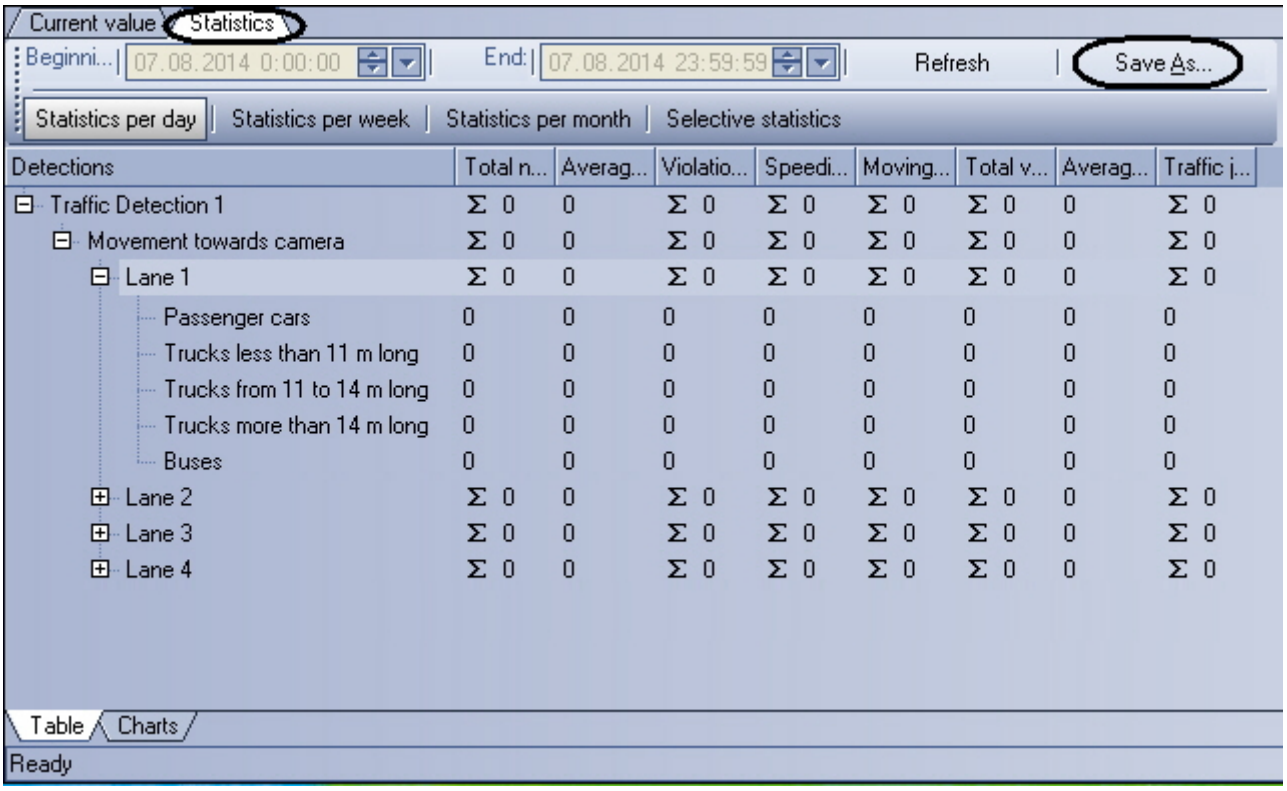


Note.

To refresh the displayed statistics, click the **Refresh** button.

3.2.6 Saving traffic statistics to a file

The **Statistics** tab allows saving the traffic statistics into a file.



To export the traffic statistics into a file, do the following:

1. Create and display the request for traffic statistics (see the Creating a request for traffic statistics section).
2. Click the **Save as** button.
3. Enter the pathname in the window that opens and click **Save**.
4. The traffic statistics will be saved in the specified location in a CSV file.

3.3 Using the Vehicle Tracer interface object

3.3.1 Introduction

The **Vehicle Tracer** interface object includes the following components:

1. **On-line monitor** – is designed for displaying the data about identified plates and for handling alarms;
2. **Events monitor** –displays video frame with a vehicle, which plate is being recognized at the moment and also identified number and speed.
3. **Alarm window** - is designed for displaying the data about vehicles in case of coincidence of recognized plates with plates which are stored on the external orientation database.

> **Note.**
>
> **Events monitor** and **Alarm window** components are optional and aren't displayed with corresponding system settings (see the document Auto-Intellect software package: Administrator guide).

3.3.2 Viewing the data about passing vehicle

The passing vehicle data is displayed in the **Events monitor** window.

> **Note**
>
> **Events monitor** component may not be displayed due to the corresponding system settings.

In the **Events monitor** window, the following data is displayed:

1. LP recognizer (the name of the corresponding **LPR channel** object) (**1**);
2. vehicle video frame with a caption, which can contain the following data (**2**):
    a. date and time of receiving data about the vehicle;
    b. vehicle speed;
    c. vehicle direction;
    d. speed detector ID number;
    e. name of the video camera that detected the vehicle;
    f. and other information about the speed detector (see Setting up the frame sign parameters).
3. identified LP number and the LP image (**3**).

> **Note**
>
> - If the LP number hasn't been recognized, **UNDEFINED** message will be displayed in the field.
> - If the characters of the recognized number are displayed incorrectly, it is necessary to change the font of the recognized number to the one that will contain all the characters of the corresponding country LP numbers (see Setting up the font of the recognized LP number).
> - The image of the recognized license plate is compressed or stretched to fit the red frame.

> **Note**
>
> - In case the **AUTO-Uragan** or **CARMEN-Auto** module is used for identification, allowed speed, vehicle speed and speed detector ID number are displayed only if the **Speed traps server** module is connected.
> - In case the alarm is registered for a vehicle (overspeeding, and/or identification of a plate in the external plates database), the field with a video frame is highlighted with red (**2**).

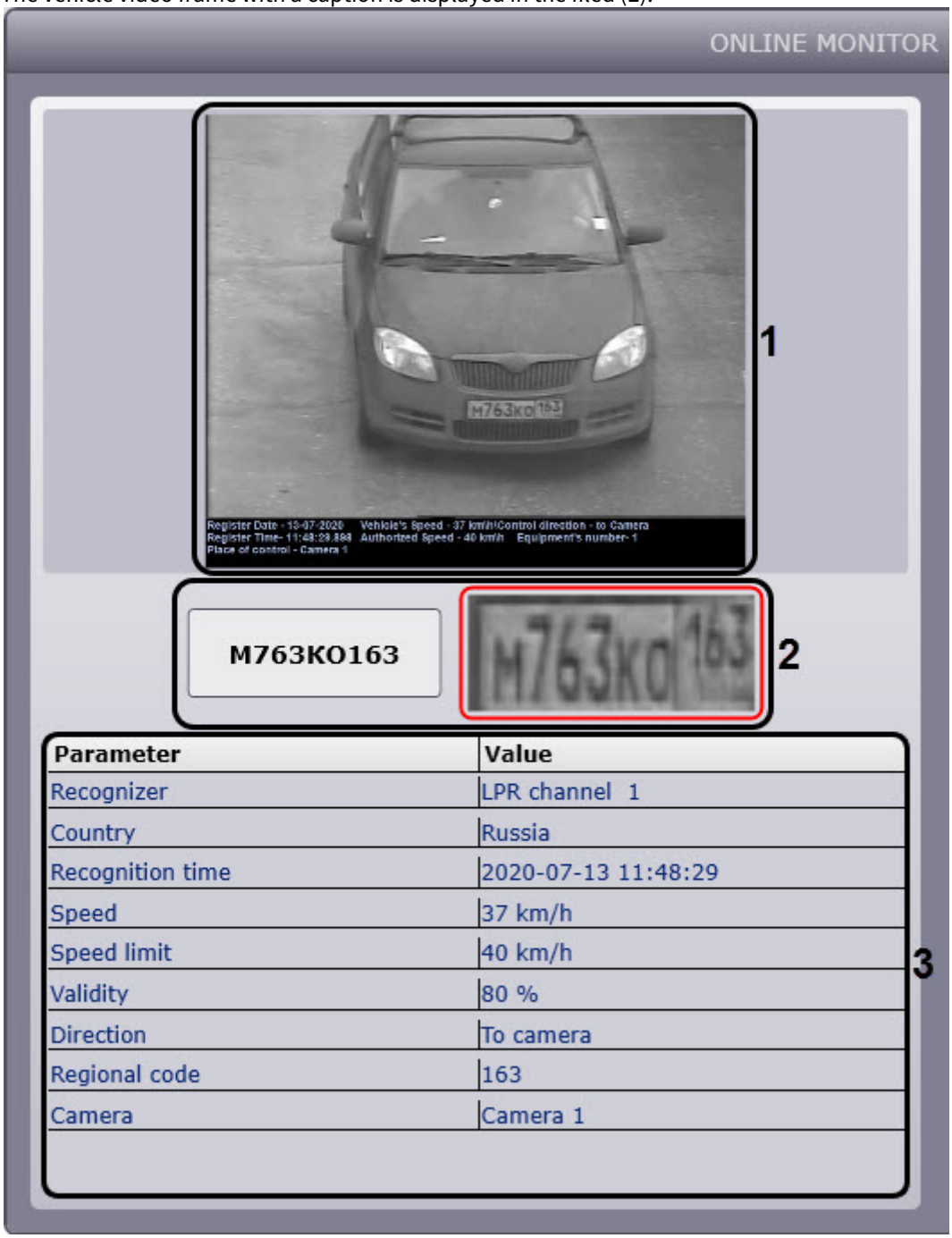
3.3.3 Viewing the data about the last identified vehicle

The last identified vehicle data is displayed in the **Last event** group of the **Online monitor** window (left area of this window).

> **Note**
>
> If there is an event selected in the identified vehicles protocol or in the alarms protocol, the data about this event will be displayed in the **Last event** group (see Viewing the protocol of the identified vehicles, Viewing the alarms protocol).

Viewing the data about the last identified vehicle is performed in the following way:

1. The vehicle video frame with a caption is displayed in the filed (**1**).



2. The identified LP number and the LP image is displayed in the field (**2**).

> **Note**
>
> - If the LP number hasn't been recognized, **UNDEFINED** message will be displayed in the field.
> - If the characters of the recognized number are displayed incorrectly, it is necessary to change the font of the recognized number to the one that will contain all the characters of the corresponding country LP numbers (see Setting up the font of the recognized LP number).
> - The image of the recognized license plate is compressed or stretched to fit the red frame.

3. Depending on the available data, the following information can be displayed in the box (**3**):
   a. In the **Recognizer** field, the name of the LP recognizer is displayed (the name of the corresponding **LPR channel** object).
   b. In the **Country** field, the country to which belongs the identified LP number is displayed.

> **Note**
>
> This field is not displayed when the **LPR IntelliVision** module is used for recognition.

c. In the **Recognition time** field, the date and time of receiving the vehicle information is displayed.
d. In the **Speed** field, the vehicle speed is displayed.

> **Note**
>
> In case the **AUTO-Uragan** or **CARMEN-Auto** modules are used for identification, and the **Speed traps server** module is not connected, zero speed value is displayed.

> **Note**
>
> Depending on the **Vehicle Tracer** settings, the speed is displayed in km/h or mi/h.

e. In the **Speed limit** field, the speed limit allowed on this part of the road is displayed.
f. In the **Speeding** field, the difference between the captured vehicle speed and the speed limit allowed on this part of the road is displayed.

> **Note**
>
> This field is displayed if the speeding event was registered, otherwise this field is absent.

g. In the **Validity** field, the identification validity rate is displayed in percent.
h. In the **Direction** field, the vehicle's direction is displayed (**Undefined**, **To the camera**, **From the camera**, **To the right**, **To the left**).
i. In the **Regional code** field, the regional code of the recognized LP is displayed.

> **Note**
>
> This field can be hidden (see Setting up the Vehicle Tracer interface window).

j. In the **Camera** field, the name of the video camera which captured the vehicle is displayed.
k. In the **SDK data file** field, the data file about the triggered engine is displayed.

> **Note**
>
> The **SDK data file** field is displayed only if the **ARH-Railway** module is used.

l. In the **Address** field, the camera location address is displayed.
m. In the **Identificator (№)** field, the camera ID number is displayed.
n. In the **Certificate (№)** field, the certificate number is displayed.
o. In the **Calibration** field, the calibration expiration date is displayed.
p. In the **Vendor** and **Model** and **Color** field, the vendor and model and color of the recognized vehicle are displayed.

> **Note**
>
> The **Vendor** and **Model** and **Color** fields are displayed only if the **RoadAR vendor and model recognizer** is used.

q. In the **Type** field, the type of the recognized vehicle is displayed.

> **Note**
>
> This field is displayed only if the **Vehicle type recognition module** and/or the **RoadAR vendor and model recognizer** are used.

r. In the **Dangerous goods class** and **Dangerous goods composition** fields, the class and the contents of the dangerous cargo are displayed correspondingly.

> **Note**
>
> The **Dangerous goods class** and **Dangerous goods composition** fields are displayed only if the **CARMEN-Auto** module and the Hazard Identification Number Recognition Engine (ADR) are used.

s. In the **GPS coordinates** field, the coordinates of the camera installation are displayed.

Viewing the data about the last identified vehicle is complete.

> **Note**
>
> In case an alarm was registered for a vehicle, the reason of alarm is also displayed in the **Last event** group.

> **Note**
>
> The data about any event selected in the identified vehicles protocol or in the alarm protocol can be viewed in the same way (see Viewing the identified vehicles protocol, Viewing the alarms protocol).
> A passing vehicle event can be created using a script (see Scripts used in the Auto-Intellect software package).

3.3.4 Viewing the identified vehicles protocol

The identified vehicles protocol is displayed in the **Online monitor** window.

To access to the protocol, go to the **Events** tab (**1**). The identified vehicles protocol is a table which contains the information about identified vehicles (**2**).

For every vehicle (event) the following data is displayed:

1. video frame of the vehicle (**3**);

2. identified vehicle LP number (**4**);

> **Note**
>
> - If the LP number hasn't been recognized, **UNDEFINED** message will be displayed in the field.
> - If the characters of the recognized number are displayed incorrectly, it is necessary to change the font of the recognized number to the one that will contain all the characters of the corresponding country LP numbers (see Setting up the font of the recognized LP number).

3. vehicle speed;

> **Note**
>
> Vehicle speed is displayed only if the **Speed traps server** module is connected.

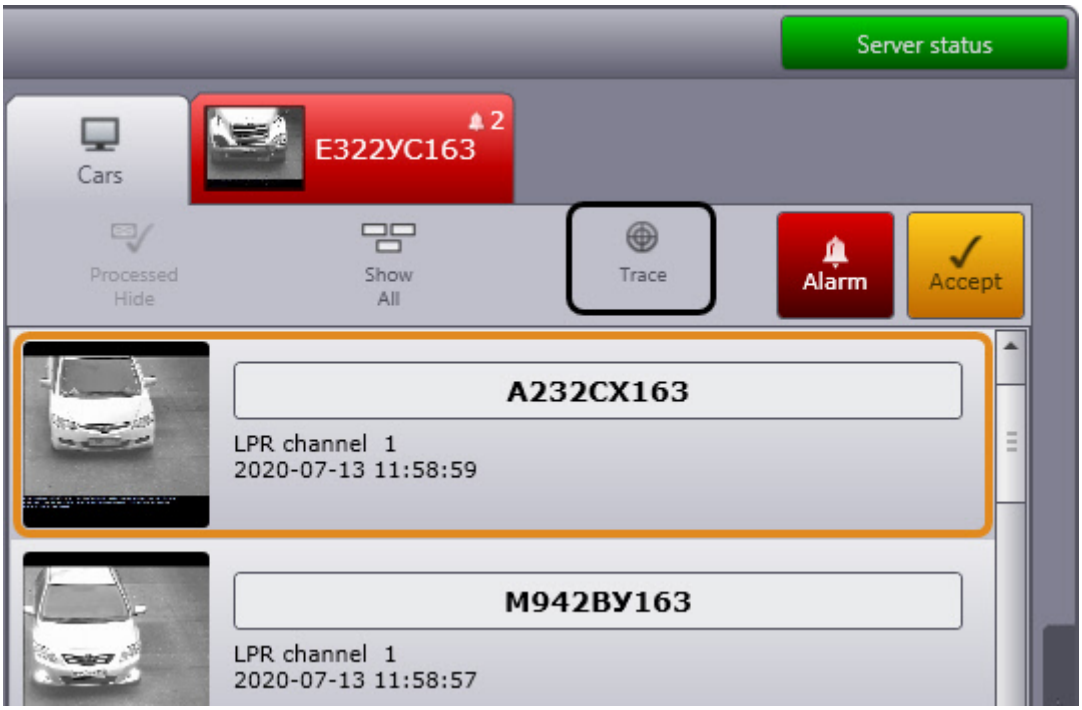
4. LPR channel (**5**);
5. date and time of receiving the information about the vehicle (**6**).

For alarms, the information about reasons of alarms is also displayed (see Alarms operation). The alarms which were not processed by the operator, are highlighted with red, and processed alarms are highlighted with yellow (see Alarm processing).

> **Note**
>
> Any alarm event is duplicated: first, an event message with a recognized LP number is received without an alarm, then the same message is received with alarm. You can hide the processed events (see Hiding the processed events in the protocol).

To view the detailed information about the event, do the following:

1. Left-click the required event.
2. As a result, the data about the vehicle will be displayed in the **Last event** group. Online update of the identified vehicles protocol will be suspended.
3. View the data about the event as described in the Viewing the data about the last identified vehicle section.
4. To restore the online update of the identified vehicles protocol click the **Trace** button in the upper area of the **Online monitor** window.



Viewing the detailed data about the event is complete.

3.3.5 Alarms operation

Alarms operation is done in the **On-line monitor** window.

Alarm is triggered by one of the following ways:

1. automatically – in case of overspeeding or vehicle's plate identification in the external database;
2. manually.

3.3.5.1 Manual alarm triggering

To enable the manual alarm triggering, do the following:

1. Left-click the required event in the identified vehicles protocol (**1**).

2. Click the **Alarm** button (**2**).

3. As a result, this event will be highlighted in red, and if it is the first alarm, the **Alarms protocol** tab will become available (**3**). For the alarm which was triggered by the operator, the **Marked by the operator** cause of alarm is displayed (**4**).

Note.

For the information about alarms protocol, see Viewing the alarms protocol.

Manual alarm triggering is complete.

3.3.5.2 Viewing the alarms protocol

The **Alarms protocol** tab located in the upper area of the **Online monitor** window (**1**) automatically becomes available in case of the alarm event. The alarms protocol is a table which contains the information about the vehicles for which the alarms were triggered (**2**).

Note.

The information about the last alarm is displayed on the tab.

The alarms which were not processed by the operator, are highlighted with red, and processed alarms are highlighted with yellow (see Alarm processing).

> **Note.**
>
> Any alarm event is duplicated: first, an event message with a recognized LP number is received without an alarm, then the same message is received with alarm. You can hide the processed events (see Hiding the processed events in the protocol).

To view the alarms protocol, do the same as to view the identified vehicles protocol (see Viewing the identified vehicles protocol). The only difference is that for an alarm the information about the alarm reason is also displayed:

1. **Marked by the operator** - means the alarm is triggered by the operator (the time of triggering is also displayed);
2. **Is found in: <external database name>** - means the identified LP is found in the external database;
3. **Overspeeding** - means the vehicle overspeeding is registered.

Detailed information about an alarm with the alarm reason is displayed in the **Last event** group (see Viewing the data about the last identified vehicle). To view the detailed information about an alarm, do the same as to view the information about the event, registered in the identified vehicles protocol (see Viewing the identified vehicles protocol).

In case the identified vehicle LP is found in the **External Plates Database**, the information about the vehicle, stored in this base, will be displayed in the field (**3**).

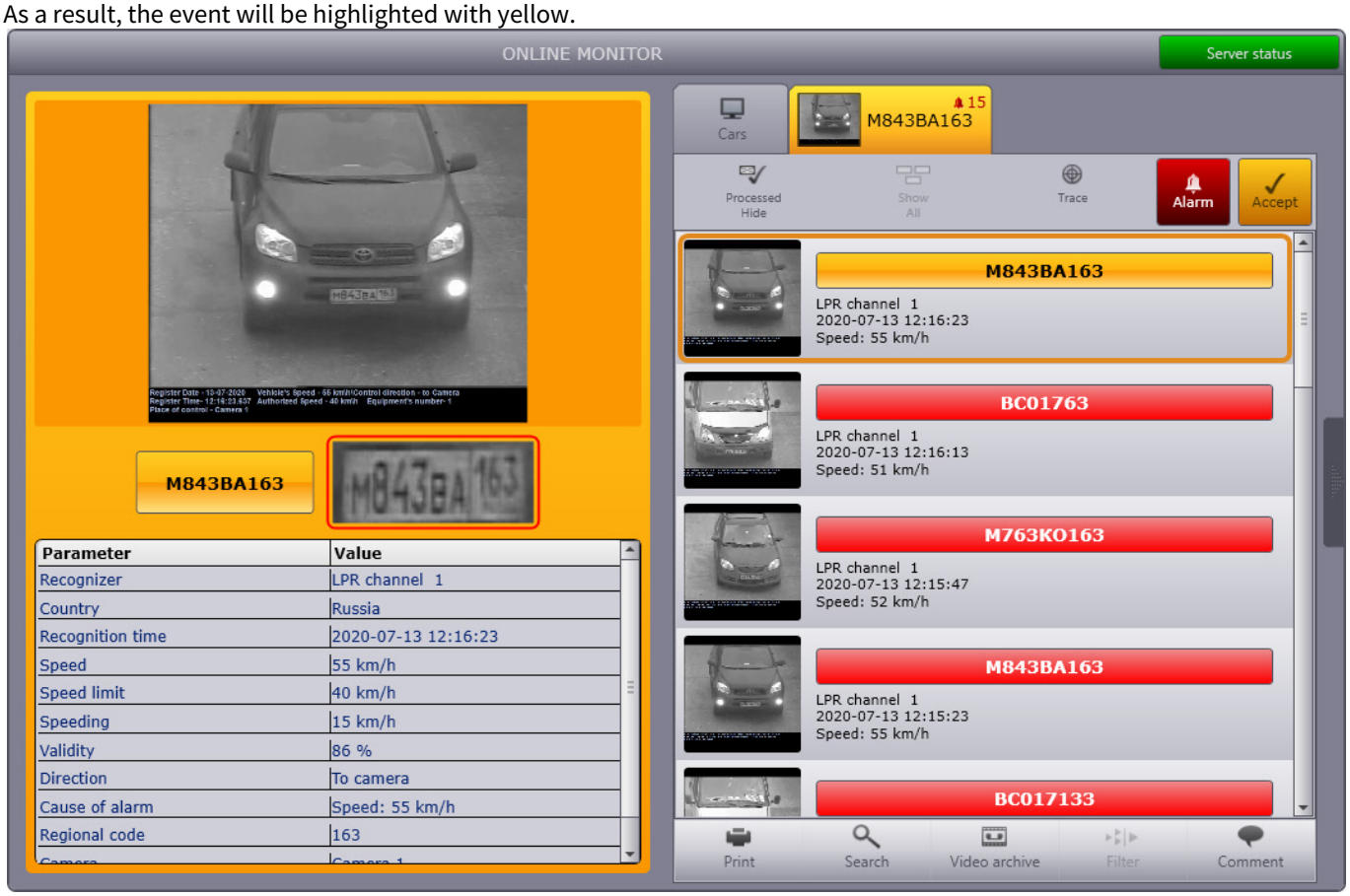
> **Note**
>
> To display the side panel, click the (**4**) button.

3.3.5.3 Alarm processing

Alarm processing is done in the following way:

1. Left-click the alarm in the identified vehicles protocol or in the alarms protocol and click **Accept** button.

2. As a result, the event will be highlighted with yellow.



Alarm processing is completed.

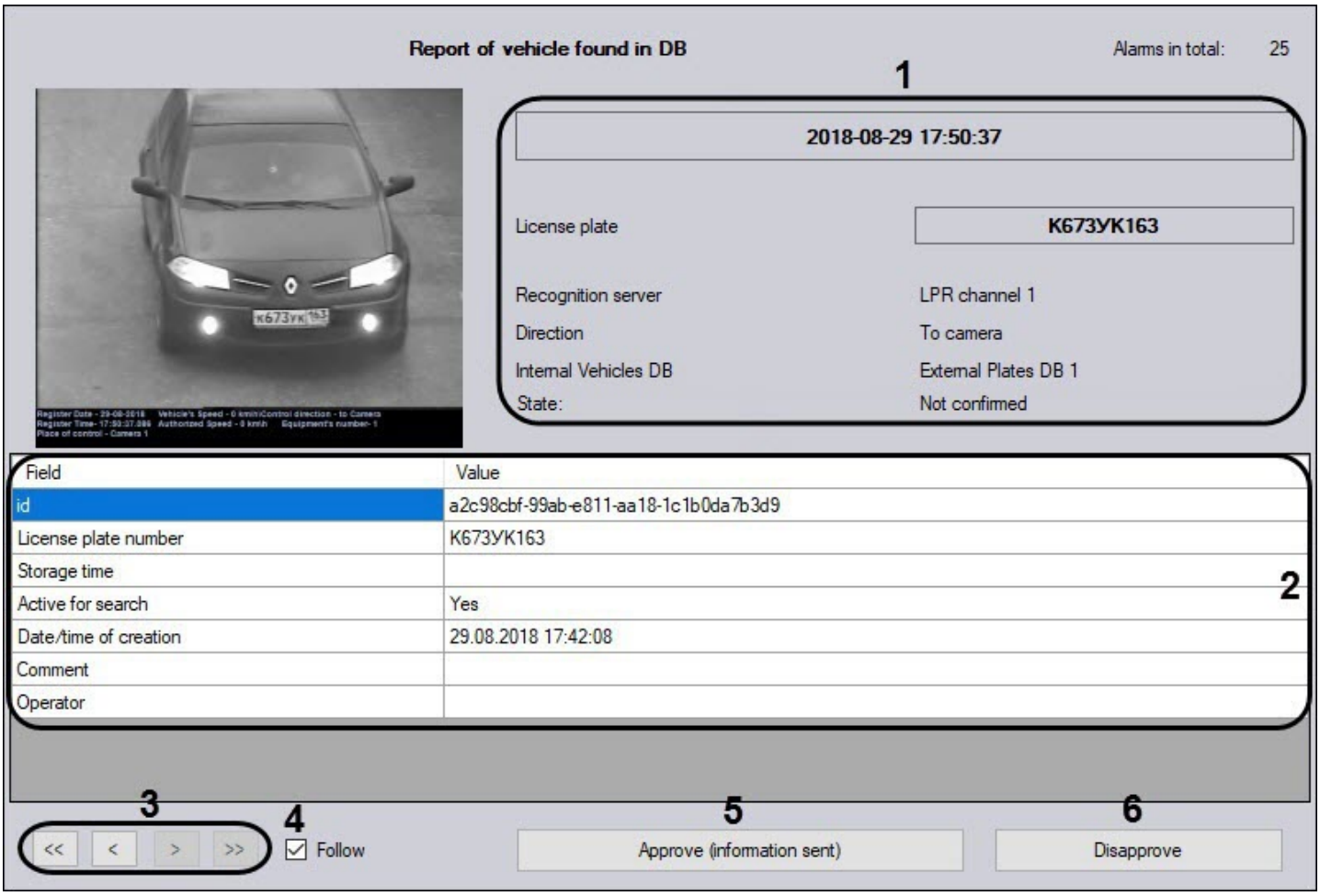
3.3.5.4 Hiding the processed events in the protocol

It is possible to hide the processed events in the identified vehicles protocol and alarms protocol. To do this, click the **Processed Hide** button. As a result, when all alarms are processed, then the **Alarms protocol** tab becomes hidden.

3.3.5.5 Viewing the alarm information in the Alarm window

Depending on the certain configuration, the **Alarm window** can be displayed automatically in the following cases:

1. If the recognized license plate number coincides with the number stored in the external online monitoring database. As a result, the **Report of vehicle found in DB** sign will be displayed at the top of the alarm window.
2. If the alarm event was triggered manually. As a result, the **Marked by the operator:** sign will be displayed at the top of the alarm window.



The following data is displayed in the **Alarm window**:

1. Event information (**1**):
   - Date and time when the alarm event was recorded.
   - License plate number.
   - Recognition server name that recorded the event.
   - Vehicle direction of movement relative to the camera.
   - Name of the external database.

     > **Note**
     >
     > The field with the name of the external database is hidden if the the alarm event was triggered manually.

   - Current state of the alarm event.

     > **Note**
     >
     > There can be the following states of the alarm event:
     > - **Not confirmed** - a new event that has not yet been confirmed.
     > - **Processing...** - an alarm event is confirmed, but the information has not yet been recorded to the database.
     > - **Confirmed** - the alarm is confirmed and recorded to the database (you may not notice this state since the event is deleted from the Alarm window after a successful confirmation).
     > - **Error** - the confirmation is not recorded to the database due to the heavy load on the Server. It is necessary to confirm the event again.

2. The description from the stolen vehicles database (**2**): ID, LP number, storage time, search status, date and time of creation, comment, full name of the operator who created the report.

> **Note**
>
> The table with the description from the stolen vehicles database is hidden if the the alarm event was triggered manually.

Use buttons to scroll the alarm events (**3**).

To confirm the active alarm status, click the **Approve (information sent)** button (**5**). As a result the alarm will be marked as received in the **On-line monitor** window, and deleted from the **Alarm window**. If the **Follow** checkbox is set (**4**), the confirmed alarm will be deleted from all **Alarm windows** in the distributed system.

To close the window of stolen vehicle report click the **Disapprove** button (**6**). If you click this button, the alarm status will not be changed in the **On-line monitor** (alarm will not be processed).

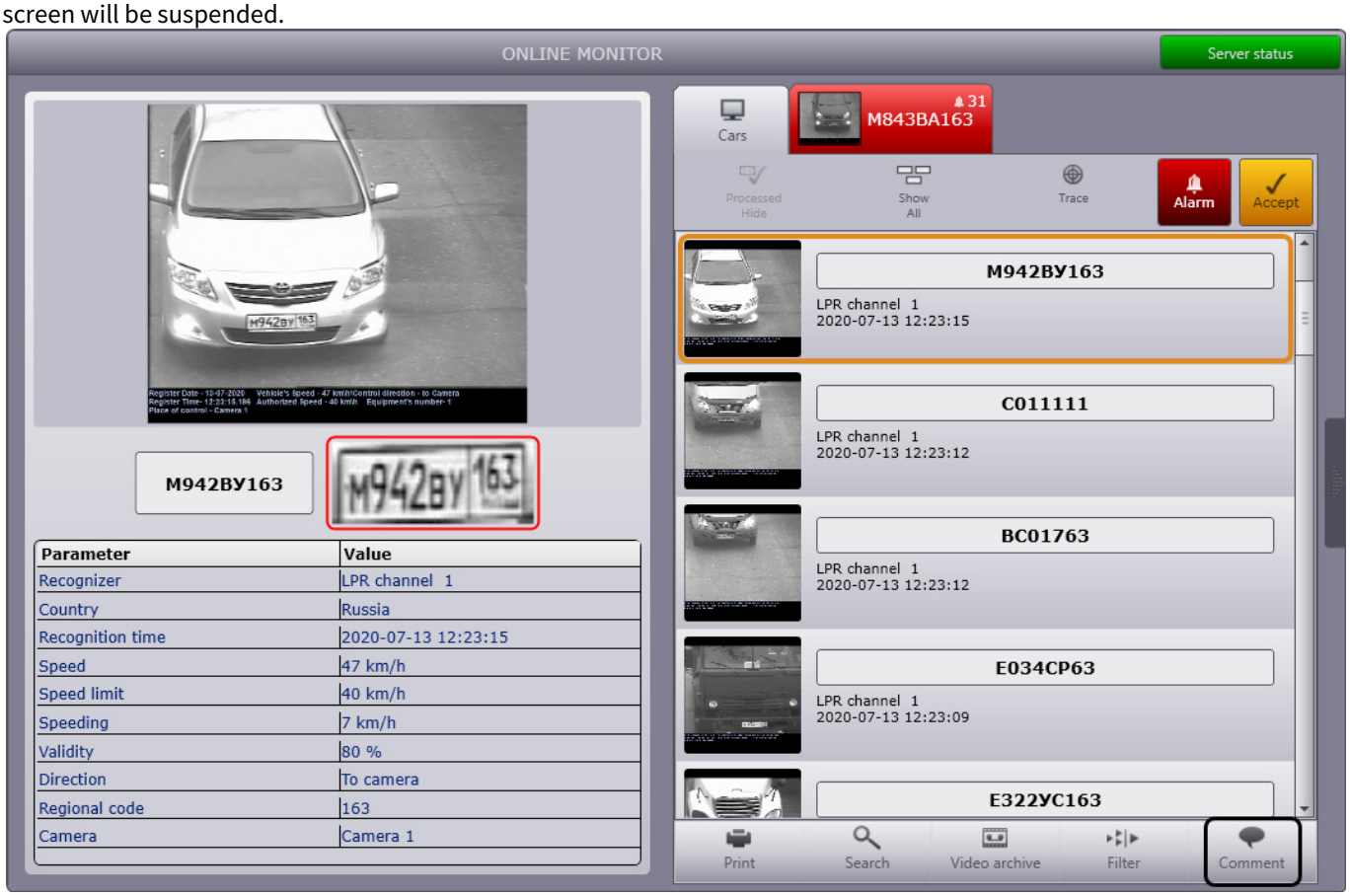
3.3.6 Adding comments to the events

It is possible to add the comments to the events. It can be done in the **Online monitor** window.

> **Attention!**
>
> It is not possible to add the comments to the accepted events (highlighted with yellow).

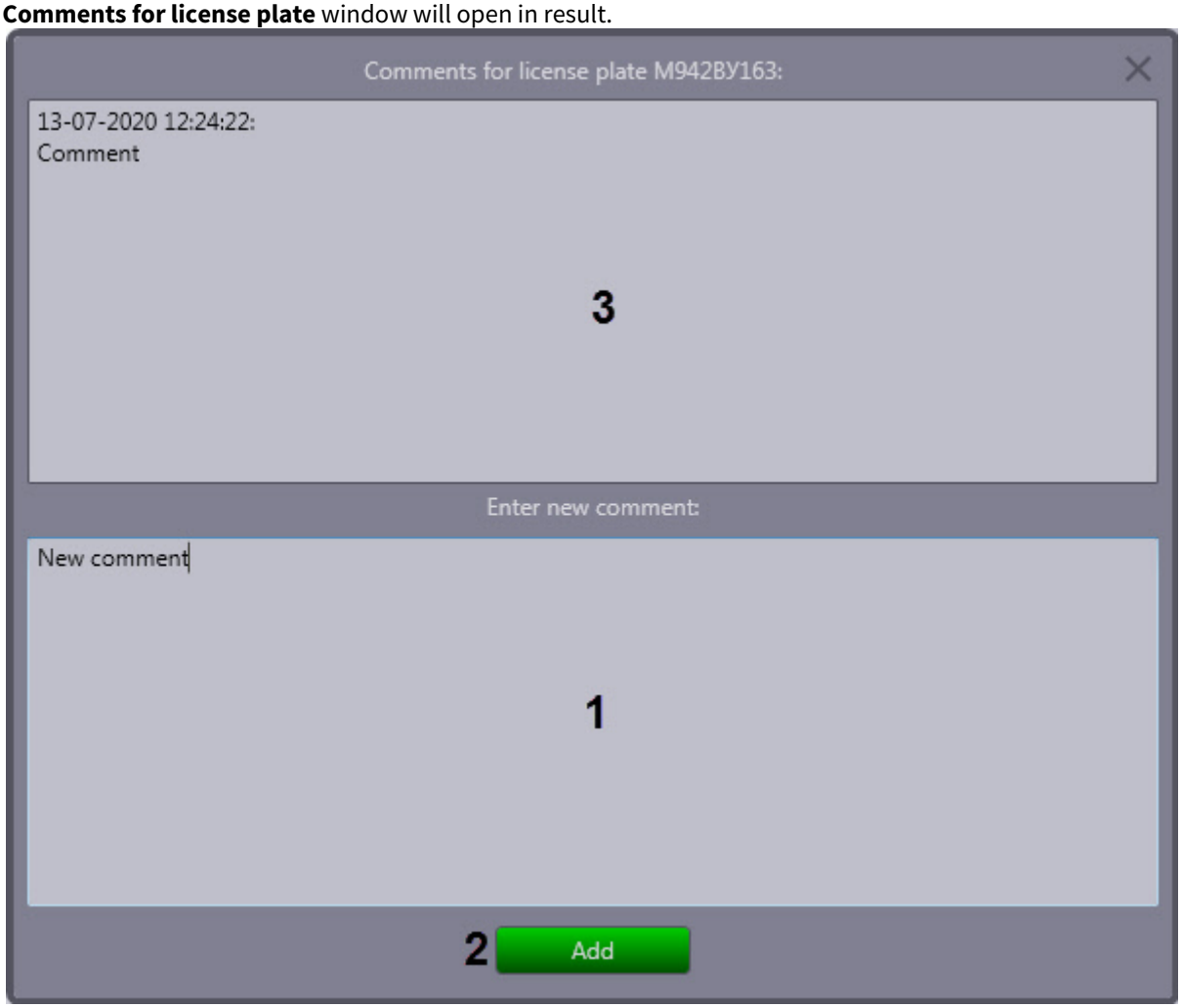
To add a comment to the event, do the following:

1. Left-click the event in the identified vehicles protocol or events protocol. Online update of the protocol displayed on the screen will be suspended.



2. Click **Comment** button.

3. **Comments for license plate** window will open in result.



4. In the **Enter new comment** field (**1**), specify a required comment.
5. Click the **Add** button (**2**) to add the comment to the event.

> **Note**
>
> The **Comments for license plate <LP number>** field (**3**) displays the previous comments, if any, and the date when they were added to this event.

6. To view the comments to the event, left-click the required event in the identified vehicles protocol or events protocol. Comments will be displayed in the corresponding field (**1**).

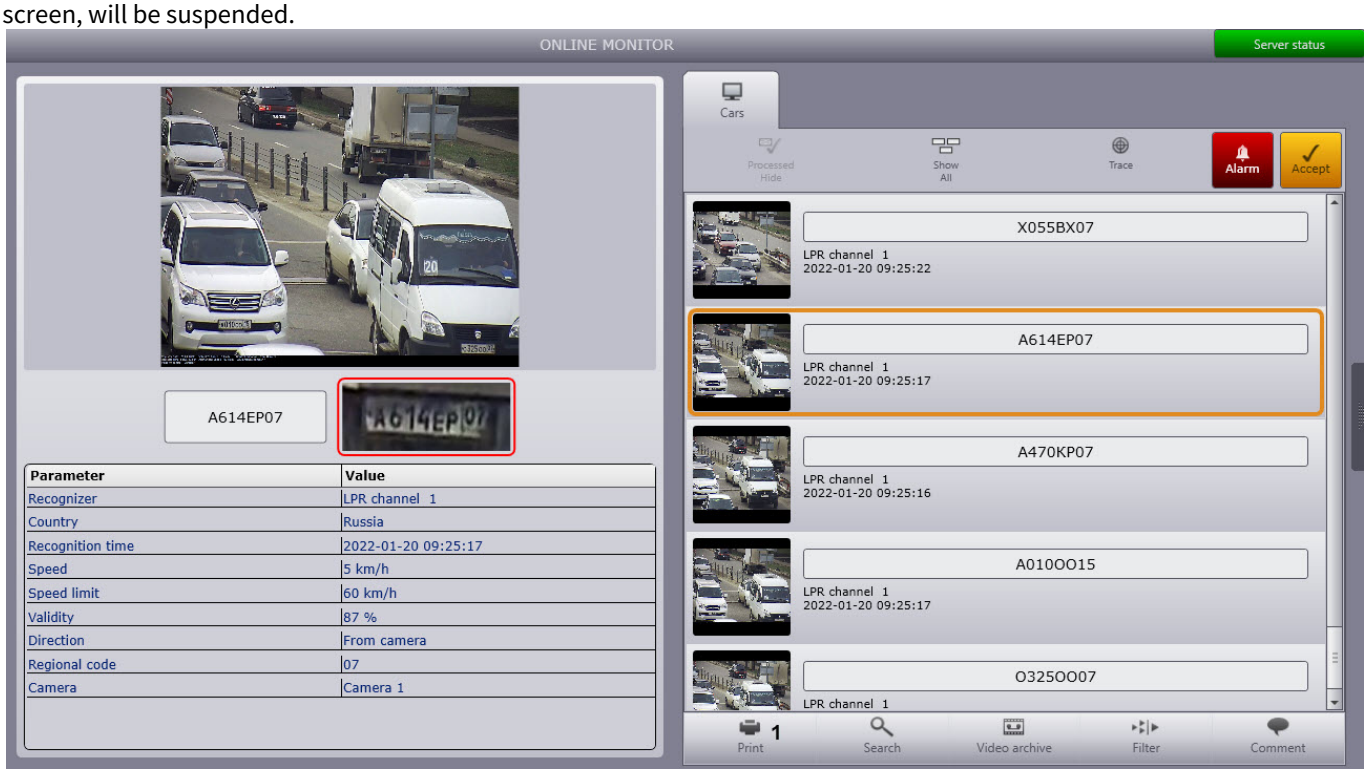
> **Note**
>
> To display the side panel, click the (**2**) button.

Adding the comments to the event is completed.

3.3.7 Printing and exporting the vehicle data

Printing and exporting the vehicle data is done in the following way:

1. Left-click the event in the identified vehicles protocol or events protocol. Online update of the protocol, displayed on the screen, will be suspended.

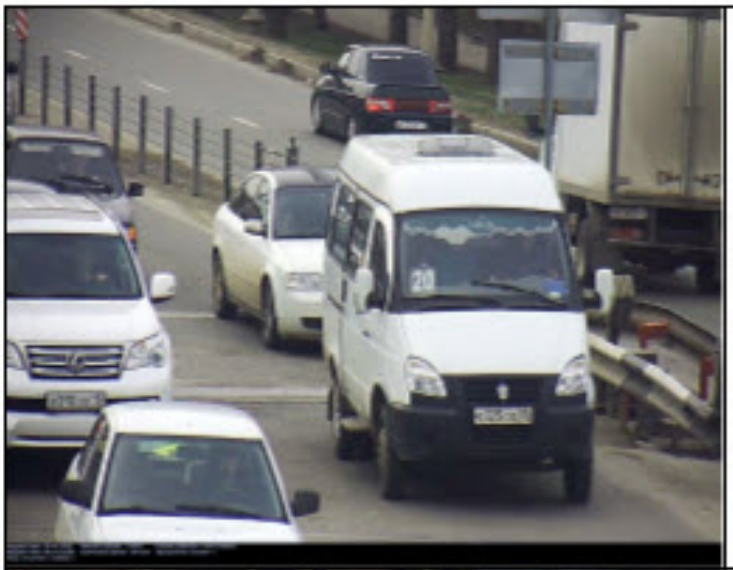


2. To build a report with vehicle data, click the **Print** button (**1**), which is located in the left corner of the bottom panel.

3. The report preview program will be displayed.

Vehicle data

Recognizer	LPR channel 1
Country	Russia
Recognition time	2022-01-20 09:27:24
Speed	7 km/h
Speed limit	60 km/h
Validity	70 %
Direction	From camera
Regional code	07
Camera	Camera 1



LPR channel 1
2022-01-20 09:27:24

A614EP07
(7 km/h)

4. If necessary, do the following operations with the report, then quit the report preview program by clicking the **File** -> **Exit viewer** in the main menu, or by clicking the button in the top right corner.
The available operations for the report are listed in the table below.

Operation	Operation invocation		
	Main menu item	Context menu item	Toolbar button
Open the report, saved in .rsd or .xml	File -> Open	-	
Save the report in .rsd or .xml	File -> Save	-	
Export the report to one of the common formats	File -> Export	-	
Print the report	File -> Print	-	
Activate the «Hand» tool	View -> Scrolling	Scrolling	
Zoom in the report pages	View -> Zoom in	Zoom in	
Zoom out the report pages	View -> Zoom out	Zoom out	
Enable dynamic scaling of report pages	View -> Dynamic scaling	Dynamic scaling	
Zoom in the selected area of the report	View -> Region scaling	Region scaling	
Scale in page size	View -> In page size	In page size	
Scale in page width	View -> In page's width size	In page's width size	
Display pages in real size	View -> Real size	Real size	
Enter or select from the list the required scale of displaying the report pages	View -> Set the scaling	Set the scaling	
Enable the nonstop paginal report displaying	-	-	
Enable the page-by-page report displaying	-	-	
Go to the first page	Navigate -> The first page	The first page	
Go to the previous page	Navigate -> Previous page	Previous page	
Go to the next page	Navigate ->The next page	The next page	
Go to the last page	Navigate ->The last page	The last page	

Operation	Operation invocation		
	Main menu item	Context menu item	Toolbar button
Go to the certain page (open the «Go to page» dialog window)	Navigate -> Go to page	-	-
Display the previous view	Navigate -> Back	Back	
Display the next view	Navigate -> Forward	Forward	
Find the required characters in the report	Document -> Find	Find	
Update the report	Document -> Update	Update	
Edit the report (open the editing program)	Document -> Edit the report	Edit the report	
Display table of contents	-	-	
Display information about the program to view the report	Help -> About program	-	-
Close the preview report program	File -> Close	-	-

Note.

Operations with report files (opening, saving, exporting, and printing) are performed via the standard OS Windows dialog windows.

Note.

To go to the required page, enter the page number in the **Page №** field of the **Go to page** dialog window and then click **OK**.

Printing and exporting the vehicle data is completed.

3.3.8 Viewing the video archive by event

You can view the video archive by event from a video camera which is used for the license plate recognition.

Note

For this feature to work, the appropriate monitor should be selected on the settings panel of the **Vehicle Tracer** object (see Selecting the Monitor object for playing back the video archive).

To view the video archive by event, do the following:

1. Select an event in the identified vehicles protocol or alarms protocol by left-clicking on it. As a result of the operation, the online update of the protocol displayed on the screen will be suspended.

2. Click the **Video archive** button.
   - If the **Monitor** object is selected for the video archive playback, the video surveillance window of the corresponding monitor will switch to the archive playback mode. For details on working with the video archive, see the *Intellect* Operator's Guide, the most current version of the documentation is located in the AxxonSoft documentation repository).
   - If the **AxxonNext monitor** object is selected for the video archive playback (see Setting up the joint operation of Auto Intellect and Axxon Next), the *Axxon Next* interface window will open in the archive playback mode. For information on working with the video archive, see the *Axxon Next* Operator's Guide, the most current version of the documentation is located in the AxxonSoft documentation repository).

Viewing the video archive by event is completed.

3.3.9 Using filters in the protocols

You can select events to be displayed in the identified vehicles protocol and alarms protocol.

> **Attention!**
>
> Both displayed and hidden in the protocol events are saved in the recognizers database of the *Auto Intellect* software.

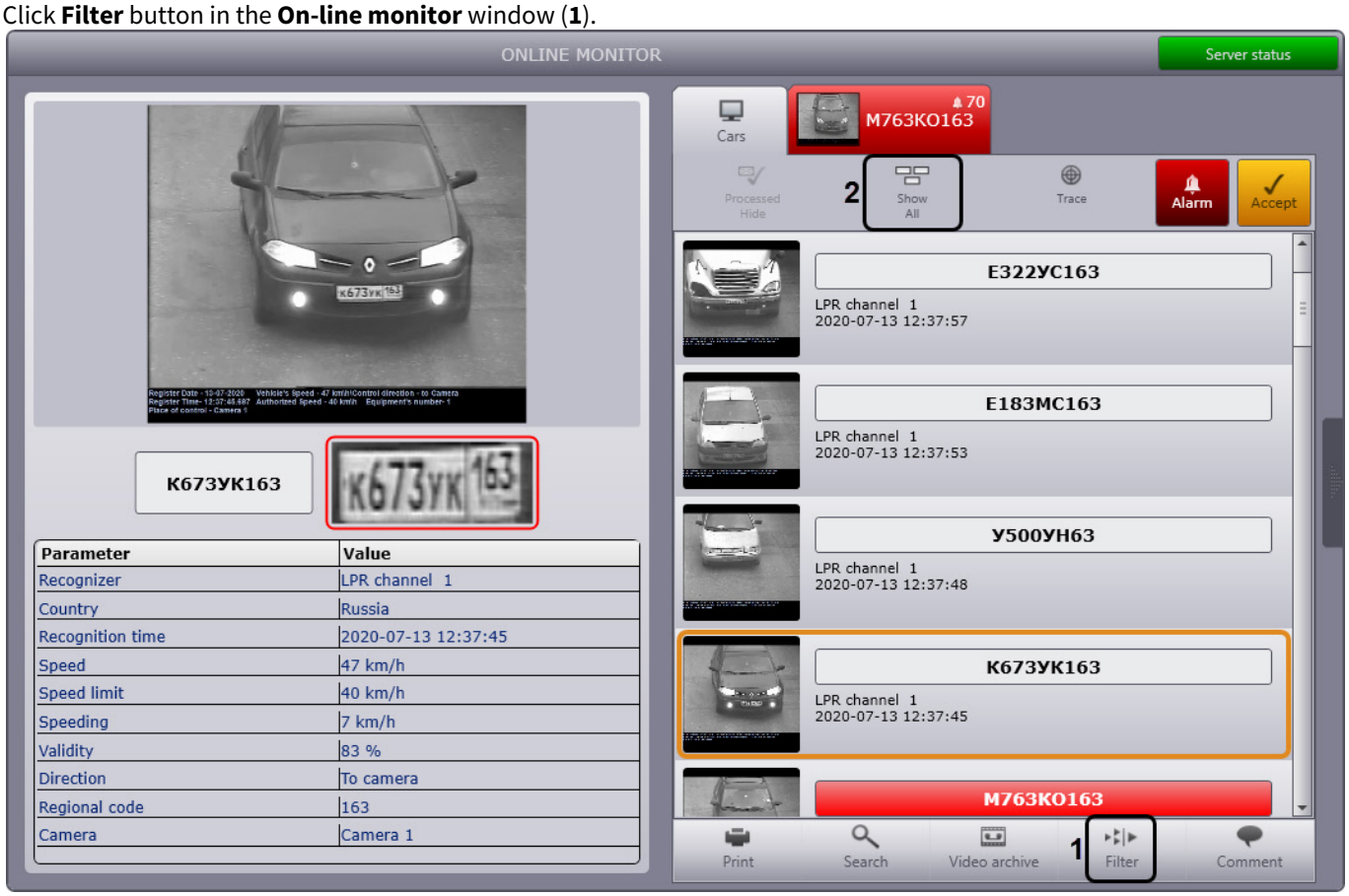
You can select the events using the following filters:

1. speed;
2. overspeeding;
3. license plate;
4. validity;
5. region;
6. direction;
7. alarm type;

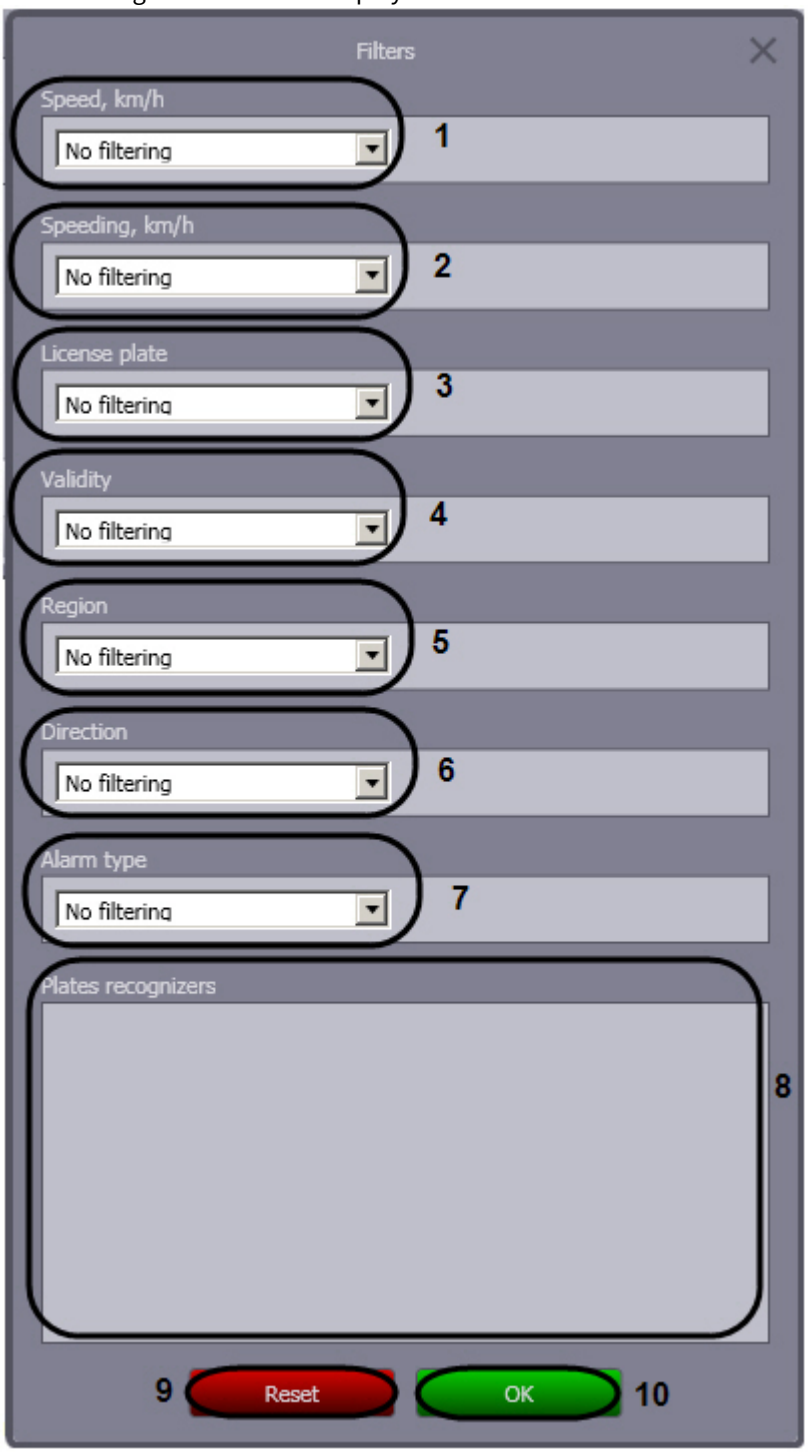
8. plate recognizers.

To select the filter, do the following:

1. Click **Filter** button in the **On-line monitor** window (**1**).



2. **Filters** dialog window will be displayed in result.



3. From the **Speed** list (**1**) select the required filter, then specify the speed value(s) in the field(s) in km/h.
   The following speed filters are available:
   - **No filtering** — the event is displayed in protocols with any vehicle speed.
   - **More** — the event is displayed in protocols if the vehicle speed exceeds the specified value.
   - **Less** — the event is displayed in protocols if the vehicle speed is below the specified value.
   - **Interval** — the event is displayed in protocols if the vehicle speed is within the specified speed range.

   > **Note**
   >
   > Available range for specifying the **Speed** filter values is 0-300.

4. From the **Speeding** list (**2**) select the required filter, then specify the overspeeding value in the field in km/h.
   The following overspeeding filters are available:
   - **No filtering** — the event is displayed in protocols with any vehicle overspeeding.
   - **More** — the event is displayed in protocols if the vehicle overspeeding exceeds the specified value.

   > **Note.**
   >
   > The overspeeding value is calculated as the difference between the recorded vehicle speed and the speed, permitted in the controlled area of the road.
   > Available range for specifying the **Speeding** filter values is 0-100.

5. From the **License plate number** list (**3**) select the required filter and then in the field enter the LP number or its part which identification leads to event displaying in protocols.
   The following LP filters are available:
   - **No filtering** — the event is displayed in protocols with any vehicle LP number.
   - **Register** — the event is displayed in protocols if the vehicle LP number exactly matches the specified value.
   - **Contains** — the event is displayed in protocols if the vehicle LP number contains the specified value.

   > **Note.**
   >
   > The value specified for the **Register** and **Contains** filters may include usual characters and «*» characters which stand for an unidentified LP character. If the value contains one or several «*» characters, only the LPs which contain the unidentified characters in the specified combination, are displayed in the protocols.

6. From the **Validity** list (**4**) select the required filter of the LP recognition validity percentage, then specify the percentage value in the field(s).
   The following validity filters are available:
   - **No filtering** - the events are displayed for those vehicles which plates are recognized with any validity.
   - **More** - events are displayed in the protocol if the recognizing validity is higher than the specified value.
   - **Interval** - vehicle event is displayed in the protocol if the recognizing validity of vehicle plate belongs to the specified range of values.

   > **Note**
   >
   > Available range for specifying the **Validity** filter values is 0-100.

7. From the **Region** list (**5**) select the required region filter, where the vehicle has been registered, and then enter the region number in the field.
   The following region filters are available:
   - **No filtering** — the events are displayed in protocols for the vehicles, registered in any region.
   - **Equal** — the events are displayed in protocols for the vehicles, registered in the specified region.
8. From the **Direction** list (**6**) select the vehicle direction for which the event should be displayed in protocols.
   The following direction filters are available:
   - **No filtering** — the events are displayed in protocols with any vehicle direction.
   - **From camera** — the event is displayed in protocols if the vehicle was moving away from the camera.
   - **Towards the camera** — the events are displayed in protocols if the vehicle was moving towards the camera.
   - **Undefined** — the events are displayed in protocols if the vehicle direction was not determined.
9. From the **Alarm type** list (**7**) select the alarm type. Only alarms of the selected type will be displayed in protocols.
   The following alarm type filters are available:
   - **No filtering** — the events are displayed in protocols with any alarm type or its absence.
   - **Overspeeding** — the events for which overspeeding has been registered are displayed in protocols.
   - **LP found in database** — the events for which the LPs have been found in the external plates database are displayed in protocols.
   - **Alarm set by operator** — the events, initialized manually, are displayed in protocols.
   - **Running a red light** — the events for which the red lights running has been registered are displayed in protocols.
   - **Entered the oncoming lane** — the events for which the entering the oncoming lane has been registered are displayed in protocols.

- **Crossed the stop line** — the events for which the crossing the stop line has been registered are displayed in protocols.
- **Stop over crosswalk line** – the events for which the stopping on the crosswalk line has been registered are displayed in protocols.

10. In the **Plates recognizers** (**8**) group set the checkboxes for those LP recognition Servers, which data should be displayed in protocols.
11. Click **OK** to save filters settings and close the **Filters** dialog window (**10**).

> **Note.**
>
> To reset all the settings, click the **Reset** button (**9**).

Filtering the events to be displayed in the protocols is complete.

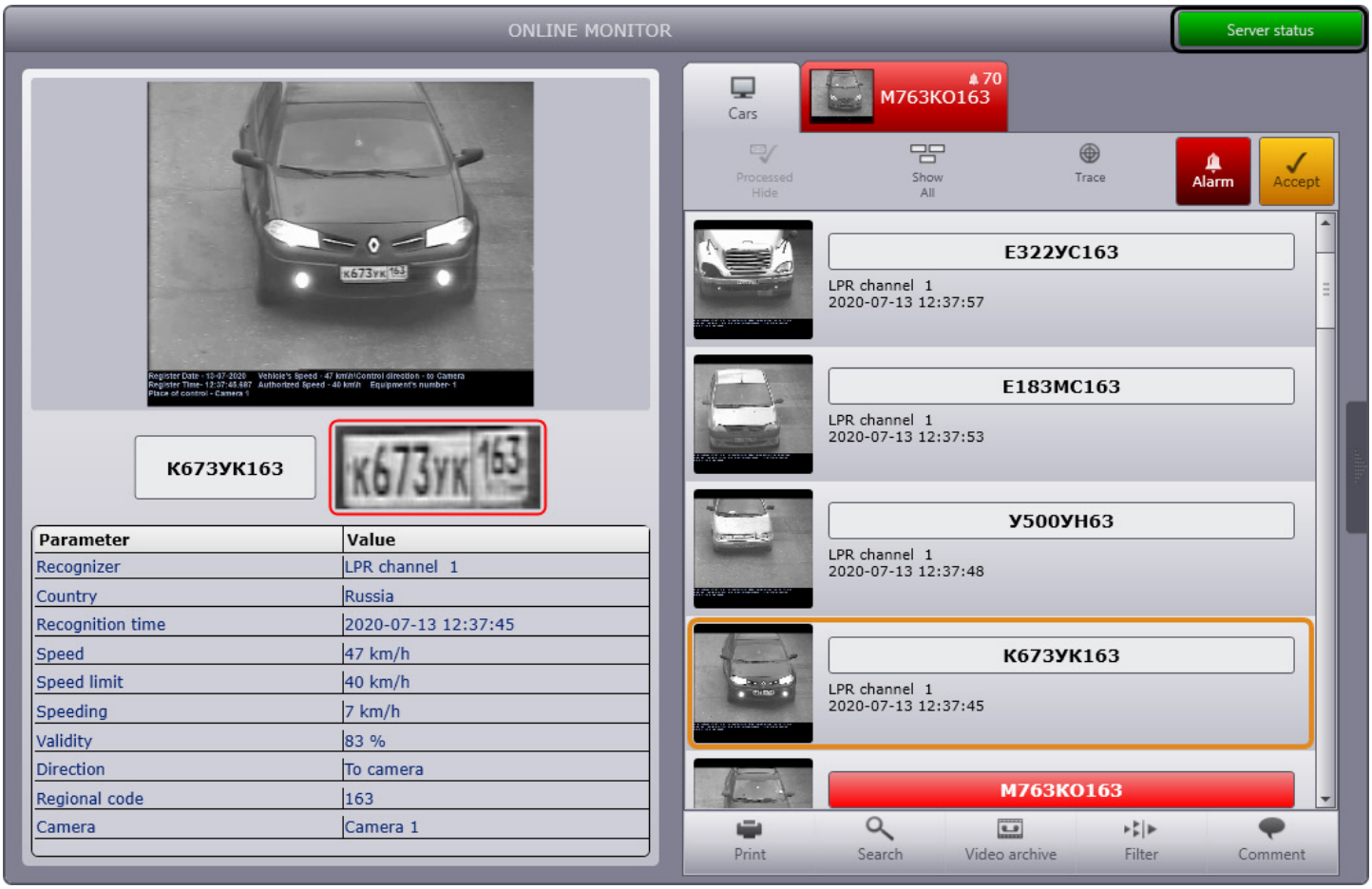
> **Note**
>
> You can disable any filtering without changing the settings in the **Filters** dialog window. To do this, click the **Show all** button (**2**). All the registered events will be displayed in protocols in result. To resume the usage of filters, click this button again.

3.3.10 Viewing the Vehicle Tracer errors

If there are no **Vehicle Tracer** errors, the **Server status** button in the right upper corner of **On-line monitor** window is green 

. If errors are registered, the button is red 

.



To view the **Vehicle Tracer** errors, do the following:

1. Click the **Server status** button.

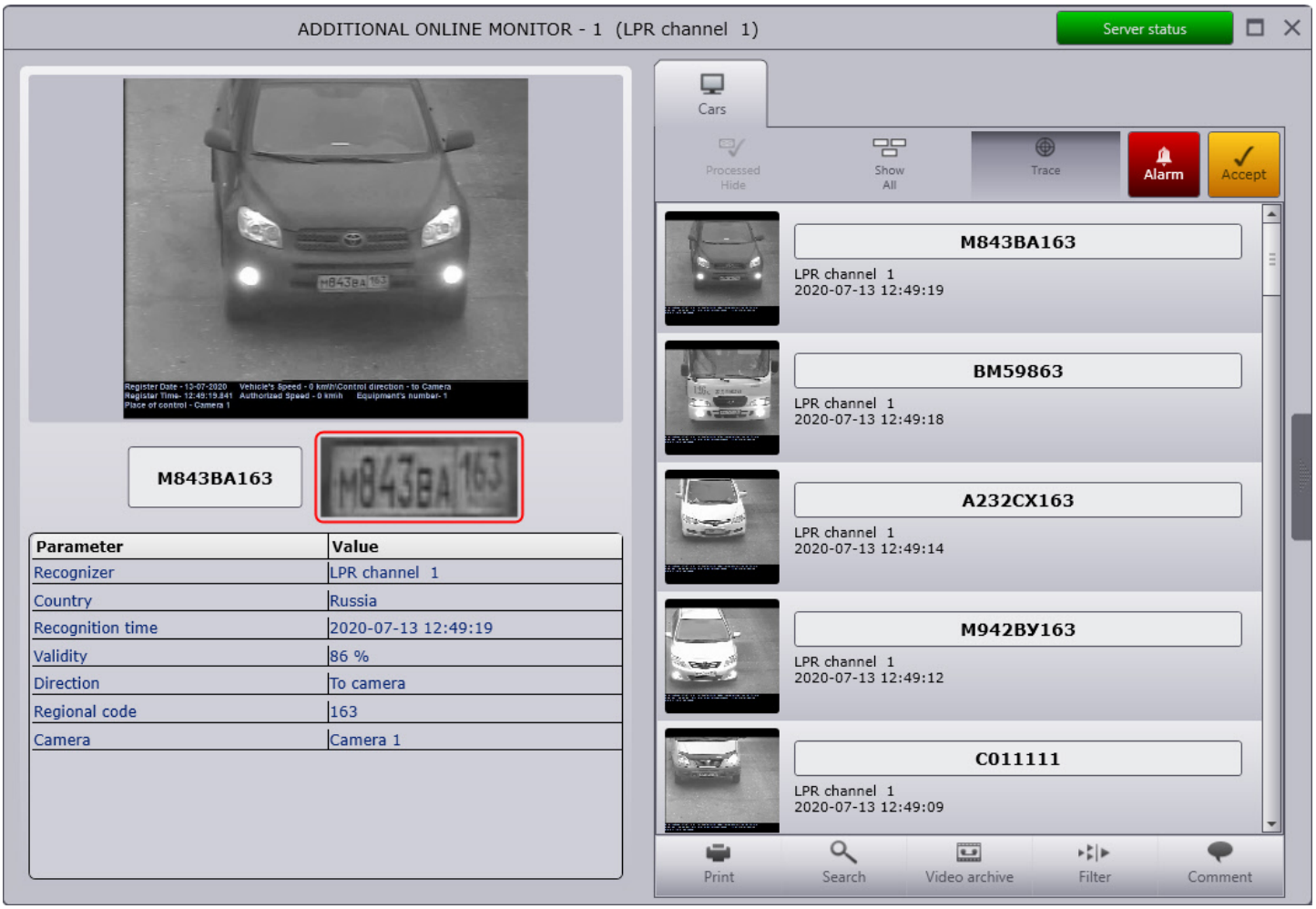
2. The **Errors** dialog window will be displayed in result.

3. The data about the occurred errors is displayed in the field (**1**).
4. The list of all possible error sources is displayed in the field (**2**): LPR channels and/or external databases. Current error sources are marked by the sign, idle sources are marked by the sign.
5. To delete the data about the errors and close the **Errors** dialog window, click the **Clear** button (**3**).
6. To close the **Errors** dialog window without deleting the data about the errors, click the button.

Viewing the **Vehicle Tracer** errors is completed.

3.3.11 Creating the additional Online monitor components

It is possible to create the additional **Online monitor** interface components. To do this, double left-click the **Events monitor** component. As a result, the additional **Online monitor** component will be displayed in the center of the screen.



Working with **Additional Online monitor** components is similar to working with the main **Online monitor** component.

3.3.12 Searching the events in the recognizers databases

3.3.12.1 Opening and closing the Event search in the Recognizers DBs window

On this page:

3.3.12.1.1 General info about searching the events in the recognizers databases

You can search the events in the the *Auto Intellect* recognizers databases via the **Event search in the Recognizers DBs** dialog window.

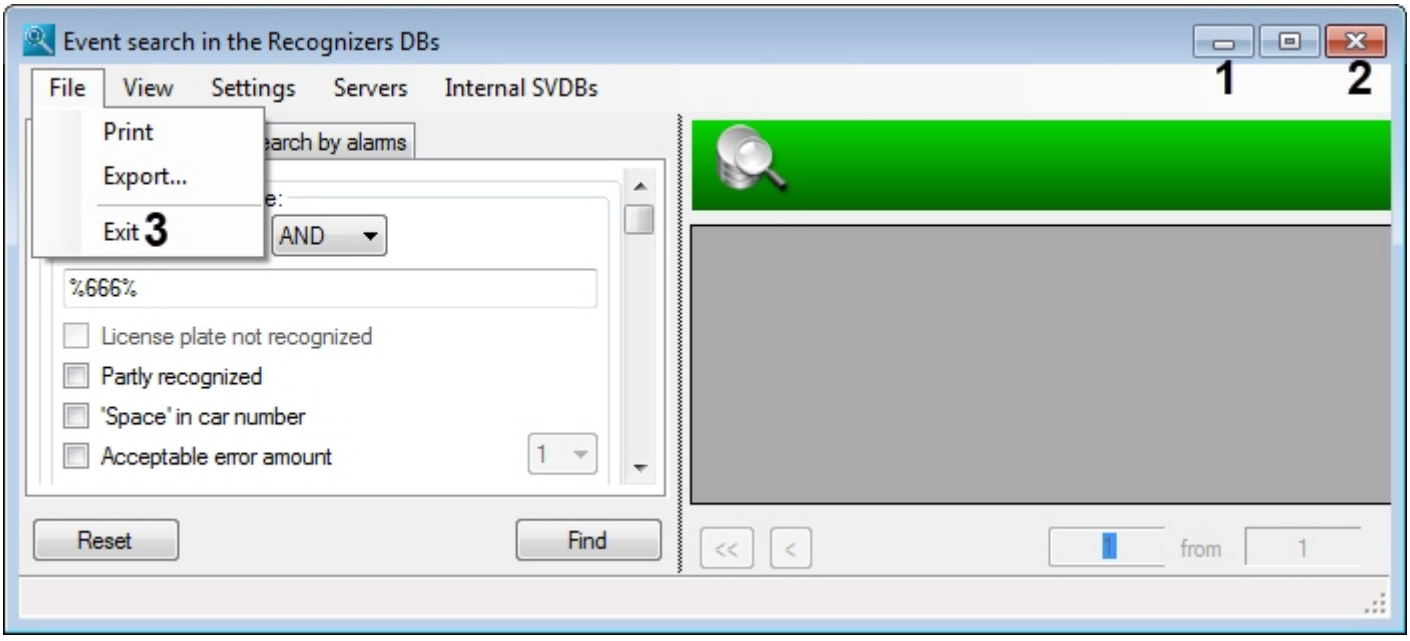
The full list of operations provided to the operator in the window **Event search in the Recognizers DBs**, is the following:

1. Searching the events, stored in the *Auto Intellect* local or remote recognizers databases.
2. Printing the search results reports.
3. Creating the personal LPs database (**Active tracking** database).

3.3.12.1.2 Opening and closing the Event search in the Recognizers DBs window

To open the window, click the **Search** button in the **Online monitor** interface object.

As a result, the **Event search in the Recognizers DBs** window will be opened.



To minimize the **Event search in the Recognizers DBs** window, click the (**1**) or (**2**) buttons. As a result, the window will be minimized to the Taskbar but will continue working.

To close the **Event search in the Recognizers DBs** window, select the **File** → **Exit** item in the main menu (**3**). As a result, the window will be closed completely.

3.3.12.1.3 Opening the Event search in the Recognizers DBs window using the Windows command line

The **Event search in the Recognizers DBs** window can also be opened using the Windows command line, even when the *Intellect* is unloaded. To do this, run the following command:

```
<Intellect installation directory>\Modules>VehiclePlateSearch.run "C:
\Users\<Username>\AppData\Local\Temp\PlateSearchSettings_1.xml"
```

Command example:

```
C:\Program Files (x86)\Intellect\Modules>VehiclePlateSearch.run "C:
\Users\User\AppData\Local\Temp\PlateSearchSettings_1.xml"
```

"C:\Users\UserName\AppData\Local\Temp\PlateSearchSettings_1.xml" - is the path to the PlateSearchSettings_1.xml configuration file, which is generated each time you click the **Search** button in the **Online monitor** interface window in accordance with the current system configuration. If the system configuration has changed, then to re-generate the file, click the **Search** button again or make changes to the file manually.

> **Note**
>
> If you work in the **Event search in the Recognizers DBs** window with the *Intellect* unloaded, then the vehicle frames and license plate images will not be displayed.

3.3.12.2 Configuring the events search

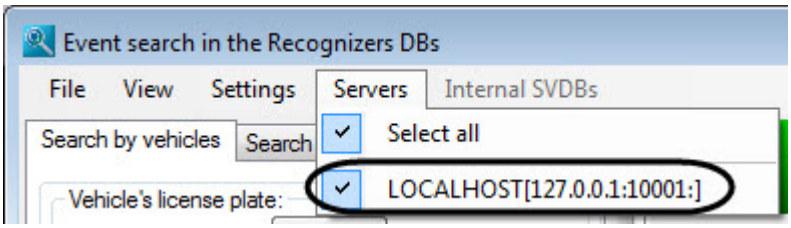
On the page:

Events search is set up in the following order:

1. Select the database, where events should be searched.
2. Configure the displaying of search results.
3. Configure the video archive.

3.3.12.2.1 Selecting the recognizer databases for the events search

To select the recognizer databases for events search, first select the servers where the required LPR databases are. To do this, in the main menu of the **Event search in the Recognizers DBs** window, in the **Servers** item, select the required server names. To select all system servers, click **Servers** → **Select all**.



Note

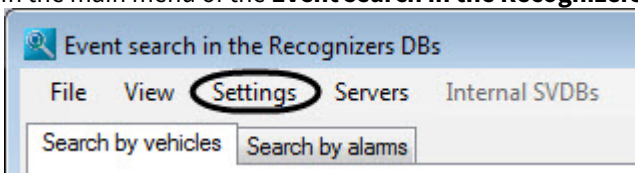
Each time you open the **Event search in the Recognizers DBs** window, the access to the selected servers is checked. If any of the selected servers is unavailable, then after the timeout expires, the header of the search results table will display a list of servers to which it was not possible to connect, and the header itself will be highlighted with red. If all servers are available, the header will be highlighted with green.
The timeout for connecting to the selected *Auto Intellect* servers is set on the settings panel of the **Vehicle Tracer** module window (see Setting up the Vehicle Tracer interface window).

3.3.12.2.2 Configuring the search results

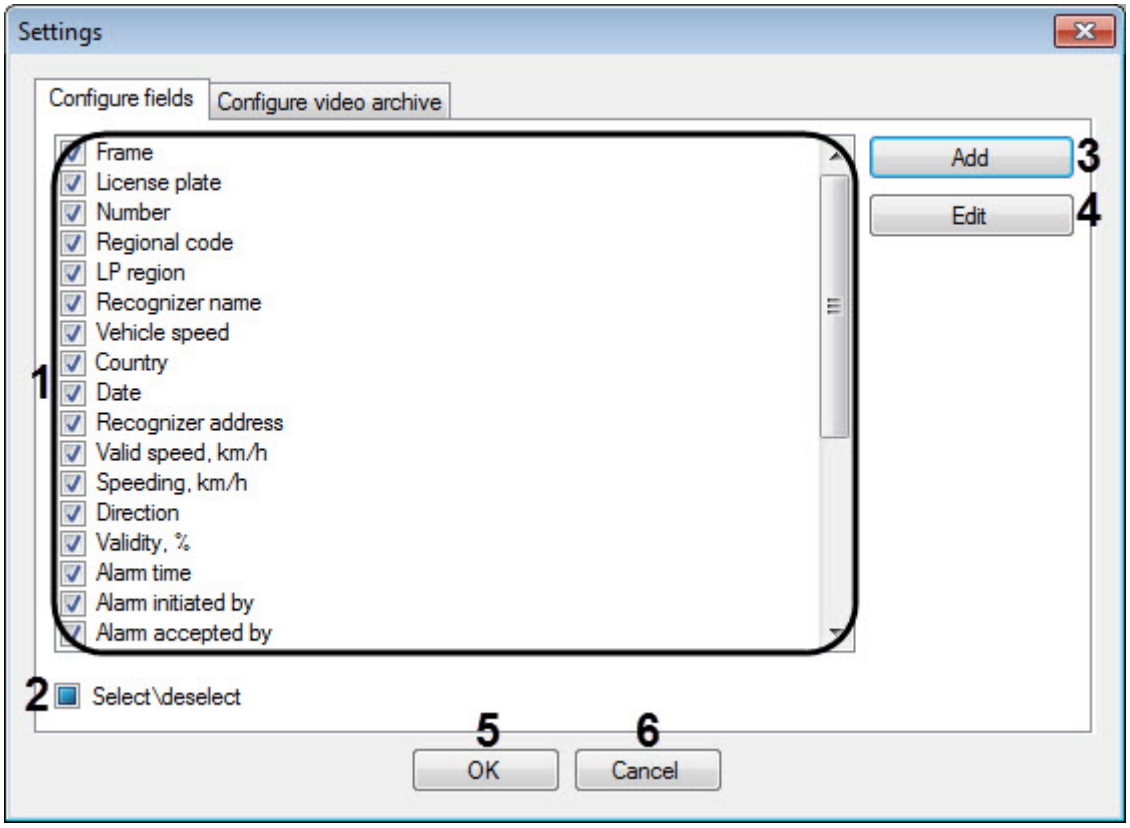
Event search results are displayed in the table. You can choose which table columns should be displayed and which shouldn't, add new columns and also edit the columns displayed names.

To configure the search results displaying, do the following:

1. In the main menu of the **Event search in the Recognizers DBs**, click **Settings**.



As a result the **Settings** dialog window is displayed. The search results displaying is configured on the **Configure fields** tab.



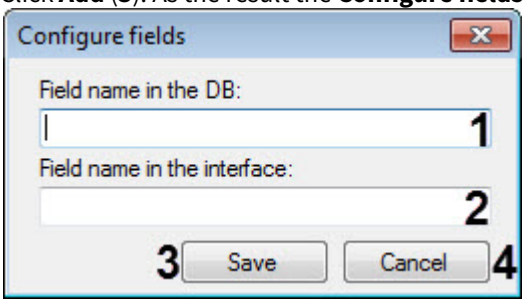
2. In the field (**1**) set the checkboxes for the columns that should be displayed in search results table.

> **Note**
>
> To display all the available columns in the search results table, set the **Select\deselect** checkbox (**2**). If this checkbox isn't set, the search results table is not displayed.

Column name (by default)	Column content
Frame	Video frame with a vehicle
License plate	Video frame with vehicle LP number
Number	Identified LP number
Region number	Region number of the identified number
LP region	Region of the identified LP number
Recognizer name	**LPR channel** object name, corresponding to the vehicle detector
Vehicle speed	Vehicle speed
Country	The country of the recognized LP number
Date	Date and time of the vehicle identification
Recognizer address	LP detector address
Valid speed, km/h	Speed in km/h permitted on the road area covered by the detector
Speeding, km/h	Vehicle overspeeding in km/h
Direction	An indication that the vehicle was moving towards the detecting camera
Validity, %	LP identification accuracy in percent
Alarm time	Time of the LP detection alarm registration
Alarm initiated by	Name of the operator who initiated the alarm
Alarm accepted by	Name of the operator who processed the alarm
Comment from external DB	Comment on the vehicle report in the external plates DB added by the operator
Alarm accepted at	Time of the LP detection alarm acceptance by the *Auto Intellect* operator
Alarm handing delay, sec	Time between registering the alarm and its acceptance by the operator
Comment	Comment on the event added by the operator
Alarm type	Alarm type (overspeeding or vehicle identification in the external plates databases)
Alarm processed	An indication that the alarm was accepted by the operator
External DB	An indication that the alarm was found in the external plates database
Red-light phase start time	Time of the red-light phase start during which the alarm was registered (if the **Red lights running** module is used)

Column name (by default)	Column content
Time passed since the red-light phase start	Time between the red-light phase start and the alarm registration (if the **Red lights running** module is used)
Category	Vehicle category identified by license plate
Camera	Name of the video camera which captured the vehicle
Type	Vehicle type (if the **Vehicle type recognition module** and/or the **RoadAR vendor and model recognizer** are used)
Vendor	Vehicle vendor (if the **RoadAR vendor and model recognizer** is used)
Model	Vehicle model (if the **RoadAR vendor and model recognizer** is used)
Vehicle color	Vehicle color (if the **RoadAR vendor and model recognizer** is used)
Frame from a synchronous camera	Video frame from a synchronous video camera displaying a vehicle
Dangerous goods class	Class of the dangerous cargo (if the **CARMEN-Auto** module and the Hazard Identification Number Recognition Engine (ADR) are used)
Dangerous goods composition	Contents of the dangerous cargo (if the **CARMEN-Auto** module and the Hazard Identification Number Recognition Engine (ADR) are used)

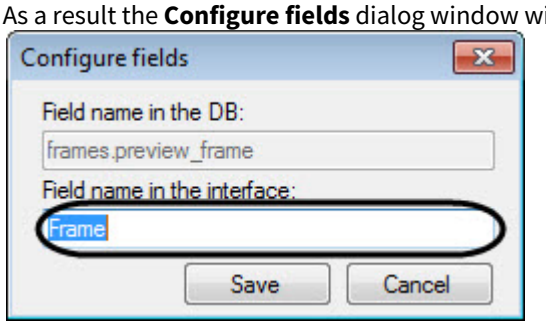
3. To add a new column to the search results table, do the following:
   a. Click **Add** (**3**). As the result the **Configure fields** dialog window will be displayed.



   b. In the **Field name in the DB** field, specify the name of the column in the connected recognizer database, which content should be displayed in the search results table (**1**).
   c. In the **Field name in the interface** field, specify the name for this column which should be displayed in the search results table (**2**).
   d. Click **Save** to save the applied changes and close the **Configure fields** dialog window (**3**).

> **Note**
>
> Click **Cancel** to close the window without saving any changes (**4**).

4. To edit the column name in the search results table, do the following:
   a. In the **Configure fields** group select the column, which name should be changed (**1**).
   b. Click **Edit** (**4**).
   c. As a result the **Configure fields** dialog window with the disabled **Field name in the DB** field is displayed.



d. In the enabled **Field name in the interface** field, specify the new column name and save the changes (see steps 4.3-4.4).

5. Click **OK** to save the changes and close the **Configure fields** dialog window (**5**).

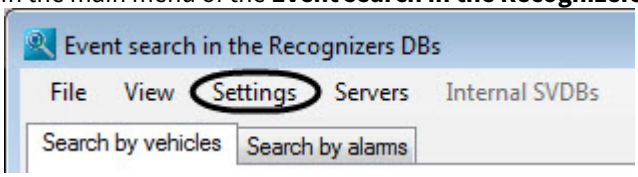
> **Note**
>
> Click **Cancel** to close this window without saving any changes (**6**).

Configuring the displaying of the search results is completed.

3.3.12.2.3 Configuring the video archive

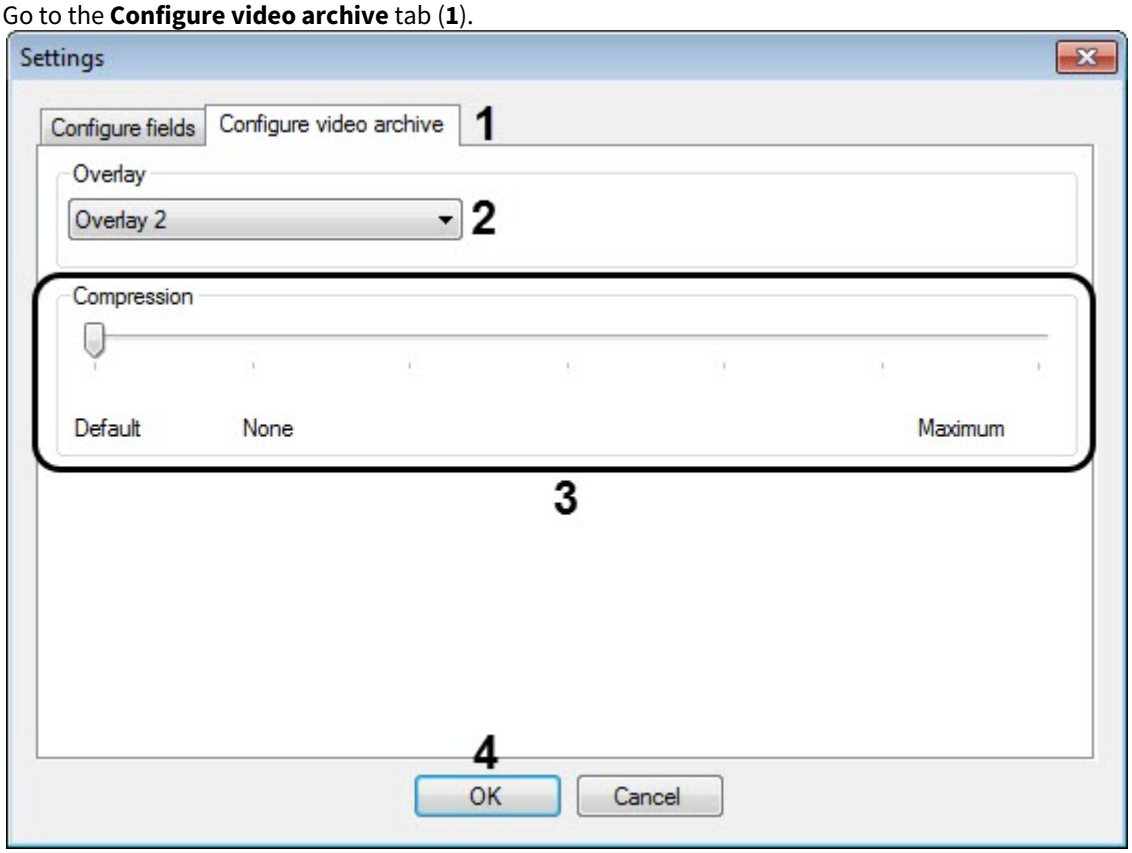
Video recordings of the events are displayed in the video archive. To configure the video recordings playback, do the following:

1. In the main menu of the **Event search in the Recognizers DBs**, click **Settings**.



As a result the **Settings** dialog window is displayed.

2. Go to the **Configure video archive** tab (**1**).



3. From the **Overlay** drop-down list, select the Overlay mode (**2**).

> **Note**
>
> Overlay is used to process the video using the video card and **Direct X** libraries, before it is displayed. Overlay allows to improve the image due to optimization of the pixel color settings. At the same time, the CPU load is reduced as the video is processed with the resources from the video capture card.

The overlay modes are presented in the table.

Overlay mode	Description

No	Videos from the video cameras are not processed by the video card
Overlay 1	Videos from the video cameras are processed as one stream
Overlay 2 (set by default)	Videos from the video cameras are processed independently of one another

4. In the **Compression** field, set the cursor according to the required video compression rate (**3**).
   - **Default**—means the original compression rate, size and quality of the video corresponds to the video image that is sent to the server.
   - **None**—means minimal compression rate, full video size, best quality.
   - **Maximum**—means maximum compression rate, minimal video size, worst quality.
5. To save changes click **OK** (**4**).

The configuring of the video recordings playback is completed.

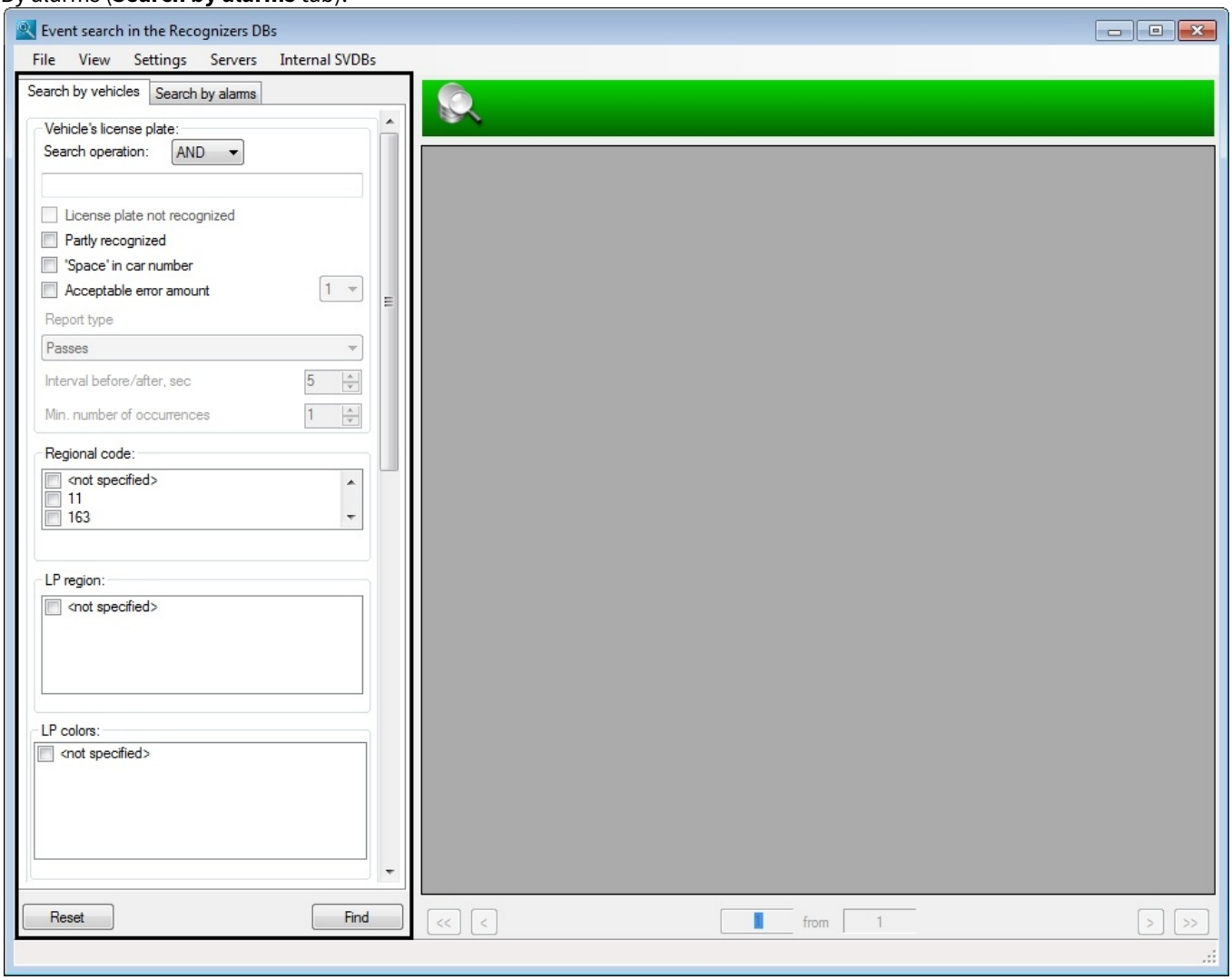
3.3.12.3 Creating the search query

On the page:

It is possible to form a search query:

1. By recognized vehicles (**Search by vehicles** tab);

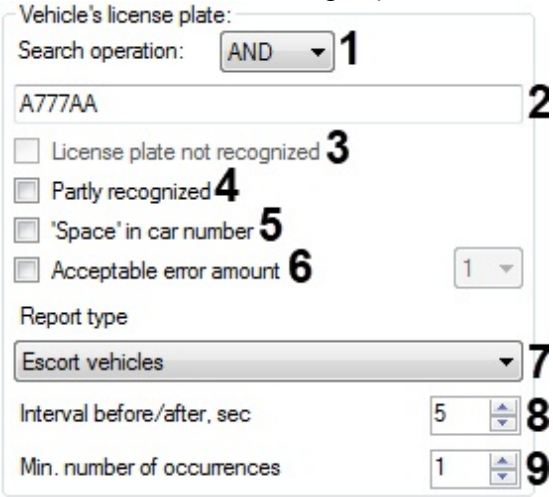
2. By alarms (**Search by alarms** tab).



3.3.12.3.1 Creating the search query by recognized vehicles

To create the search query by recognized vehicles, do the following:

1. Go to the **Search by vehicles** tab.
2. In the **Vehicle's license plate** group:



a. From the **Search operation** list (**1**), select a logical construction, used for uniting several elements of the key phrase, which correspond to the LP numbers or their parts that are being searched:
   - **AND**—for searching by numbers, containing all the elements of the key phrase;
   - **OR**—for searching by numbers, containing at least one element of the key phrase.

b. In the (**2**) field, enter the key phrase. The elements of the key phrase can be separated by comma "**,**" or semicolon "**;**".

> **Note**
>
> The key phrase may include usual characters and picture-characters in the required combination.

Picture-characters	Description of Picture-characters	Example of search query
%	Any string in length from zero and more characters	Search query **a%385%78** returns LP numbers, containing the elements 'a', '385' and '78', divided by any number of characters, for example 'AO38578', 'a385mk78'
_ (underlining)	Any single character	Search query **2__5** returns LP numbers, containing the sequence of four characters, the first of which is '2', the last one is '5',for example, 'A256577', '2115OK43'
[]	Any single character within the range ([a-e]) or in the set ([abcde])	Search query **[e-m][2-5]53** returns LP numbers, containing the sequence of four characters. The sequence ends in '53', the first character belongs to the range e-m, the second one belongs to the range 2-5, for example, 'k453mn02', 'm253bt63'
[^]	Any single character outside the range ([^a-e]) or the set ([^abcde])	Search query **[^e-m]499** returns LP numbers, containing the sequence of four characters. The sequence ends in '499', the first character does not belong to the range e-m, for example 'b499bk57', 'n499578'

c. Set the **License plate not recognized** checkbox (**3**) if it is necessary to display all the numbers.

> **Note**
>
> Selection of the checkbox **License plate not recognized** is enabled only if the **OR** logical construction is selected in the **Search operation** drop-down list.

d. Set the **Partly recognized** checkbox if it is necessary to display partially recognized numbers (**4**).

e. Set the **'Space' in car number** checkbox (**5**) if it is necessary to display the numbers that contain a space between the characters.

f. Set the **Acceptable error amount** check box (**6**) to display the numbers with the errors (character mismatches), the amount of which is indicated in the drop-down list.

g. From the **Report type** drop-down list (**7**), select the type of vehicle search:
   i. **Passes**—standard search.
   ii. **Escort vehicles**—search for all vehicles that have been recorded near the specified vehicle within the time interval set in the **Interval before/after, sec** parameter.

h. In the **Interval before/after, sec** field (**8**), specify the time in seconds within which it is necessary to to search for the vehicle.

> **Note**
>
> This parameter is available if **Escort vehicles** value is selected in the **Report type** drop-down list.

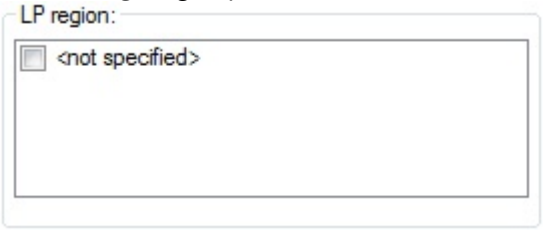
i. In the **Min. number of occurrences** field (**9**), specify the minimum number of vehicle records within the time set in the **Interval before/after, sec** parameter.

> **Note**
>
> This parameter is available if **Escort vehicles** value is selected in the **Report type** drop-down list.

3. In the **Regional code** group, set the checkboxes for those regional codes events for which should be returned while being searched.

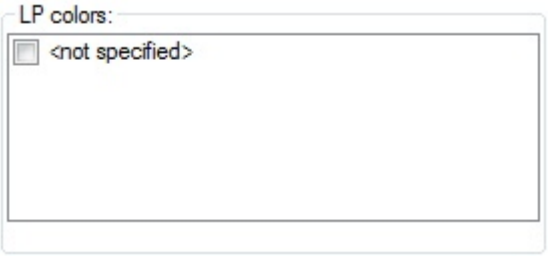
> **Attention!**
>
> Only those regional codes are displayed, the license plate of which has already been recognized earlier, since this information is received from the database of recognized license plates.

4. In the **LP region** group, set the checkboxes for those regions, which events should be returned while being searched.



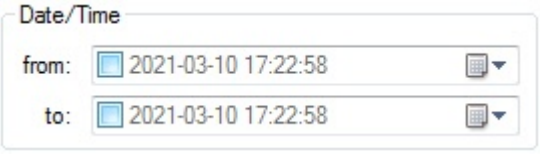
> **Attention!**
>
> Only those regions are displayed, the license plate of which has already been recognized earlier, since this information is received from the database of recognized license plates.

5. In the **LP colors** group, select color of regional code and basic color of the license plate.

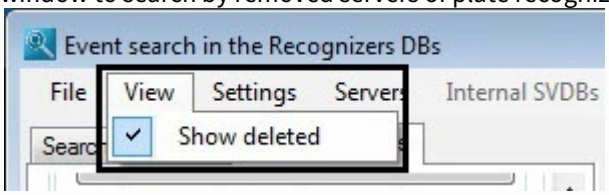


> **Attention!**
>
> Only those license plate colors are displayed, the license plate of which has already been recognized earlier, since this information is received from the database of recognized license plates.

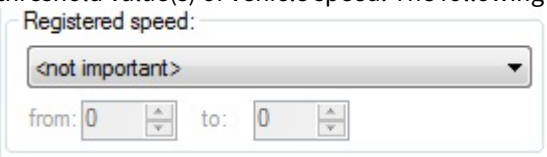
6. In the **Date/time** group, set the time range within which the required events have been registered. By default this range is not activated (checkboxes from and to are disabled). To activate it, set the checkboxes **From** and/or **To** and then click button and in the appeared calendar set the required date. Enter the required time in the field **From** and/or **To**. If only upper or bottom boundary is selected, the search query will return the events, registered before or after the set deadline correspondingly. To disable the search by date and time, uncheck **From** and **To** checkboxes.



7. In the **Plate recognizers** group, set the checkboxes for those plate recognizers, which events are to be returned while being searched.

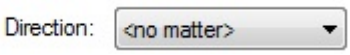
> **Note**
>
> By default, information about objects removed from the *Intellect* software package is not displayed in the **Plate recognizers** group. Select **Show deleted** in the **View** menu of the **Event search in the Recognizers DBs** main window to search by removed servers of plate recognizers.
>
> 
>
>
> After this all removed servers of plate recognizers will be displayed in the **Plate recognizers** group. Set checkboxes for those plate recognizers which will be used while being searched.

8. From the list **Registered speed,** select the required filter of vehicle speed and then in the activated field(s) enter the threshold value(s) of vehicle speed. The following speed filters are available:



   - **<not important>**—events of the vehicle, moving with any speed will be returned.
   - **More**—events of the vehicle, moving with a speed, exceeding a single threshold value, will be returned.
   - **Less**—events of the vehicle, moving with a speed, not exceeding a single threshold value, will be returned.
   - **Interval**—events of the vehicle, moving with a speed, belonging to a single entered threshold value, will be returned.

9. From the **Direction** list, select the required filter concerning the direction of the vehicle. The following direction filters are available:

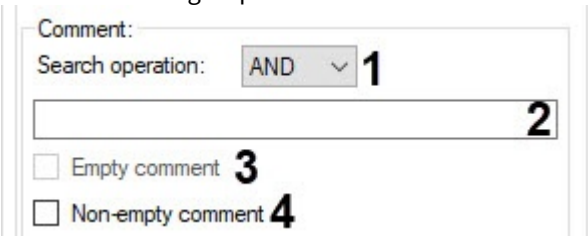


   - **<no matter>**—events of the vehicle, moving in any direction concerning the LP recognizer's camera will be returned.
   - **Undefined**—events of the vehicle, which direction could not be defined, will be returned.
   - **From the camera**—events of the vehicle, moving away from the LP recognizer's camera will be returned.
   - **To the camera**—events of the vehicle, moving towards the LP recognizer's camera will be returned.
   - **To the right**—events of the vehicle, moving to the right of the LP recognizer's camera will be returned.
   - **To the left**—events of the vehicle, moving to the left of the LP recognizer's camera will be returned.

10. In the **Countries** group, set the checkbox for the country, which events should be returned while being searched.

> **Attention!**
>
> Only those countries are displayed, the license plate of which has already been recognized earlier, since this information is received from the database of recognized license plates.

11. In the **Comment** group:

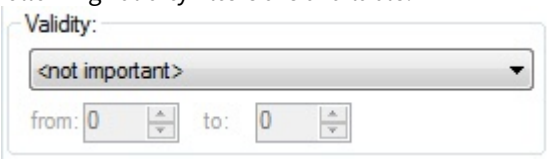


    a. From the **Search operation** list (**1**), select a logical construction, used for uniting several elements of the key phrase, corresponding to the comments, that are being searched:
        - **AND**—for searching by comments, containing all the elements of the key phrase;
        - **OR**—for searching by comments, containing at least one element of the key phrase.
    b. In the field (**2**), enter the key phrase, containing one or several comma separated elements, corresponding to the comments to the events, which are being searched, and which were specified in the **Online monitor** window (see Adding comments to the events).
    c. Set the **Empty comment** checkbox (**3**) to include the uncommented events in the search.

> **Note**
>
> This parameter is available if the **OR** logical construction is selected in the **Search operation** drop-down list.

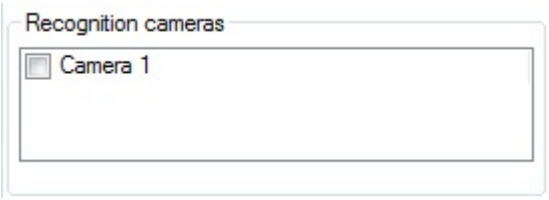
    d. Set the **Non-empty comment** checkbox (**4**) to include only the commented events in the search.

12. From the **Validity** list, select the required validity filter and then enter the threshold of validity values in percent. The following validity filters are available:

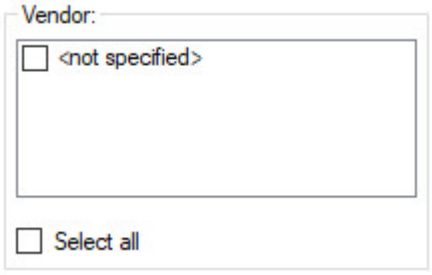


- **<not important>**—events of the vehicle, which numbers have been recognized with any validity.
- **More**—events of the vehicle, which numbers have been recognized with validity, exceeding the entered threshold value in percent.
- **Less**—events of the vehicle, which numbers have been recognized with validity, not exceeding the entered threshold value in percent.
- **Interval**—events of the vehicle, which numbers have been recognized with validity, belonging to the entered threshold value in percent.

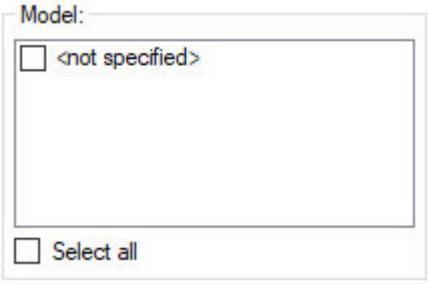
13. In the **Recognition cameras** field, set the checkboxes for the cameras, which events should be returned while being searched.



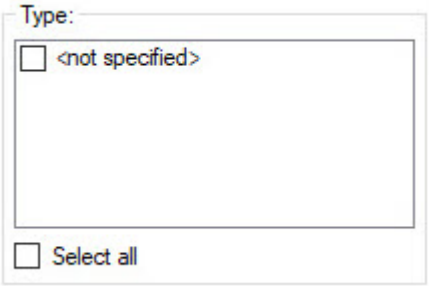
14. In the **Vendor** group, set the checkbox for the vendors from whose vehicles you want to return events when searching.



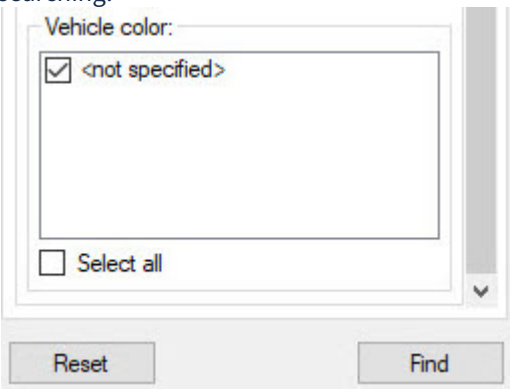
15. In the **Model** group, set the checkbox for the vehicle models, the events from which you want to return when searching.



16. In the **Type** group, set the checkbox for the vehicle types, the events from which you want to return when searching.



17. In the **Vehicle color** group, set the checkbox for the vehicle colors, the events from which you want to return when searching.



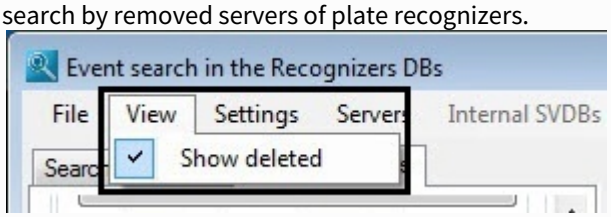
To clear the **Search by vehicles** tab from the entered search, click the **Reset** button.

3.3.12.3.2 Creating the search query by alarms

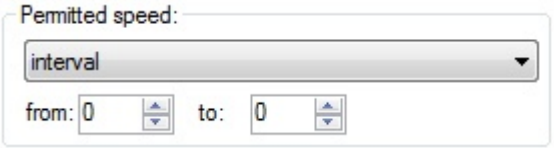
To create the search query by alarms, do the following:

1. Go to the **Search by alarms** tab.
2. Repeat steps 2-12 of the **Creating the search query by recognized vehicles** section as applied to interface elements of the tab **Search by alarms**.

3. In the **External DB** group (**2**), set the checkboxes for those external databases, which events are to be returned while being searched.

> **Note**
>
> The **External database** group contains a list of all the databases that have ever been used together with the **Vehicle Tracer** module but, by default, databases removed from the *Intellect* software package are not displayed in the list. Select the **Show deleted** in the **View** menu of **Event search in the Recognizers DBs** main window to search by removed servers of plate recognizers.
>
> 
>
>
> As a result, all external databases removed from the system will be displayed in the list. Set checkboxes for those databases which will be used while being searched.

4. From the **Permitted speed** list, select the required speed filter, permitted on the controlled road area and then enter the threshold speed values in km/h. The following filters of the permitted speed are available:

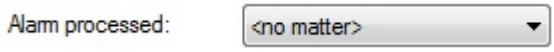


   - **<not important>**—events of the vehicle, registered on the road area with any permitted speed will be returned.
   - **More**—events of the vehicle, registered on the road area with any permitted speed, exceeding the entered threshold value will be returned.
   - **Less**—events of the vehicle, registered on the road area with any permitted speed, not exceeding the entered threshold value will be returned.
   - **Interval**—events of the vehicle, registered on the road area with any permitted speed, that belong to the entered threshold value range will be returned.

5. From the **Alarm handling delay, sec** list, select the required filter according to the alarm handling delay and then in the activated field(s) enter the threshold value(s) of delay time in seconds. The following filters of alarm handling delay are available:

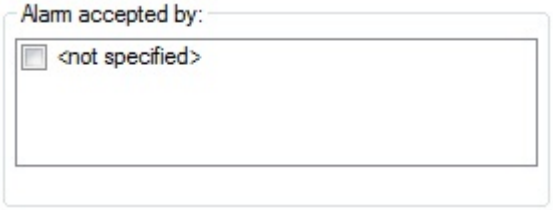
   - **<not important>**—alarms, accepted in any time after being registered or unaccepted at all.
   - **More**—alarms will be returned, accepted with a delay, exceeding the entered threshold value.
   - **Less**—alarms will be returned, accepted with a delay, not exceeding the entered threshold value.
   - **Interval**—alarms will be returned, accepted with a delay, belonging to the entered threshold value.

6. From the **Alarm processed** list, select the required filter according to the alarm processing factor:



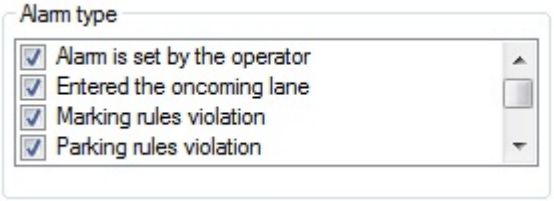
   - **<not important>**—both processed and unprocessed events will be returned.
   - **Alarm is not processed**—only unprocessed events will be returned.
   - **Alarm processed**—only processed events will be returned.

7. In the **Alarm accepted by** group, set the checkboxes for the operators who received the alarm events to display these events in the search query.



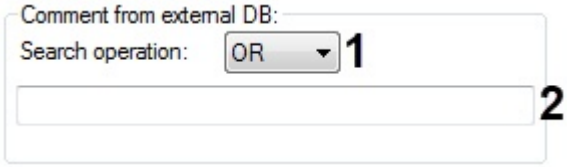
> **Note**
>
> This parameter is available if the **<not important>** or **Alarm processed** value is selected in the **Alarm processed** list (see above).

8. In the **Alarm type** group, set the checkboxes for the alarms, which should be returned in results of search query:



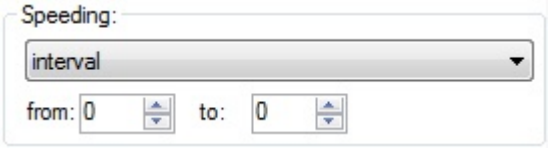
   - **Stop over stop line**—events will be returned for which stopping over the stop line at the stoplight has been registered.
   - **Entered the oncoming lane**—events will be returned for which entering the oncoming lane has been registered.
   - **Parking violation**—events will be returned for which the violation of parking rules has been registered.
   - **Marking rules violation**—events will be returned for which the violation of marking rules has been registered.
   - **LP found in database**—events will be returned which plates have been found in the external database.
   - **Stop over crosswalk line**—events will be returned for which stopping over the crosswalk line at the stoplight has been registered.
   - **Overspeeding**—events will be returned for which overspeeding has been registered.
   - **Running a red light**—events will be returned for which running a red light has been registered.
   - **Running a red light at crossroads**—events will be returned for which running a red light at crossroads has been registered.
   - **Alarm is set by operator**—manually triggered alarms will be returned.

9. In the **Comment from external DB** group:



   a. From the **Search operation** list (**1**), select the logical construct which is used to combine several elements of the key phrase, that correspond to the comments to the events to be searched in external databases:
      - **AND**—to search for comments that contain all the elements of the key phrase;
      - **OR**—to search for comments that contain at least one element of the key phrase.
   b. In the field (**2**), enter a key phrase consisting of one or more elements, separated by commas, that correspond to the comments to the events to be searched in external databases that are specified in the **External DB** group (see Creating the Active tracking database).

10. From the **Speeding** list, select the required speeding filter and then enter the threshold values of speeding in km/h. The following filters of the speeding are available:

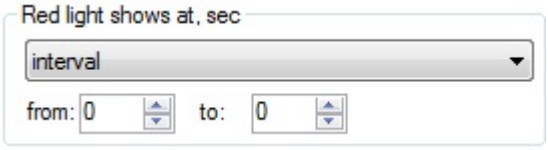


   - **<not important>**—events of the vehicle, moving with any overspeeding or with the absence of it will be returned.
   - **More**—events of the vehicle, moving with overspeeding, exceeding the entered threshold value will be returned.

- **Less**—events of the vehicle, moving with overspeeding, less than the entered threshold value will be returned.
- **Interval**—events of the vehicle, moving with overspeeding, in the entered range of threshold values, will be returned.

> **Note**
>
> - This parameter is available if the checkbox **Speeding** is set in the **Alarm type** group.
> - The value of speeding is calculated as a difference between the fixed vehicle speed and the speed, permitted on the controlled area of the road.

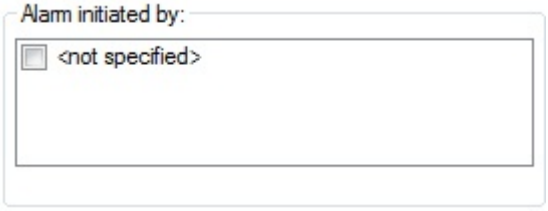
11. From the **Red light shows at, sec** list, select the required filter for red light start and then in the activated field(s) enter the threshold value(s) in seconds. The following filters of the running a red light are available:



- **<not important>**—events of the vehicle, which violated a red light, will be returned.
- **More**—events of the vehicle, which violated a red light after the entered threshold value will be returned.
- **Less**—events of the vehicle, which violated a red light before the entered threshold value will be returned.
- **Interval**—events of the vehicle, which violated a red light within the entered range of threshold values, will be returned.

> **Note**
>
> This parameter is available if the **Running a red light** checkbox is set in the **Alarm type** group.

12. In the **Alarm initiated by** field, select the required operators who initiated the alarm. The corresponding alarms will be shown in the search results.



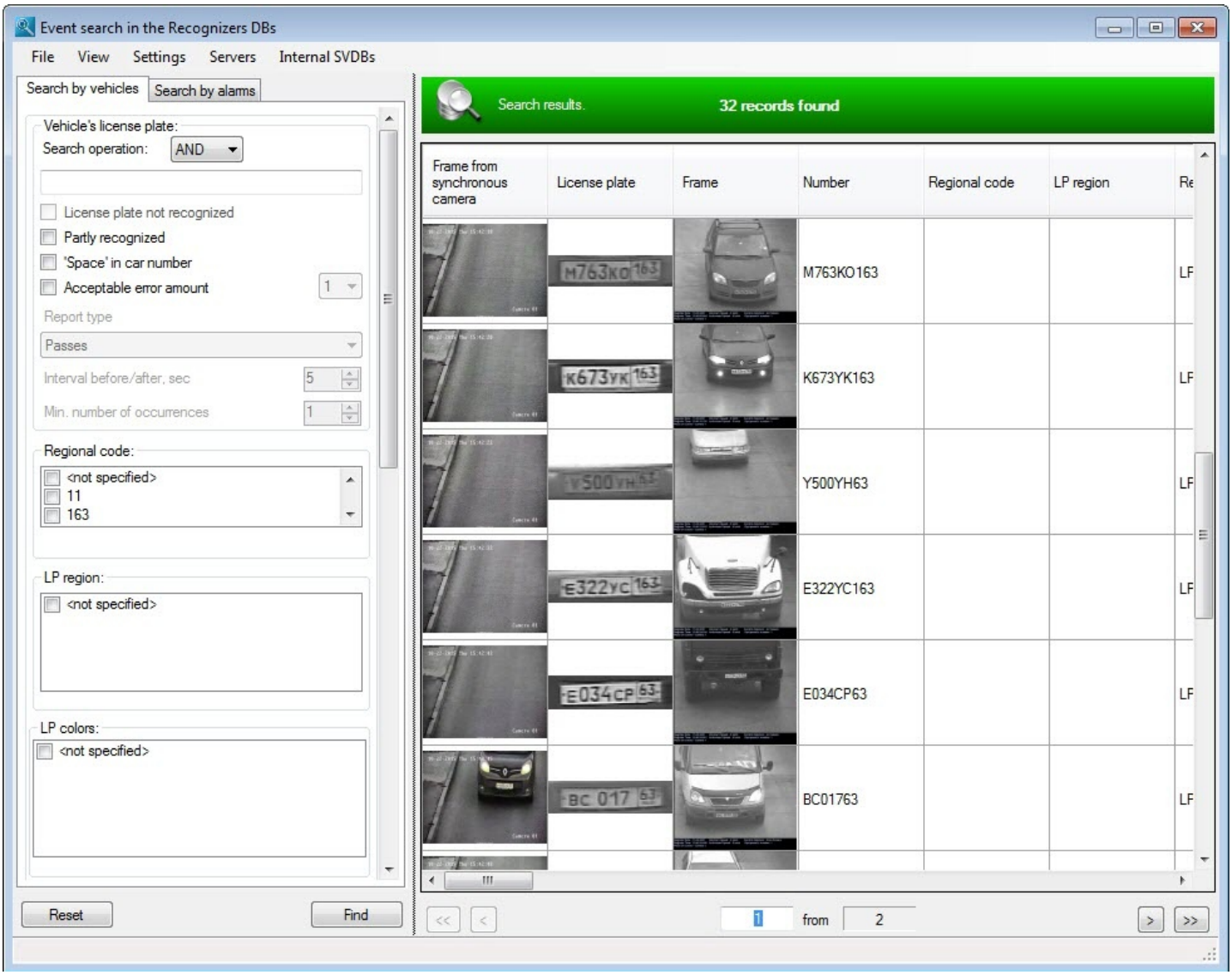
> **Note**
>
> This parameter is available if the **Alarm is set by operator** checkbox is set in the **Alarm type** group.

To clear the **Search by alarms** tab from the entered search, click the **Reset** button.

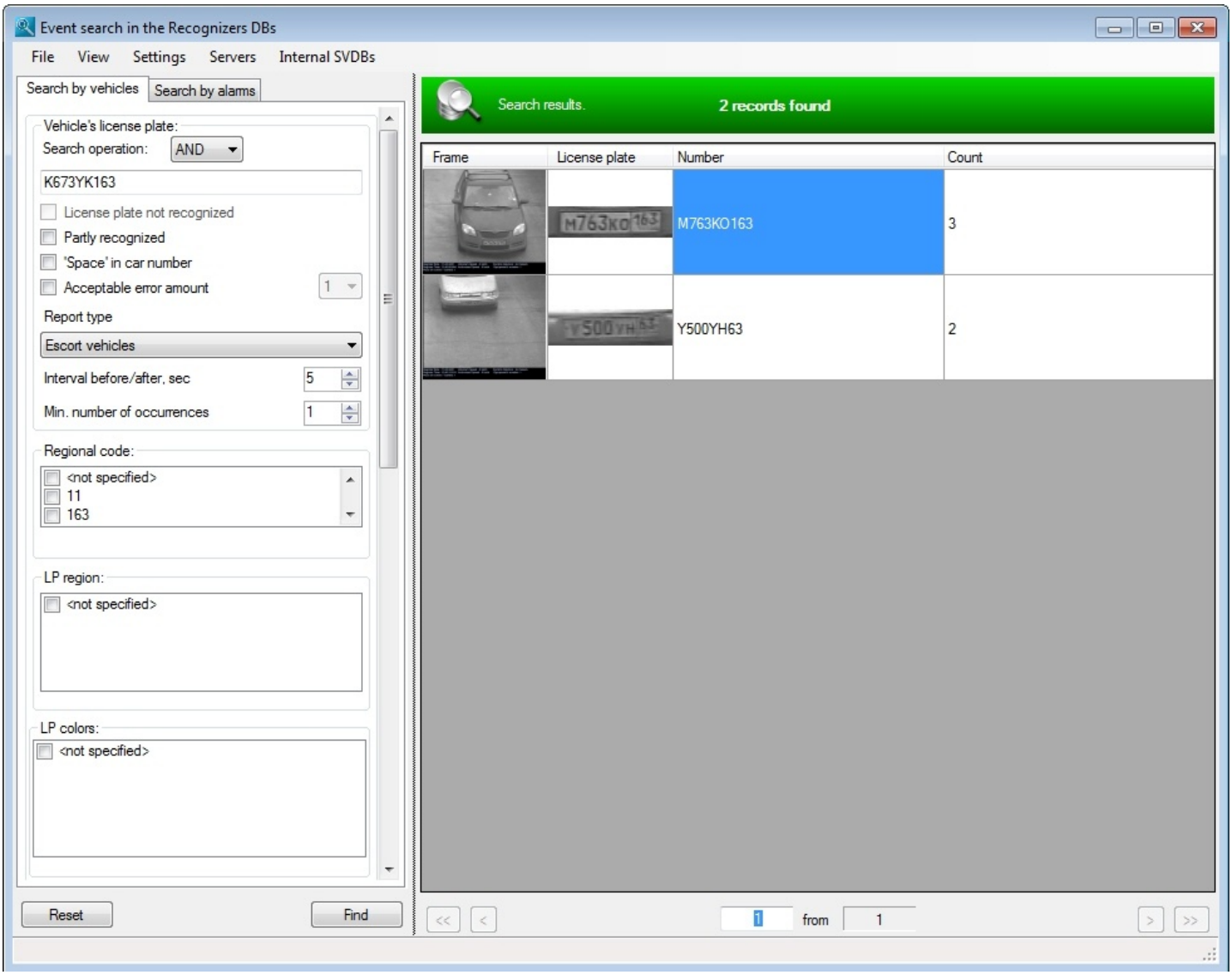
3.3.12.3.3 Query launching

After forming the search query by vehicles or by alarms, launch its processing by clicking the **Find** button.

As a result, a table of search results will be displayed that match the entered conditions:



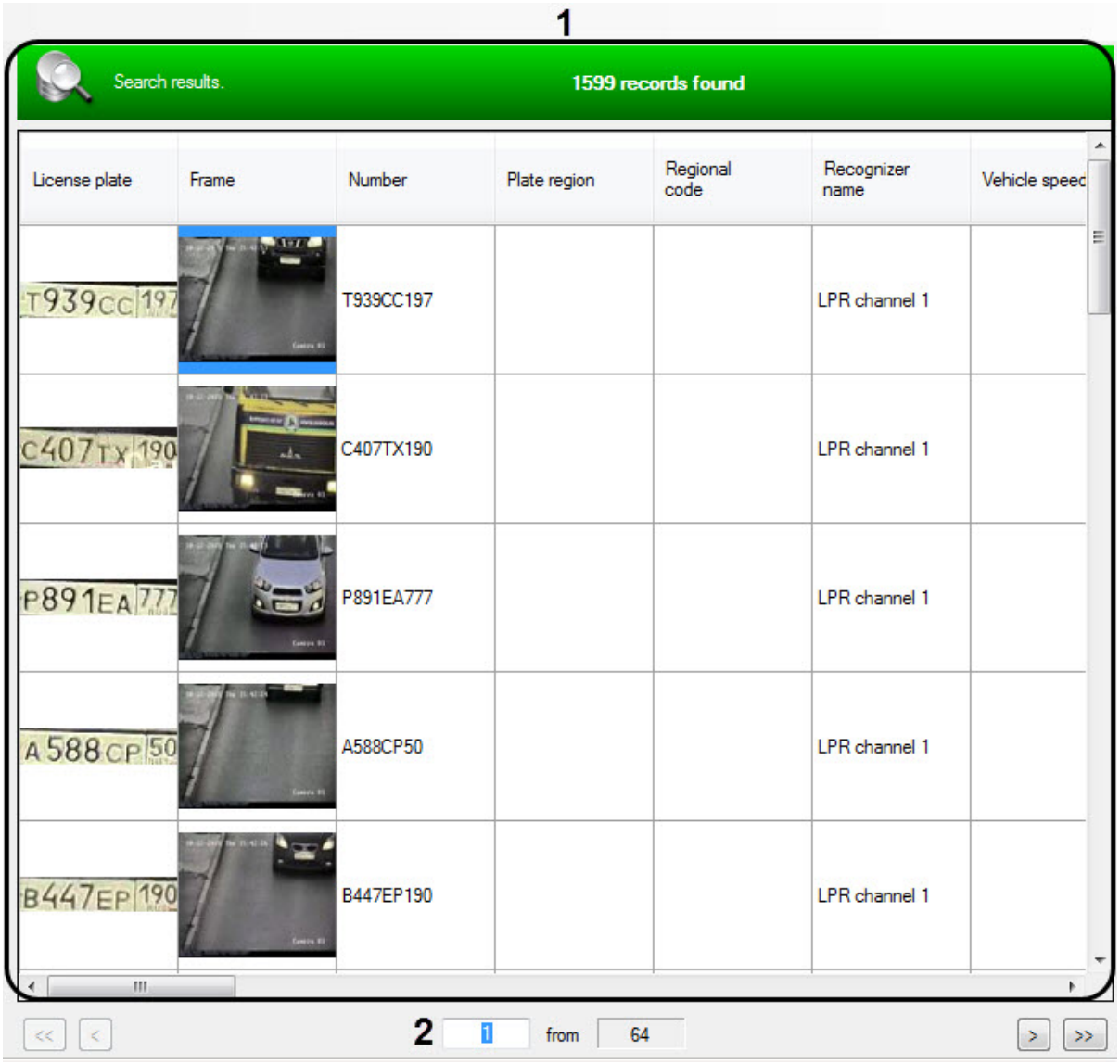
If the **Escort vehicles** report type was selected, the search results table will look like this:



3.3.12.4 Viewing, printing and exporting the search results

Columns of **Search results** table (**1**) are displayed in accordance with the settings, given in the **Configure fields** dialog window (see Configuring the events search).

The description of the columns content is given in the same section of the Guide.



To navigate in the results table, use the following interface elements:

1. button << – go to the first page of the table;
2. button < – go to the previous page of the table;
3. field 1 – go to the required page of the table;
4. field 121 - the number of pages in the table;
5. button > – go to the next page of the table;
6. button >> – go to the last page of the table.

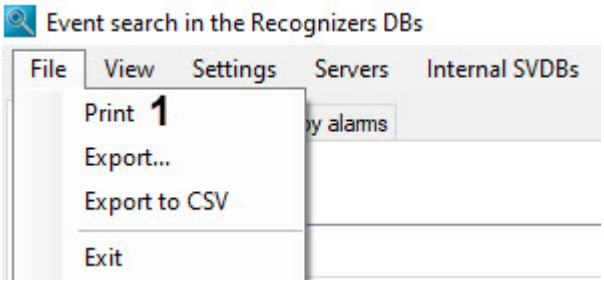
> **Note.**
>
> To go to the required page, enter its number in the field (**2**), and then press **Enter** on the keyboard.

The search results can be printed or exported as a report (see Printing the search results report), as well as the JPG file (see Exporting the search results to JPG files).

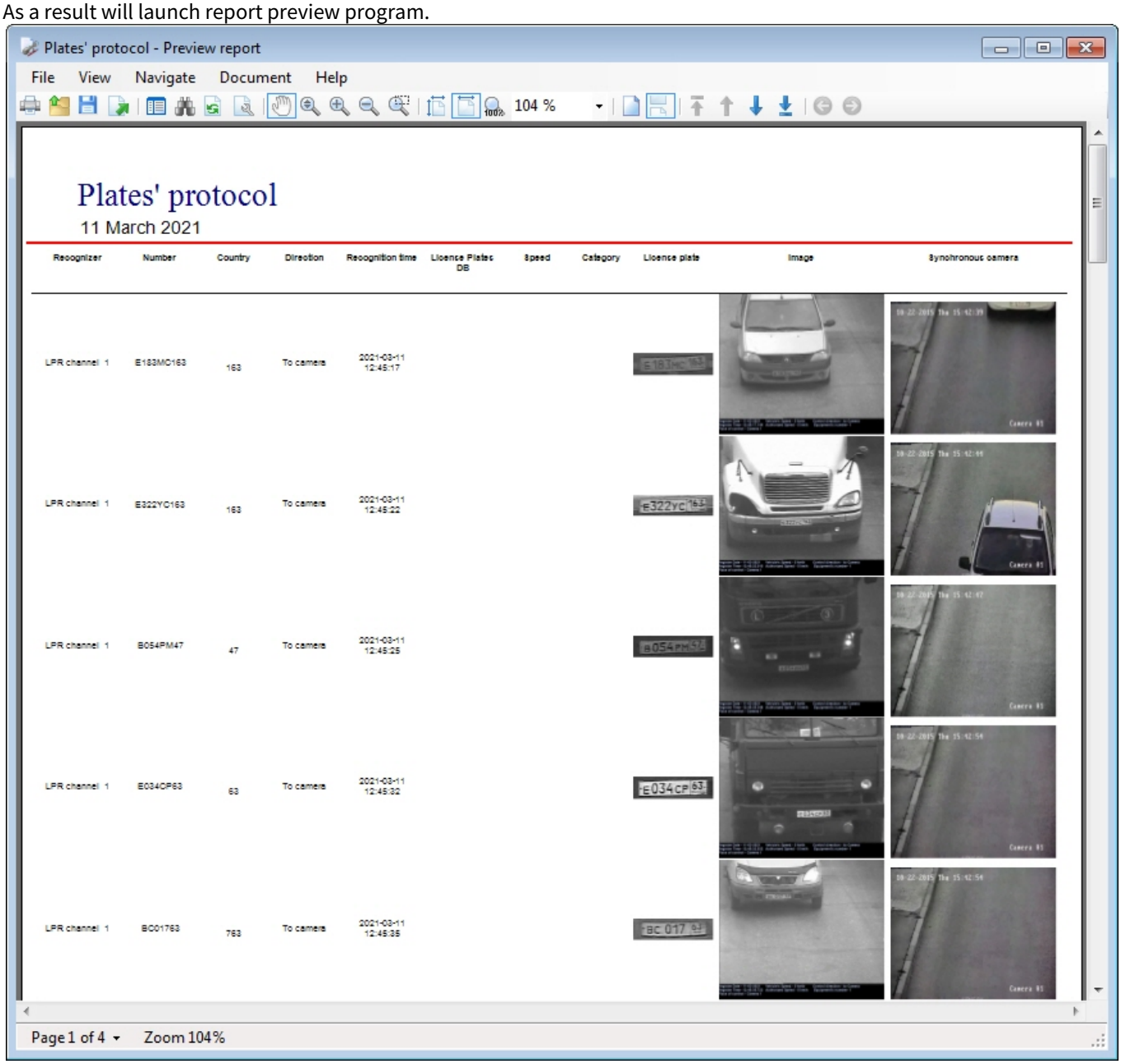
3.3.12.4.1 Printing the search results report

The event search results can be printed as a report. To do this, follow these steps:

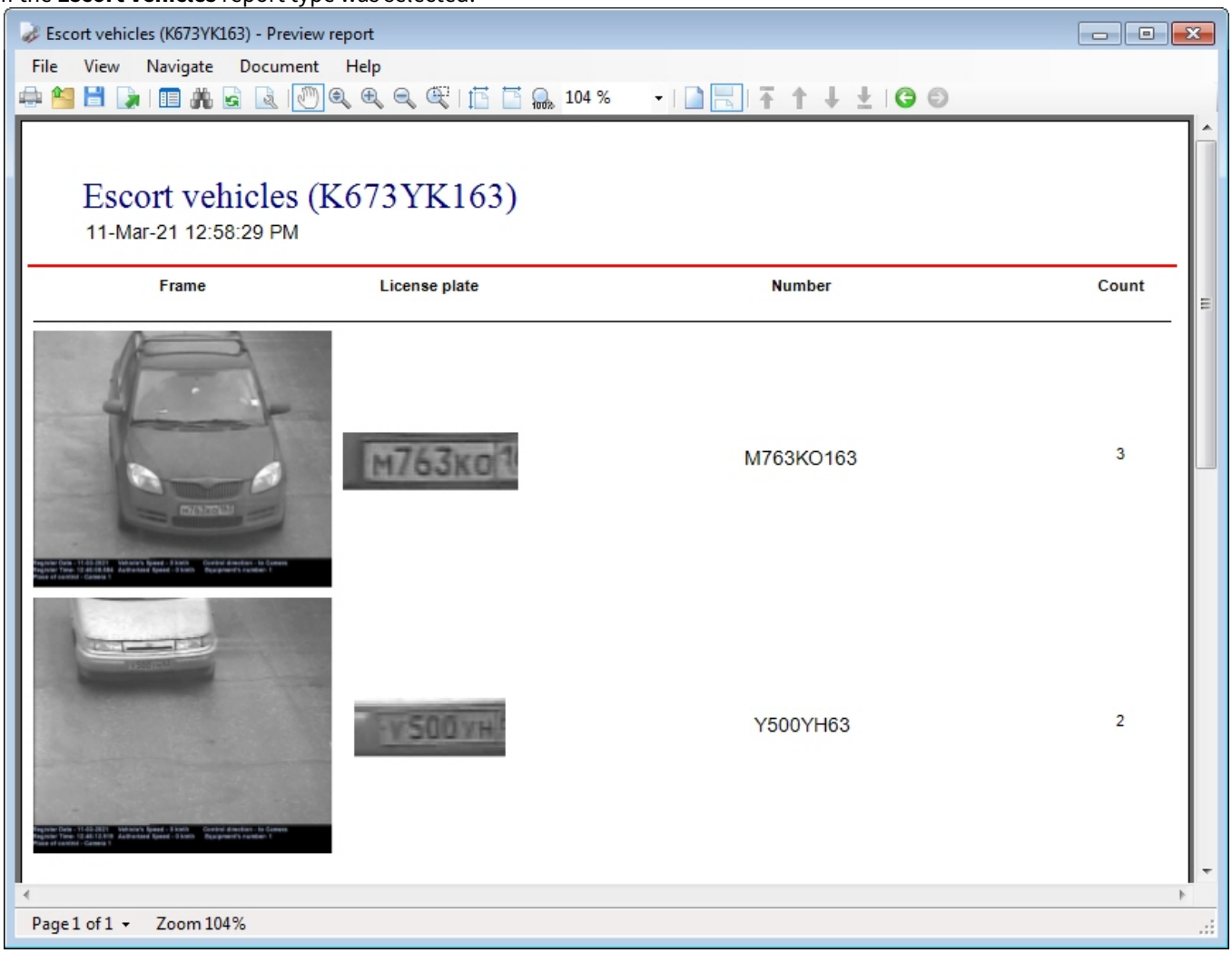
1. In the main menu of the **Event search in the Recognizers DBs** window, click **File** → **Print** (**1**).



2. As a result will launch report preview program.

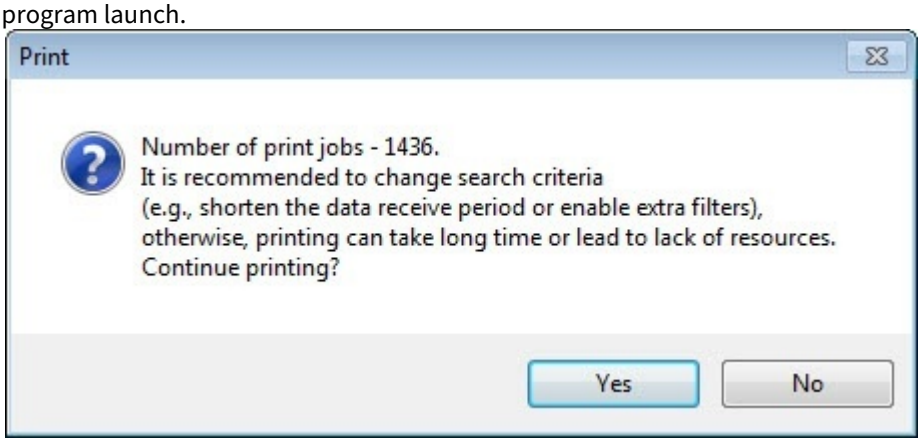


If the **Escort vehicles** report type was selected:



Perform the necessary operations with a report in the report viewing window. All operations in this window are similar to those described on the page Printing and exporting the vehicle data.

If there are more than 1000 entries in the search results the following message will be displayed before the preview report program launch.



Note

If the search results contain more than 1000 entries, the report may not be generated, because Windows does not allocate more than 2 GB of memory to the x86-bit processes.

Click **Yes** to continue. Click **No** to come back to change the search criteria.

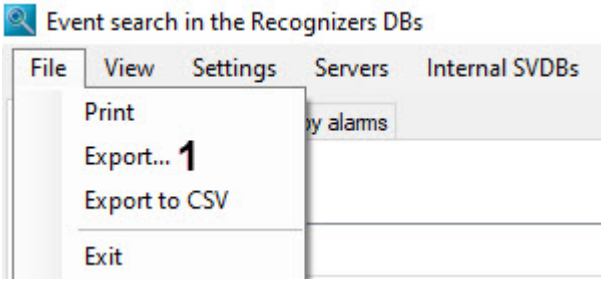
3.3.12.4.2 Exporting the search results to JPG files

The events search results can be exported to JPG files. For each event, the following objects will be created:

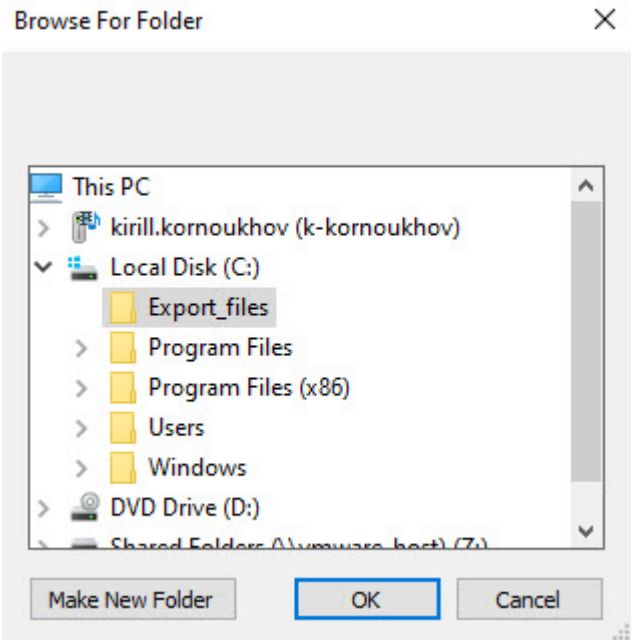
- a JPG file containing the frame from the main camera;
- a JPG file containing the frame from the synchronous camera with the *_secondary.jpg name (if the synchronous camera is configured);
- an archive containing meta data in the **ARENA** module format (if Debug4 mode is enabled). This functionality is required for integration with the TRIS.

To export the events search results to JPG files, do the following:

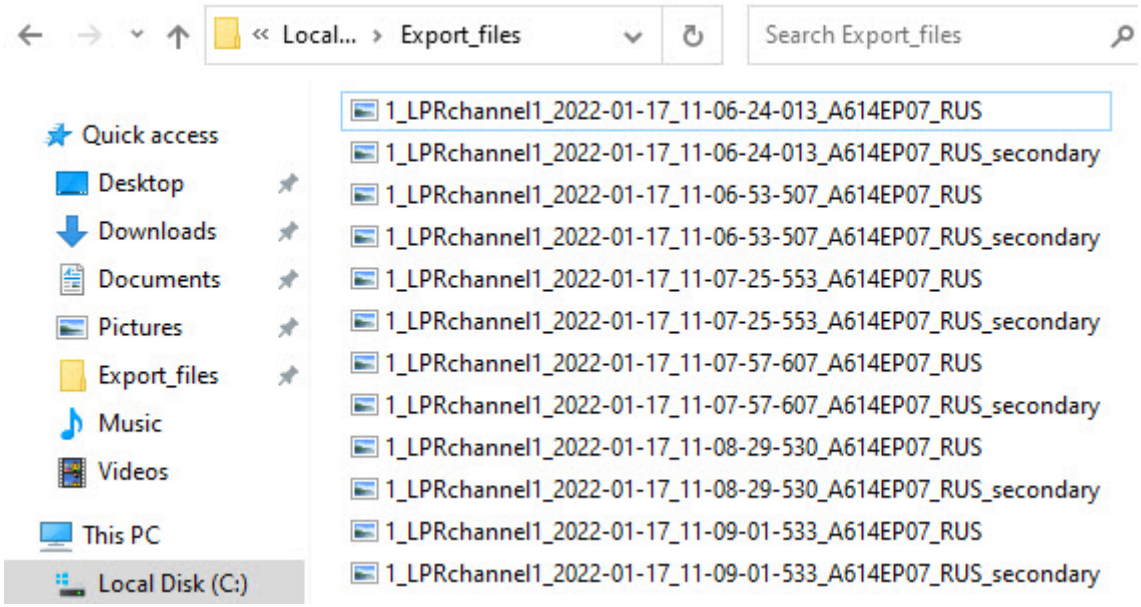
1. In the main menu of the **Event search in the Recognizers DBs** window, click **File** → **Export** (**1**).



2. In the opened window select the folder in which the JPG files with search results are to be exported. Click **OK**.



3. As a result all JPG files corresponding to event search results will be exported to the specified folder. File names contain the following information:
detection tool ID, detection tool name, date and time, license plate, country (if defined), photo type (for example, secondary indicates that a photo is taken from a second synchronous camera, if there is any).



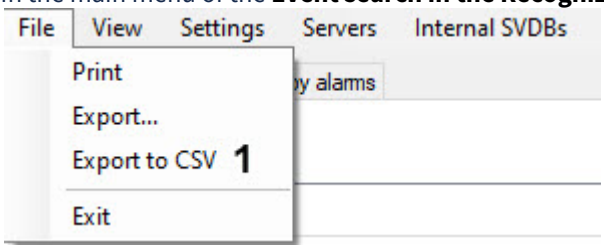
Exporting the events search results to JPG files is complete.

3.3.12.4.3 Exporting the search results to CSV file

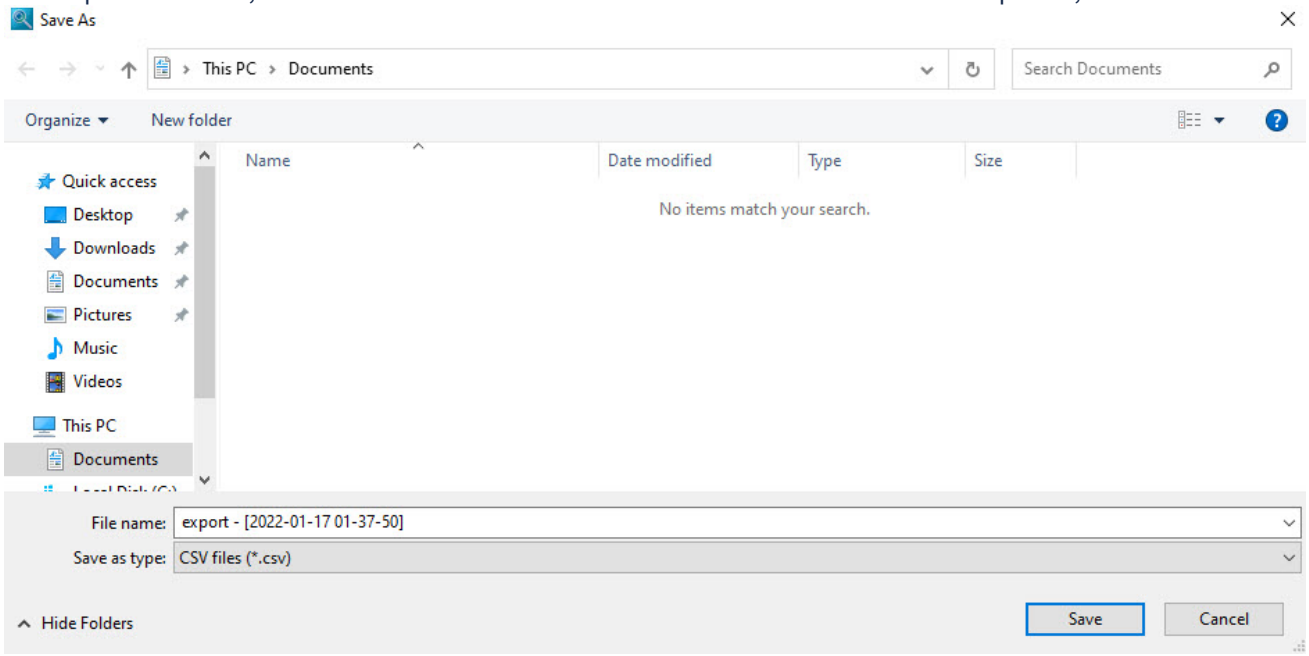
You can export the event search results to a CSV file.

To export event search results to a CSV file, do the following:

1. In the main menu of the **Event search in the Recognizers DBs** window, click **File** → **Export to CSV** (**1**).



2. In the opened window, select the folder in which the CSV file with search results is to be exported, and click **Save**.



As a result, a CSV file containing the search results will be created in the specified folder.

export - [2022-01-17 01-37-50] - Notepad

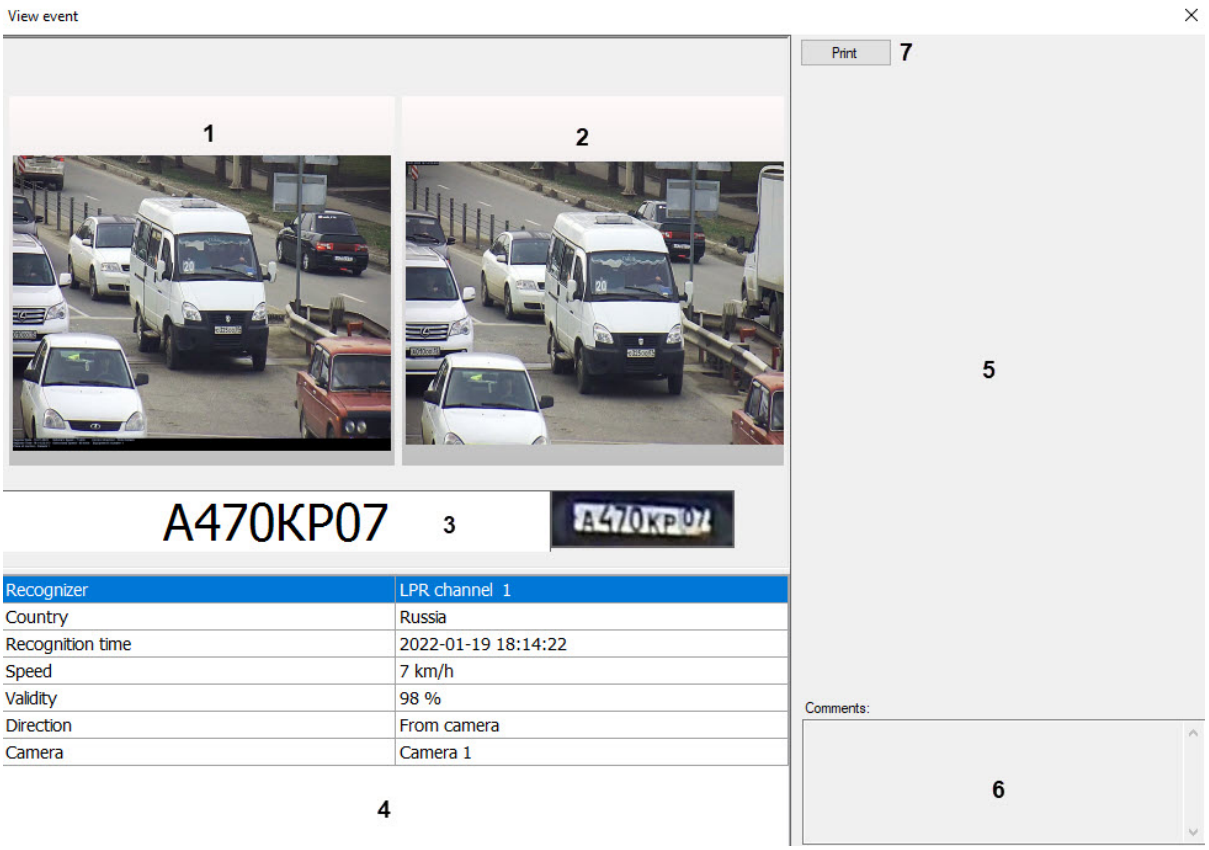
File Edit Format View Help

```
plate,date,detector,country,region,db_name,operator,marked,accept,validity,vehicle_type
"A614EP07","1/17/2022 11:06:24 AM","LPR channel  1","RUS","","","","","","95",""
"A614EP07","1/17/2022 11:06:53 AM","LPR channel  1","RUS","","","","","","76",""
"A614EP07","1/17/2022 11:07:25 AM","LPR channel  1","RUS","","","","","","70",""
"A614EP07","1/17/2022 11:07:57 AM","LPR channel  1","RUS","","","","","","65",""
"A614EP07","1/17/2022 11:08:29 AM","LPR channel  1","RUS","","","","","","76",""
"A614EP07","1/17/2022 11:09:01 AM","LPR channel  1","RUS","","","","","","76",""
"A614EP07","1/17/2022 11:09:33 AM","LPR channel  1","RUS","","","","","","83",""
"A614EP07","1/17/2022 11:10:05 AM","LPR channel  1","RUS","","","","","","76",""
"A614EP07","1/17/2022 11:10:37 AM","LPR channel  1","RUS","","","","","","76",""
"A614EP07","1/17/2022 11:11:09 AM","LPR channel  1","RUS","","","","","","70",""
"A614EP07","1/17/2022 11:11:41 AM","LPR channel  1","RUS","","","","","","83",""
"A614EP07","1/17/2022 11:12:13 AM","LPR channel  1","RUS","","","","","","76",""
"A614EP07","1/17/2022 11:12:45 AM","LPR channel  1","RUS","","","","","","83",""
"A614EP07","1/17/2022 11:13:17 AM","LPR channel  1","RUS","","","","","","70",""
"A614EP07","1/17/2022 11:13:49 AM","LPR channel  1","RUS","","","","","","76",""
"A614EP07","1/17/2022 11:14:21 AM","LPR channel  1","RUS","","","","","","83",""
"A614EP07","1/17/2022 11:14:53 AM","LPR channel  1","RUS","","","","","","83",""
```

Exporting the events search results to a CSV file is complete.

3.3.12.5 Previewing and printing the event data

To view the event data, double left-click the corresponding string in the search results table. **View event** dialog window will open in result.



In the **View event** window, the following event characteristics are displayed:

1. The main video frame with a caption which contains the following data (**1**):
    a. Date and time of receiving the vehicle data;
    b. Vehicle speed;
    c. Vehicle direction;
    d. Speed, permitted on the controlled road area;
    e. ID of speed detector;
    f. Control site;
    g. Name of the camera that captured the vehicle.
2. Additional video frame if any (**2**).
3. Field (**3**) with the following data:
    a. Identified LP number;
    b. Image of recognized LP.
4. Field (**4**) with the following data:
    a. LP recognizer name;
    b. Country;
    c. Date and time of identifying the LP;
    d. Vehicle speed;
    e. Validity in %;
    f. Vehicle direction in relation to the LP recognition camera;
    g. Name of the camera that captured the vehicle.
5. Vehicle data from the external LP database if the identified LP has been found there (**5**);
6. Comments to the event (**6**).

To print the Report or/and export it to one of the most commonly used formats click the **Print** button (**7**). Preview report program will launch in result. In the window of this program there will be displayed the Vehicle characteristics report.

Vehicle data

Recognizer	LPR channel 1
Country	Russia
Recognition time	2022-01-20 09:27:24
Speed	7 km/h
Speed limit	60 km/h
Validity	70 %
Direction	From camera
Regional code	07
Camera	Camera 1

Perform the necessary operations with a report and then quit the program Preview report by following the points of the main menu **File** -> **Exit** or by clicking the button (see step 4 in Printing and exporting the vehicle data).

3.3.12.6 Creating the Active tracking database

The **Active tracking** database is the *Auto-Intellect* database and is filled up by operator via the **Vehicle Tracer** module.

> **Note.**
>
> - It is impossible to remove and change records via the **Vehicle Tracer** module except for changing the suspect vehicle profile status.
> - All operator actions with the Active tracking database (for example, adding or deleting a suspect vehicle profile, changing the start or end date of the suspect vehicle profile) are logged.

For total interaction between the **Active tracking** database and the **Vehicle Tracing** module the following conditions should be met:

1. The **Active tracking** database should be connected to *Auto-Intellect* as an external plates database.
2. This external database should be used by the **Vehicle Tracer** module for analyzing the recognized license plates.

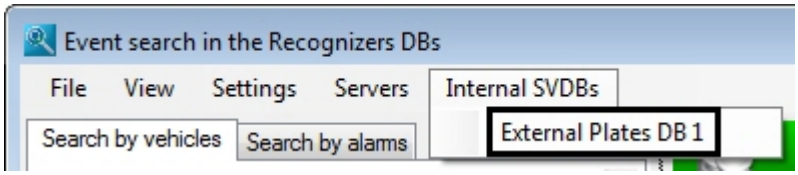
If the following conditions are met, the interaction between the **Active tracking** database and the **Vehicle Tracer** module is performed in the following way:

1. The operator adds the vehicle LP to the **Active tracking** database via the **Vehicle Tracer** module, and specifies the reason of its adding.
2. The **Vehicle Tracer** module compares the passing vehicle LP with the LPs stored in the **Active tracking** database. If the correspondence between these LPs is established, the alarm event is generated with the location of the number in the corresponding database.

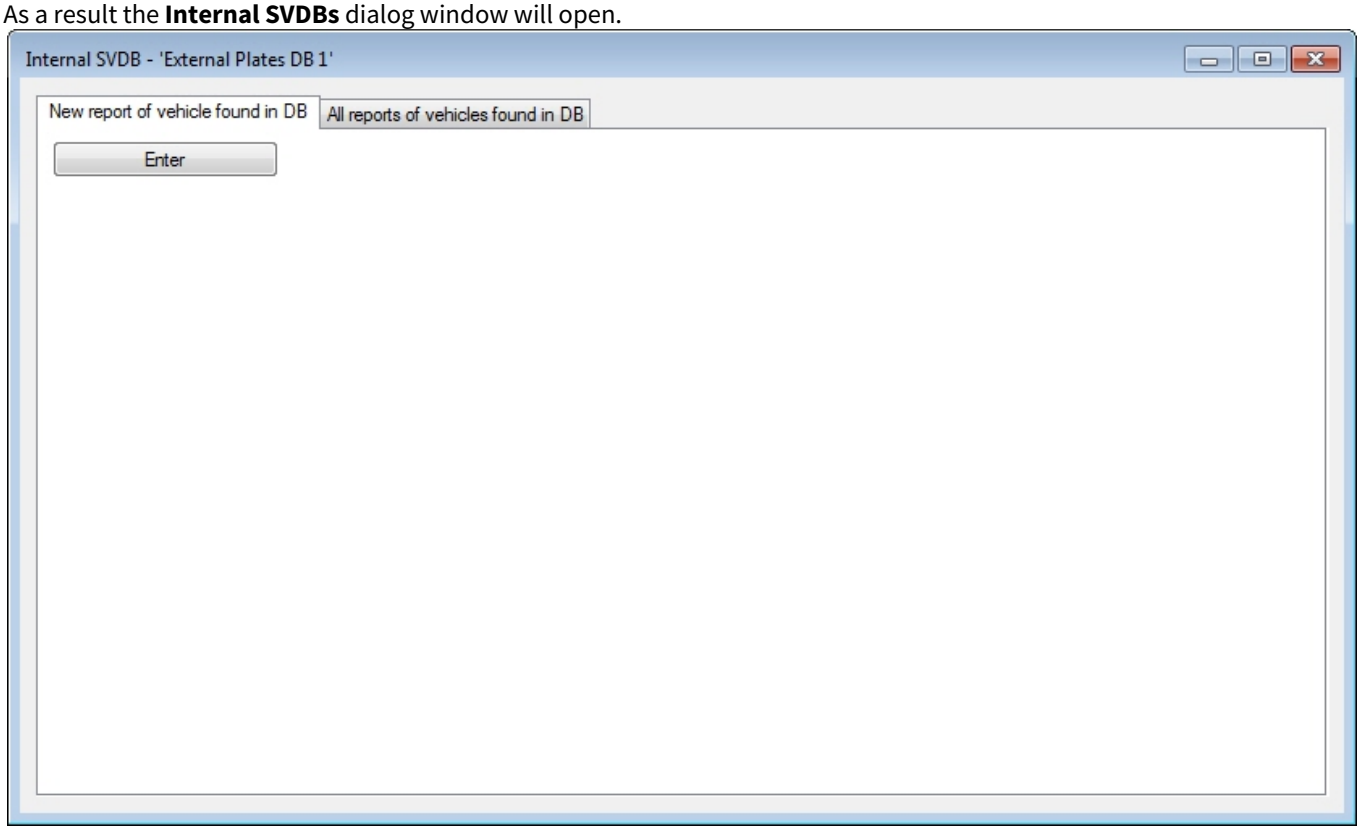
The **Active tracking** option is convenient to be used in the *Auto-Intellect* distributed system, as it enables the operator at his workstation to notify the remote workstation operators about the vehicle that is to be captured.

The information about the vehicle is added to the **Active tracking** database as follows:

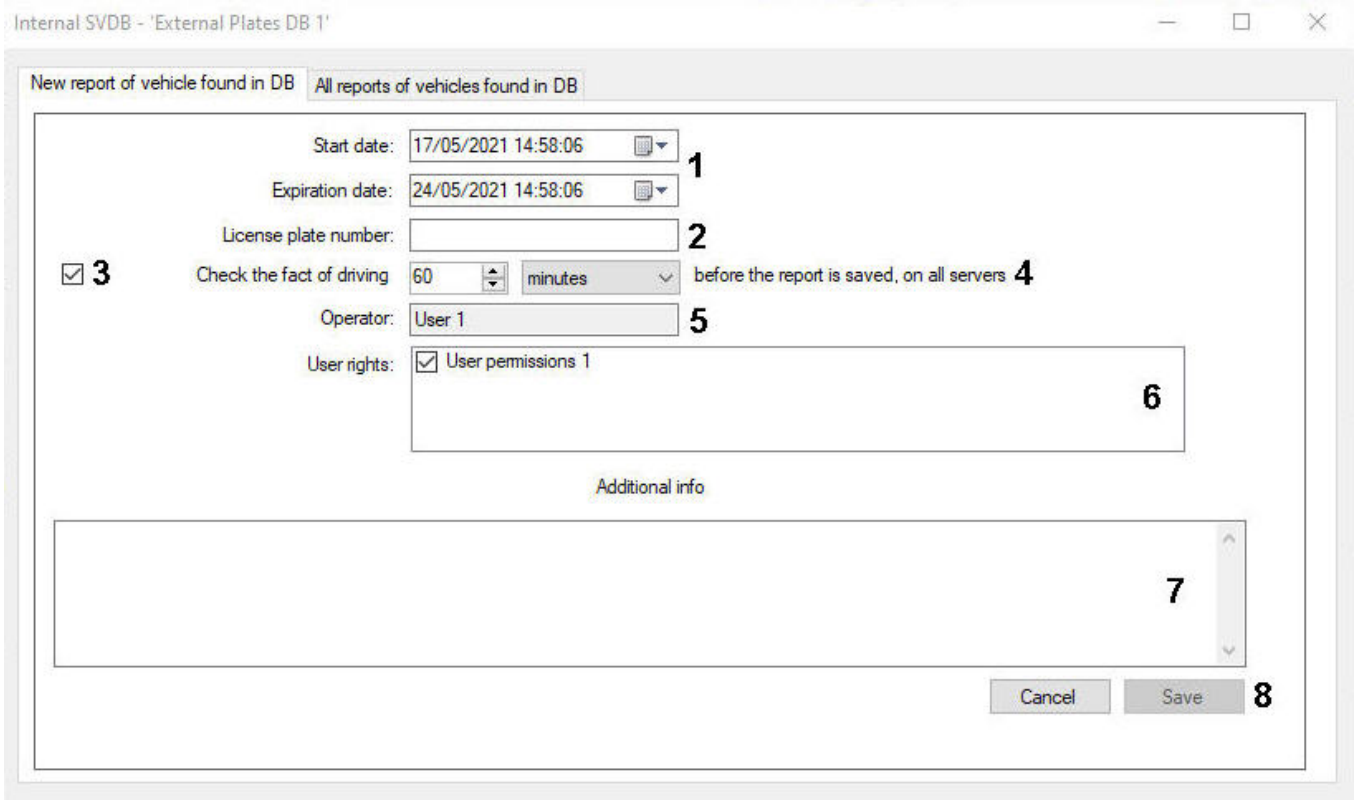
1. Click the **External Plates DB** in the main menu of the **Event search in the Recognizers DBs** window.



2. As a result the **Internal SVDBs** dialog window will open.



3. Click **Enter** to add records to the database.
4. Indicate the start and expiration date of the suspect vehicle profile (**1**). All alarm events about the number being in the corresponding external LP database will be guaranteed to be stored until the expiration of the suspect vehicle profile, despite the periodic procedure for clearing the archive of events (see Configuring the database records retention period).



5. In the **License plate number** field (**2**) specify the vehicle number. To enter a two-line number, use two underscore characters "__" as a line separator, for example: **123ABC__TH777**.
6. If it is necessary to check the fact of vehicle driving to the vehicle report by all boundaries, do the following:

- Set the **Check the fact of driving** checkbox (**3**).
- Enter the time period for which it is required to check the fact of vehicle driving to the vehicle report by all boundaries (**4**).

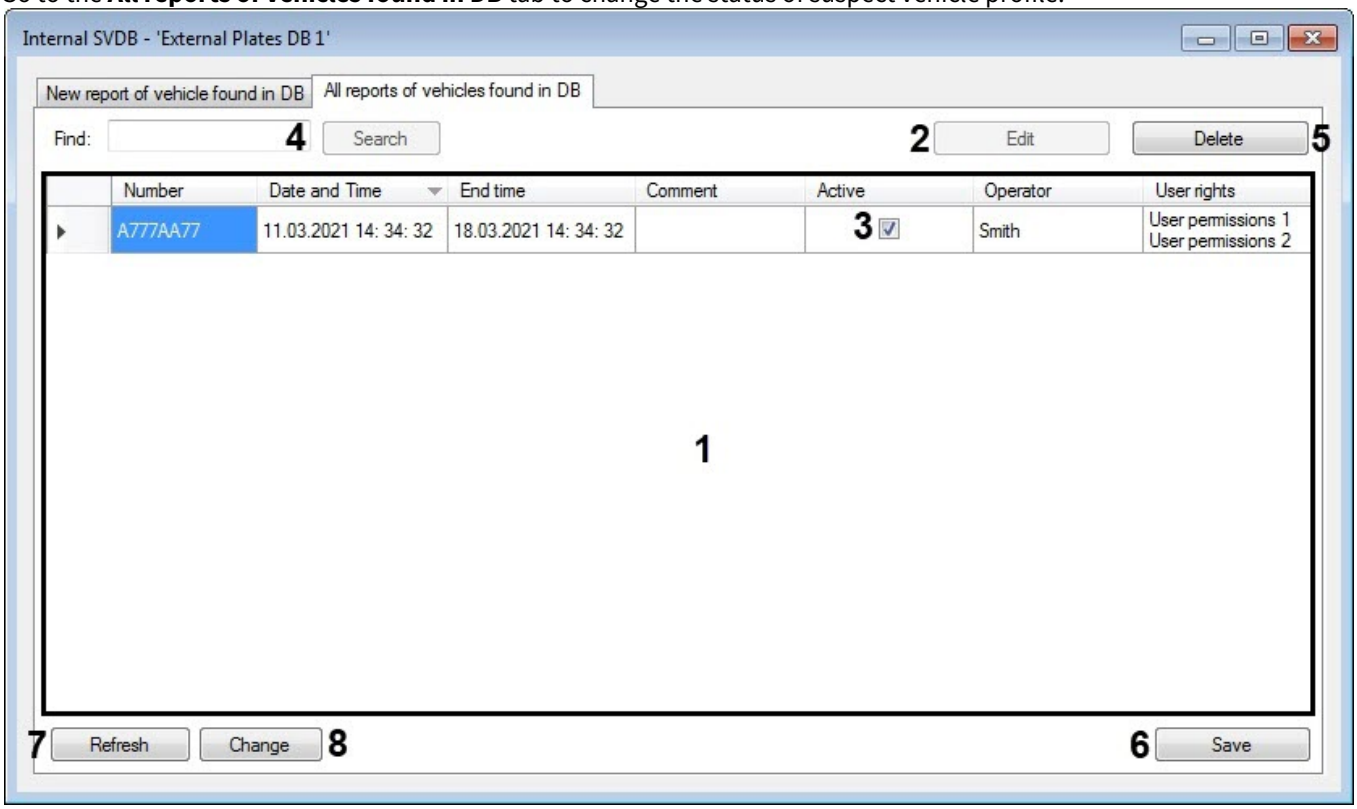
7. The **Operator** field (**5**) indicates the current operator creating the suspect vehicle profile.
8. In the **User rights** list (**6**), set the check boxes for those *Intellect* user rights that should receive an alarm event when the LP number is found in the database. In order for only the current operator to receive an alarm event, it is necessary to uncheck all the boxes in the **User rights** list.

> **Note**
>
> To receive alarm events, it is necessary that the selected user has full access to the **External plates DB** object, to which the suspect vehicle profile is entered. If any restrictions are set in the user rights for the **External plates DB** object, then users with such rights will not receive alarm events.

9. If necessary, in the **Additional information** field (**7**) enter a description of the reason for creating the suspect vehicle profile.
10. Click **Save** to save changes (**8**).

> **Note.**
>
> The suspect vehicle profiles added to the database receive the **Active** status.

11. Go to the **All reports of vehicles found in DB** tab to change the status of suspect vehicle profile.



12. The table displays a list of all suspect vehicle profiles in the database that the current operator has access to (**1**):
    - In the **Number** column, the LPs on the wanted list are displayed.
    - In the **Date and Time** column, the time of adding the vehicle report to the database is displayed.
    - In the **End time** column, the expiration time of the suspect vehicle profile is displayed.
    - In the **Comment** column, the reason by which the vehicle report is created is displayed.
    - In the **Active** column, the checkboxes are set for the active vehicle reports.
    - In the **Operator** column, the operator who added the vehicle report to the database is displayed.
    - In the **User rights** column, the rights of users who will receive an alarm event about finding a number in the database is displayed.

> **Note**
>
> You can sort the suspect vehicle profiles by clicking on the name of the corresponding column.

13. The **Date and Time**, **End time** and **Comment** columns can be edited. To do this, select the corresponding value in the column, then double-click on this value or click on the **Edit** button (**2**).

> **Note**
>
> The columns **Number**, **Operator** and **User rights** are not editable.

14. To change the suspect vehicle profile status, in the **Active** column (**3**), set the check boxes for the suspect vehicle profiles that are active, or uncheck the boxes for those suspect vehicle profiles that are inactive.
15. To search for the vehicle in the table, enter the search request in the **Find** field (**4**) and click the **Search** button. A list of vehicles matching the search request will be displayed.

> **Note**
>
> The data is searched in the following fields: Number, Date and Time, Operator, Comment.

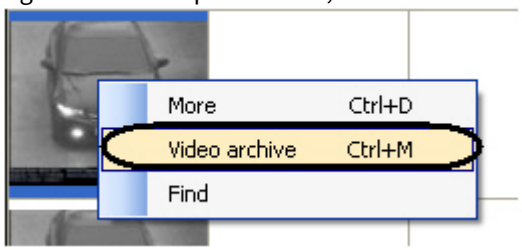
16. To remove the selected suspect vehicle profile, click **Delete** (**5**).
17. To save the changes, click **Save** (**6**).
18. To update the list of suspect vehicle profiles, click **Refresh** (**7**).
19. To save all suspect vehicle profiles to a CSV file, click **Change** (**8**) and select the **Save to CSV** item.
20. To load previously saved suspect vehicle profiles from a CSV file, click **Change** (**8**) and select the **Import from CSV** item.

Adding the vehicle data to the **External Plates DB** is completed.

3.3.12.7 Viewing the video archive by event

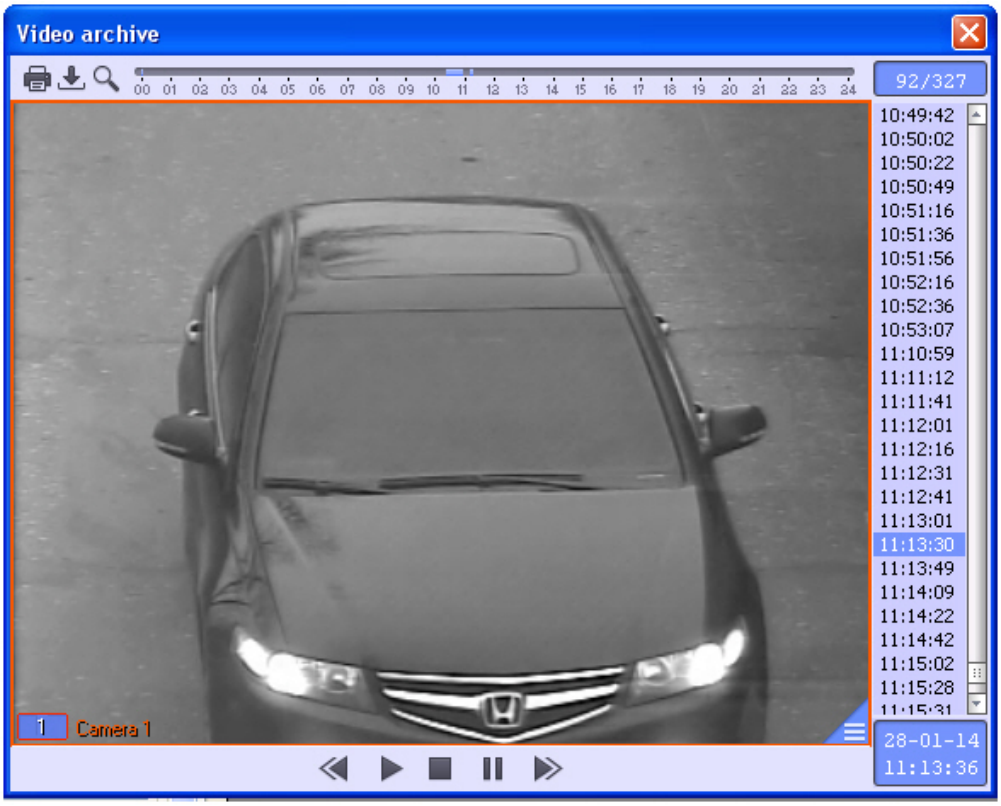
Viewing the video archive by event can be initiated in three ways:

1. Right-click the required event, and in the contextual menu select the **Video archive** option.



2. Left-click the required event, and on the keyboard push the **Ctrl + M** keys combination.
3. Holding the **Shift** key, double left-click the required event.

As a result, the video archive with videos of the event will open.



To close the video archive, click the  button in the right upper corner of the window.

Viewing the video archive by event is completed.

4 Description of the Auto-Intellect user interface

4.1 The Traffic Monitor interface object

4.1.1 Table panel of the Current value tab

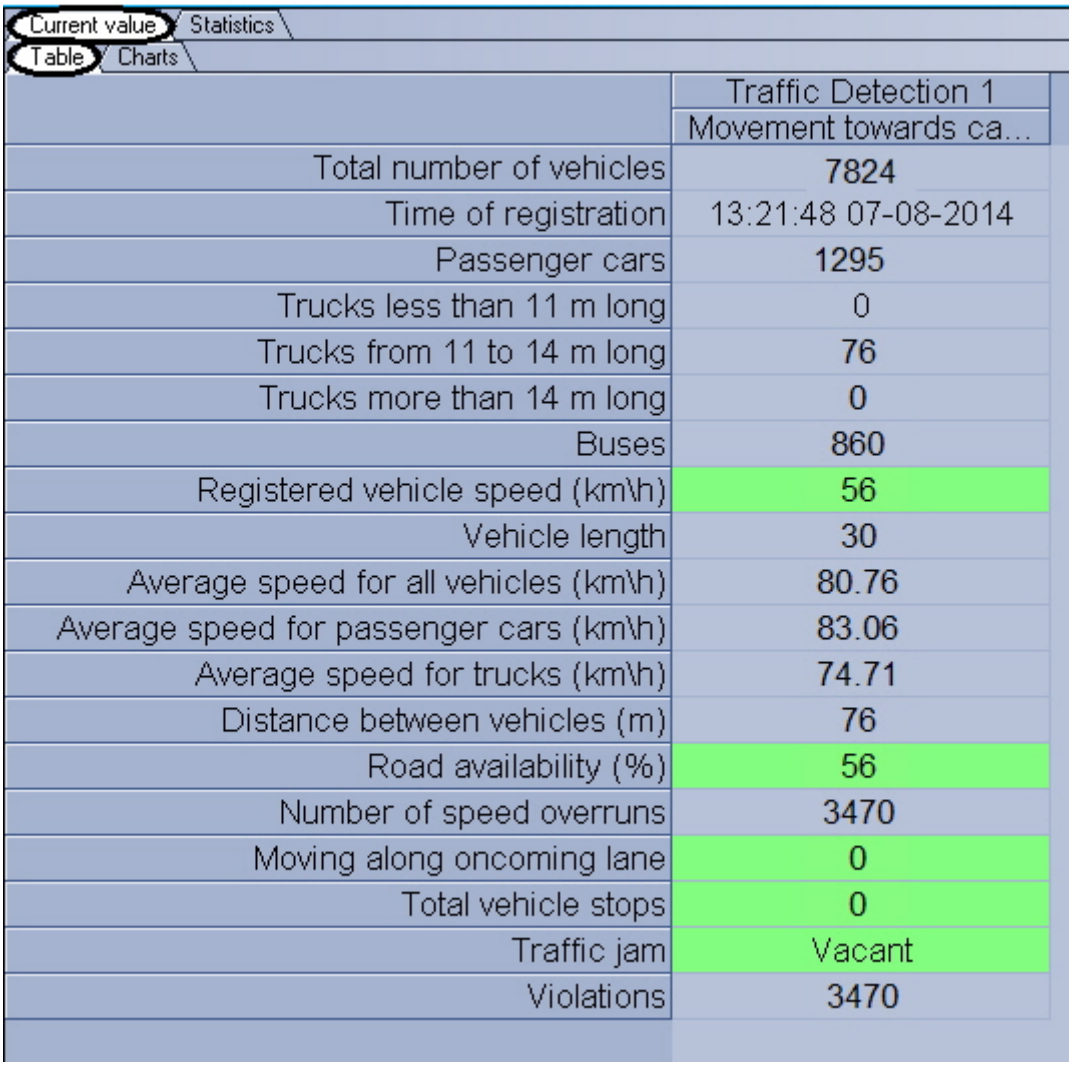
The following figures show the **Table** sub-tab of the **Current value** tab displayed by lane and by direction respectively (depending on the system setup).

Dispalying by lanes:

Current value | Statistics
Table | Charts

	Traffic Detection 1			
	1	2	3	4
Total number of vehicles	2124	2736	1501	1260
Time of registration	8:46 04-02-2	8:49 04-02-2	8:49 04-02-2	8:48 04-02-2
Passenger cars	2119	2521	880	3
Trucks less than 11 m long	5	210	419	625
Trucks from 11 to 14 m long	6	20	3	22
Trucks more than 14 m long	0	0	0	0
Buses	0	5	202	632
Registered vehicle speed (km\h)	191	43	34	88
Vehicle length	6	20	3	22
Average speed for all vehicles (km\h)	180.75	16.20	38.09	102.26
Average speed for passenger cars (km\h)	180.82	15.99	39.30	30.33
Average speed for trucks (km\h)	150.00	18.65	36.37	102.44
Distance between vehicles (m)	94	22	30	137
Road availability (%)	5	20	10	10
Number of speed overruns	2114	22	171	1063
Moving along oncoming lane	0	0	0	0
Total vehicle stops	0	0	0	0
Traffic jam	Vacant	Vacant	Vacant	Vacant
Violations	2114	22	171	1063

Displaying by direction:



The following table describes the elements of the **Table** panel.

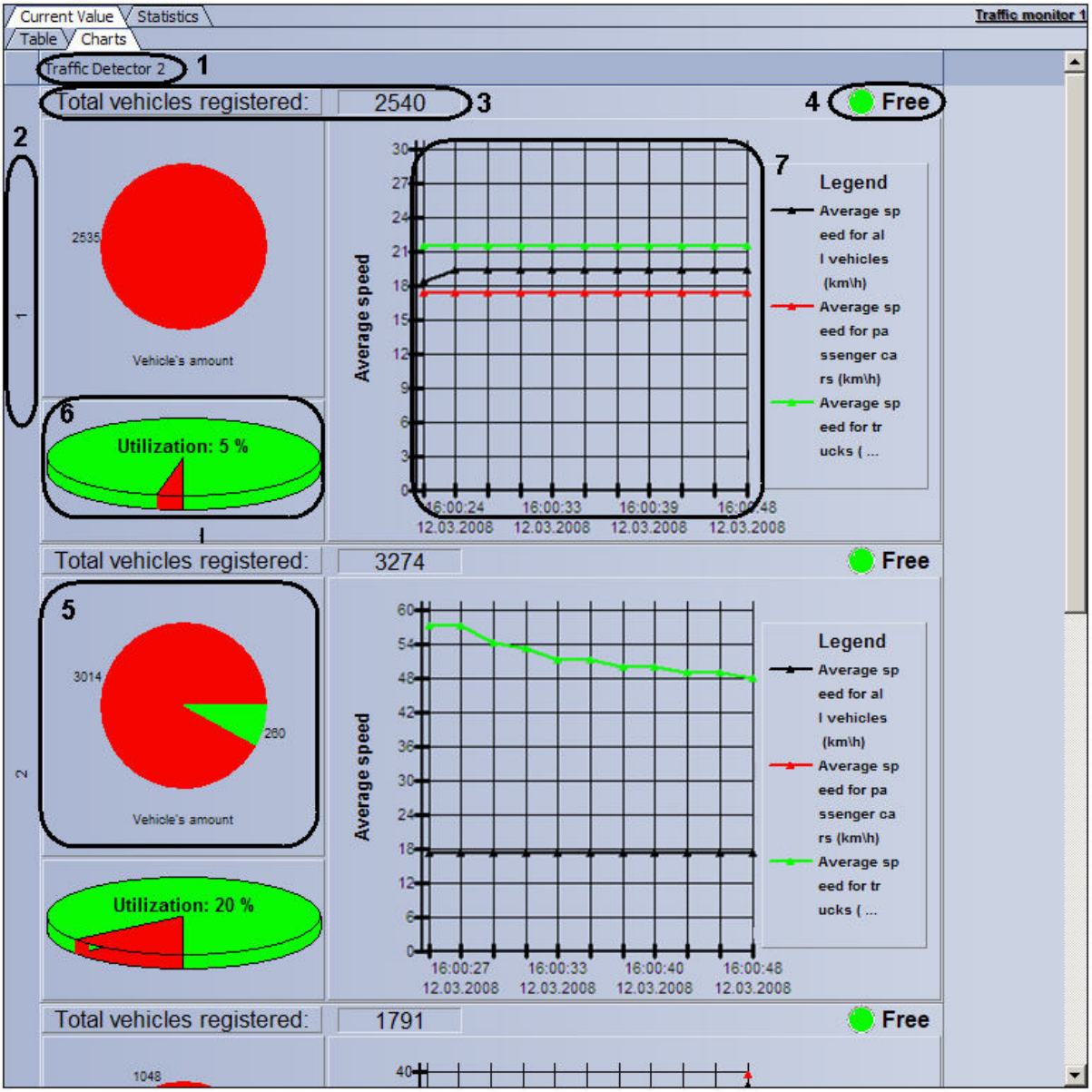
Field name	Description
Time of registration	The time when the last vehicle passed
Total number of vehicles	Total number of registered vehicles of all types
Passenger cars	The number of registered passenger cars
Trucks less than 11 m long	The number of registered trucks less than 11 m long
Trucks from 11 to 14 m long	The number of registered trucks from 11 to 14 m long
Trucks more than 14 m long	The number of registered trucks more than 14 m long
Buses	The number of registered buses
Registered speed of the vehicle	The speed of the last registered vehicle, km/h
Vehicle length	Total length of the registered vehicle, m

Field name	Description
Average speed for all vehicles	Average speed for all registered vehicles, km/h
Average speed for passenger cars	Average speed for passenger car vehicles, km/h
Average speed for trucks	Average speed for registered trucks, km/h
Distance between vehicles	The distance between the last vehicle and the previous one, m
Road load	Average road load, %
Number of speed overruns	The number of speeding violations
Moving along the oncoming lane	The number of moving along the oncoming lane events
Number of vehicle stops	The number of vehicles stopped in the lane
Jam	Traffic jam indicator
Number of incidents	Total number of road rules violations for the lane (direction)

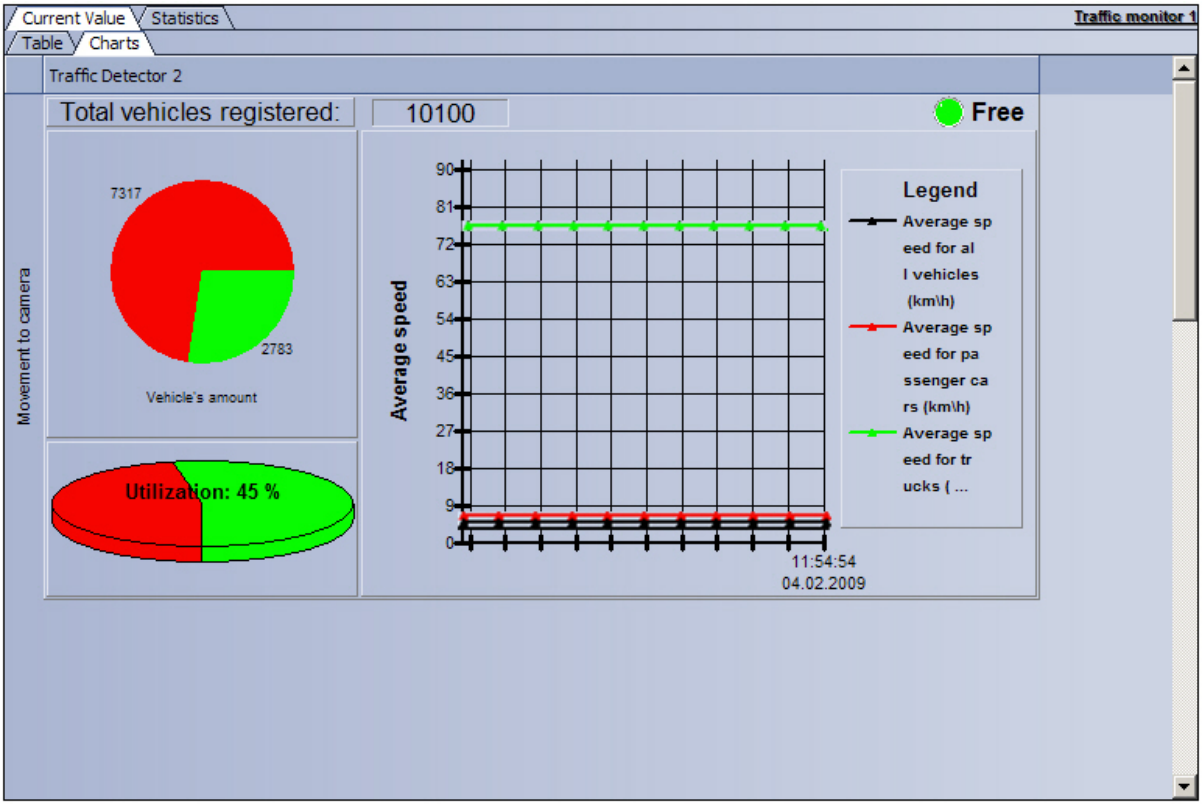
4.1.2 Charts panel of the Current value tab

The following figured show the **Charts** panel of the **Current value** tab displayed by lane and by direction, respectively (depending on the system setup).

Displaying by lanes:



Displaying by direction:

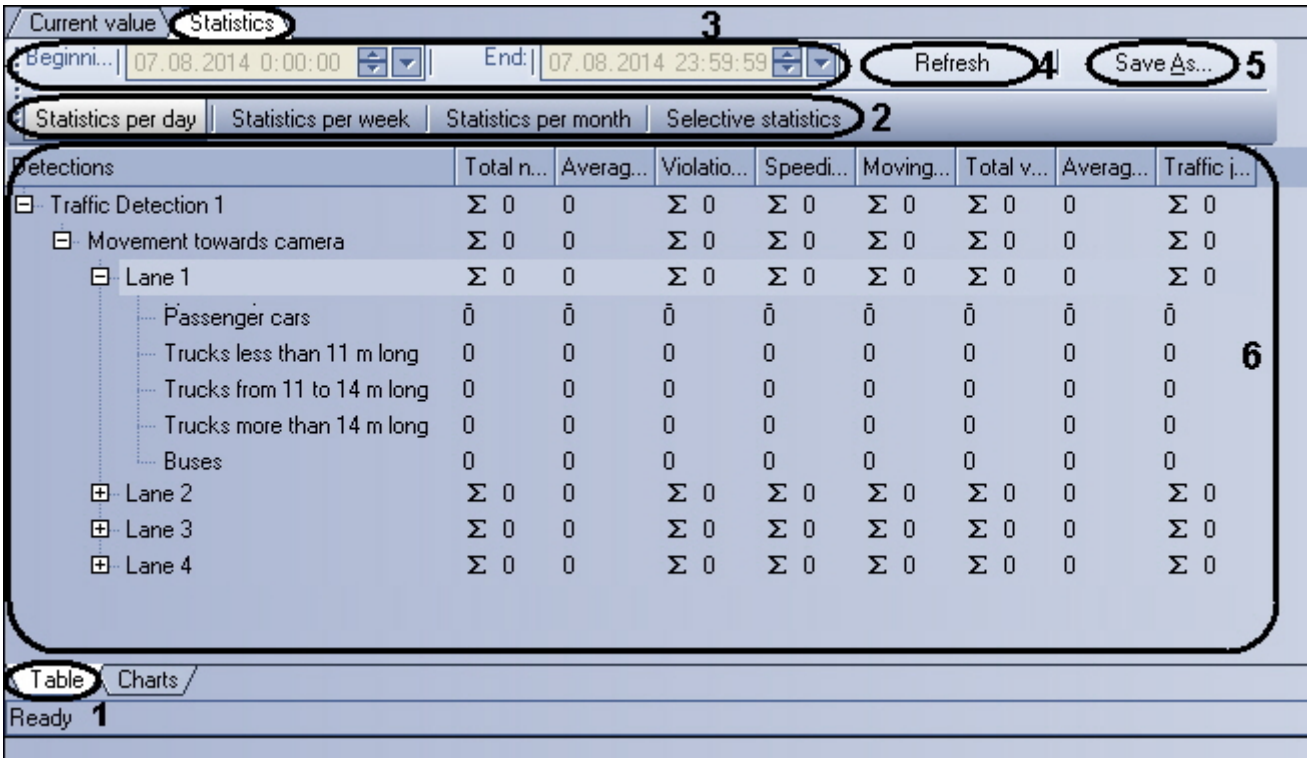


The following table describes the elements of the **Charts** panel.

Number of element	Description
1	The Traffic Detection object name
2	The lane number or direction
3	Total number of vehicles registered for the lane (direction)
4	Indication of a traffic jam in the lane (direction)
5	Chart showing the number of vehicles in the lane (direction)
6	Chart showing the road load of the lane (direction), %
7	Chart showing the statistics for the average speed of different vehicles types

4.1.3 Table panel of the Statistics tab

The following figure shows the **Table** sub-tab of the **Statistics** tab.

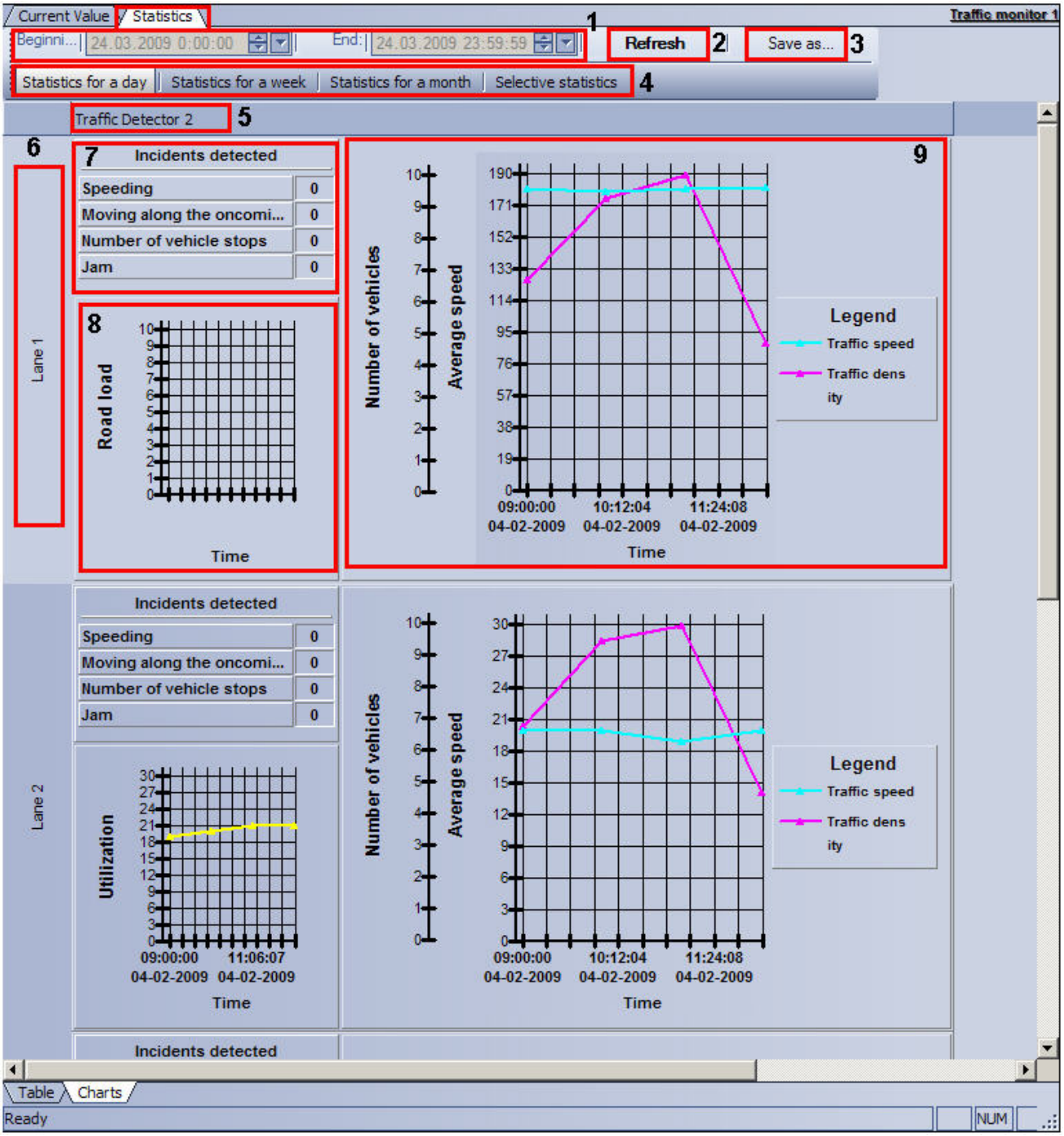


The following table describes the elements of the **Table** sub-tab.

Number of element	Description
2	Set of elements for selecting the statistic frequency
3	Set of elements for entering the beginning and end dates and times of the traffic statistics period
4	The **Refresh** button refreshes the displayed statistics.
5	The **Save as** button exports the displayed statistics to a file
6	Traffic statistics results

4.1.4 Charts panel of the Statistics tab

The following figure shows the **Charts** panel of the **Statistics** tab.



The following table describes the elements of the **Charts** panel.

Number of elements	Description
1	Set of elements for entering the beginning and end dates and times of the traffic statistics period
2	The **Refresh** button refreshes the displayed statistics.
3	The **Save as** button exports the displayed statistics to a file
4	Set of elements for selecting the statistic frequency

Number of elements	Description
5	The Traffic Detection object name
6	The lane number
7	Incident statistics for the lane
8	The road load chart
9	Chart showing the number of vehicles in the lane

4.2 The Vehicle Tracer interface description

4.2.1 The Events monitor

The **Events monitor** contains the following interface elements.

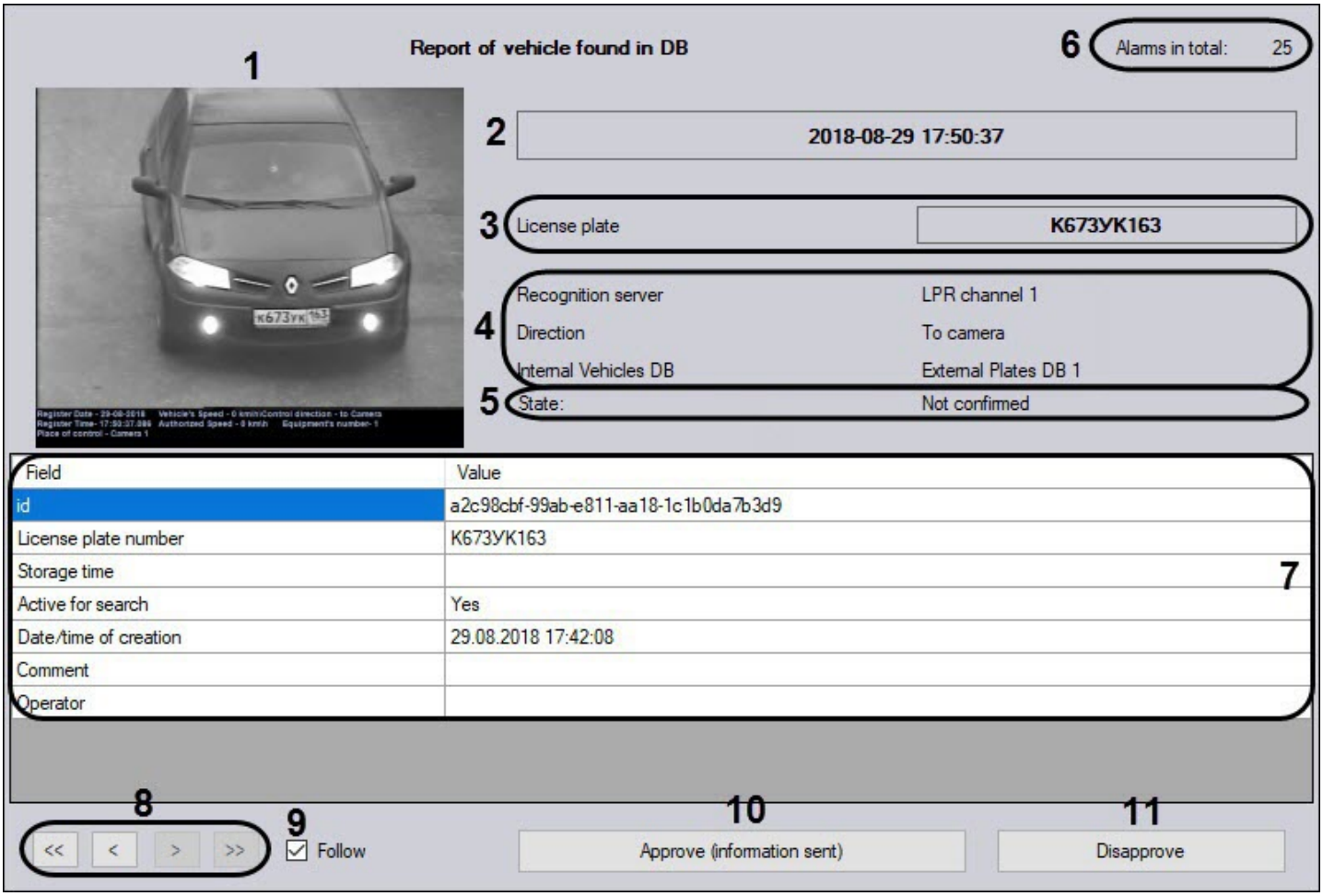
The **Events monitor** interface description is presented in the table:

Element number	Description
1	The passing vehicle LP detector
2	The frame with a passing vehicle and a caption

Element number	Description
3	The identified LP number and the LP image

4.2.2 The Alarm window

The **Alarm window** contains the following interface elements.



The Alarm window interface description is presented in the following table.

Number of element	Description
1	The signed video frame with moving vehicle
2	Date and time when the alarm event was recorded
3	Vehicle license plate number
4	Data about the tools that recorded the event *Note. The field with the name of the external database is hidden if the the alarm event was triggered manually.*

Number of element	Description
5	Current state of the alarm event There can be the following states of the alarm event: • **Not confirmed** - a new event that has not yet been confirmed. • **Processing...** - an alarm event is confirmed, but the information has not yet been recorded to the database. • **Confirmed** - the alarm is confirmed and recorded to the database (you may not notice this state since the event is deleted from the Alarm window after a successful confirmation). • **Error** - the confirmation is not recorded to the database due to the heavy load on the Server. It is necessary to confirm the event again.
6	Number of unprocessed alarm events
7	Description from the stolen vehicles database *Note. The table with the description from the stolen vehicles database is hidden if the the alarm event was triggered manually.*
8	Go to the first alarm event in the list; go to the previous alarm event; go to the next alarm event; go to the last alarm event in the list
9	If the checkbox is set it disappears from all alarm windows in distributed environment when the alarm is confirmed, when the alarm is not confirmed – only from the current alarm window. If the checkbox is not set the alarm disappeared only from the current alarm window both when the alarm confirmed or not.
10	Confirm the event alarm status. The alarm is marked as received when click this button. The dialog box with the offer to print the alarm event card will display.
11	Close the alarm window. The alarm status is not changed when click this button (alarm is not processed). Alarm will disappear from the **Alarm window**.

4.2.3 The Online monitor

The **Online monitor** component contains the following interface elements.

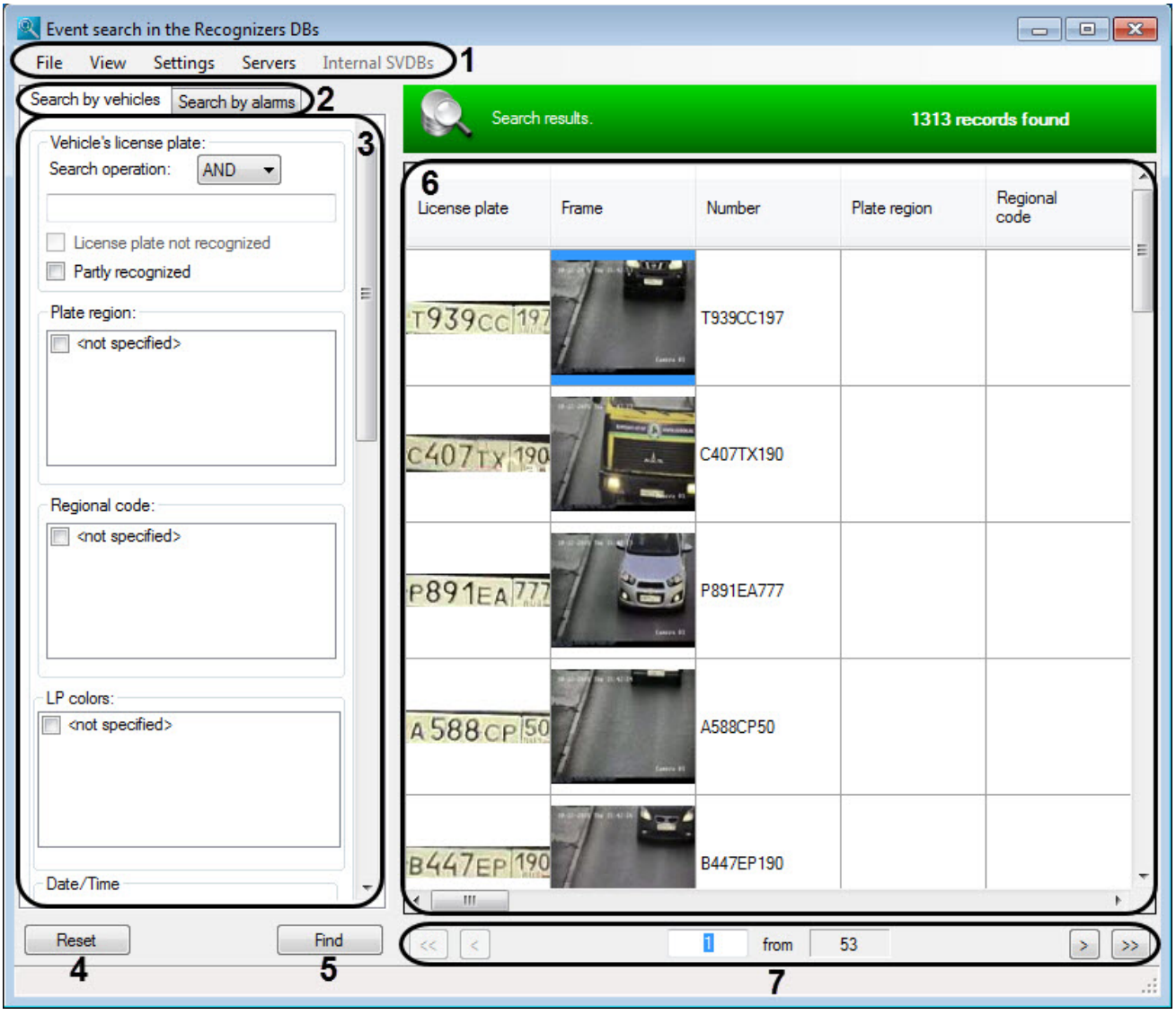
The **Online monitor** interface description is presented in the following table.

Element number	Description
1	Data about the last passed vehicle or event, selected in the identified vehicles protocol or in the alarms protocol
2	Go to the **Events** tab of the identified vehicles protocol.
3	In case of the alarm event, go to the **Alarms protocol** tab. This tab displays the video frame and the LP of the most recent alarm.
4	Hide the processed events in the protocols.
5	Enable/disable the pre-configured filters.
6	Resume the online update of the displayed vehicle protocol.
7	Alarm triggering by the operator.
8	Alarm acceptance.
9	Go to the list of errors occurred in the **Vehicle Tracer** module.
10	Displaying the information from the external database.
11	Data about the identified objects protocol or the alarms protocol (depends on the activated tabs - **Events** tab or **Alarms protocol** tab).

Element number	Description
12	Hide/show the panel with comments and external database.
13	Comments to the selected event.
14	Create the report with data about the selected event.
15	Open the window for search in the plates recognizer databases.
16	Go to the video archive of identified vehicles.
17	Go to the filter settings, used in protocols.
18	Comments to the selected event with specified date and time of the comment creation.

4.2.4 The Events search in recognizers databases

The **Events search in the recognizers DBs** dialog window contains the following interface elements.

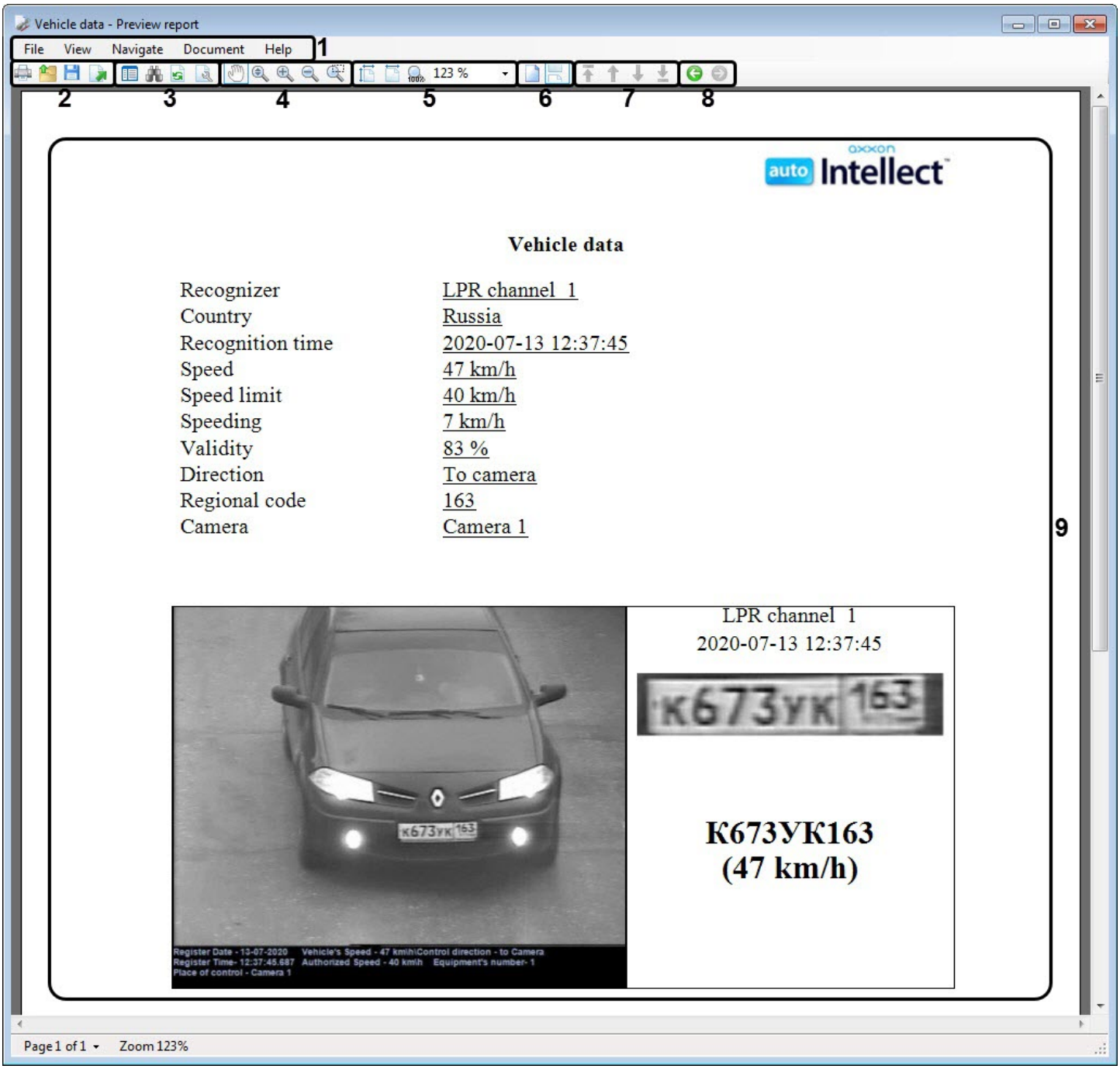


The **Events search in the recognizers DBs** interface description is presented in the following table.

Element number	Description
1	The main menu that enables to do the following operations: 1. **File** command: a. Printing the events search results; b. Closing the **Events search in the recognizers DBs** window. 2. **View** command: a. Configuring the display of remote servers and databases; 3. **Settings** command: a. Configuring the display of events search results; b. Connecting the recognizers databases. 4. **Servers** command: a. Selecting the databases for searching the events. 5. **Internal SVDBs** command: a. Editing the user Active tracking database.
2	Selecting the serch type: by vehicles or by alarms.
3	Forming the search query of the selected search type.
4	Clearing the search form from the given search criteria.
5	Launching the search query processing.
6	Events search results table.
7	Navigation panel of the events search results.

4.2.5 The preview report

The preview report program window contains the following interface elements.



The preview report interface description is presented in the following table.

Element number	Description
1	Main menu for viewing the reports (operations with a file, operations of previewing and navigating the report, operation with a report, viewing the information about program).
2	Group of elements for operations with a report file (printing, opening, saving, exporting).
3	Group of elements for operations with a report (displaying, content, search, update, edit).
4	Selecting the scaling mode and the scale of displaying the report.

Element number	Description
5	Zooming the report.
6	Selecting the mode of displaying the report (page-by-page, nonstop page-by-page).
7	Group of elements for navigation in the report.
8	Undo or redo the last action.
9	Field for displaying the formed report.