



TRAFFIC **SCANNER**

User manual

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Introduction

Traffic Scanner is a software produced by Infoproget Srl that deals with reading and recognition of vehicle license plates.

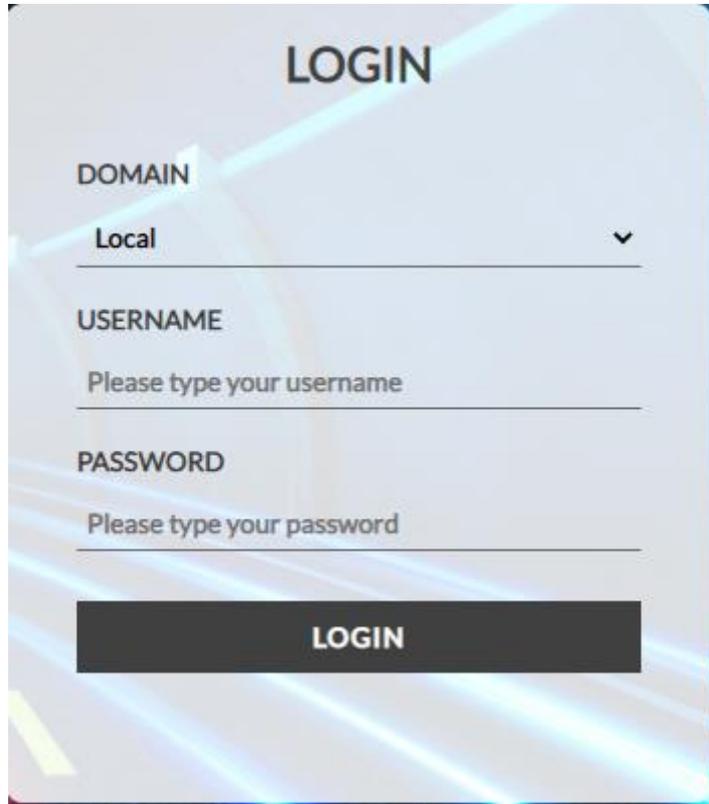
Traffic Scanner allows the notification of alarms and the use of reporting lists. It allows access to external databases for real-time checking of license plate status

It provides statistical data analysis of the vehicles transporting dangerous goods, traffic distribution, temporal analysis, territorial analysis for the origin/destination of the traffic and identification by vehicle categories.

This manual is intended to be a detailed guide on the main operations carried out during the daily use of the software and is therefore reserved for operating personnel.

Login

First of all, access the Traffic Scanner system via the http://IP_address of the server



LOGIN

DOMAIN

Local

USERNAME

Please type your username

PASSWORD

Please type your password

LOGIN

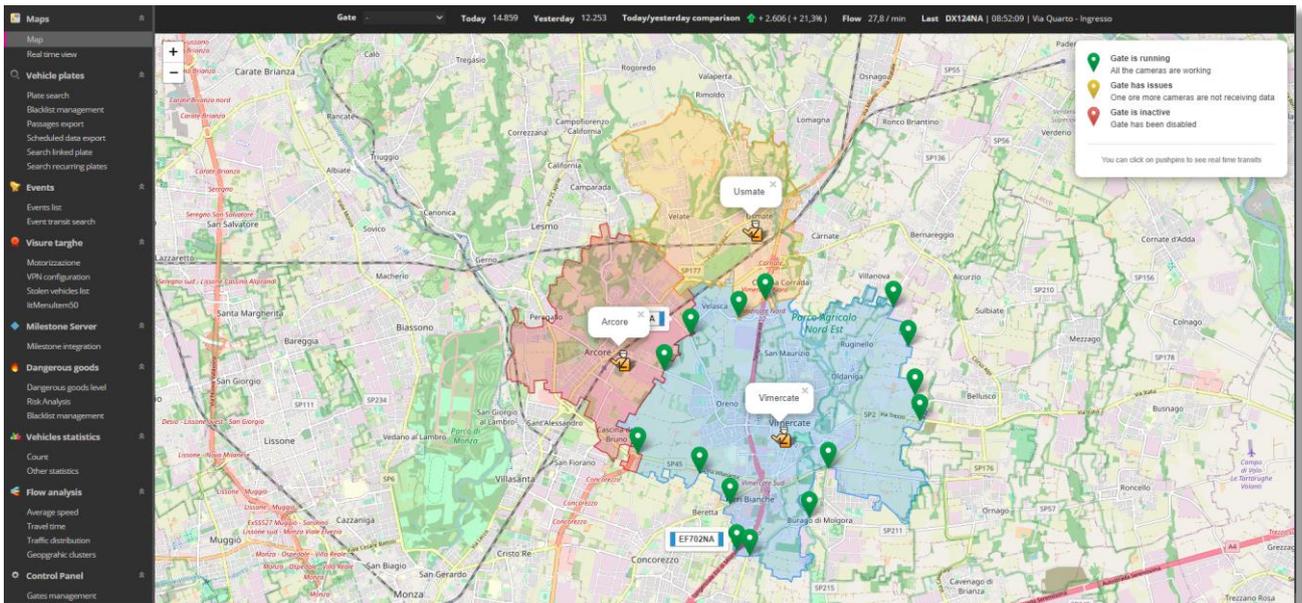
Enter your login credentials to log in to the system.

Map

The first screen displayed is the Map of the area where the license plate reading cameras have been installed.

On the left side of the screen is the menu with the purchased Traffic Scanner features.

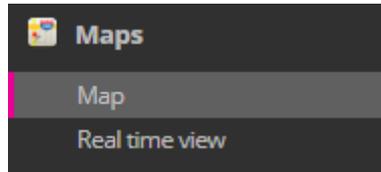
This list may change based on the viewing permissions of the connected user and the modules installed on the system.



Below is the analysis of all the main menus that the operator can have access to in Traffic Scanner

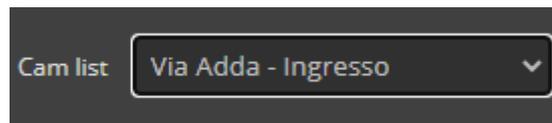
Real Time View

Using the *Real-time view* menu, it is possible to monitor the images for each passage at the same time as they are received by the server.



On the screen you have two choices:

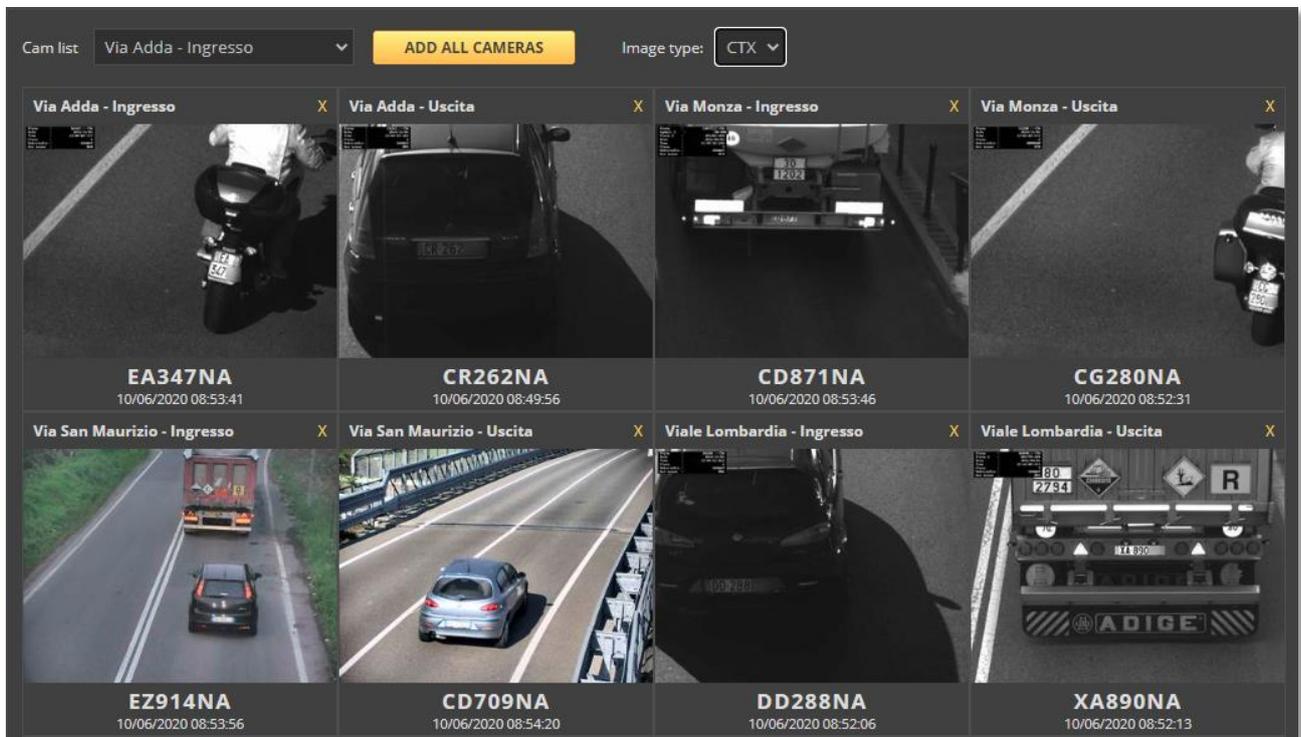
The Cam List (The default is all gates)



And the type of image. The choice is between IR (infrared, night vision) or CTX (color context)



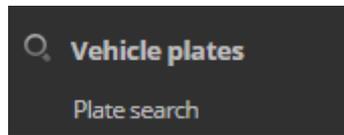
The image of the passages will appear on the screen with the name of the gate at the top, in the part below appears the License plate image/no., the date and the time of the passage.



Also in the *License Plate Search* menu it is possible to access the real-time display as we will see in the following paragraph.

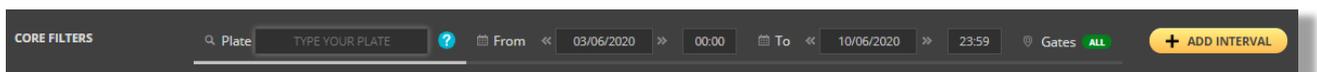
License Plate Search

Using the *License Plate Search* item in the *Vehicle Plates* menu it is possible to search for all the transits coming from the different gates. It is possible to change the display type, filter the results and check the details by single transit and by single plate.



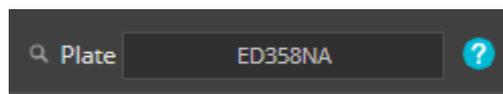
Core Filters

Starting from the upper part of the screen you can search by single plate, set a time filter and select which Gates to include in the searching process.



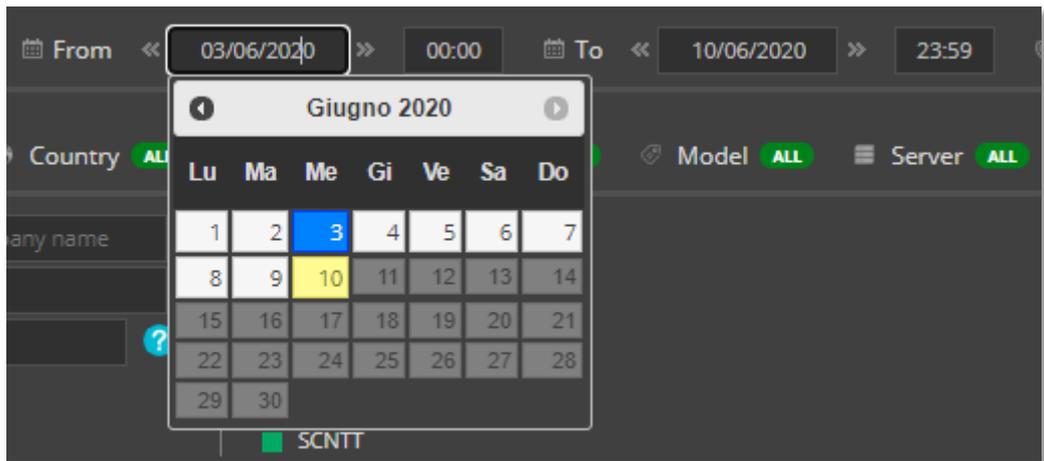
License Plate number

In this section is possible to insert a complete license plate no. or part of it or use wildcards if the complete plate number is not known. For the options allowed click on the question mark next to the plate insertion field

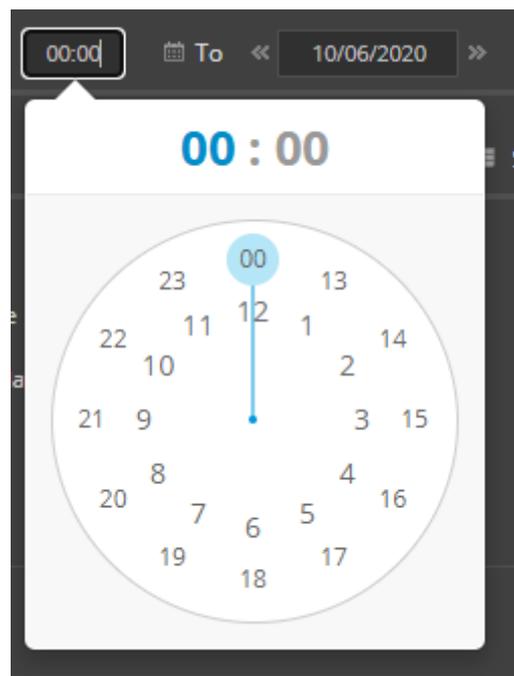


Time interval

For the time interval filter click on the From -> To fields and select the days from the calendar

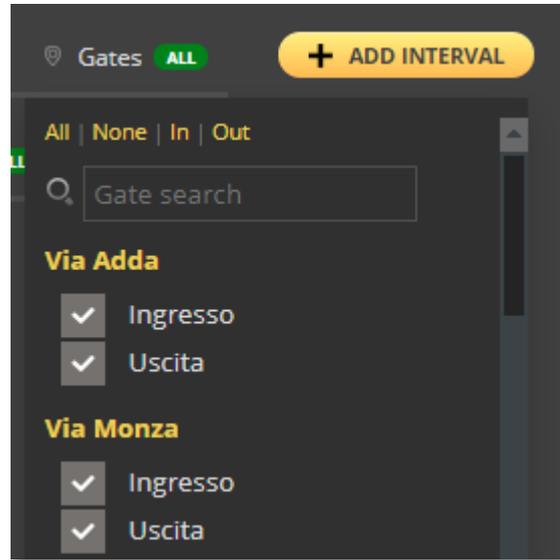


If you also want to insert a Time filter, click on the time field and choose it from the appearing clock



Gate selection

To select one or more gates, move the mouse over the word *Gates* to bring up the selection screen: you can select one or more gates. Leaving the default setting all gates are selected



Click on the button to confirm the just inserted filter

Intervals

An important novelty of the new search screen is the ability to insert multiple time interval filters that will be applied simultaneously during the searching process.

In this section you see a summary of the filter just chosen from the *Main Filters* section:

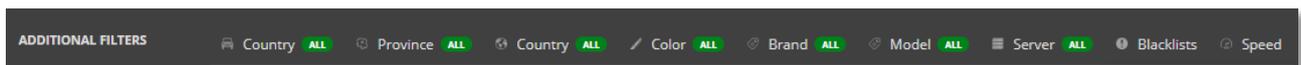
Intervals	Plate	From	To	Gates	Remove all
	ED358NA	03/06/20 00:00:00	10/06/20 23:59:00	All	Remove

In the following example there are two distinct filters for searching all the license plates that begins with the letters “ED” on february 20th and 22th on all the gates:

Intervals	Plate	From	To	Gates	Remove all
	ED358NA	03/06/20 00:00:00	10/06/20 23:59:00	All	Remove
	ED358NA	09/06/20 00:00:00	10/06/20 23:59:00	All	Remove

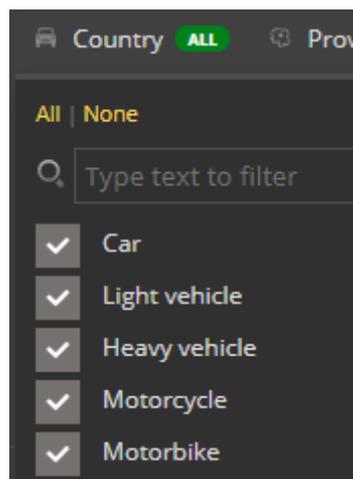
Additional filters

You can insert additional filters to improve your search through the Secondary Filters section.

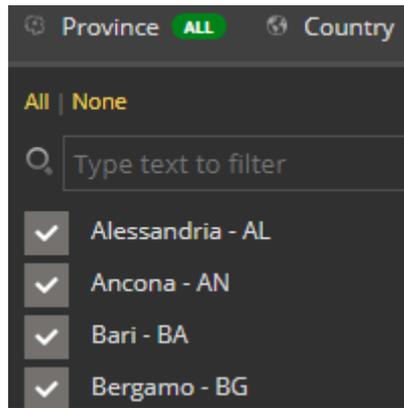


In particular you can select:

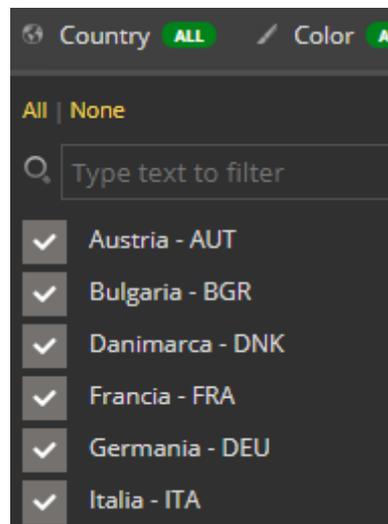
- The vehicle class



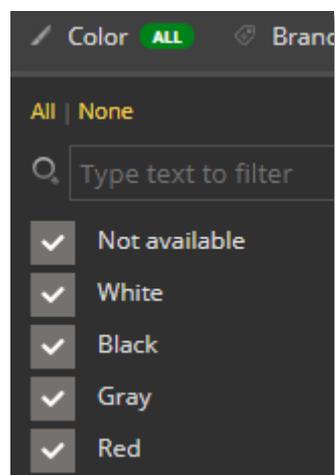
- The Registration Province



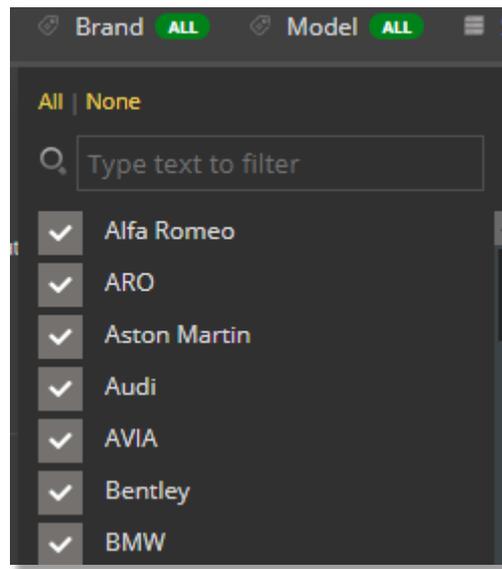
- The registration Country



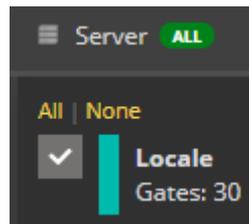
- The color



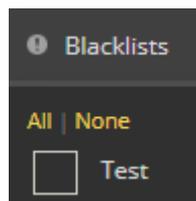
- The Manufacturer



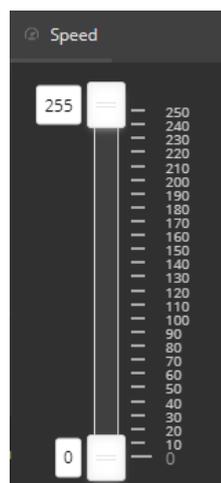
- Other Traffic Scanner servers federated with your own one



- Only the plate no. contained in one or more blacklist



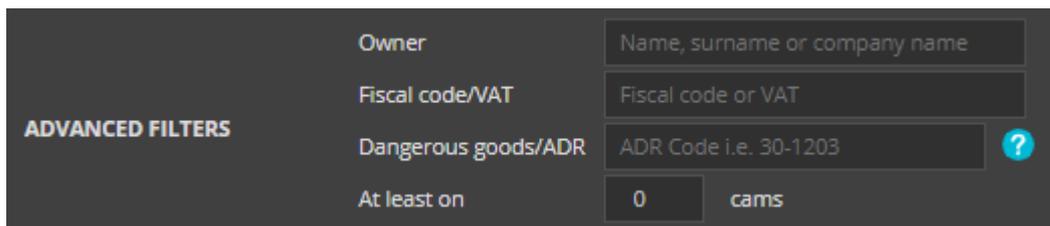
- A speed range interval



Advanced filters

It is possible to filter the transits also using:

- The registered owner of the vehicle (feature available only in Italy)
- Type of dangerous goods transported
- List the vehicles that have made at least a certain number of passages on the same couple of gates.



ADVANCED FILTERS	Owner	<input type="text" value="Name, surname or company name"/>
	Fiscal code/VAT	<input type="text" value="Fiscal code or VAT"/>
	Dangerous goods/ADR	<input type="text" value="ADR Code i.e. 30-1203"/> ?
	At least on	<input type="text" value="0"/> <input type="text" value="cams"/>

Search

Once all the choices have been made to set up the search, we have the following buttons available:

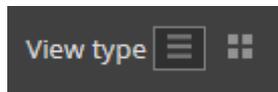


Through the Search button you will start the search procedure which will follow the filters set previously.

Through the Reset Filters button you'll reset all the choices previously made in order to insert new filters.

View Type

Below the search filters you have the opportunity to choose two different display modes

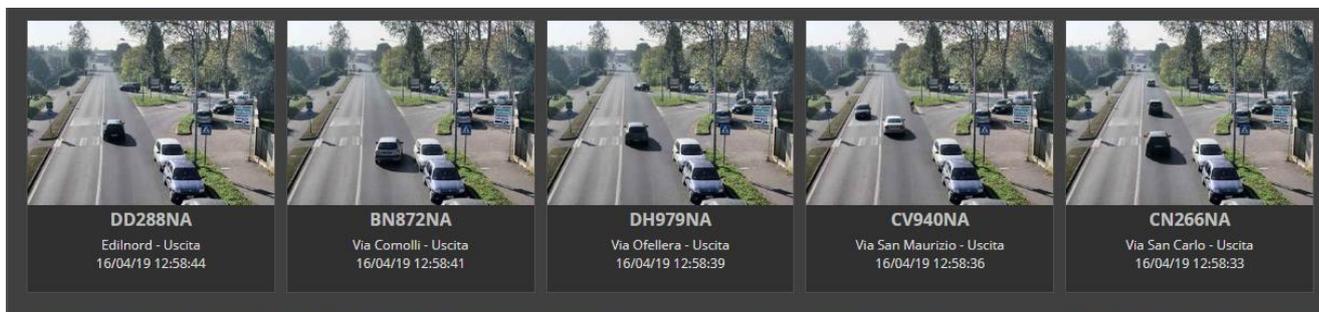


The sorting mode allows you to see all the transit details on a single row

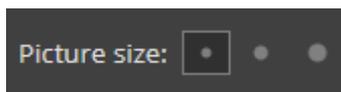
Plate	Plate image	Date and time	Gate	Anomalie	Vehicle type	Euro class	Reg. year	Province	Country	ADR	Speed	Color	Brand and model	Owner details	Details
DD288NA		10/06/20 08:55:54	Viale Lombardia Uscita		Car	4	2006	VT	ITA		35	Black	Alfa Romeo 147	Over The Lux S.r.l. P.IVA 00314257943	
CD871NA		10/06/20 08:55:53	Via Ofellera Uscita		Truck	3	2002	RM	ITA	4	84	Red		Hair Gallery Store S.r.l. P.IVA 00364952439	
CR262NA		10/06/20 08:55:50	Via Comolli Ingresso		Car	3	2004	TO	ITA		85	Black	Citroen C3	Upgrade S.r.l. P.IVA 00572391825	
DP762NA		10/06/20 08:55:47	Via Occhiate Ingresso		Truck	4	2008	VA	ITA	4	35	Red		Antonio Gatti C.F. JA1TP54-0360758	



Or the Preview mode which will display fewer details giving priority to the vehicle images:



Choosing this second mode will also enable a Picture size menu through which you can vary the size of the images shown, according to the screen resolution



On the right side of the screen you can choose how many results should be displayed on a single page

Results per page 250 500

To complete the Display menu, you can activate or deactivate the Real Time mode which allows you to see the transits as they are received by the cameras.

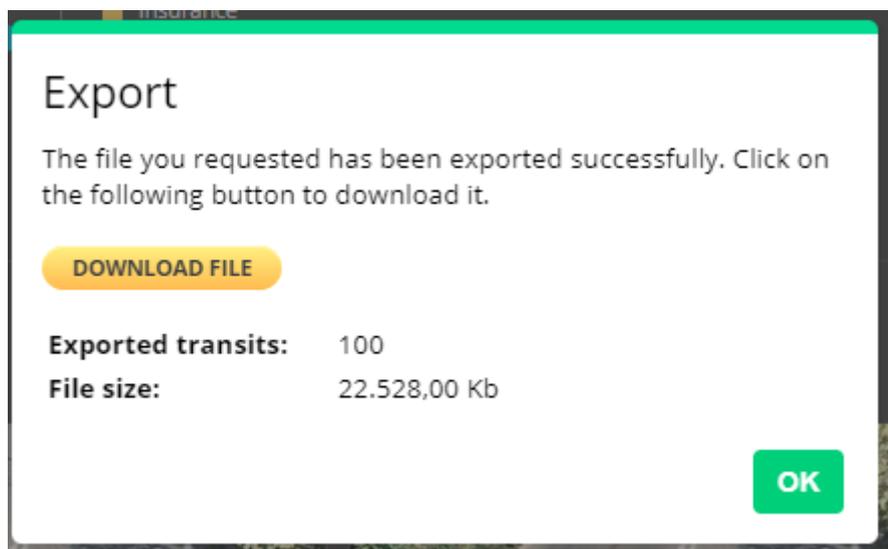
Real time

Export

In this section has also been added the possibility to export the results of the search carried out via the button to a ZIP file

 ZIP Export

By clicking on the link the file will be generated (the timing depends on the amount of data searched) and at the end the following screen will appear:



By clicking on *Download File* it will be possible to download the research just carried out. The screen also shows the number of transits and the size of the file.

Search results

Once the filters and the type of visualization have been chosen, the search results will appear:

Plate	Plate image	Date and time	Gate	Anomalie	Vehicle type	Euro class	Reg. year	Province	Country	ADR	Speed	Color	Brand and model	Owner details	Details
DD288NA		10/06/20 08:55:54	Viale Lombardia Uscla		Car	4	2006	VT	ITA		35	Black	Alfa Romeo 147	Over The Lux S.r.l. P.IVA 00314257943	
CD871NA		10/06/20 08:55:53	Via Ofellera Uscla		Car	3	2002	RM	ITA	84	35	Black		Hair Gallery Store S.r.l. P.IVA 00364952439	
CR262NA		10/06/20 08:55:50	Via Comolli Ingresso		Car	3	2004	TO	ITA	85	35	Black	Citroen C3	Upgrade S.r.l. P.IVA 00572391825	
DP762NA		10/06/20 08:55:47	Via Occhiate Ingresso		Car	4	2008	VA	ITA	84	35	Black		Antonio Gatti C.F. JAATPS44E66Q758J	

In addition to showing the plate, the plate image, the date and time of the passage and the passage in which the transit was detected, further information is reported.

The Anomalies column will report, if necessary, one or more colored squares based on the type of alarm highlighted:

LEGEND

- Blacklist
- Insurance
- Revision
- Cloned plate
- Dummy
- SCNTT

The *Revision* and *Insurance* columns will report further evidence of the anomaly found:

Anomalie	Assic.	Rev.
■	✓	✗
■	✓	✗
■	✓	✗

The following informations are also reported:

- Euro pollution class
- Registration year
- Registration Province
- Registration Country
- ADR code
- Speed detected
- Color
- Brand
- Model

Euro class	Reg. year	Province	Country	ADR	Speed	Color	Brand and model
2	1999	MI	ITA		78	Black	 VW Polo
		EE	BGR		47	Grey	 Dacia Lodgy
4	2006	CN	ITA		42	Blue	 VW
3	2005	CR	ITA		52	Grey	 Peugeot 206



By the  button you get access to the *Transit Details* sub menu.

By positioning on the same button without clicking on it, a preview image of the vehicle will be shown.

Transit Details

In the new page that opens you will get the following information:

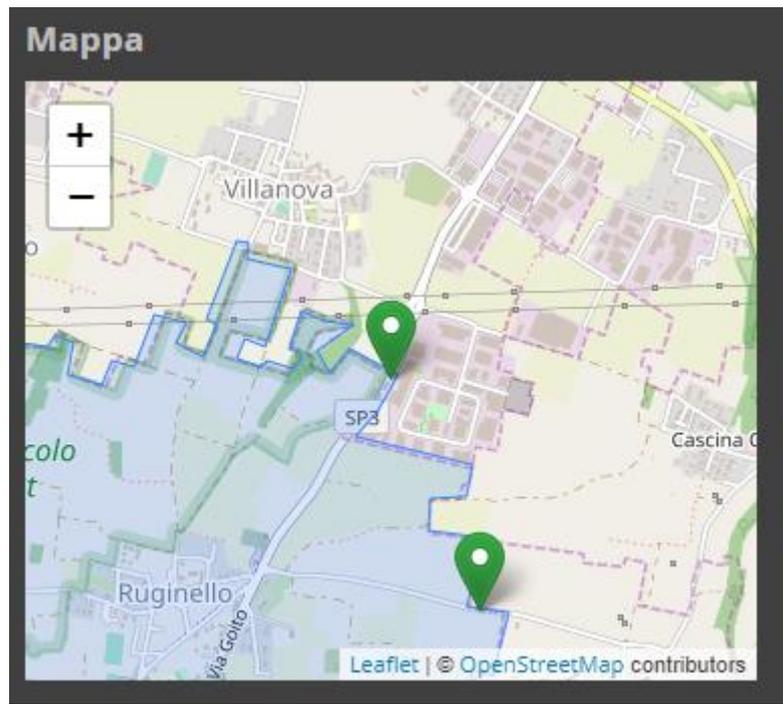
- Plate crop image



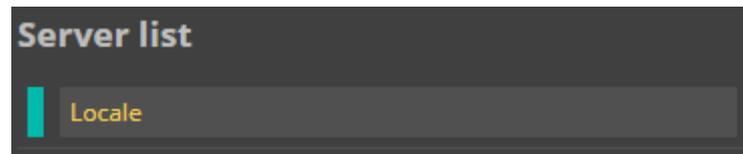
- Transit details

BC239NA	
Transit ID	133065651
Gate	 Via San Carlo - Ingresso
Data e ora (transito)	10/06/20 09:31:24
Data e ora (ricezione)	10/06/20 09:31:24
Province	MI
Country	ITA
Speed	78 Km/h
Color	
Brand e model	 VW Polo
Server	Locale
Owner details	
Intestatario	Musement S.p.A.
CF/P.IVA	00975862611
Inizio proprietà	06/11/19

- Map with the position of the selected transit



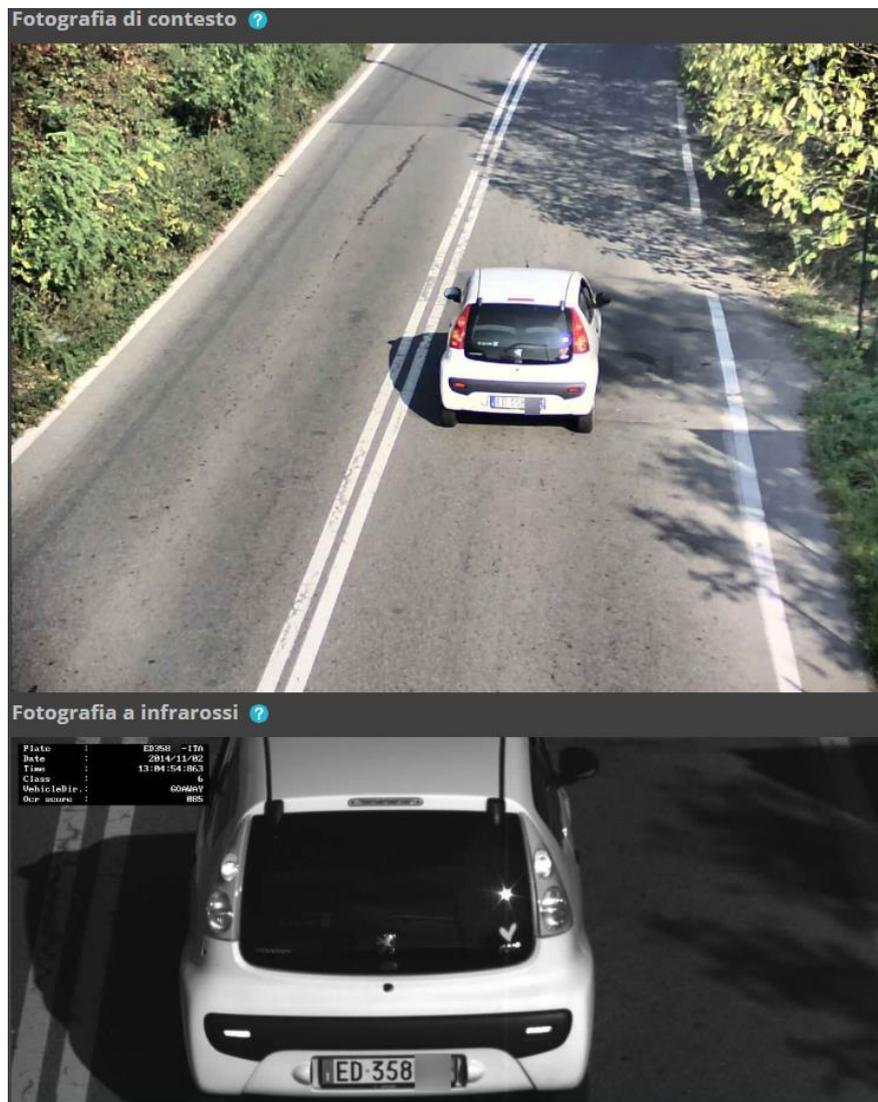
- Server on which the transit was detected. If there are different servers federated with each other



- List of transits made from the same plate with indication of the time, the passage and the time difference compared to the previous transit

Other transits from the same plate		
<input checked="" type="radio"/>	10 giugno 2020	100 transiti
09:31:24	Via San Carlo - Ingresso	
09:29:06	Via Monza - Uscita	
09:26:56	Viale Lombardia - Uscita	
09:24:57	Via Guzzina - Uscita	3 m
09:21:35	Via Occhiate - Ingresso	
09:18:51	Via Occhiate - Uscita	
09:09:12	Via Casecca - Uscita	4 m

- On the right you can view the context image (in color) and the infrared image. Here will be displayed one or two images, depending on the camera model

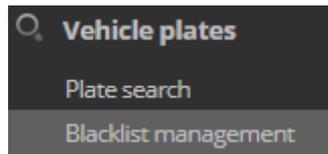


In *Preview* mode, you can view the same data by clicking on the image of the transit.

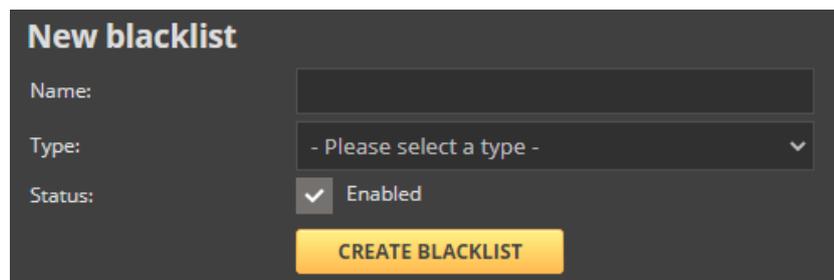
Black list

In Traffic Scanner it is possible to create many black lists which includes all the plates you want to get an alert from.

From the left menu select the item *Blacklist Management*



Here you can create one or multiple Blacklists

A dark-themed form titled 'New blacklist'. It contains three fields: 'Name:' with an empty text input; 'Type:' with a dropdown menu showing '- Please select a type -'; and 'Status:' with a checked checkbox and the text 'Enabled'. At the bottom is a yellow button labeled 'CREATE BLACKLIST'.

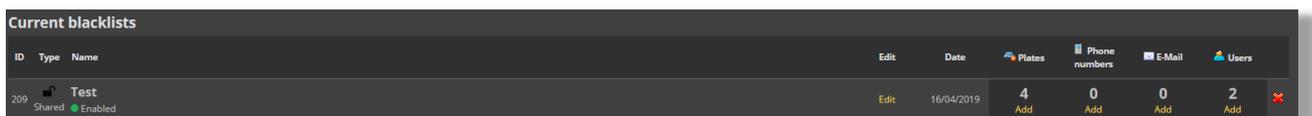
Enter the name of the list, choose the type from the Type drop-down list among the following options

- **Private:** the list will be visible only to the owner
- **Shared:** the list will be visible to the owner and to other users selected by the owner itself

The Status shows if the list is active or not.



Clicking on the button the blacklist will be created

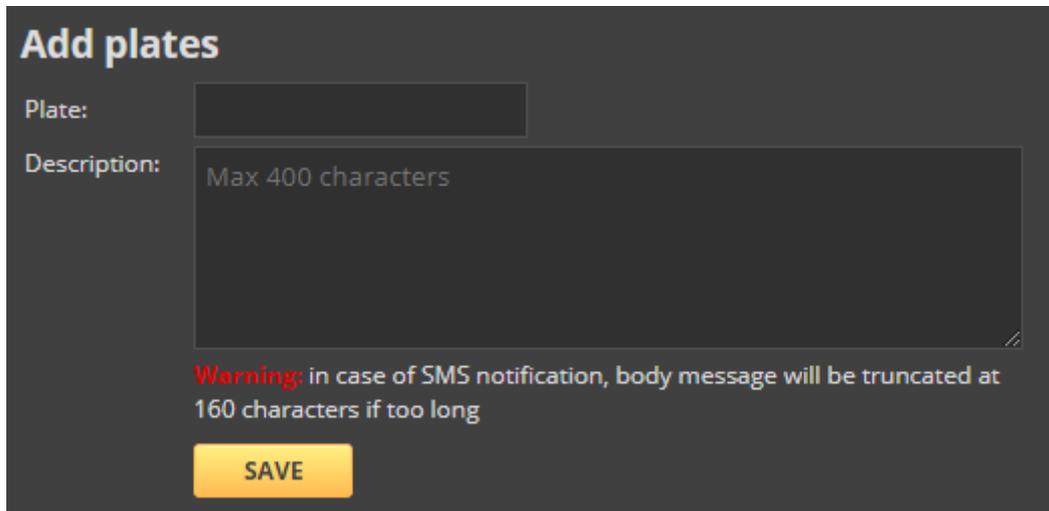


ID	Type	Name	Edit	Date	Plates	Phone numbers	E-Mail	Users
209	Shared	Test	Edit	16/04/2019	4 Add	0 Add	0 Add	2 Add

Once the blacklist has been created you can manage the license plate number insertion, the mobile phone numbers to send to the sms, the email addresses to send the emails to and the users who can view or modify the list if we have chosen "Shared".

Add Plates

Clicking on the *Add* button under the Plates column you access to the *Add plates* menu



Add plates

Plate:

Description:

Warning: in case of SMS notification, body message will be truncated at 160 characters if too long

SAVE

By inserting the plate and the description and clicking on the *Save* button, we will add a plate to the list. This will be reported in the License Plate List

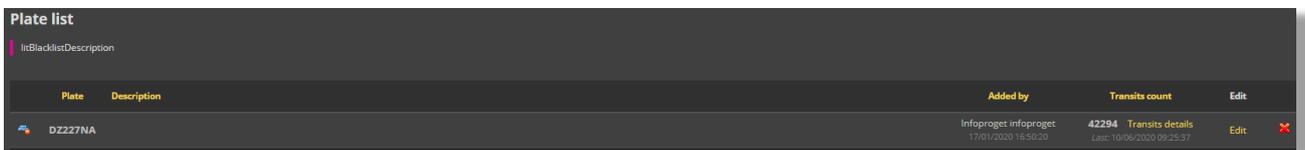


Plate	Description	Added by	Transits count	Edit
DZZ27NA		Infoproget infoproget 17/01/2020 15:50:29	42294 Transits details Last: 10/06/2020 09:25:37	Edit

From this screen it is also possible to delete a plate by clicking on



[< Back to Blacklist management](#)

Once inserted all the plates, click

to return to the previous screen

Add mobile phone numbers

By clicking on the *Add* button under the Telephone Numbers heading



It is possible to display the screen for entering the telephone numbers to which to send the SMS (possible only in the presence of a router with the sending sms feature enabled)

A dark grey rectangular form titled "Add phone number" in white. Below the title, there are three input fields: "Country:" with a dropdown menu showing "- Please select -", "Prefix:" with an empty text box, and "Phone number:" with an empty text box. At the bottom left of the form is a yellow button with the word "ADD" in black.

From *Country* select the correct international setting (+39 for Italy)

Insert the *Prefix* and the *Phone Number*

Click on the *Add* button. This number will be inserted in the Phone Numbers List

A dark grey rectangular table titled "Phone numbers list" in white. The table has two columns: "ID" and "Mobile phone". The first row contains a small telephone handset icon, the number "355", and the phone number "+393331234567". To the right of the phone number is a yellow "Delete" link.

ID	Mobile phone
 355	+393331234567 Delete

To delete an entry simply click on the *Delete* link

[< Back to Blacklist management](#)

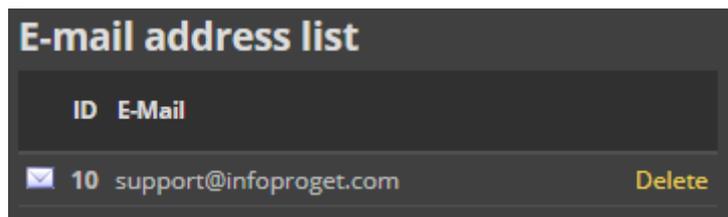
Once you have finished entering the phone numbers, click on [Back to Blacklist management](#) to return to the previous screen.

Add email

Click on the Add button under Email



Click on the *Add* button to insert an email address into the notification list.



To delete an email address simply click on the *Delete* link

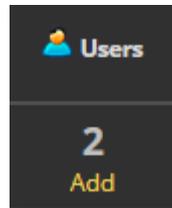
[< Back to Blacklist management](#)

Once you have finished entering the list, click on the previous screen.

to return to

Add users

If you have chosen the creation of a Shared blacklist, click on the *Add* button under the Users item to choose who to share the report list with



By accessing the user entry screen

A dark grey form titled "Add User". It contains a "User:" label followed by a dropdown menu showing "- Please select a user -". Below that is a "Permissions:" label followed by two dropdown menus, one showing "Read" and the other "Write". At the bottom of the form is a yellow "ADD" button.

You will have to choose the user among those already included in the Traffic Scanner

A dark grey form titled "Add User" with the "User:" dropdown menu open. The dropdown menu lists three options: "- Please select a user -" (highlighted in blue), "-> Guardia di Finanza", and "-> Polizia". The "Permissions:" section is visible below the dropdown.A dark grey horizontal bar containing the label "Permissions:" followed by two dropdown menus, one showing "Read" and the other "Write".

And permission to read and / or write

The inserted user will be reported in the *User list*

Users list		
Name	Read	Write
 Infoproget infoproget		 Delete

To delete a user simply click on the *Delete* link

[< Back to Blacklist management](#)

Once you have finished entering the list, click on the previous screen. to return to

.



To delete an entire blacklist click on the icon from the *Current Blacklist*.

Import plates no. from CSV

It is also possible to import the plates to be included in a blacklists via csv file. To do this, move to the section

CSV Import (Plates and phone numbers)

Click on the link

Show CSV import guide

To check the creation details of the csv file, so that it can be read correctly by Traffic Scanner.

Details that we report below:

The file you're importing should be formatted as .csv. Here you can find an example

Blacklist ID;Plate;Phone Number

1;AB123CD;+391234567000

2;CZ245NK;+391234567111

3;NT353WW;+391234567222

Row 1: header line, will be ignored during import

Row 2: plate **AB123CD** will be imported in blacklist with ID **1**, notifications will be delivered to phone number **+391234567000**

Row 3: plate **CZ245NK** will be imported in blacklist with ID **2**, notifications will be delivered to phone number **+391234567000**

Row 4: plate **NT335WW** will be imported in blacklist with ID **3**, notifications will be delivered to phone number **+391234567000**

You can find the Blacklist **ID** looking above at current blacklists table, under the first column labeled **ID**. Please follow this procedure:

1st step Create a new blacklist

2nd step Map/assign blacklists IDs using Excel or editing CSV File

3rd step Do CSV file import

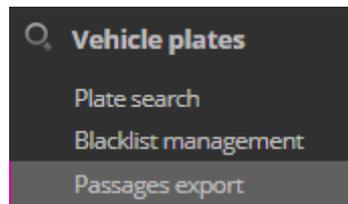
Once the file has been created, select it using the *Choose file* button and then on the *Upload* button to insert it into the system.

Scegli file Nessun file selezionato

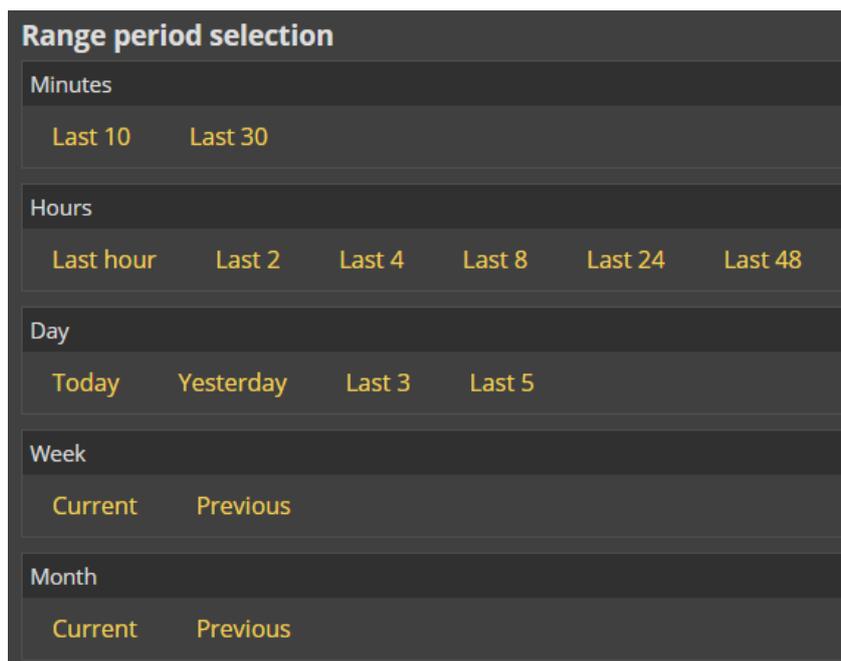
UPLOAD

Passages Export

Using the Passages Export menu, it is possible to extract the values, and possibly also the images, of the passages for one or more gates in a pre-established period.



In the main part of the screen it is possible to select pre-established time periods, by means of convenient presets, by clicking directly on the corresponding item



Or directly select the date and time from the appropriate section on the right side of the screen

Date

All passages | 3 months | 6 months

From: 31/05/2020 00:00

To: 11/06/2020 00:00

It is also possible to select one or more gates from the menu on the right side of the screen just as in the License Plate Search menu already illustrated above:

Gates

All | None | In | Out

Gate search

Via Adda

- Ingresso
- Uscita

Via Monza

- Ingresso
- Uscita

By changing the choice of gates and the time period, the number of passages that will be exported will be indicated in the Transits section available for export

TRANSITI TROVATI	MAX ESPORTABILI (CSV)	MAX ESPORTABILI (ZIP)	DAL (DATA E ORA)	AL (DATA E ORA)
401.138	150.000	10.000	31/05/2020 00:00	11/06/2020 00:00

Finally, to proceed with the export, you must choose the format from the following items:

Export file format

CSV

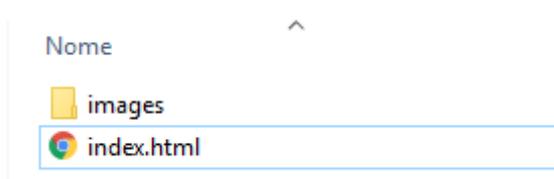
ZIP

If the CSV choice is selected, only the metadata, that is the details of each step, will be exported.

If the ZIP choice is selected, both the metadata and the images of each transit will be exported.

By clicking on the chosen format, a link will be created to download the corresponding file.

In the case of the ZIP file, unzip the file into a folder. An images folder and an index.html file will be created



Clicking on the Index.html file will open an internet page where you can consult the details of the individual steps including infrared (**IR** button) or context images (**CTX** button)

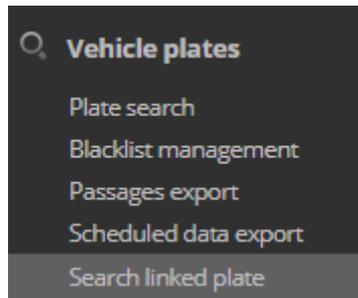
Infoproget Traffic Scanner

Esportazione transiti Brugherio

ID Passaggio	Targa	Data	Varco	Luogo	ID Varco	Stato	Ocr Score	Provincia	Velocità	
118156985	BB672	19/04/2019 15:16:00	Viale Lombardia	Ingresso	7	ITA	74	TO	44	IR CTX
118156986	DR410	19/04/2019 15:16:01	Via San Maurizio	Ingresso	5	ITA	82	BS	60	IR CTX
118156987	DM812	19/04/2019 15:16:04	Via dei Mille	Ingresso	13	DNK	85	EE	63	IR CTX
118156988	BZ357	19/04/2019 15:16:06	Via San Maurizio	Ingresso	5	ITA	87	CA	69	IR CTX
118156989	DB786	19/04/2019 15:16:07	Via Guzzina	Uscita	10	ITA	82	CN	46	IR CTX
118156990	CR262	19/04/2019 15:16:10	Via San Carlo	Ingresso	19	ITA	85	TO	47	IR CTX

Suspicious plate search

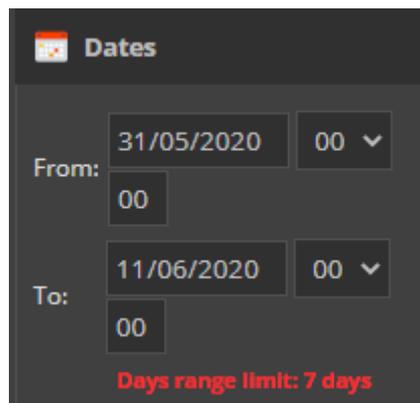
Using the Search linked plate menu, it is possible to check whether, when a license plate passes, there are vehicles that follow or precede it with a certain occurrence within a defined time frame. This method of analysis was designed to identify means that exhibit anomalous displacement patterns.



With this module it is possible to derive which vehicles pass with a certain diligence together with a vehicle that is being observed and whose license plate number is known to investigators. Some parameters are inserted in the report to determine the following analysis logics:

Filters

First of all we must select the time filter, in the right part of the screen you can choose from:



License plate, minimum threshold of passages and previous and subsequent time interval to be considered by the search algorithm

Plate and options

Plate

Min threshold (>1)

Time before

Hours Mins

Time after

Hours Mins

APPLY FILTER

Gates selection

Gates

Via Adda - Ingresso

Via Adda - Uscita

Via Monza - Ingresso

Via Monza - Uscita

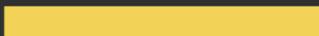
APPLY FILTER

Once the filters have been selected, click on

The search result will show:

- The license plate numbers found
- Number of the passages
- First transit date&time
- Last transit date&time

Search linked plate

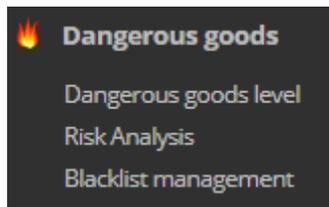
Plate	N°	Transits	First transit	Last transit	Exclude
<input type="checkbox"/> ZA130NA	302		05/06/2020 06:18:34	08/06/2020 00:22:59	<input type="checkbox"/>
<input type="checkbox"/> EJ185NA	210		05/06/2020 06:51:09	07/06/2020 23:10:12	<input type="checkbox"/>
<input type="checkbox"/> DJ963NA	202		05/06/2020 05:31:42	08/06/2020 00:24:38	<input type="checkbox"/>
<input type="checkbox"/> DD153NA	202		05/06/2020 09:19:15	07/06/2020 23:25:12	<input type="checkbox"/>

There is also the possibility to exclude a passage or to view the details and the photo of each passage for each single plate by clicking on the 

Immagine Targa	Data e Ora	Gate and direction	Foto
	05/06/2020 06:51:09	Via Adda - Ingresso	
	05/06/2020 06:51:09	Via Adda - Ingresso	
	05/06/2020 06:51:09	Via Adda - Ingresso	
	05/06/2020 06:51:09	Via Adda - Ingresso	

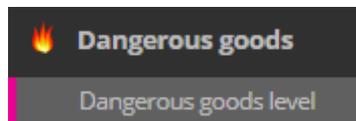
Dangerous Goods

In the Dangerous Goods menu, it is possible to keep under control the traffic of vehicles used for the transport of risky goods and divided by type based on the detected ADR code.

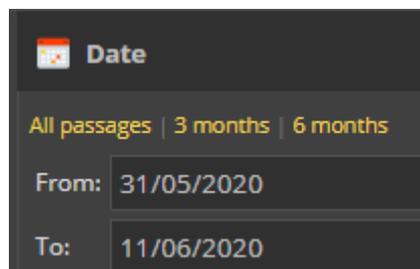


Dangerous Goods Level

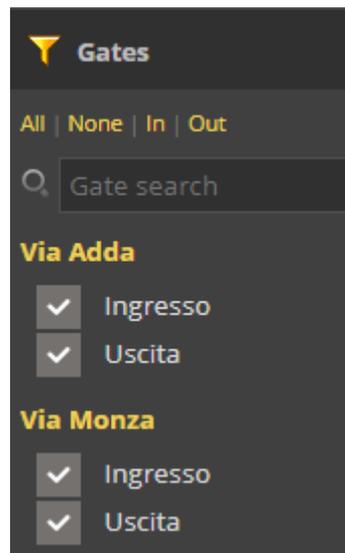
By clicking on the *Dangerous goods level* item in the *Dangerous goods* menu, it is possible to have a report of how many dangerous goods passes have occurred for each passage and the type of goods transported.



Also in this case, it is first of all necessary to set the filter of the time interval to be taken into consideration



And select the Gates

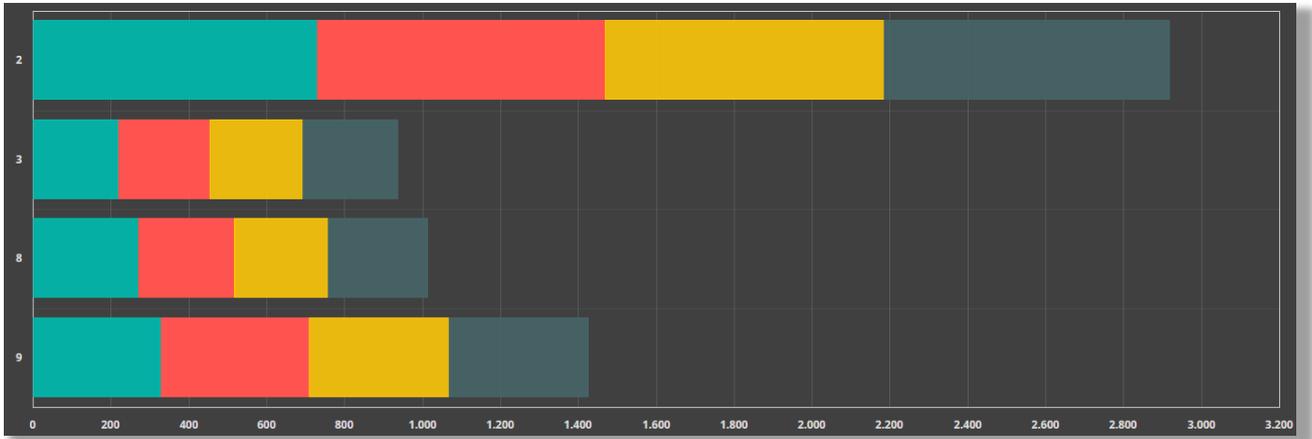


At the bottom of the screen you'll find the legend concerning the risk levels classification

Code	Risk/danger
	2 Emission of gas due to pressure or chemical reaction
	3 Flammability of liquids (vapors) and gases or self-heating liquid
	4 Flammability of solids or self-heating solid
	5 Oxidizing (fire-intensifying) effect
	6 Toxicity or risk of infection
	7 Radioactivity
	8 Corrosivity
	9 Risk of spontaneous violent reaction

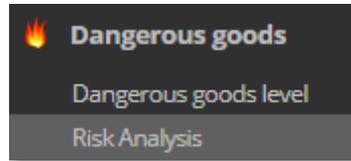
The chart in the main part of the screen will show the number of passages for each individual gate.

Each colored portion of the chart represents a single gate

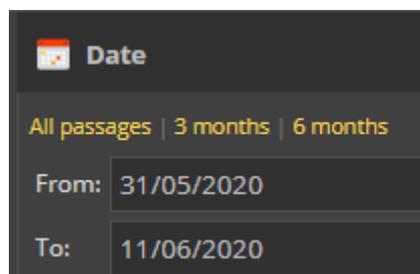


Risk analysis

Through the *Risk analysis* menu it is possible to have an indicative assessment of the risk calculated by Traffic Scanner divided by day



First of all let's select the time interval



At this point the report will appear in the middle of the screen

Risk Analysis			
Date	Risk level	Transits	Transits details
10/06/2020	1	2070	606 2251073 OXYGEN, REFRIGERATED LIQUID
			459 903082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
			338 802794 BATTERIES, WET, FILLED WITH ACID, electric storage
			178 301202 GAS OIL or DIESEL FUEL or HEATING OIL, LIGHT (flash-point more than 60 °C and not more than 100 °C)
			168 221977 NITROGEN, REFRIGERATED LIQUID
			164 231965 HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. such as mixtures A, A01, A02, A0, A1, B1, B2, B or C
			157 301866 RESIN SOLUTION, flammable (having a flash-point below 23 °C and viscous according to 2.2.3.1.4) (vapour pressure at 50 °C not more than 110 kPa)

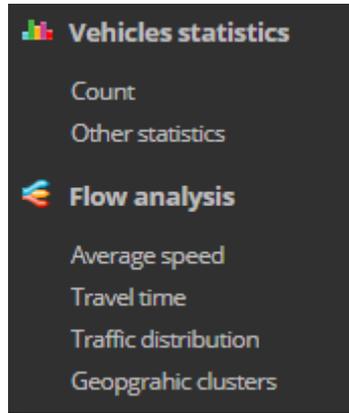
The risk level is determined for each single day counting the number of vehicles passages transporting dangerous goods

31/05/2020	5	4739	 1454 2251073 OXYGEN, REFRIGERATED LIQUID
			 1093 903082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
			 725 802794 BATTERIES, WET, FILLED WITH ACID, electric storage
			 373 221977 NITROGEN, REFRIGERATED LIQUID

The risk levels are splitted in 5 categories, from the least to the most severe, with progressive coloring from green to red

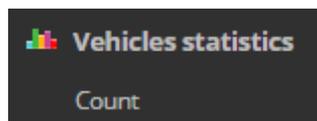
Statistics and Flow Analysis

Under the Vehicle Statistics and Flow Analysis menu, it is possible to access a series of processes carried out on the transits detected by the Traffic Scanner for a desired period of time and for each individual passage.

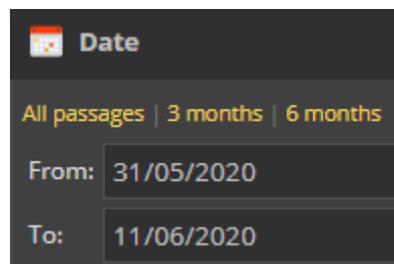


Vehicle Count

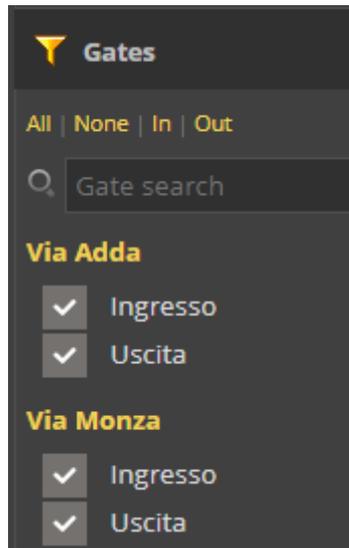
Under the item *Count* in the Vehicle Statistics menu you can view the number of passages filtering them by different categories.



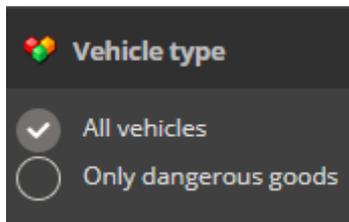
The time interval selection tool



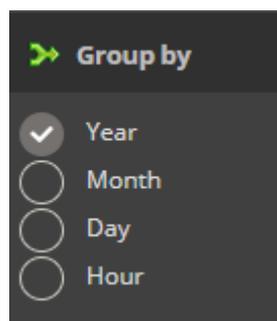
And the gate selection tool



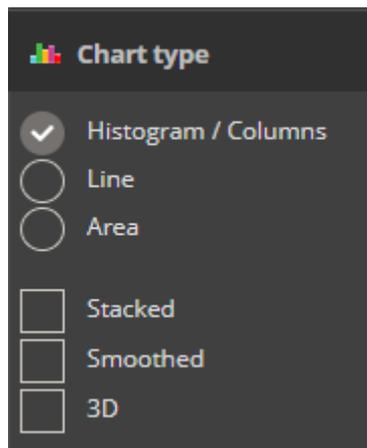
It is possible to choose whether to display the data of all vehicles or only the count relating to vehicles carrying dangerous goods



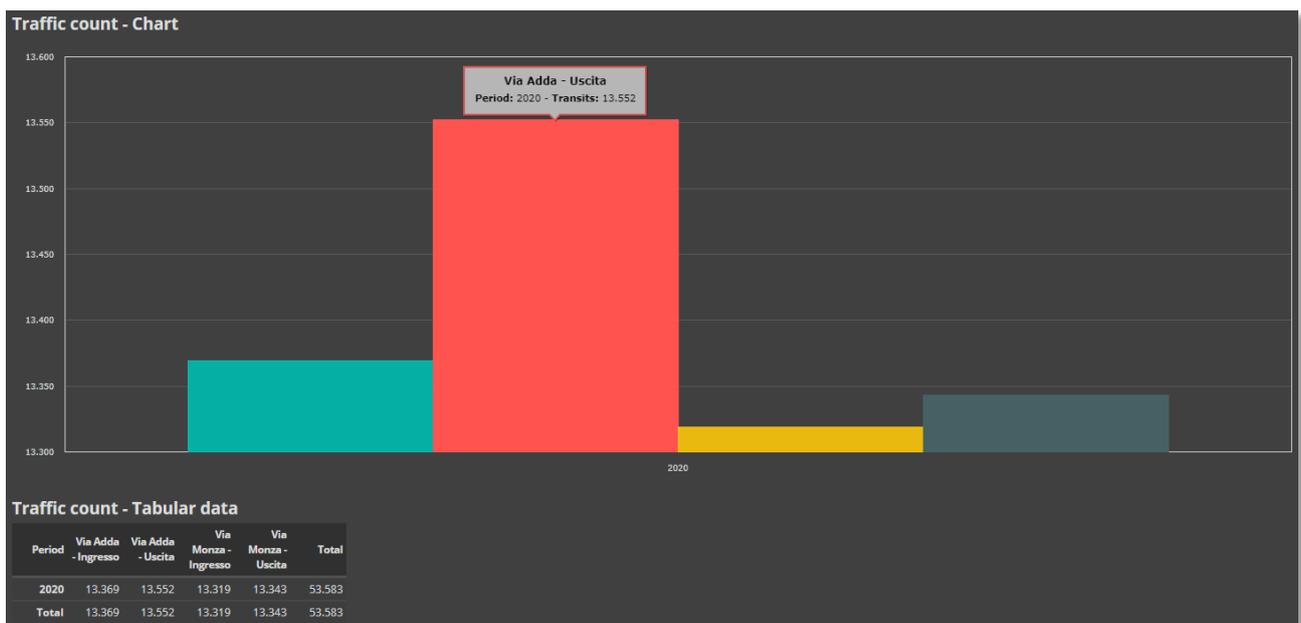
You can choose the time data grouping



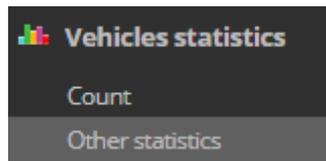
And the preferred chart type layout



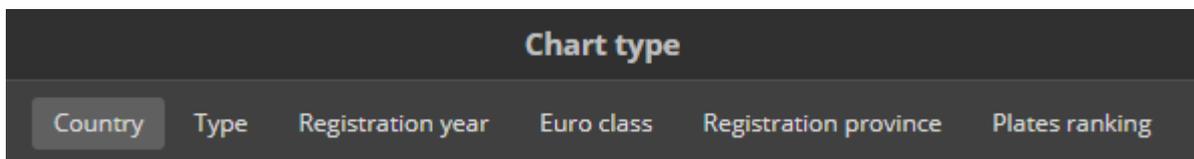
Once the parameters have been chosen, you will obtain the desired chart and a table with the corresponding numeric values



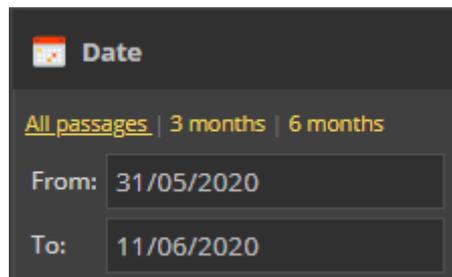
Other statistics



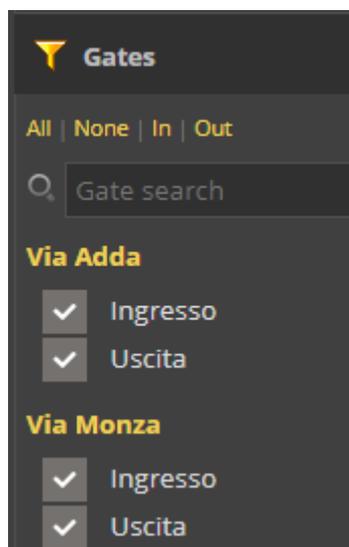
through the item *Other statistics*, under the Vehicle statistics menu, you will be able to view the analysis by **Country, vehicle type, Registration Year, Euro Class, Registration Province and plate ranking**.



Regardless of the graph you are going to analyze, choose the Time period desired

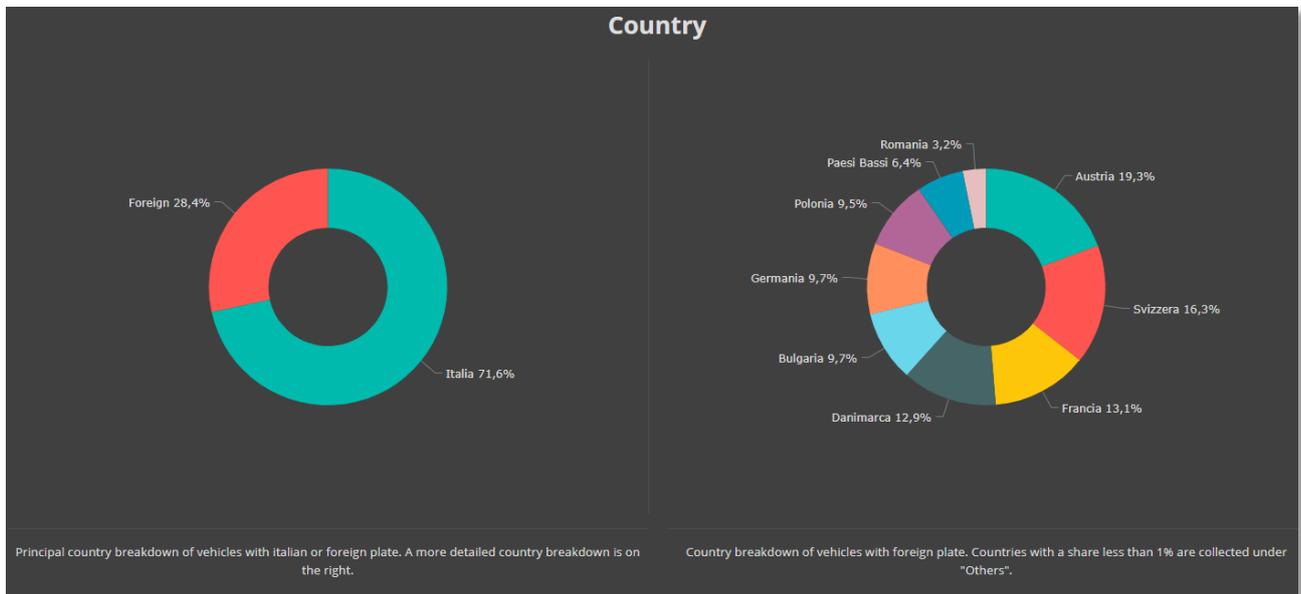


And the gates to consider



Country

In the first part of the screen the difference between the Italian and foreign license plates is visually represented, while on the right appears the foreign countries detailed chart



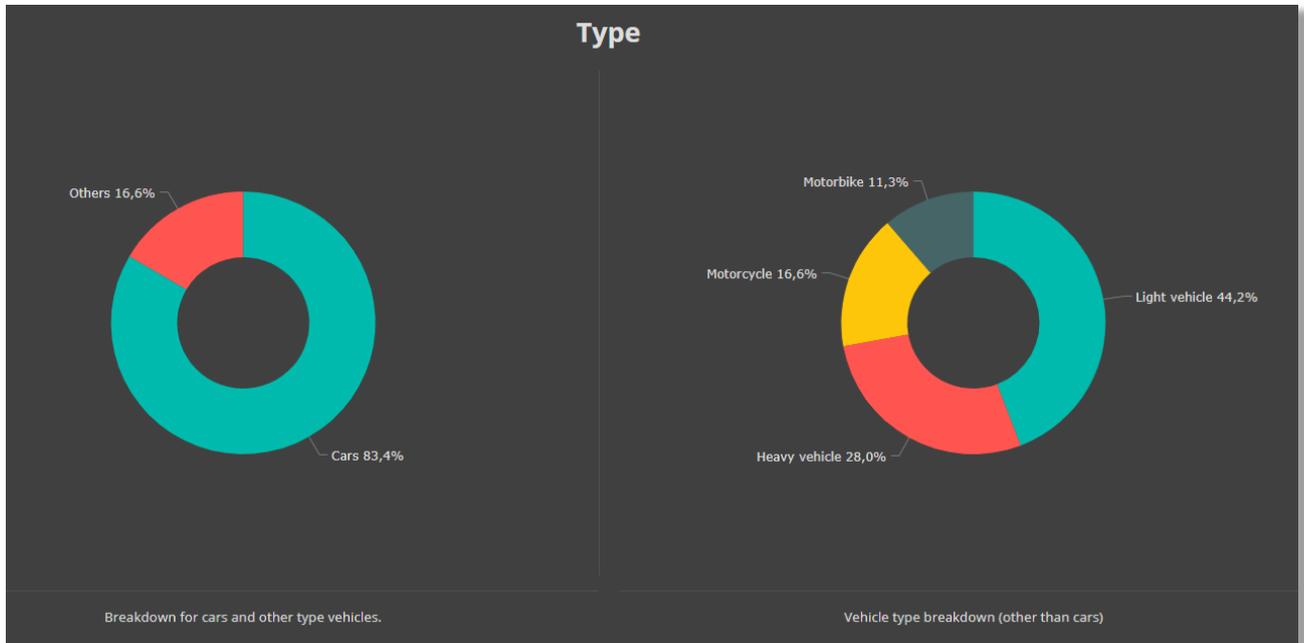
Scrolling down you can also view the numerical detail

Export (CSV)			Export (CSV)			
Description	Transits count	Percentage	Description	Symbol	Transits count	Percentage
Italia	288.730	71,6%	Austria	AT	22.195	19,3%
Foreign	114.715	28,4%	Svizzera	CH	18.691	16,3%
Unrecognized	0	0,0%	Francia	FR	14.998	13,1%
Uncertain	0	0,0%	Danimarca	DK	14.764	12,9%
			Bulgaria	BG	11.117	9,7%
			Germania	DE	11.110	9,7%
			Polonia	PL	10.886	9,5%
			Paesi Bassi	NL	7.300	6,4%
			Romania	RO	3.654	3,2%

With the ability to export data to a CSV file.

Classification

In the first part of the screen, the difference between cars and other types of vehicles is visually represented. On the right side the detail of the other vehicles



Scrolling down you can also view the numerical detail

The figure shows two tables with "Export (CSV)" buttons above them.

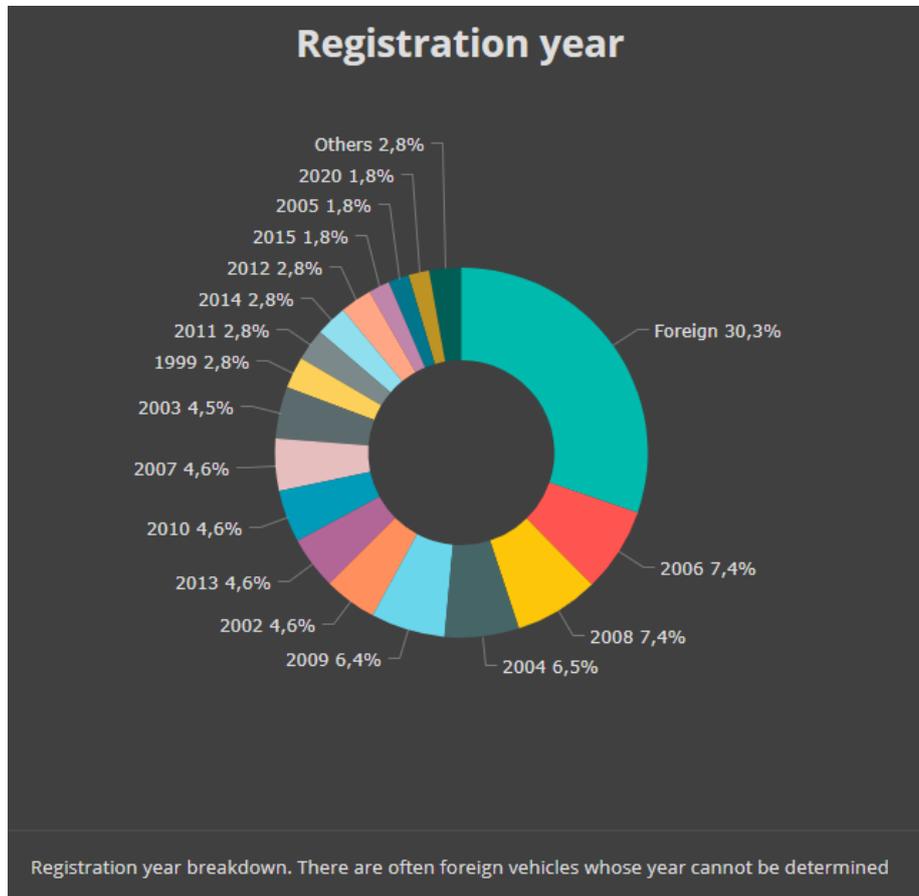
Description	Transits count	Percentage
Cars	336.998	83,4%
Others	66.845	16,6%

Description	Transits count	Percentage
Light vehicle	29.528	44,2%
Heavy vehicle	18.698	28,0%
Motorcycle	11.098	16,6%
Motorbike	7.521	11,3%

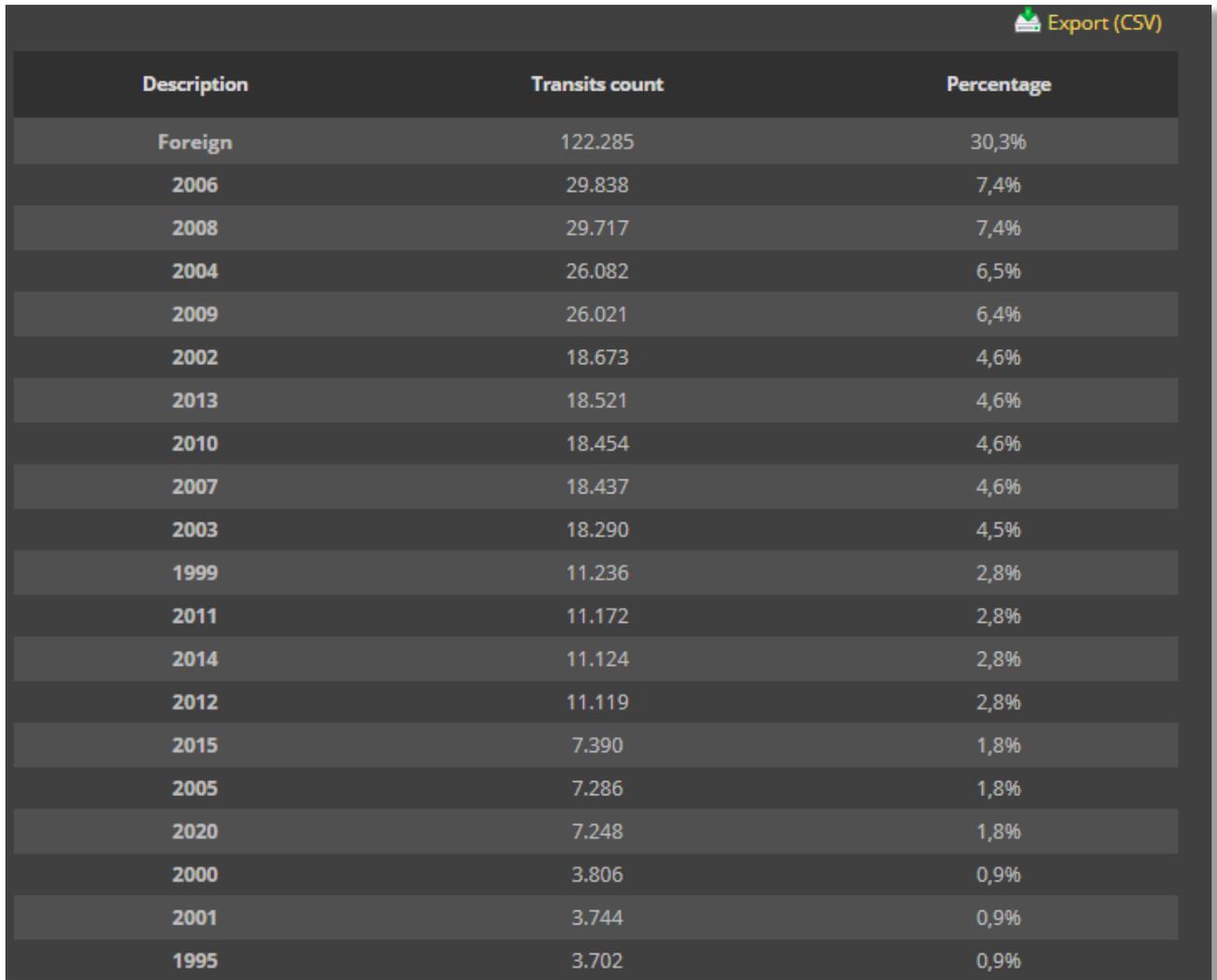
With the ability to export data to a CSV file.

Registration year

The first part of the screen shows the breakdown by year with the percentage compared to the total amount of transits



Scrolling down you can view the numeric details



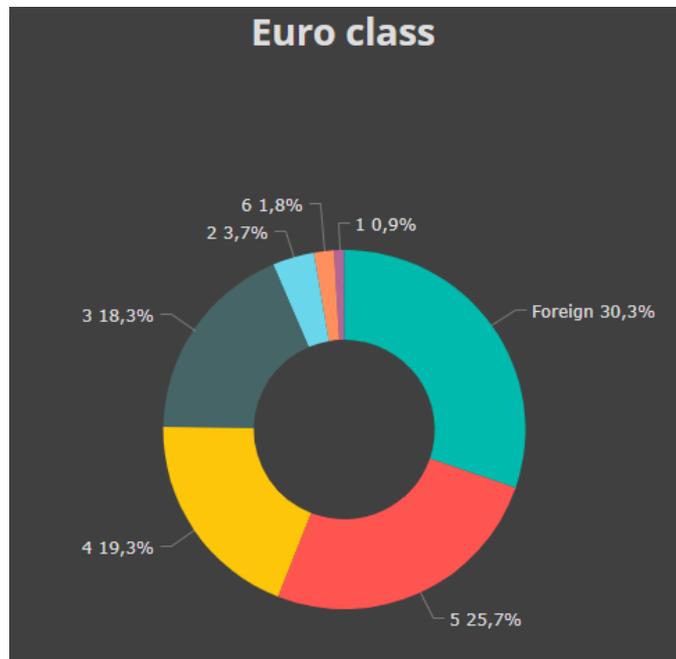
The image shows a screenshot of a data table with a dark background. In the top right corner, there is a small icon of a document with a green checkmark and the text "Export (CSV)". The table has three columns: "Description", "Transits count", and "Percentage". The data is sorted by "Transits count" in descending order. The rows are as follows:

Description	Transits count	Percentage
Foreign	122.285	30,3%
2006	29.838	7,4%
2008	29.717	7,4%
2004	26.082	6,5%
2009	26.021	6,4%
2002	18.673	4,6%
2013	18.521	4,6%
2010	18.454	4,6%
2007	18.437	4,6%
2003	18.290	4,5%
1999	11.236	2,8%
2011	11.172	2,8%
2014	11.124	2,8%
2012	11.119	2,8%
2015	7.390	1,8%
2005	7.286	1,8%
2020	7.248	1,8%
2000	3.806	0,9%
2001	3.744	0,9%
1995	3.702	0,9%

With the ability to export data to a CSV file.

Euro Pollution Class

The first part of the screen shows the breakdown by EURO pollutant class visually



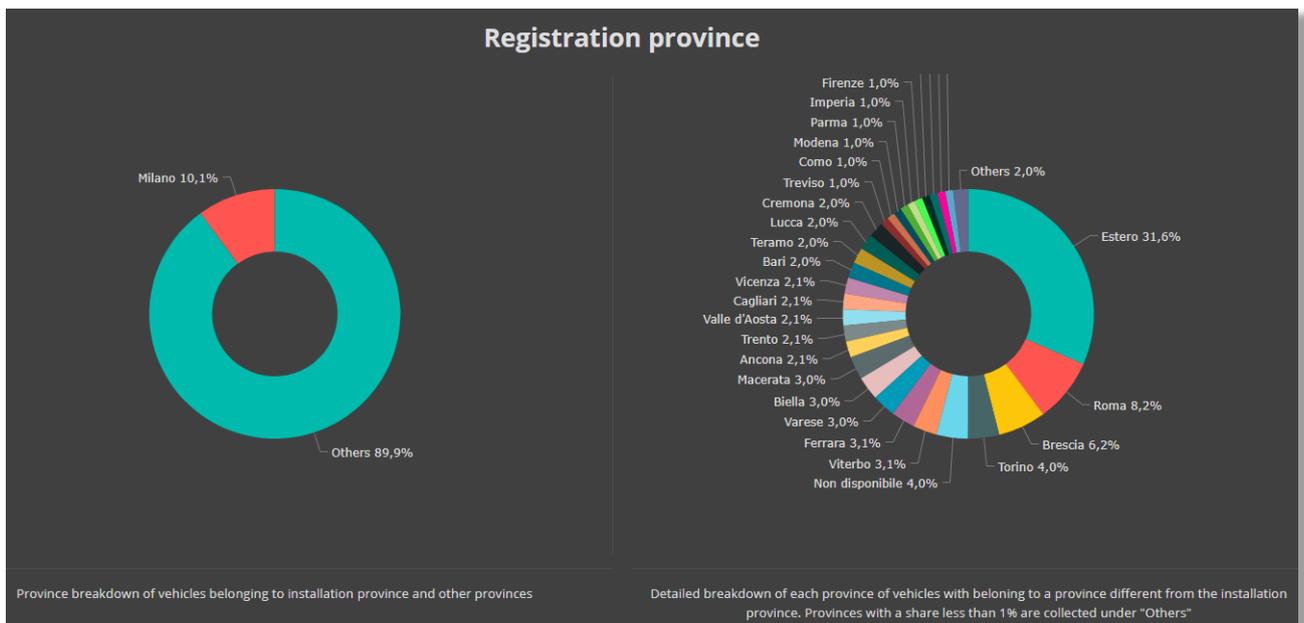
Scrolling down you can view the numeric details

Export (CSV)		
Description	Transits count	Percentage
Foreign	122.317	30,3%
5	103.838	25,7%
4	78.013	19,3%
3	74.098	18,3%
2	15.047	3,7%
6	7.248	1,8%
1	3.703	0,9%

With the ability to export data to a CSV file.

Registration Province

In the first part of the screen, the difference between the system installation province and the other provinces is visually represented. On the right side the detail of the provinces with the percentage on the total of the passages.



Scrolling down you can view the numeric details

Description	Symbol	Transits count	Percentage	Description	Symbol	Transits count	Percentage
Others	NN	363.455	89,9%	Estero	EE	114.948	31,6%
Milano	MI	40.869	10,1%	Roma	RM	29.885	8,2%
				Brescia	BS	22.500	6,2%
				Torino	TO	14.653	4,0%
				Non disponibile	NN	14.640	4,0%
				Viterbo	VT	11.201	3,1%
				Ferrara	FE	11.141	3,1%
				Varese	VA	11.081	3,0%
				Biella	BI	11.048	3,0%
				Macerata	MC	10.887	3,0%
				Ancona	AN	7.595	2,1%
				Trento	TN	7.583	2,1%
				Valle d'Aosta	AO	7.501	2,1%
				Cagliari	CA	7.476	2,1%
				Vicenza	VI	7.454	2,1%

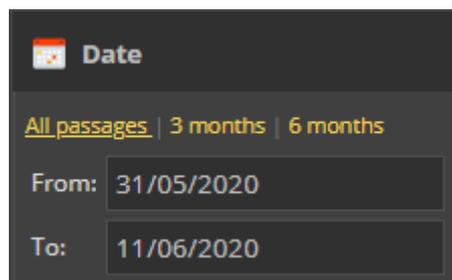
With the ability to export data to a CSV file.

Flow Analysis

In this section you can find an analysis of the average speed detected, the transit time between entry and exit from the gates and an analysis of traffic distribution.

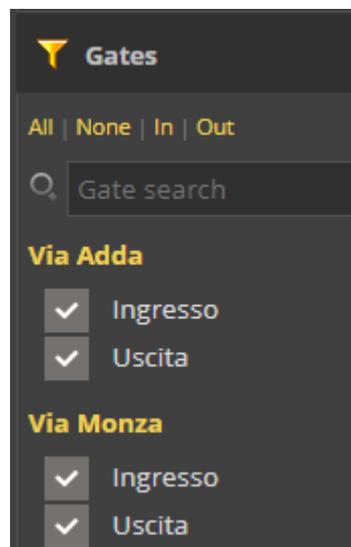
Regardless of the graph analyzed, you have to choose:

The time interval



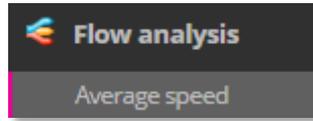
A dark-themed UI element titled "Date" with a calendar icon. It features three links: "All passages" (underlined), "3 months", and "6 months". Below these are two input fields: "From:" with the value "31/05/2020" and "To:" with the value "11/06/2020".

And the gate selection

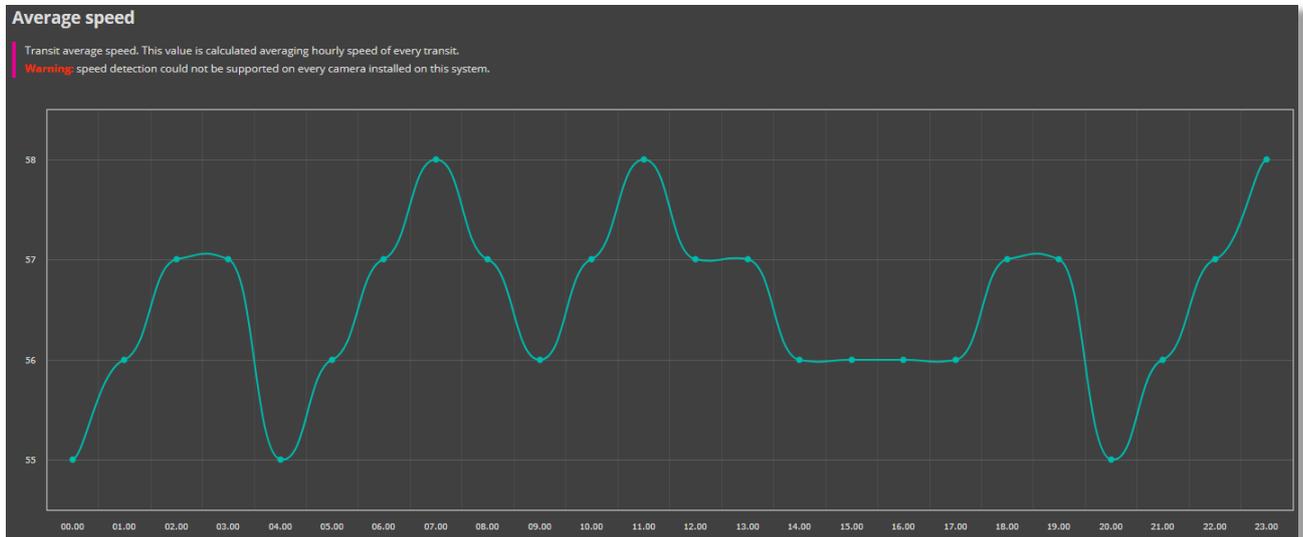


A dark-themed UI element titled "Gates" with a funnel icon. It includes a row of links: "All", "None", "In", and "Out". Below is a search bar with a magnifying glass icon and the text "Gate search". The interface is divided into two sections: "Via Adda" and "Via Monza". Each section contains two checkboxes, both of which are checked: "Ingresso" and "Uscita".

Average Speed



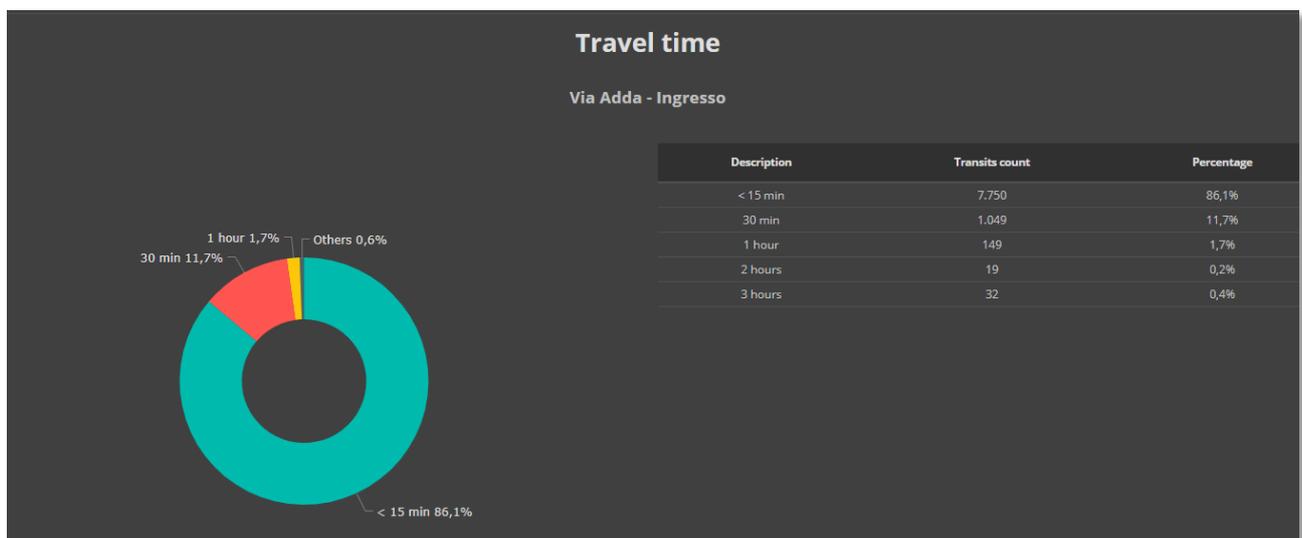
The graph shows the curve relating to the average transit speed of vehicles under the gates, calculated by averaging the measurements acquired in the selected time interval and projected in 24 hours



Travel Time

The screen displays graphically and numerically the timing spent by the vehicles to cross the Municipality, calculated between the time detected by the entrance gate and the time detected on the exit gate .

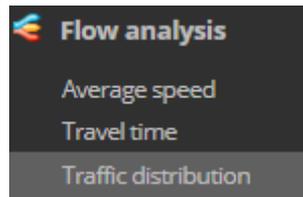
For example analyzing the commuters traffic which enters in the morning and exits in the evening from any detection gate.



This analysis is useful to get an idea of how much of the traffic detected is attributable to residents and how much to external commuters

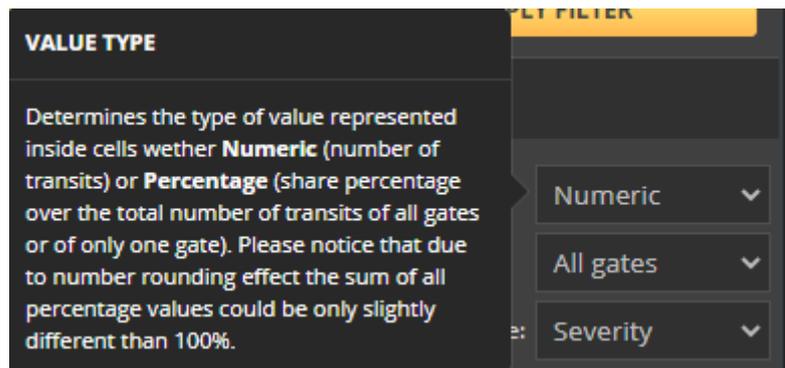
Traffic Distribution

In this section the so-called "origin / destination" matrix is represented, that is the synthesis of the cross counting calculated between entry and exit gates. The values can also be represented by individual vehicle class. This report is useful for determining how traffic propagates within the territory monitored by the gates

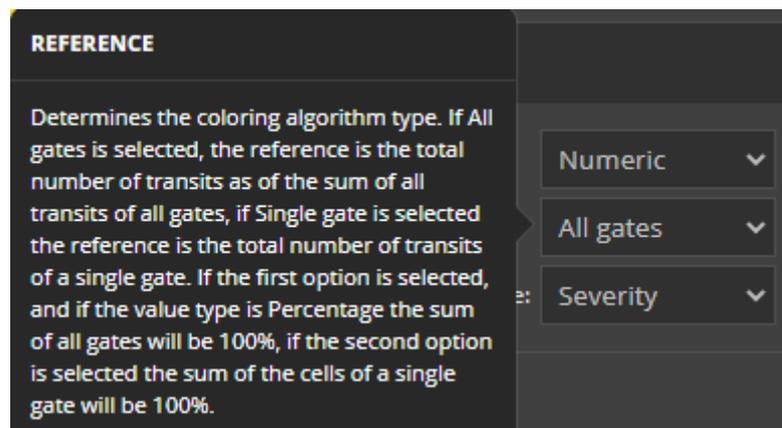


First of all select the filters:

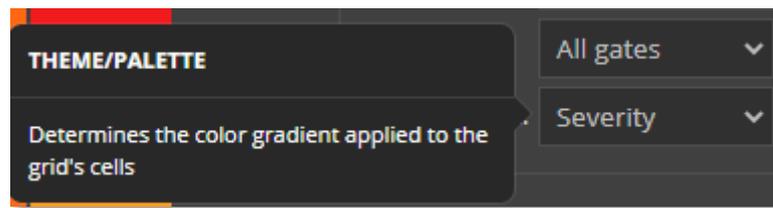
- Value type between *Numeric* and *Percentage*



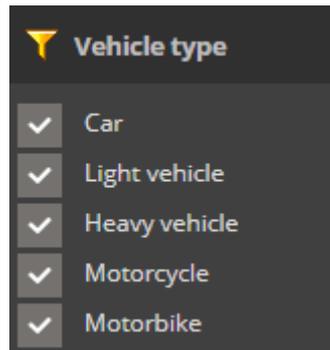
- Reference between *all gates* and *only one gate*



- Color and Theme



- Type of vehicles to include



In the main part of the screen, the table will show how many vehicles have passed between the vertical gate and the horizontal gate

For example

-	Via Adda	Via Monza
Via Adda	31	29
Via Monza	21	24

It means that:

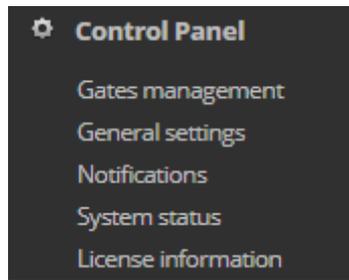
31 vehicles passed through the Via Adda gate and exited the same gate.

29 vehicles passed through the Via Adda gate and exited the Via Monza gate

21 vehicles passed through the Via Monza gate and exited the Via Adda gate

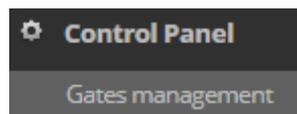
24 vehicles passed through the Via Monza gate and exited the same gate

Control panel



In the Control Panel it is possible to configure the program for the operation of each section.

Gate Management



In the upper part of the screen you can see the name of the gate with the geographical

coordinates, the green check



under the enabled column will indicate that the gate is

active. It is possible to edit the gate setup



or delete the gate



ID	Gate name [+ Add]	Latitude	Longitude	Enabled
1	Via Adda	45,627450	9,400021	✓ ✎ ✖
2	Via Monza	45,634408	9,396235	✓ ✎ ✖
3	Via San Maurizio	45,618837	9,401722	✓ ✎ ✖
4	Viale Lombardia	45,635712	9,363707	✓ ✎ ✖

The camera list is visible in the lower part of the screen

Legenda features

OCR CTX/CTX REMOTE IR/IR REMOTE INTERTRAFI RABBITMQ PARKING CPS VELOCAR RELAY SCNTT HYPER SILENT ADRONLY

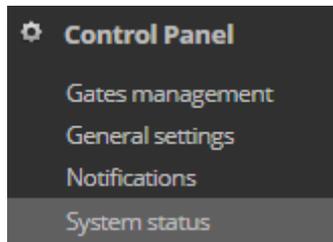
ID	Model	Gate [+ Add]	Features	IP	Status
1	Demo	Via Adda - Ingresso	CTX IR	127.0.0.1 (0)	✓ ✎ ✕
2	Demo	Via Adda - Uscita	CTX IR	192.168.4.73 (0)	✓ ✎ ✕
3	Demo	Via Monza - Ingresso	CTX IR	192.168.4.67 (0)	✓ ✎ ✕
4	Demo	Via Monza - Uscita	CTX IR	192.168.4.69 (0)	✓ ✎ ✕

Camera parameters:

- Camera ID
- Model
- Gate and direction (IN/OUT)
- Image setup (CTX = context camera - IR = infrared camera)
- IP address and port used
- Status, if the camera is active 
- Edit information 
- Camera deletion 

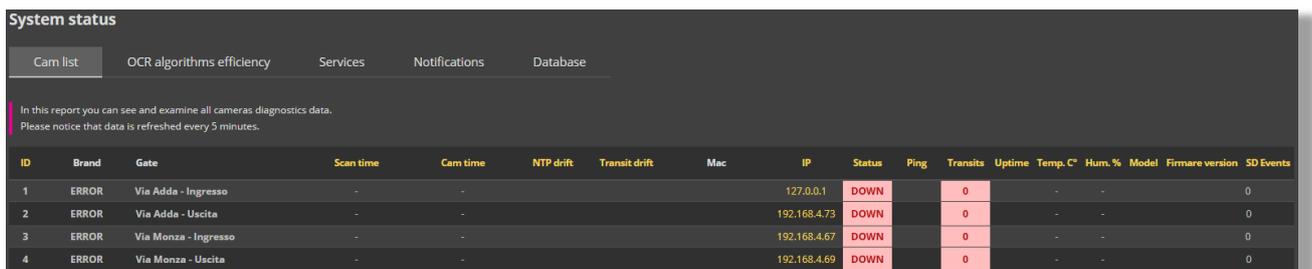
System status

By the System Status item in the Control Panel menu, it is possible to check the operation status of the cameras and Traffic Scanner services



System diagnostic

At the top of the screen is the Camera diagnostics

A screenshot of a 'System status' page. At the top, there are tabs for 'Cam list', 'OCR algorithms efficiency', 'Services', 'Notifications', and 'Database'. Below the tabs is a message: 'In this report you can see and examine all cameras diagnostics data. Please notice that data is refreshed every 5 minutes.' Below the message is a table with columns: ID, Brand, Gate, Scan time, Cam time, NTP drift, Transit drift, Mac, IP, Status, Ping, Transits, Uptime, Temp. C°, Hum. %, Model, Firmware version, and SD Events. The table contains four rows, all with 'ERROR' in the Brand column and 'DOWN' in the Status column.

ID	Brand	Gate	Scan time	Cam time	NTP drift	Transit drift	Mac	IP	Status	Ping	Transits	Uptime	Temp. C°	Hum. %	Model	Firmware version	SD Events
1	ERROR	Via Adda - Ingresso	-	-	-	-	-	127.0.0.1	DOWN	-	0	-	-	-	-	-	0
2	ERROR	Via Adda - Uscita	-	-	-	-	-	192.168.4.73	DOWN	-	0	-	-	-	-	-	0
3	ERROR	Via Monza - Ingresso	-	-	-	-	-	192.168.4.67	DOWN	-	0	-	-	-	-	-	0
4	ERROR	Via Monza - Uscita	-	-	-	-	-	192.168.4.69	DOWN	-	0	-	-	-	-	-	0

That report the following informations:

- Camera ID
- Associated gate
- Last scan time
- Camera date&time
- NTP drift or the difference between the time indicated in the passage from the camera and the time of the Traffic Scanner server. It is important that it is always at 0 because otherwise it means that the transits received by the camera will be stored as if they had occurred in the past or in the future compared to the real time.
- Transit drift or how long the camera has not detected a passage, it could be due to low vehicle traffic or a possible anomaly.
- Mac address and IP address of the camera

OK

DOWN

- Status: it will be **OK** if the camera is reachable via the network or **DOWN** if it is not..
- Passages: the number of transits recorded in the last 5 minutes
- Camera model, firmware and statistical data on temperature etc.

OCR algorithm efficiency

analyzing this report it is possible to check with which scoring the OCR of the cameras are reading the license plates no.

System status

Cam list **OCR algorithms efficiency** Services Notifications Database

In this report you can see statistics about OCR algorithms efficiency for each camera.
Please notice that the following data is of the current day (today). Data is calculated only when there are at least 100 transits for the camera examined.

ID	Brand	Gate	Transits	Unread/Unrecog.	Type	Italian	Foreign	Unrecog. country	Speed	Color	Brand	Drift+	Drift-	%+	%-
1	Demo	Via Adda Ingresso	677	0,00	100,00	73,12	26,88	0,00	100,00	79,32	77,25	0	0	34,27	0,00
2	Demo	Via Adda Uscita	696	0,00	100,00	70,69	29,31	0,00	100,00	82,04	80,46	0	0	37,93	0,00
3	Demo	Via Monza Ingresso	729	0,00	100,00	74,76	25,24	0,00	100,00	81,76	79,15	0	0	38,96	0,00
4	Demo	Via Monza Uscita	645	0,00	100,00	70,23	29,77	0,00	100,00	81,09	78,14	0	0	41,55	0,00
5	Demo	Via San Maurizio Ingresso	697	0,00	100,00	72,17	27,83	0,00	100,00	80,20	76,90	0	0	37,73	0,00
6	Demo	Via San Maurizio Uscita	669	0,00	100,00	71,75	28,25	0,00	100,00	80,87	78,03	0	0	37,67	0,00
7	Demo	Viale Lombardia Ingresso	673	0,00	100,00	74,00	26,00	0,00	100,00	78,60	76,23	0	0	39,23	0,00
8	Demo	Viale Lombardia Uscita	688	0,00	100,00	71,95	28,05	0,00	100,00	82,12	79,80	0	0	36,48	0,00
9	Demo	Via Guzzina Ingresso	716	0,00	100,00	69,41	30,59	0,00	100,00	78,91	76,26	0	0	35,06	0,00
10	Demo	Via Guzzina Uscita	725	0,00	100,00	71,86	28,14	0,00	100,00	78,76	75,86	0	0	42,62	0,00
11	Demo	Via Quarto Ingresso	631	0,00	100,00	71,95	28,05	0,00	100,00	80,67	76,39	0	0	39,46	0,00
12	Demo	Via Quarto Uscita	691	0,00	100,00	71,78	28,22	0,00	100,00	84,66	80,46	0	0	35,89	0,00

this report is very convenient for checking if the camera's frame and geometry are correctly set without having to jump over each camera to check it.

System services

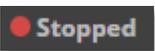
Scrolling down you can check the status of the Traffic Scanner services. The services are necessary for the correct operation of the system and therefore the following must be found in the status:



Except for services not present in the system indicated with:



Nel caso dovesse esserci un servizio premere sul pulsante per avviarlo.

If there is a service , press the  button to start it.

System status

Cam list OCR algorithms efficiency **Services** Notifications Database

Using this panel you can handle all the services. You can start or stop services and, in some specific cases, reset them. Reset button kills the service and tries to restart it. If you're unable to solve your issues, please contact your vendor.

Name	Status	Options		Description
MSSQL\$LPR	Running	START	STOP	SQL Server (LPR)
vpnagent	N.D.	START	STOP	Service not installed
RabbitMQ	N.D.	START	STOP	Service not installed
LPRUniversalAgent	Running	START	STOP	LPR Universal Agent
LPRNotifierAgent	Running	START	STOP	LPR Notifier Agent
LPRInsuranceAgent	N.D.	START	STOP	Service not installed
LPRSpoolerAgent	N.D.	START	STOP	Service not installed
LPRVpnLauncher	N.D.	START	STOP	Service not installed
LPRMessengerAgent	N.D.	START	STOP	Service not installed
LPRHealthAgent	N.D.	START	STOP	Service not installed
LPRTelegramAgent	N.D.	START	STOP	Service not installed
LPRMotGovAgent	N.D.	START	STOP	Service not installed

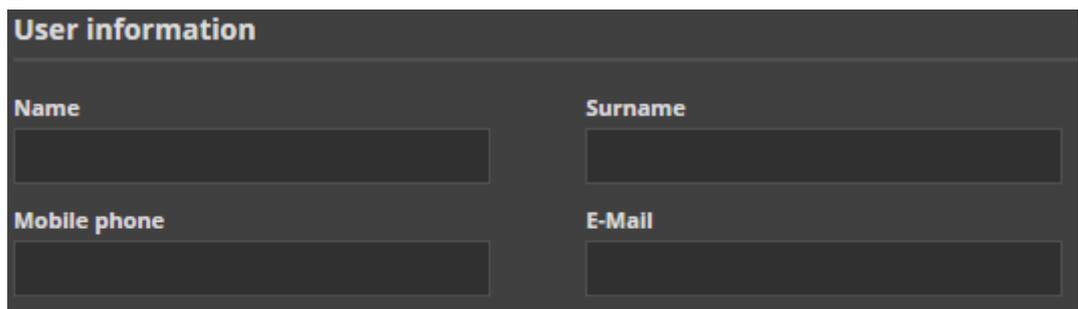
Users Management



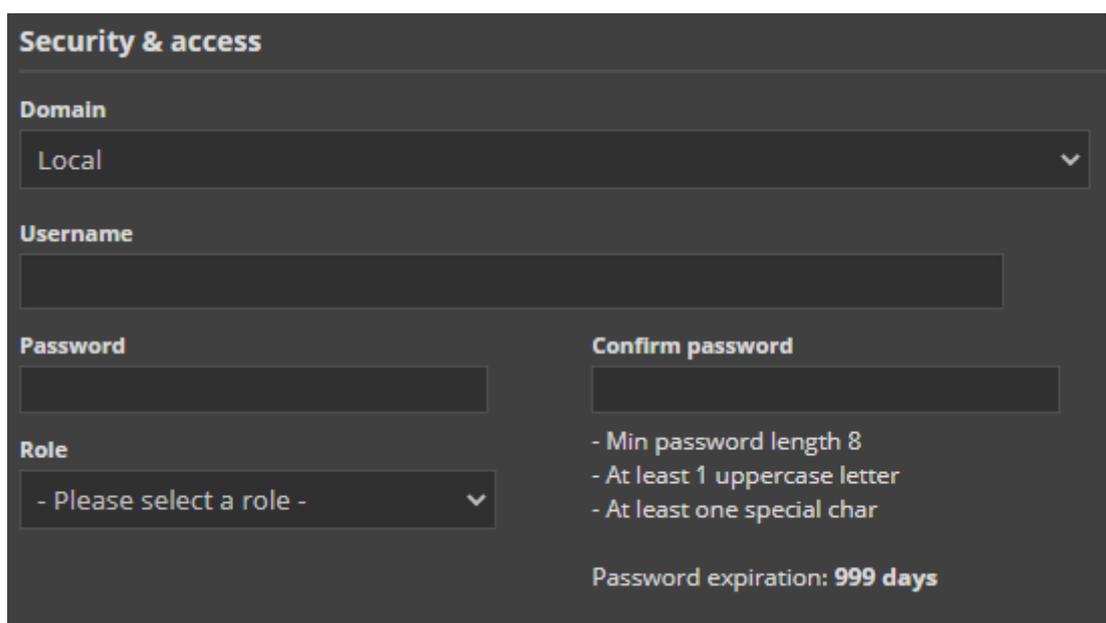
Through the Users item in the Users and security menu, it is possible to create new users or modify an existing one.

New user creation

- 1) Enter the User's personal data

A dark-themed form titled "User information". It contains four input fields arranged in a 2x2 grid: "Name", "Surname", "Mobile phone", and "E-Mail".

- 2) Fill in the access data

A dark-themed form titled "Security & access". It contains several fields: a "Domain" dropdown menu (set to "Local"), a "Username" text field, a "Password" text field, a "Confirm password" text field, a "Role" dropdown menu (set to "- Please select a role -"), and a "Password expiration" field (set to "999 days"). To the right of the "Confirm password" field, there are three bullet points: "- Min password length 8", "- At least 1 uppercase letter", and "- At least one special char".

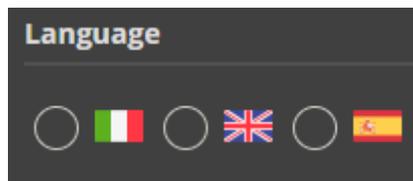
The User Code is the login name that must be entered for access to the Traffic Scanner

The Role identifies the permissions and menus that the user has access to. There are different types of roles based on privileges and are the following:

- Viewer
- User
- Power User
- Superuser
- Admin
- Power Admin

To find out which role to associate a user with, always refer to the System Administrator.

3) Select the language that Traffic Scanner should show to the user



4) Confirm the user creation by clicking the  button