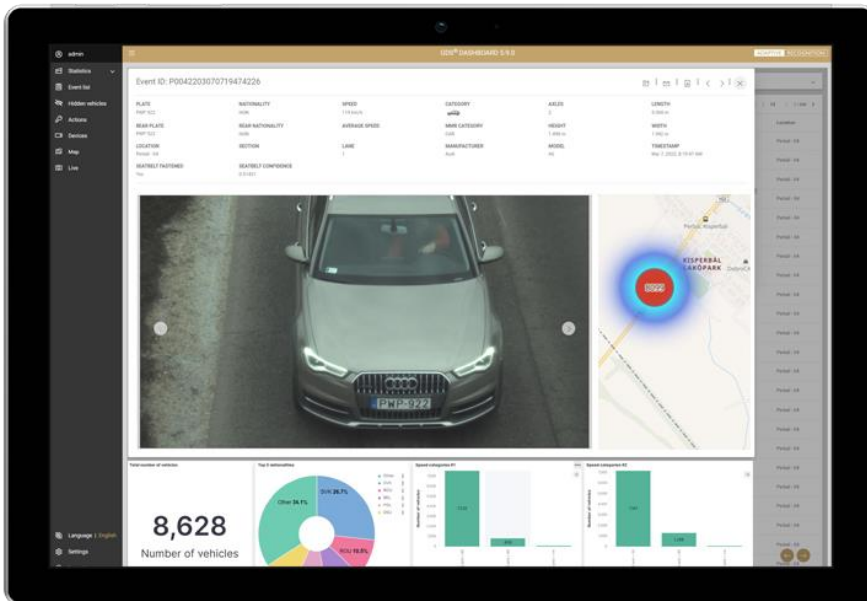


GDS Dashboard User Manual



The purpose of the document is to present the interface of the GDS Dashboard and highlight its features and functions.

GDS Dashboard

User Manual

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1. EXECUTIVE SUMMARY

Globessey Data Server (GDS)

GDS is a universal traffic and document data collection and visualization middleware for backend system providers and/or Adaptive Recognition ANPR camera or PR technology users. GDS effortlessly manages, analyzes, and shares large volumes of traffic data regardless of the number of connected endpoints. With the single-click device registration option, GDS can be fully up and ready in mere minutes.

GDS is scalable to store large amounts of records (meta data and associated attachments) in a high availability system that natively supports load balancing over network. Data collection is completely autonomous, while the standardized (acknowledgement-based) data package flow is rapidly managed through IP-based communication and transmitted between multiple endpoints and the server. The software can also share endpoint data with specific business applications.

Thanks to the support of various failover mechanics, continuous data syncing, and automated data recovery, your system can be hardened and downtimes minimized. By natively supporting all Adaptive Recognition smart cameras – Vidar, Einar, MicroCAM – and Osmond document reader endpoints can be operated or, thanks to self-verification and periphery check, monitored, using aggregated status notifications on the interface of GDS supplemented by SNMP device monitoring. This way, you can always reflect the detailed conditions of the system in real-time, saving you time and money regarding maintenance.

GDS Dashboard

Responsive web-based GUI optimized for a variety of display sizes, provides a frontend (GUI) to access the functions of GDS and serves as a handy toolkit to configure and monitor the system. Equipped with a powerful and flexible analytics feature, GDS Dashboard lets you enjoy comprehensive metrics in a visualized format.

The purpose of this document is to present the interface of the GDS DASHBOARD and highlight its features and functions.



2. USER MANAGEMENT

2.1. LOGIN & LOGOUT

GDS Dashboard can be accessed with mainstream web browsers (Chrome, Firefox, Edge), by putting the appropriate IP/web address – and port in the case of using non-http(s) standard port – provided by your IT administrator, into the URL bar. The login screen that appears allows you to access the Dashboard by entering user credentials (Username and Password) and clicking on **Login** button.

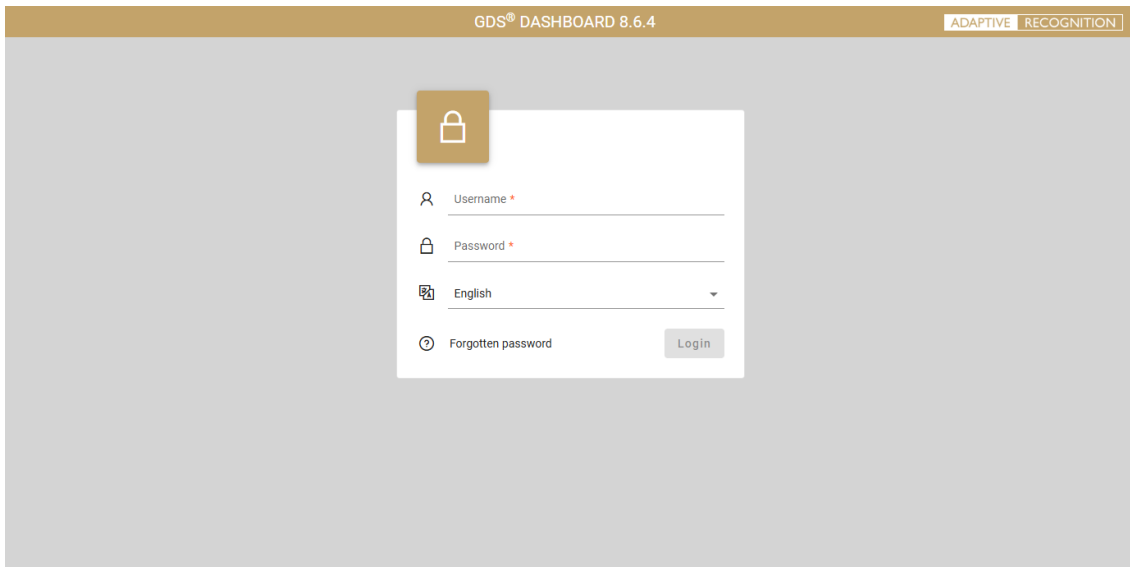


fig. 01: Login screen

The **display language** of the user interface can be pre-selected on the login screen and can also be changed after logging in.

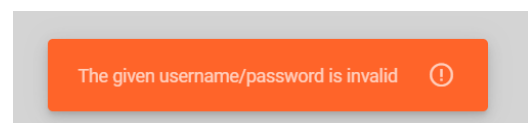
The **forgotten password** function allows the user to send reminder email to their registered email address.

After their work session is finished users can log out from the Dashboard by clicking the **Logout** button at the end of the menu bar. After 60 minutes of inactivity, the user is automatically logged out of the session.



User operations are supported by context sensitive system messages.

Username *
Required field
 Password *
Required field



2.2. ADMINISTRATION

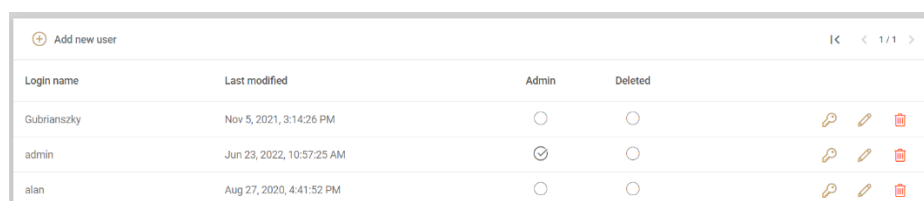
Some functions and menu entries of the system can only be accessed with the appropriate user rights. GDS Dashboard handles the following **user groups**:

- Administrator
- User
- Developer (same rights as User + API doc access (/webjars/swagger-ui/index.html))

User rights	Administrator	User
manage user credentials for themself	X	X
manage user credentials for everyone	X	
add or delete users	X	
access the STATISTICS interface	X	X
access the EVENT LIST interface	X	X
access the HIDDEN VEHICLES interface	X	
access the ACTIONS interface	X	X
access the ENDPOINTS interface	X	
access the MAP interface *	X	X
access the LIVE interface	X	X
access the SETTINGS interface	X	

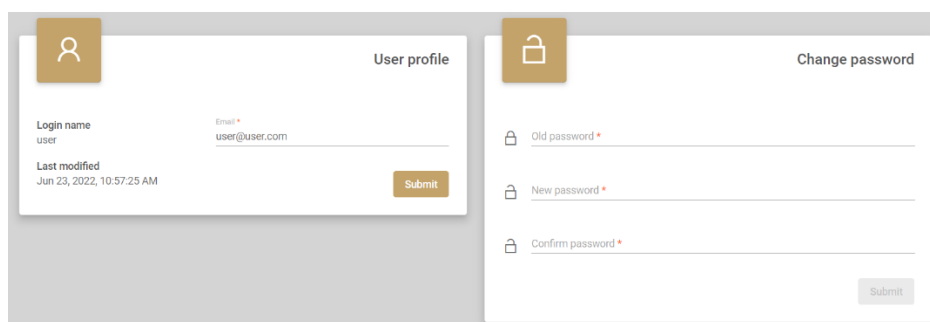
* *accept new device* function is only available to Administrators

User management tasks are conducted in the **ADMIN** interface (top entry of the Dashboard menu bar). Members of 'Administrator' user group see a list view of all registered users, where it is possible to change their e-mail addresses, passwords or remove their access.



Login name	Last modified	Admin	Deleted	
Gubrianszky	Nov 5, 2021, 3:14:26 PM	<input type="radio"/>	<input type="radio"/>	
admin	Jun 23, 2022, 10:57:25 AM	<input checked="" type="radio"/>	<input type="radio"/>	
alan	Aug 27, 2020, 4:41:52 PM	<input type="radio"/>	<input type="radio"/>	

Members of the 'User' group can see and modify their own credentials:



User profile

Login name

Email *

Last modified

Change password

Old password *

New password *

Confirm password *

fig. 02: Content of the admin interface

3. EVENT MANAGEMENT

3.1 EVENT LIST

Traffic data (series of events created of every passing vehicle) and document data (series of events from document and passport readers, e.g.: the Osmond document reader) - hereinafter: **records** - stored in GDS are displayed in pageable, and sortable lists in tabular format and the individual records selected in the list are displayed on a custom “pop-up” form.

The interface supports traditional user paradigms, such as drag’n’drop actions, copy-paste, right-mouse click to open context menus, zoom and resize actions, sorting orders (either ascending or descending). The event lists can be sorted arbitrarily based on the displayed properties. By default, the records are ordered by their timestamp, with the newest records at the top of the list.

ID	Timestamp	Plate	Nationality	Rear plate	Rear nationality	Category	MMR category
A041250204150508	Feb 4, 2025, 4:05:08 PM	HOF944	H	ARE009	H		1
A041250204150453	Feb 4, 2025, 4:04:53 PM	SWT825	PL	CJD443	PL		5
N039250204150450	Feb 4, 2025, 4:04:50 PM	YFP552	D	ZGM508	D		8
A041250204150438	Feb 4, 2025, 4:04:38 PM	DJM494	H	WMJ249	H		9
A041250204150423	Feb 4, 2025, 4:04:23 PM	OQV247	H	DKV789	H		1
N039250204150415	Feb 4, 2025, 4:04:15 PM	OA0325	H	QBR798	H		1
A041250204150408	Feb 4, 2025, 4:04:08 PM	LYQ935	H	XMR518	H		5
A041250204150353	Feb 4, 2025, 4:03:53 PM	HSQ968	D	CPB240	D		5
N039250204150340	Feb 4, 2025, 4:03:40 PM	ADB401	RO	KCP964	RO		1
A041250204150338	Feb 4, 2025, 4:03:38 PM	SVW033	H	OFG613	H		1
A041250204150323	Feb 4, 2025, 4:03:23 PM	YLF355	UK	QJP292	UK		9
A041250204150308	Feb 4, 2025, 4:03:08 PM	QMJ677	UK	XQW532	UK		1
N039250204150305	Feb 4, 2025, 4:03:05 PM	PKV231	PL	NOD438	PL		1
A041250204150253	Feb 4, 2025, 4:02:53 PM	YCP811	SK	KDE965	SK		1

fig.03: Tabular display of traffic records

ID	Timestamp	Overall Check	Date of birth	Document type	Document number	Date of expiry
250129120101556A	Jan 29, 2025, 1:01:01 PM	OK	Jan 19, 1978, 1:00:00 AM	PS/7e		Sep 19, 2013, 2:20:00 AM
250129120008290A	Jan 29, 2025, 1:00:08 PM	OK	Dec 14, 1977, 1:06:40 AM	PM	S1100998	Oct 15, 2011, 2:53:20 AM
250129119930534A	Jan 29, 2025, 12:59:30 PM	OK	Jun 11, 1985, 2:00:00 AM	PD	D0000000	Nov 29, 2015, 2:20:00 AM
250129115759512A	Jan 29, 2025, 12:57:59 PM	OK	Jul 7, 1975, 12:56:40 AM	P	A0000000	Oct 22, 2011, 1:33:20 AM
250129115658252A	Jan 29, 2025, 12:56:58 PM	OK	Jul 15, 1954, 1:53:20 AM	P	N000000000	Dec 9, 2013, 1:46:40 AM
250129115523235A	Jan 29, 2025, 12:55:23 PM	OK	Jun 11, 1985, 2:00:00 AM	PD	D000000000	Nov 29, 2015, 2:20:00 AM
250129115457470A	Jan 29, 2025, 12:54:57 PM	OK	Aug 3, 1981, 2:03:20 AM	PO	E000000000	Oct 17, 2021, 2:20:00 AM
250129115326448A	Jan 29, 2025, 12:53:26 PM	OK	Apr 20, 1992, 2:00:00 AM	P		Jun 1, 2027, 2:33:20 AM
250129115213196A	Jan 29, 2025, 12:52:13 PM	OK	Jul 15, 1954, 1:53:20 AM	P	N000000000	Dec 9, 2013, 1:46:40 AM
250129115155433A	Jan 29, 2025, 12:51:55 PM	OK	Aug 12, 1964, 1:03:20 AM	P	C01XYN1.LL	Jul 19, 2027, 3:20:00 AM
250129115024417A	Jan 29, 2025, 12:50:24 PM	OK	Jan 19, 1978, 1:00:00 AM	PS/7e		Sep 19, 2013, 2:20:00 AM
250129114729161A	Jan 29, 2025, 12:47:29 PM	OK	Aug 12, 1964, 1:03:20 AM	P	CA000000	Feb 21, 2018, 12:40:00 AM
250129114418124A	Jan 29, 2025, 12:44:18 PM	OK	Feb 29, 1968, 1:00:00 AM	PS		Oct 10, 2022, 2:00:00 AM
250129114249326A	Jan 29, 2025, 12:42:49 PM	OK	Feb 29, 1968, 1:00:00 AM	PS		Oct 10, 2022, 2:00:00 AM

fig.04: Tabular display of document records

Fifty records are shown on each page. Display of different metadata (values assigned to various data fields of the records) columns can be turned ON and OFF by a drop-down list of checkboxes after clicking on the top left corner of the event list (: **Hide/Show Columns**), and column order can be rearranged by dragging their respective headers.

Timestamp	Plate	Nationality	Rear plate	Rear nationality	Category	MMR category
120620 Jan 29, 2025, 1:06:20 PM	RXM892	HUN	RXM892	HUN		5
120611 Jan 29, 2025, 1:06:11 PM	PFC723	HUN	PFC723	HUN		6
120600 Jan 29, 2025, 1:06:00 PM	KTJ551	HUN	KTU551	HUN		6
120515 Jan 29, 2025, 1:05:15 PM	SUJ668	HUN	SUJ668	HUN		7
120332 Jan 29, 2025, 1:03:32 PM	NZH722	HUN	NZH722	HUN		6
120303 Jan 29, 2025, 1:03:03 PM	NZH212	HUN	NZH212	HUN		6
120259 Jan 29, 2025, 1:02:59 PM	PAH416	HUN	PAH416	HUN		6
120250 Jan 29, 2025, 1:02:50 PM	LET130	HUN	LET130	HUN		6
120235 Jan 29, 2025, 1:02:35 PM	AIEK552	HUN	AIEK552	HUN		6
120122 Jan 29, 2025, 1:01:22 PM	PDV373	HUN	XIB273	HUN		6
120055 Jan 29, 2025, 1:00:55 PM	KEH684	HUN	KEH684	HUN		6
120036 Jan 29, 2025, 1:00:36 PM	SXF748	HUN	SXF748	HUN		5
120029 Jan 29, 2025, 1:00:29 PM	BT8218AG	MKD	BT8218AG	MKD		6
115954 Jan 29, 2025, 12:59:54 PM	NSS095	HUN	NSS095	HUN		5
115859 Jan 29, 2025, 12:58:59 PM	RYR772	HUN	RYR772	HUN		6
115822 Jan 29, 2025, 12:58:22 PM	AEBC825	HUN	AEBC825	HUN		6

fig.05: Customization of tabular display of traffic records

Datatypes of vehicle-based events:

- ID (sequential event ID)
- Timestamp
- Plate number (front and rear)
- Nationality (front and rear)
- Category and MMR category
- Speed
- Average speed
- Location info:
 - Location name
 - Section name
- Vehicle info:
 - Manufacturer
 - Model
 - Color
- Infringement info:
 - Action list name
 - Seatbelt fastened

Datatypes of document or passport reader-based records (see later):

- ID (sequential event ID)
- Timestamp
- Overall check
- Birth Date
- Document type
- Document number
- Validity
- Issuer
- Name
- Parents name
- sex

By clicking on a record of the event list, the user is presented with a detailed ‘pop-up’ view, that includes the **media attachments** (images and/or videos) associated with the record. Metadata and media attachments displayed may vary depending on the connected endpoint(s).

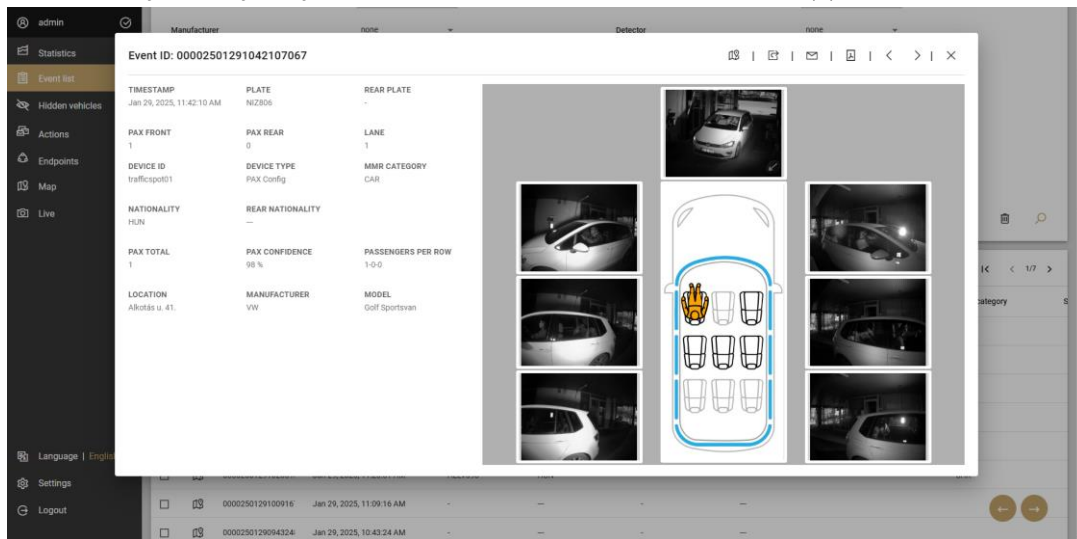


fig.06: Detailed view of a PAX type traffic record

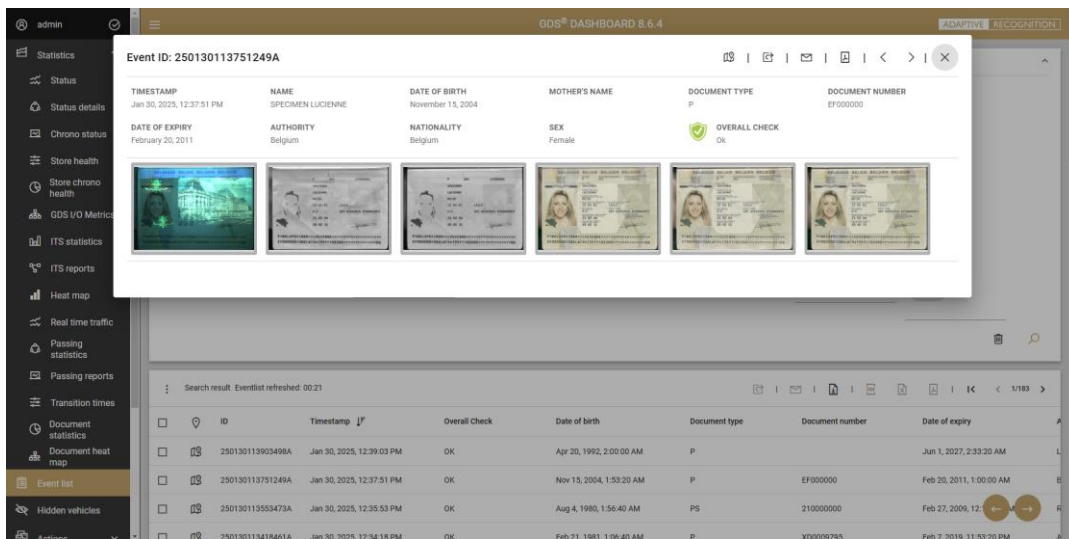


fig.07: Detailed view of a document record

Images may take a few seconds to appear, depending on the connection bandwidth between the endpoint(s) and the server. Click on an image to enlarge it and use the < and > arrows to jump to the next/previous record.

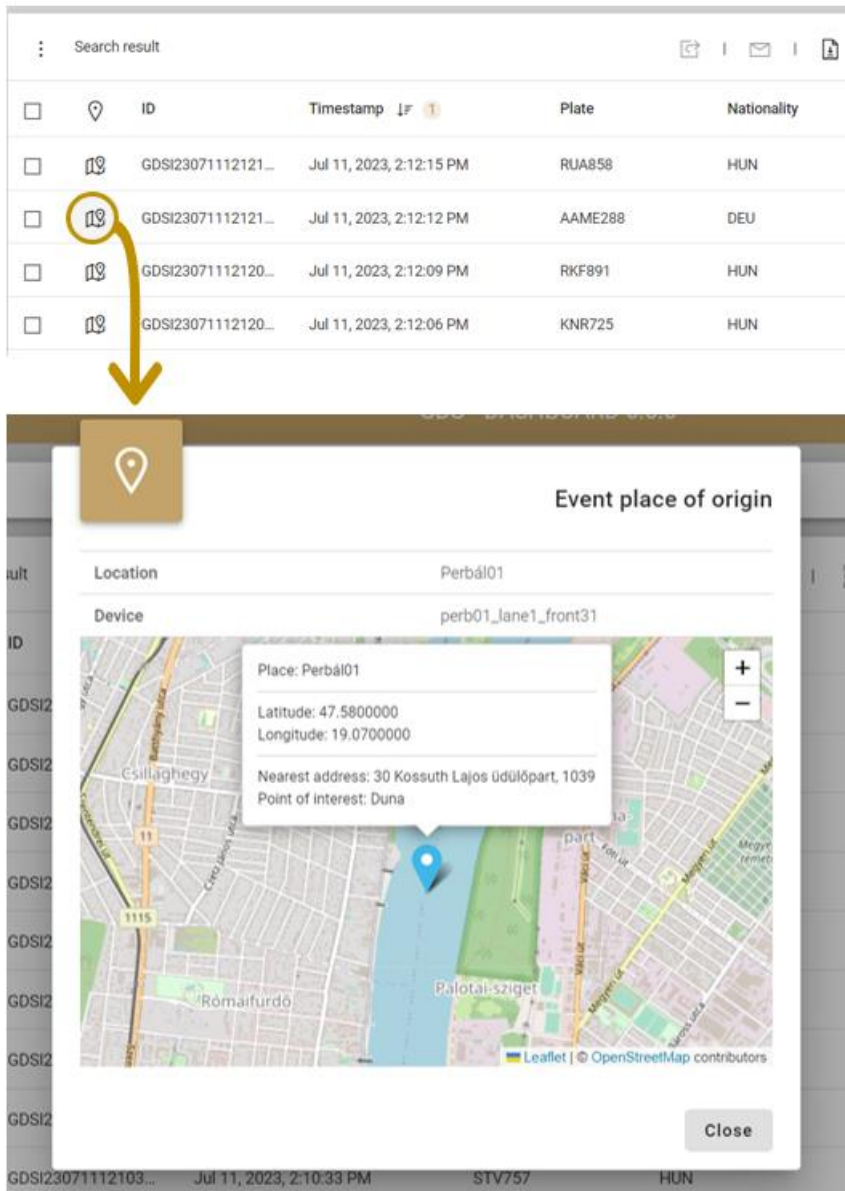



fig.08: Quick-view for event location

In case a MAP service is active, the **Event list** highlights a geo-location icon () for every record. This marker opens the MAP card, showing geographical information, and the nearest address of where the event has been captured. This function is also available in the event view dialog.

3.2 EVENT QUICK TOOLS

Icons on top of the event list, represent the following functions that can be applied to records that are selected from the list by clicking on their checkbox.

	Icon	Event ID	Date	Plate	Nationality	Vehicle	Speed	Location
<input type="checkbox"/>		P0012501231228221	2025. jan. 23. 13:28:22	JML976	HUN			Perbal 01 - Trafficspc
<input checked="" type="checkbox"/>		P0012501231228065	2025. jan. 23. 13:28:06	NLE952	HUN		67 km/h	Perbal 01 - Trafficspc
<input checked="" type="checkbox"/>		P0012501231227495	2025. jan. 23. 13:27:49	RMT224	HUN		62 km/h	Perbal 01 - Trafficspc
<input checked="" type="checkbox"/>		P0012501231227399	2025. jan. 23. 13:27:39	RNZ230	HUN		67 km/h	Perbal 01 - Trafficspc
<input type="checkbox"/>		P0012501231227330	2025. jan. 23. 13:27:33	AEBE457	HUN		64 km/h	Perbal 01 - Trafficspc

fig.09: Quick-tool icons and selecting traffic records

- **Import to action group** (assigned selected records to an Action; see chapter 5)
- **Send e-mail** (share selected records in email with PDF attachment)
- **Mass export** (exports metadata of all records with or without media attachment in the event list– according to the filter criteria - into a csv file; see chapter 3.3).
- **Export CSV** (exports the selected records into a CSV file with formatted with a header; see chapter 3.3.)
- **Export XLSX** (exports the selected records into a XLS file with formatted with a header; see chapter 3.3.)
- **Export to PDF** (exports the selected records into a PDF; see chapter 3.3.)

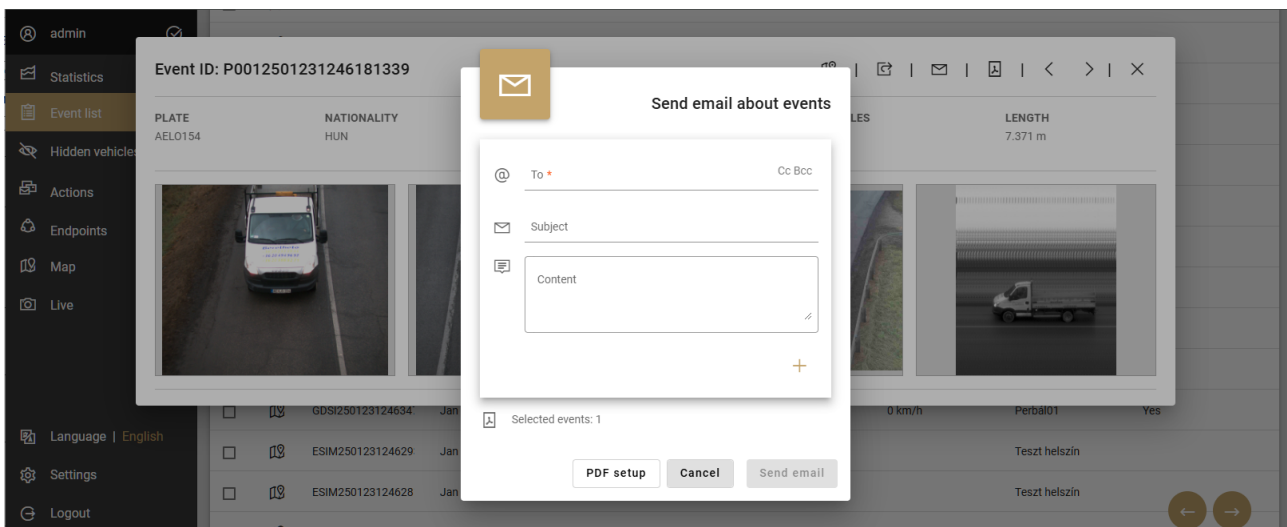


fig.10: Dialogue box about email generation

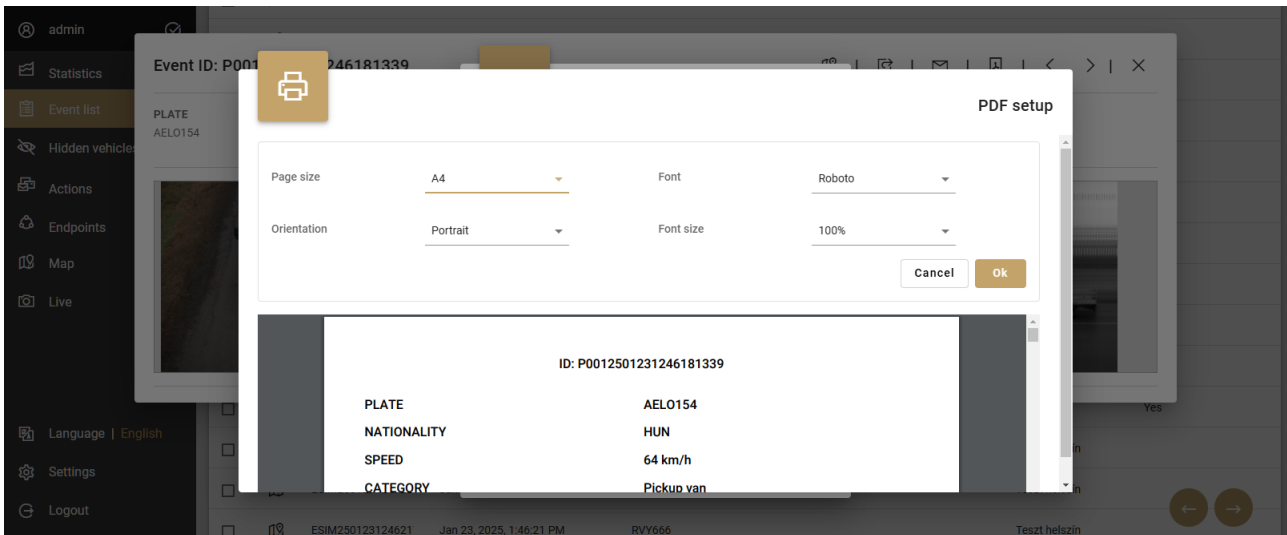
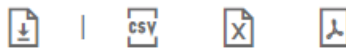


fig.11: Dialog box about PDF generation in event view window

3.3 EXPORTING RECORDS

GDS Dashboard provides several export options:



- Event view can be exported in PDF, which contains all the data related to the record as well as the associated image(s).
- From the event list it is possible to export several selected records simultaneously in csv, excel and pdf format.
- It is also possible to conduct mass-export, the conditions of which can be compiled by the user. The export file is created in csv format without images OR together with images in compressed (ZIP) format. The ZIP file contains a csv file containing the records that match the filter conditions and the images associated with the records.

In the PDF options window, user can check and format the PDF before exporting. Page size, font, page orientation, and font size can be adjusted.

	A	B	C	D	E	F	G	H	I	J
1	ID	Category	Nationalit	Plate	Rear nationality	Rear plate	Speed	Lane	Location	Timestamp
2	P0042106220851294393	210	HUN	LYH553	HUN	LYH553	55 km/h	1	Perbál - 04	Jun 22, 2021, 10:51:29 AM
3	P0042106220851257282	310	HUN	LFS027	HUN	LFS027	52 km/h	1	Perbál - 04	Jun 22, 2021, 10:51:25 AM
4	P0042106220851234434	510	DEU	ZWP3802	DEU	ZWP471	50 km/h	1	Perbál - 04	Jun 22, 2021, 10:51:23 AM
5	P0042106220851196871	210	HUN	PXE775	HUN	PXE775	61 km/h	2	Perbál - 04	Jun 22, 2021, 10:51:19 AM
6	P0042106220851177850	310	HUN	MJY650	HUN	MJY650	61 km/h	2	Perbál - 04	Jun 22, 2021, 10:51:17 AM
7	P0042106220851147568	210	HUN	JML110	HUN	JML110	65 km/h	2	Perbál - 04	Jun 22, 2021, 10:51:14 AM
8	P0042106220851115639	440	HUN	SOZ373	HUN	SOZ373	67 km/h	2	Perbál - 04	Jun 22, 2021, 10:51:11 AM
9	P0042106220851067787	210	HUN	JPS623	HUN	JPS623	40 km/h	1	Perbál - 04	Jun 22, 2021, 10:51:06 AM
10	P0042106220851060666	210	HUN	KDS233	HUN	KDS233	71 km/h	2	Perbál - 04	Jun 22, 2021, 10:51:06 AM
11	P0042106220850337015	210	HUN	SKL995	HUN	SKL995	66 km/h	1	Perbál - 04	Jun 22, 2021, 10:50:33 AM
12	P0042106220850210084	210	HUN	RVC477	HUN	RVC477	72 km/h	2	Perbál - 04	Jun 22, 2021, 10:50:21 AM
13	P0042106220849490743	210	HUN	PXP416	HUN	PXP416	66 km/h	1	Perbál - 04	Jun 22, 2021, 10:49:49 AM
14	P0042106220849341862	210	HUN	SLR082	HUN	SLR082	74 km/h	2	Perbál - 04	Jun 22, 2021, 10:49:34 AM
15	P0042106220849299210	210	HUN	LXJ229	HUN	LXJ229	63 km/h	2	Perbál - 04	Jun 22, 2021, 10:49:29 AM
16	P0042106220849290387	310	HUN	JOX605	HUN	JOX605	71 km/h	1	Perbál - 04	Jun 22, 2021, 10:49:29 AM
17	P0042106220849284911	210	HUN	SKK458	HUN	SKK458	64 km/h	2	Perbál - 04	Jun 22, 2021, 10:49:28 AM
18	P0042106220849282229	210	DEU	CI11591D	DEU	CI11591D	60 km/h	2	Perbál - 04	Jun 22, 2021, 10:49:26 AM

fig.12: Result of XLS export of a set of random generated Recordings

```

1 ID;Category;Nationality;Plate;Rear nationality;Rear plate;Speed;Lane;Average speed;Detector;Location;Section;Action list name;Timestamp;
confidence
2 P0042106220851294393;210;HUN;LYH553;HUN;LYH553;55 km/h;1;;Perbál - 04;;;Jun 22, 2021, 10:51:29 AM;0.5056
3 P0042106220851257282;310;HUN;LFS027;HUN;LFS027;52 km/h;1;;Perbál - 04;;;Jun 22, 2021, 10:51:25 AM;0.49588
4 P0042106220851234434;510;DEU;ZWP3802;DEU;ZWP471;50 km/h;1;;Perbál - 04;;;Jun 22, 2021, 10:51:23 AM;-1;-1
5 P0042106220851196871;210;HUN;PXK775;HUN;PXK775;61 km/h;2;;Perbál - 04;;;Jun 22, 2021, 10:51:19 AM;0.48034
6 P0042106220851177850;310;HUN;MJY650;HUN;MJY650;61 km/h;2;;Perbál - 04;;;Jun 22, 2021, 10:51:17 AM;0.55016
7 P0042106220851147568;210;HUN;JML110;HUN;JML110;65 km/h;2;;Perbál - 04;;;Jun 22, 2021, 10:51:14 AM;0.49143
8 P0042106220851115639;440;HUN;SOZ373;HUN;SOZ373;67 km/h;2;;Perbál - 04;;;Jun 22, 2021, 10:51:11 AM;0.47564
9 P0042106220851067787;210;HUN;JPS623;HUN;JPS623;40 km/h;1;;Perbál - 04;;;Jun 22, 2021, 10:51:06 AM;0.53372
10 P0042106220851060666;210;HUN;KDS233;HUN;KDS233;71 km/h;2;;Perbál - 04;;;Jun 22, 2021, 10:51:06 AM;0.33278
11 P0042106220850337015;210;HUN;SKL995;HUN;SKL995;66 km/h;1;;Perbál - 04;;;Jun 22, 2021, 10:50:33 AM;0.50258
12 P0042106220850210084;210;HUN;RVC477;HUN;RVC477;72 km/h;2;;Perbál - 04;;;Jun 22, 2021, 10:50:21 AM;-1;-1
13 P0042106220849490743;210;HUN;PXP416;HUN;PXP416;66 km/h;1;;Perbál - 04;;;Jun 22, 2021, 10:49:49 AM;0.53384
14 P0042106220849341862;210;HUN;SLR082;HUN;SLR082;74 km/h;2;;Perbál - 04;;;Jun 22, 2021, 10:49:34 AM;0.49898
15 P0042106220849299210;210;HUN;LXJ229;HUN;LXJ229;63 km/h;2;;Perbál - 04;;;Jun 22, 2021, 10:49:29 AM;-1;-1
16 P0042106220849290387;310;HUN;JOK605;HUN;JOK605;71 km/h;1;;Perbál - 04;;;Jun 22, 2021, 10:49:29 AM;0.46952
17 P0042106220849284911;210;HUN;SKK458;HUN;SKK458;64 km/h;2;;Perbál - 04;;;Jun 22, 2021, 10:49:28 AM;0.47497
18 P0042106220849282228;310;SRB;SH1587B;SRB;SH1587B;60 km/h;2;;Perbál - 04;;;Jun 22, 2021, 10:49:26 AM;0.46800
    
```

fig.13: Results of CSV export of a set of random generated Recordings

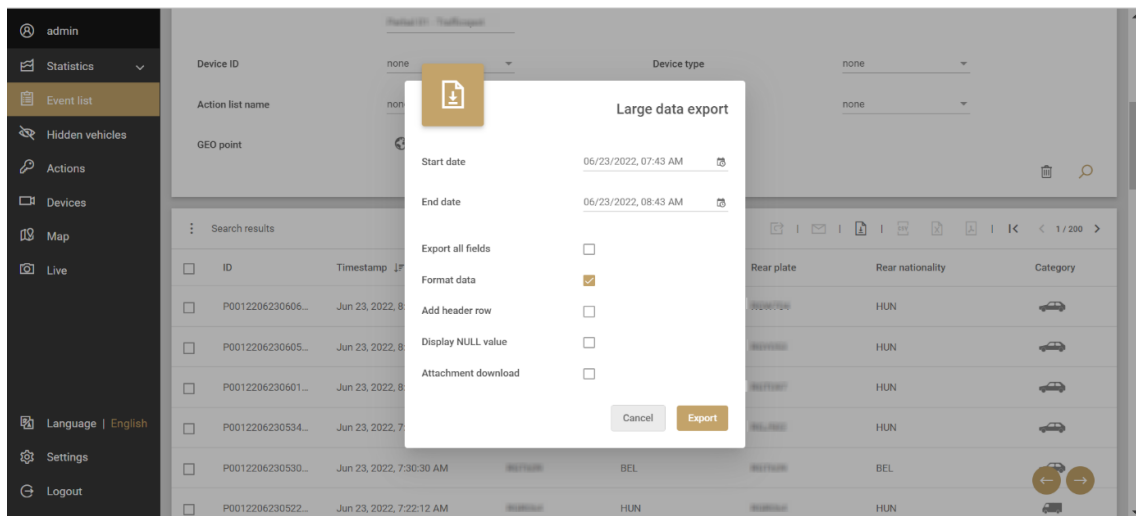


fig.14: Mass export of Recordings

Mass export feature has no (hard-coded) limitation regarding the amount of data to be exported. In case the user opts to include images within the mass export, an artificial limitation (configurable maximum interval, 4 hours by default) can be applied to prevent accidental download requests of Gigabytes of event images.

Contents of a mass export package:

The screenshot illustrates the mass export process in the GDS Dashboard. A 'Large data export' dialog box is shown with various filters and an 'Export' button. An arrow points from this dialog to a 'Summary (txt)' window displaying statistics: 12 total event records, 46 total attachments, 46 total attachments downloaded, and 0 missing attachments. Another arrow points to a grid of vehicle images labeled 'Image data (jpeg)'. A third arrow points to a table labeled 'Event data (csv) + image link...'. The table contains columns for Timestamp, Action list, Section, Category, ID, Lane, Location, Nationality, Plate, Rear nationality, Rear plate, Speed, Front plate, and Images.

Timestamp	Action list	Section	Category	ID	Lane	Location	Nationality	Plate	Rear nationality	Rear plate	Speed	Front plate	Images
2023.09.06 14:14	not set	not set	Car	P004210906121447953	1	Pethal - 04 HUN	HU665	HUN	HU665	59 km/h		P004210906121447953	P004210906121447953
2023.09.06 14:14	not set	not set	Car	P0042109061214479714	1	Pethal - 04 HUN	NUN387	HUN	NUN387	68 km/h		P0042109061214479714	P0042109061214479714
2023.09.06 14:14	not set	not set	Car	P0042109061214480071	1	Pethal - 04 HUN	PO0739	HUN	PO0739	55 km/h		P0042109061214480071	P0042109061214480071
2023.09.06 14:13	not set	not set	Car	P00421090612144801294	1	Pethal - 04 HUN	MCM053	HUN	MCM053	59 km/h		P00421090612144801294	P00421090612144801294
2023.09.06 14:14	not set	not set	Car	P00421090612144803058	1	Pethal - 04 HUN	GVN512	HUN	GVN512	59 km/h		P00421090612144803058	P00421090612144803058
2023.09.06 14:14	not set	not set	Van	P00421090612144804066	1	Pethal - 04 HUN	SNE871	HUN	SNE871	64 km/h		P00421090612144804066	P00421090612144804066
2023.09.06 14:14	not set	not set	Van	P00421090612144821215	2	Pethal - 04 HUN	PTM693	HUN	PTM693	62 km/h		P00421090612144821215	P00421090612144821215
2023.09.06 14:14	not set	not set	Car	P00421090612144824612	1	Pethal - 04 HUN	SCA833	HUN	SCA833	57 km/h		P00421090612144824612	P00421090612144824612
2023.09.06 14:14	not set	not set	Van	P00421090612144831000	2	Pethal - 04 HUN	POH754	HUN	POH754	58 km/h		P00421090612144831000	P00421090612144831000
2023.09.06 14:13	not set	not set	Car	P00421090612144837033	2	Pethal - 04 HUN	PGH345	HUN	PGH345	27 km/h		P00421090612144837033	P00421090612144837033
2023.09.06 14:14	not set	not set	Car	P00421090612144838233	2	Pethal - 04 HUN	GVN220	HUN	GVN220	68 km/h		P00421090612144838233	P00421090612144838233
2023.09.06 14:14	not set	not set	Pickup van	P00421090612144839887	1	Pethal - 04 HUN	MTN984	HUN	MTN984	65 km/h		P00421090612144839887	P00421090612144839887

fig.15: Contents of Mass Export (visual illustration)

3.4 EVENT FILTER

It is possible to search and filter stored records between ANPR (traffic) or document data. There is a special filter, the Select the table, to determine whether the search takes place in ANPR (traffic) or document records. A variety of search criteria can be compiled choosing from the properties of the records, and the criteria can be arbitrarily combined with logical operations and parentheses. (Programming skills for setting up a complex logical query are not necessary.)

The screenshot shows the 'Event filter' interface with two tabs: 'Basic' and 'Advanced'. Under the 'Basic' tab, there is a 'Select the table' dropdown menu. The dropdown is open, showing 'multi_event' (selected with a checkmark) and 'documents'. Below this, there are fields for 'ID' and 'Plate', and a 'Timestamp' field set to 'none'. The 'Nationality' field is also set to 'none'.

fig.16: Select the table filter to set the search to be based on ANPR (multi_event) or Document (documents) data

Filter can be defined in two methods:

- BASIC
- ADVANCED

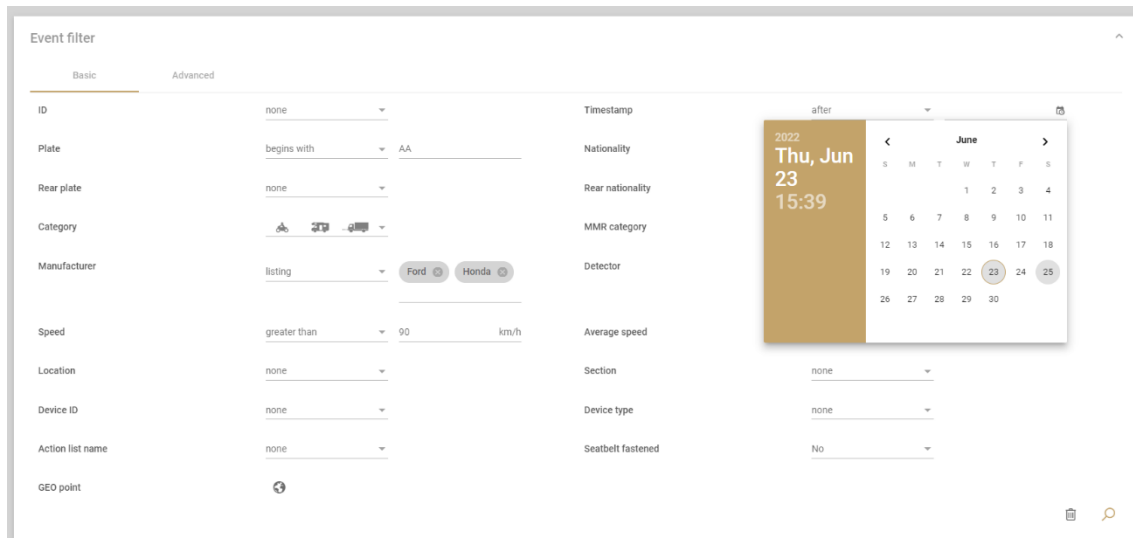



fig.17: Basic event filter on GDS dashboard, with interactive QoL elements

In **BASIC mode**, metadata associated with the records can serve as a basis of filtering conditions with inclusive 'AND' relations. After specifying the filter criteria, clicking the search button (🔍) on the right (pressing the ENTER button is not sufficient) will display the filtered event list.

Filtering can be done with a set of operators:

Operator	Description
none	the specific condition will not be considered
begins with	the beginning of an unspecified number of characters for the phrase you are looking for (e.g. license plate, document identifier, etc.) e.g. Plate – ABC
listing	allows filtering for several license plates and values at the same time (exact data required must be entered, separated by Enter) e.g. Nationality - HUN [Enter] BEL
available	data corresponding to the given condition is available for the record e.g. has speed data: Speed - available
unavailable	data corresponding to the given condition is not available for the record e.g. no speed data: Speed - not available
before	listing events that occur before a specified time e.g. Date earlier than 01/06/2024
after	listing events that occur later than a specified time e.g. Date later than 01/06/2024
between	filtering for events between two specified times / values e.g. between 30 km/h and 90 km/h
less than	list events with a speed lower than the specified speed e.g. less than 90 km/h
greater than	list events with a speed higher than the specified speed e.g. greater than 30 km/h

It is possible to filter by geographical area utilizing the geo point interface  to filter records within a geographical zone created by the user.

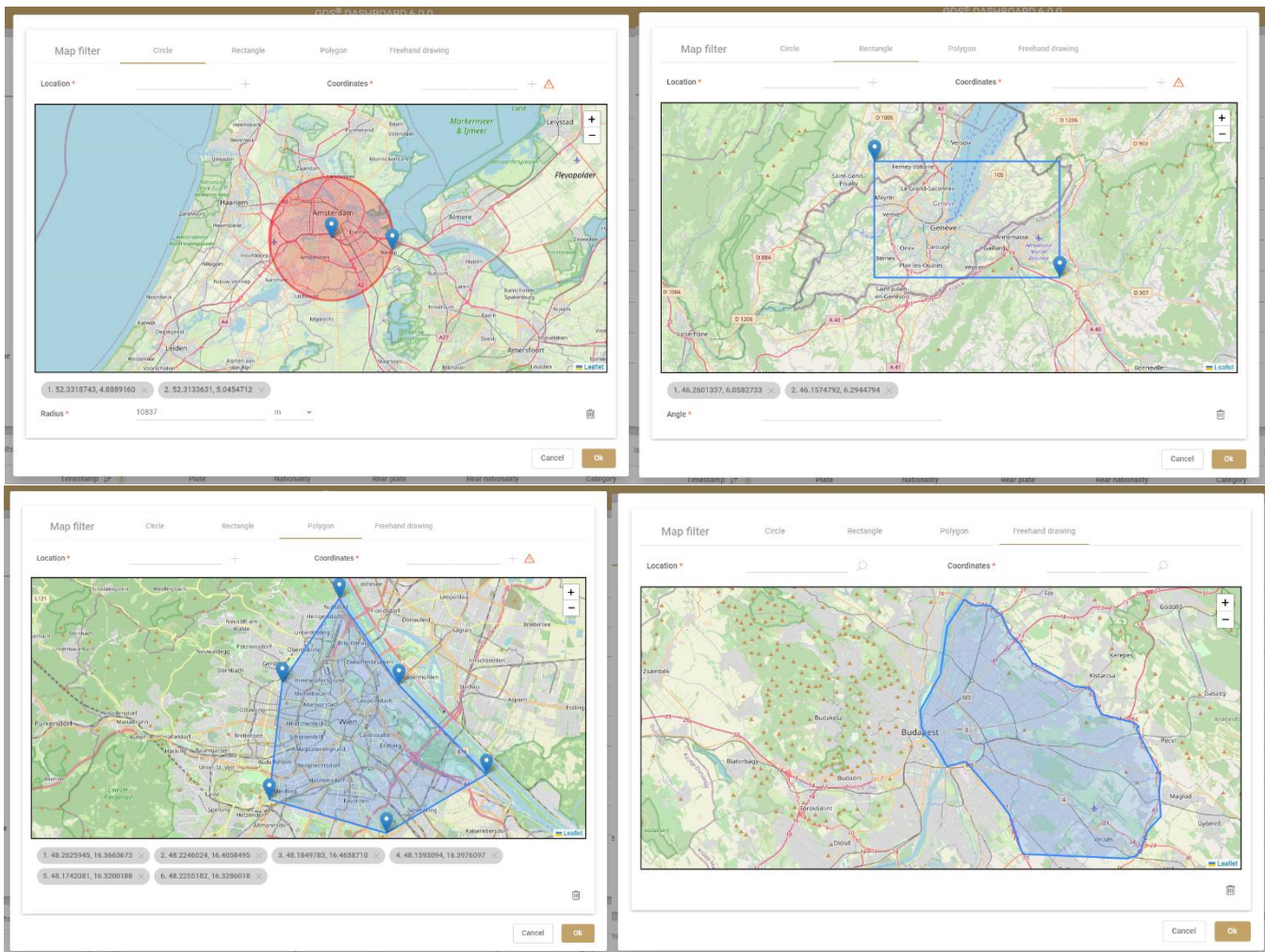



fig.18: Geo location filtering on GDS dashboard

Drawing toolset (circle, rectangle polygon, freehand) is available to the users to define their area of interest by interactive markers, supported by online [geocoder engine](#) that turns addresses and place names inserted to the 'Location' box into geographic coordinates. For more info, see chapter 8.3.

Markers can be defined by clicking on the map, searching for a geographical location, or inserting the coordinates. Submitted markers appear in grey tags under the map and can be removed by clicking on the delete tag (x) button. All tags can be removed at once using the Clear map () button.

In **ADVANCED mode**, metadata associated with the records can be put to a complex query using logical operations (AND / OR / NOT / XOR) and parentheses.

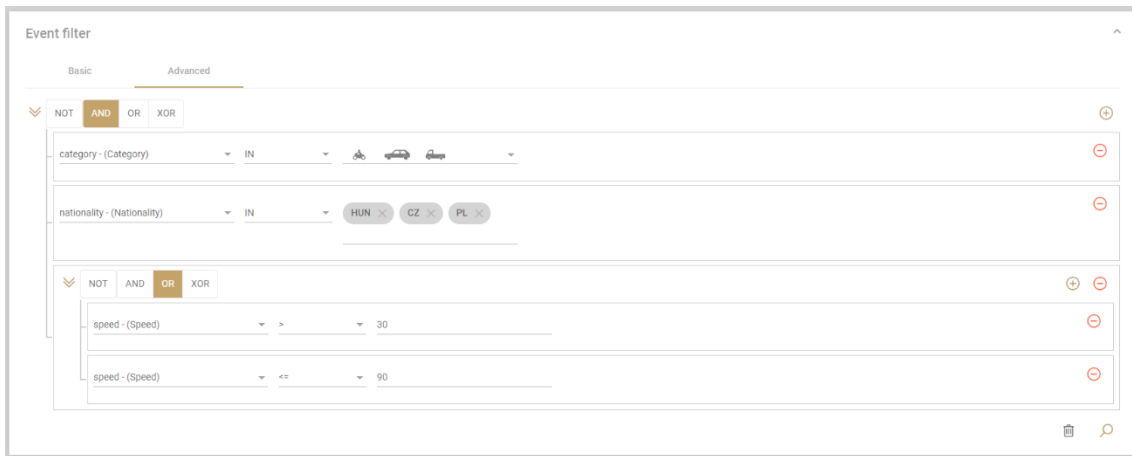


fig.19: Advanced event filter on GDS dashboard, with operators

4. HIDDEN VEHICLES

This view is only related to traffic events. The Hidden Vehicles interface is available to admin level users. License plates added to the **Hidden Vehicles** list will not appear in the event list even if they have been detected. Hidden Vehicles will never trigger notifications either.

License plates can be added manually (by clicking **Add new vehicle**) or by importing it. Import (📄) and export (📄) are initiated with the icons in the upper right corner.

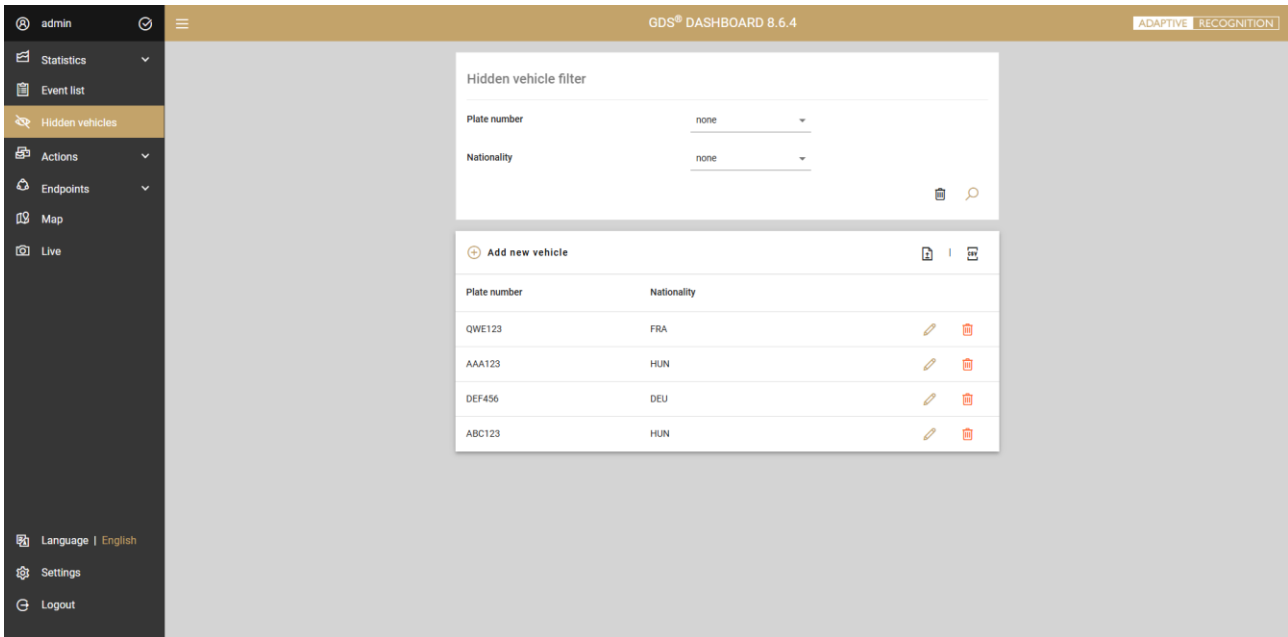


Plate number	Nationality		
QWE123	FRA		
AAA123	HUN		
DEF456	DEU		
ABC123	HUN		

fig.20: List of hidden vehicles

When importing a CSV file, make sure to follow a template that matches the format of an exported CSV file. This way compatibility is guaranteed. To check whether a certain vehicle is listed among the hidden vehicles, the search box can be used at the top of the interface.

5. ACTIONS

Actions in the GDS central software are automated rulesets for notifications, featuring a combination of filters based on various derived information such as time periods, registration numbers, vehicle make and model data, and document properties. Each action can be associated with **Notification** methods (email/SMS/Webhook/GDS user). As in the "Event list" function, it can also be set for a new action to apply to ANPR (traffic) data or document data. In the case of set actions, it is possible to list both ANPR and/or document actions in the filter view by setting the "Select the table" filter.

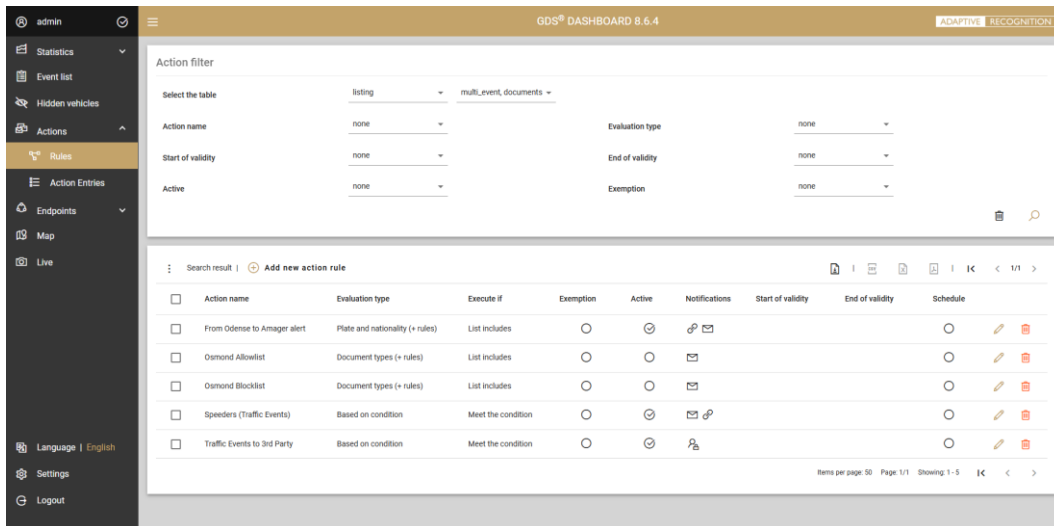


fig.21: List of actions visible to the User (with icons of currently active Notifications)

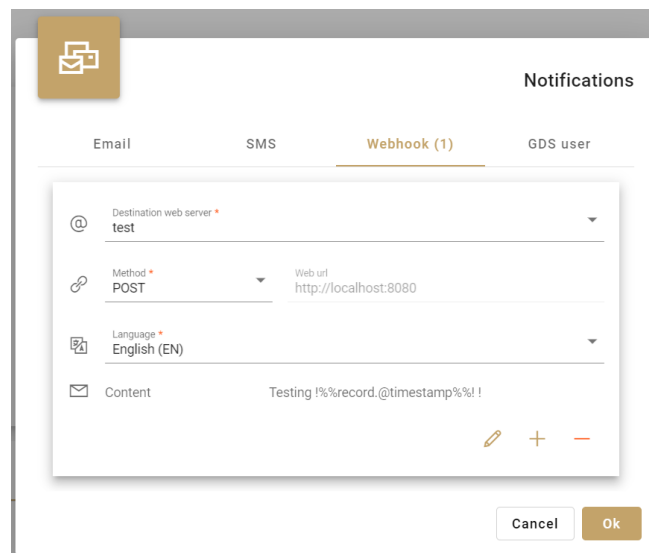


fig.22: Configuring notification channels for an Action (in edit view)

Actions can be defined based on:

- condition only
- condition and record parameters:

- in the case of traffic type action, number plate and nationality with condition
- in the case of document type action, various document parameters with condition

Alert condition can be set as inclusive/exclusive.

5.1 CREATING AN ACTION

Setting up an Action can be achieved with different methods:

- **BASIC** editing mode (fig. 22), for classical compilation of filters via GUI (i.e.: dropdown menus, checkboxes, input fields)
- **ADVANCED** editing mode (fig.23), for setting up arithmetic formula with a visual aid (i.e.: AND/OR conditions, parentheses)
- **SPECIAL** editing mode (fig.24), that allows inserting an SQL syntax to initiate complex queries by users with appropriate knowledge on database operations. Query syntax can be verified using the **Check validity** button.

fig.23: BASIC editing mode of a traffic type GDS Action

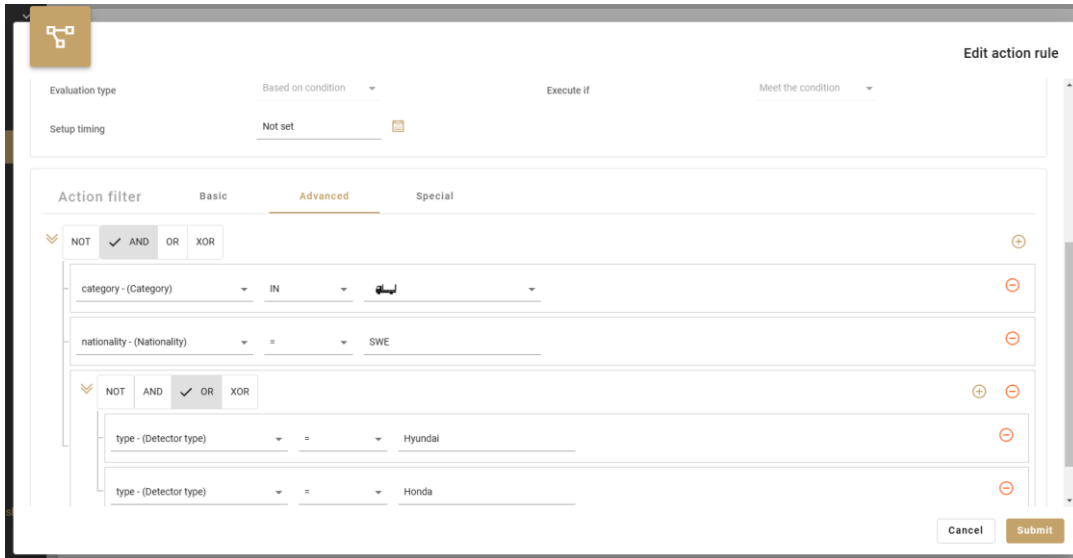


fig.24: ADVANCED editing mode of a traffic type GDS Action

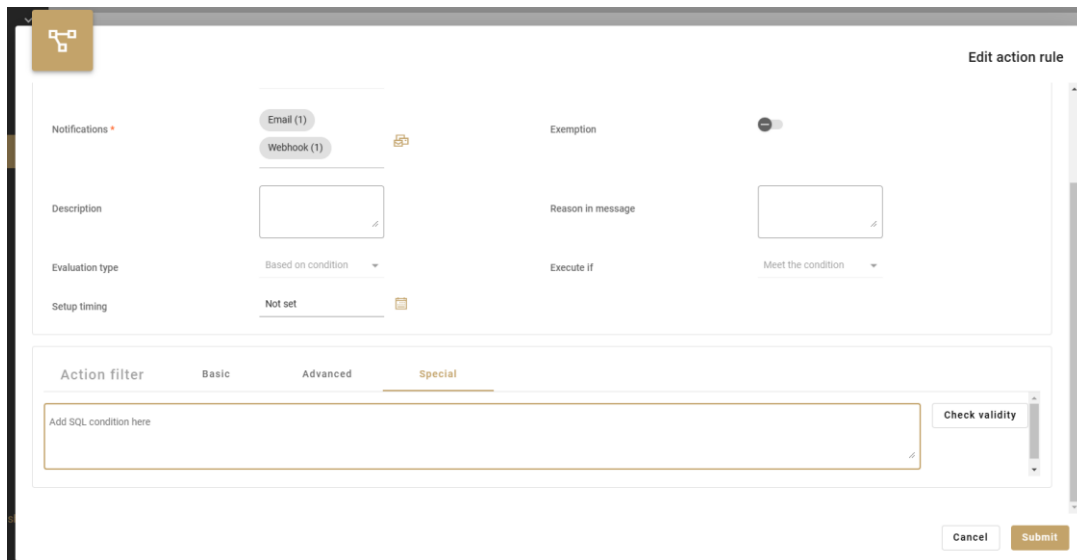


fig.25: SPECIAL editing mode of a traffic type GDS Action

An action can be set to be active only during certain time periods, such as quiet hours or weekends. In the following example, the Action is active from July to the end of December, only on Mondays (all day), Tuesdays (before noon), and Wednesdays (between 10-11AM and 3-5PM) in Budapest local time zone.

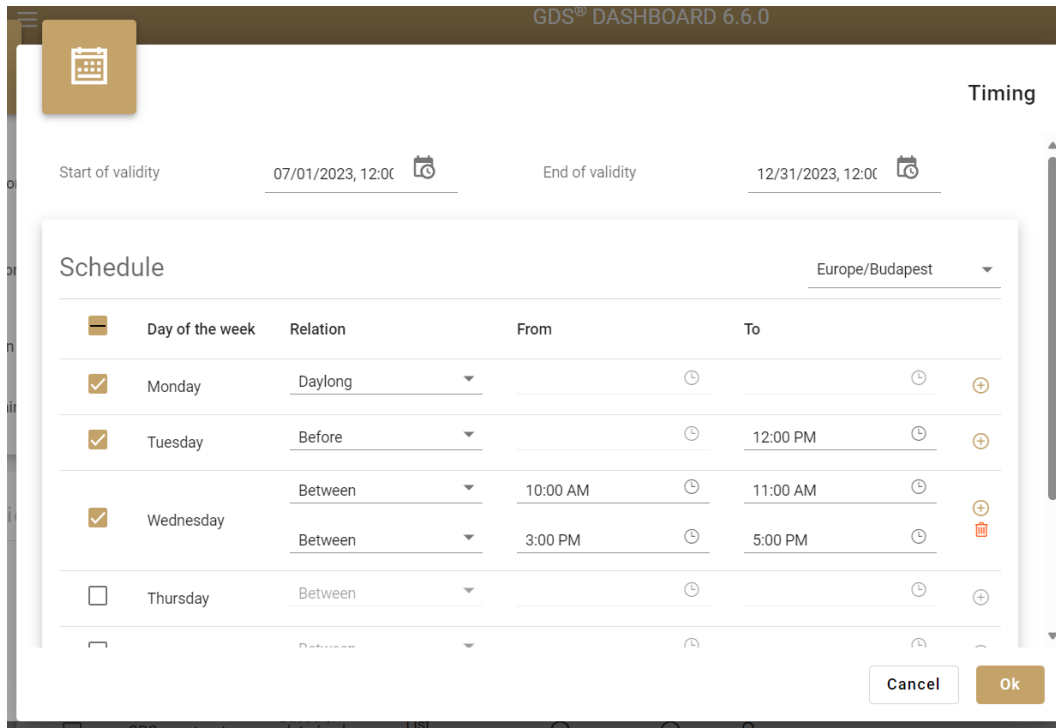


fig.26: TIMING of active & inactive periods for an action

5.2 DATA IMPORT

The **import** of a preset collection of number plates into a new or existing Action group, it can be done by the User's choice of the following principles:

- adding vehicles / documents from a CSV file (the imported collection will be merged to the existing Action, so the original list is not overwritten and no duplicates are created);
- adding vehicles / documents from the **Event List**.

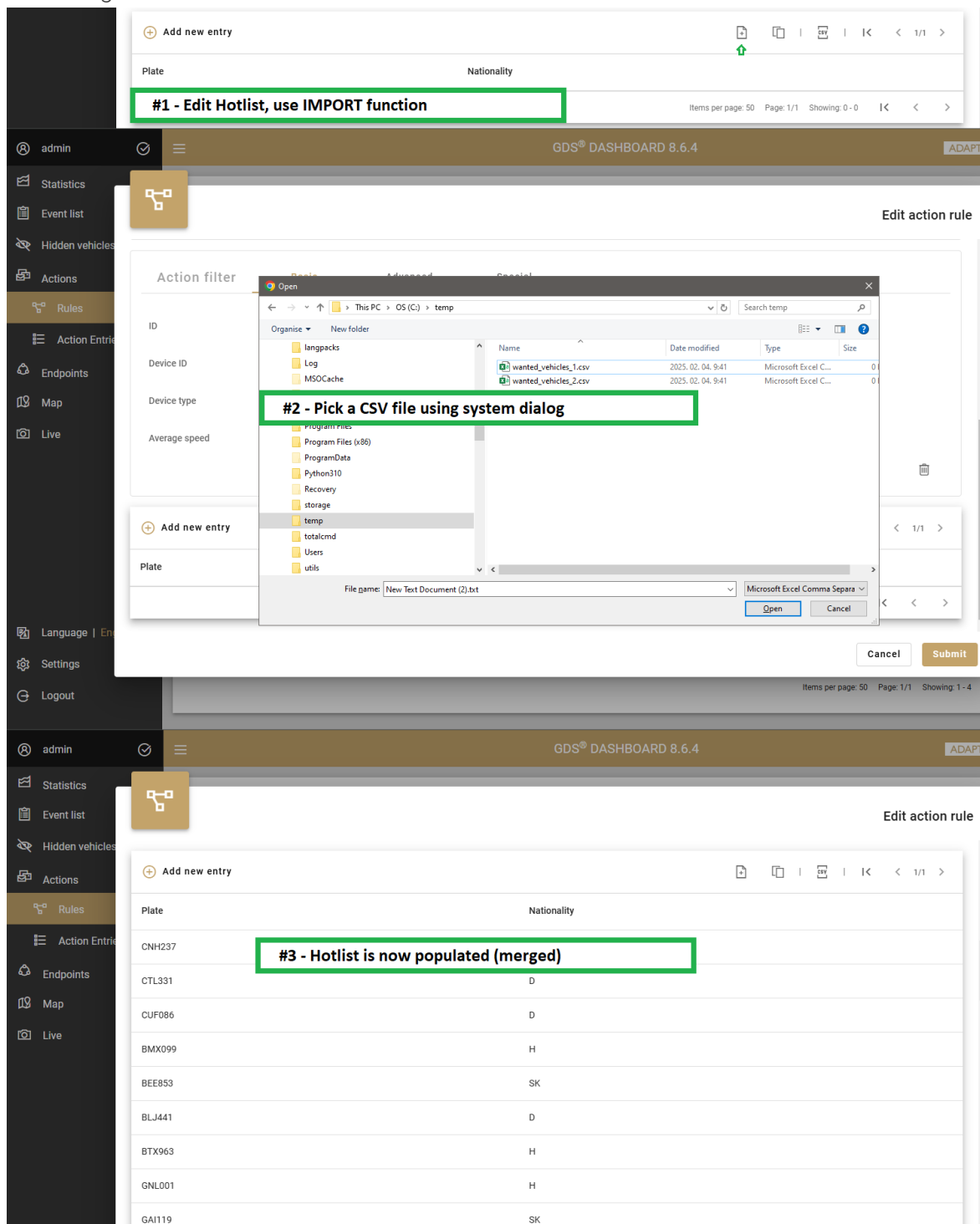


fig.27: Steps to import collection of number plates registered in an CSV file for a traffic type action

Action can be set to be executed (notification sent) if the detected vehicle or document meets / does not meet the conditions or is present / not present on the list. Activating the **Exemption** check box deactivates all actions for vehicles or documents assigned to that list, and pauses notifications. Multiple Exemption lists can be specified. The Action can be activated by checking the **Action activated** box. Saving changes is possible even if the action is not activated, in which case later activation is required.

5.3 PREDEFINED ACTIONS

There are two predefined actions for the Osmond document reader. These actions are schemas for the reader.

- Osmond Allowlist: allowlist for the selected documents.
- Osmond Blocklist: documents blocklist for the selected documents.

These actions are intentionally not active because they do not need to be enabled for cooperation with the Osmond document reader. They only need to be enabled if notifications are also assigned to these actions.

The contents of these lists can be modified from the Action menu.

Further information about their operation can be found in the Osmond manual.

The screenshot shows the 'Actions' menu in the GDS Dashboard. The 'Rules' section is expanded, showing a table of predefined actions. The table has the following columns: Action name, Evaluation type, Execute if, Exemption, Active, Notifications, Start of validity, End of validity, and Schedule. Two actions are listed: 'Osmond Allowlist' and 'Osmond Blocklist'. Both actions have 'Document types (+ rules)' as the evaluation type, 'List includes' as the execute if condition, and 'none' as the exemption. The 'Active' column for both actions is currently unchecked. The 'Notifications' column shows an envelope icon for both. The 'Start of validity' and 'End of validity' columns are empty. The 'Schedule' column shows a circular icon for both. The table is displayed in a search result view with 'Add new action rule' and pagination controls.

Action name	Evaluation type	Execute if	Exemption	Active	Notifications	Start of validity	End of validity	Schedule
<input type="checkbox"/> Osmond Allowlist	Document types (+ rules)	List includes	<input type="radio"/>	<input type="radio"/>				
<input type="checkbox"/> Osmond Blocklist	Document types (+ rules)	List includes	<input type="radio"/>	<input type="radio"/>				

fig.28: Predefined Osmond lists in the Actions menu

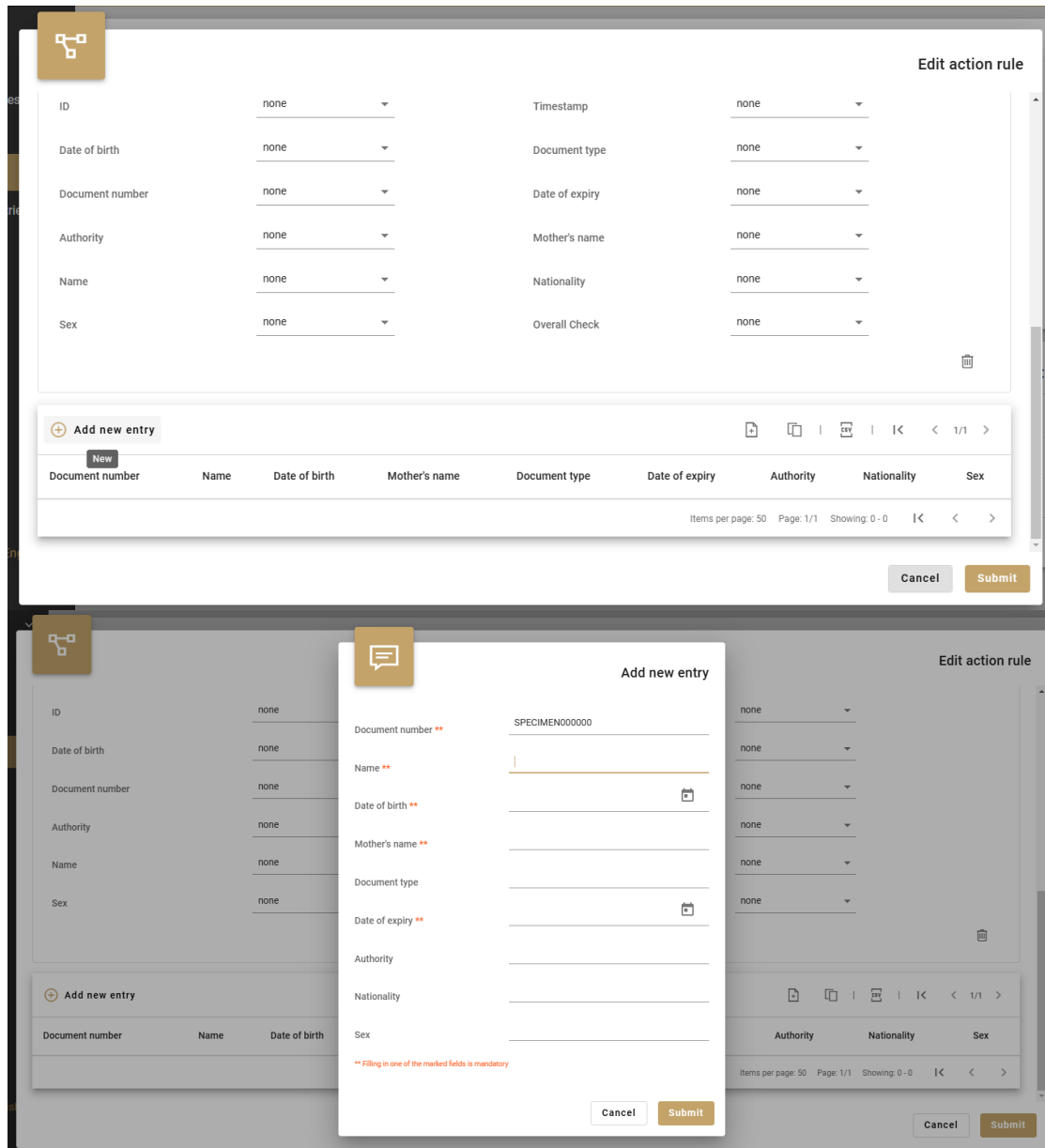


fig.29: Add a new document entry to Osmond Allowlist or Osmond Blocklist

5.4 NOTIFICATIONS

In case the user decides to setup custom format for Email/SMS/Webhook/Forgotten password notification, the content of Email, SMS, Webhook and forgotten password notifications can be configured freely. The text of messages (EMAIL, SMS, Webhook, forgotten password) is specified by the user creating it and can invoke any event parameter with smart tags.

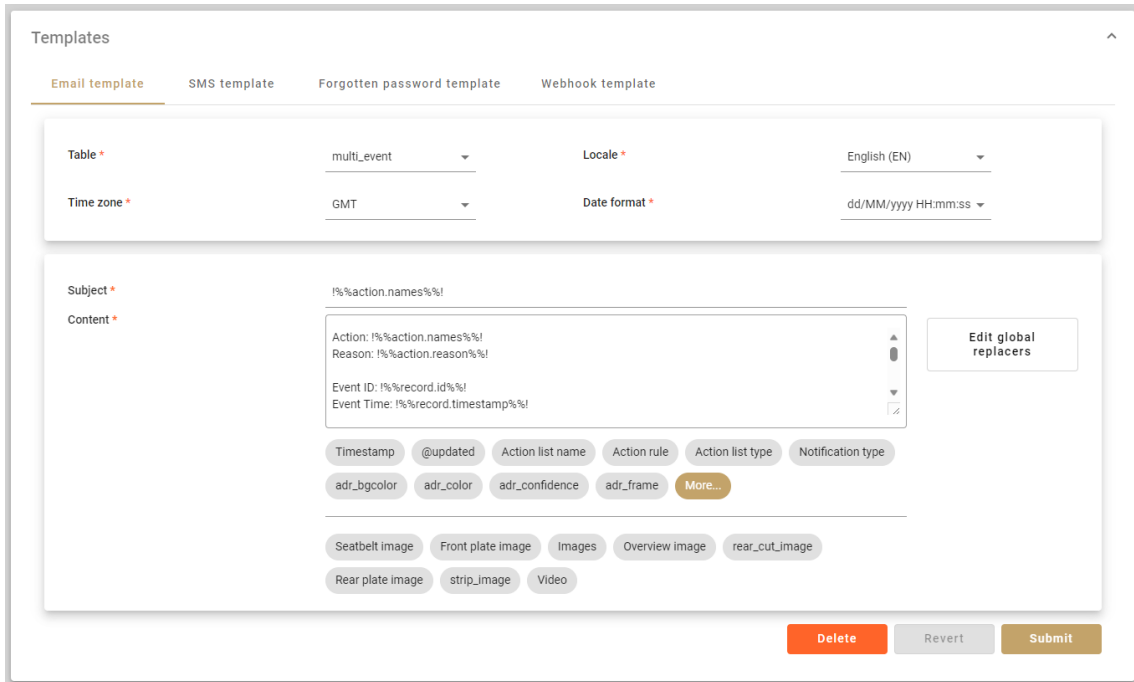


fig.30: Compiling message content for email notification using Smart Tags

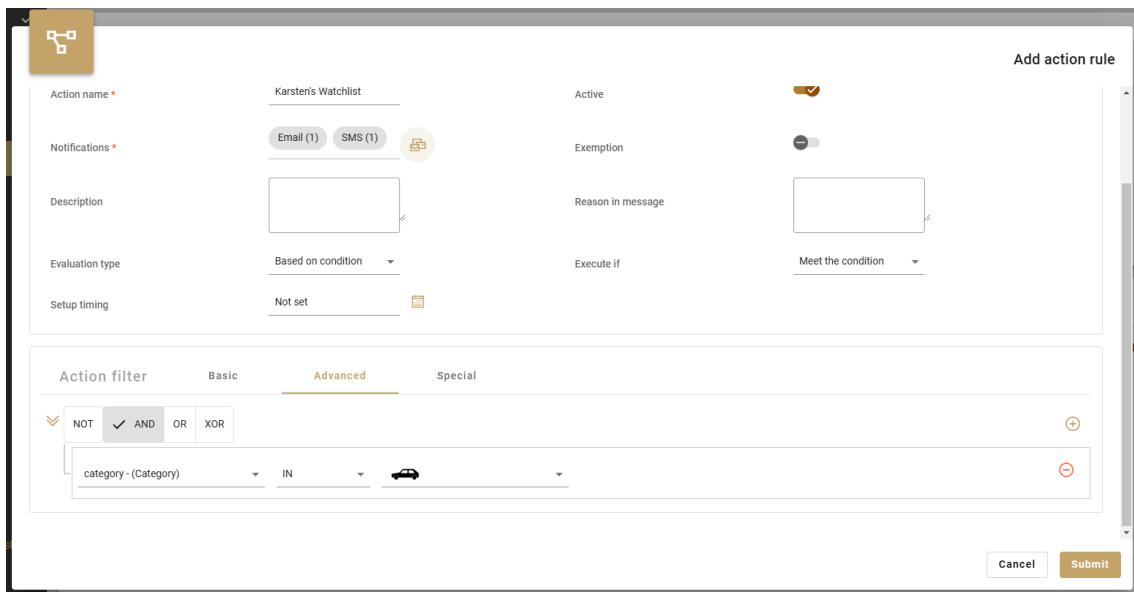


fig.31: Imaginary traffic type notification rule named as “Karsten’s Watchlist” featuring email and SMS automated notifications

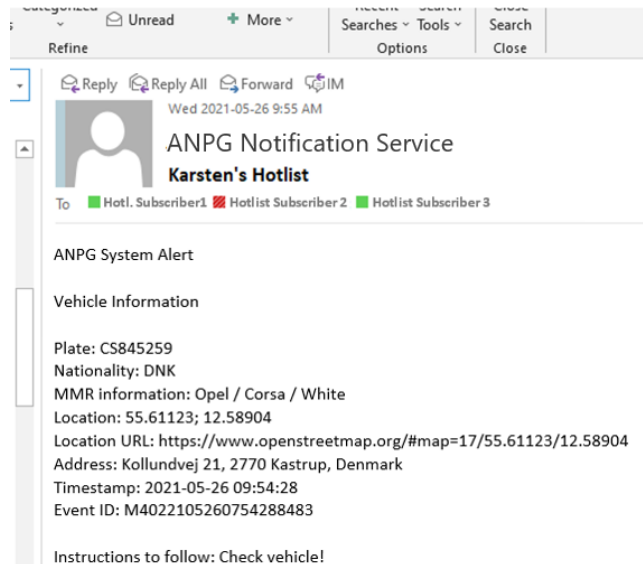


fig.32: Email notification, as it would appear in case a vehicle triggers the conditions of “Karsten’s Watchlist”

Both the content and subject of the EMAIL notifications are configurable. Recipients can be defined as regular or hidden addressees (CC or BCC). It is possible to include a generated URL in the notification, so the recipient can see the location on a map with a single click.

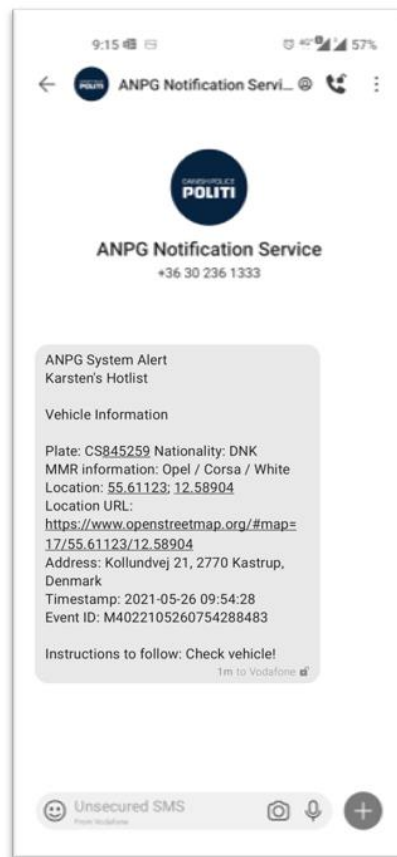


fig.33: SMS notification, as it would appear in case a vehicle triggers the conditions of “Karsten’s Watchlist”

There are no restrictions associated with the number of Users who may receive Notifications, given that the Customer's email server and/or SMS provider capacity is sufficient and the number of GDS server nodes have been scaled appropriately to the expected load.

The following settings must also be set for each notification:

- Email and SMS notifications: [SMTP settings](#) (see chapter 8.1).
- Webhook notifications: [Web Server settings](#) (see chapter 8.1).
- Forgotten password: [SMTP](#) (see chapter 8.1) and [Frontend web address settings](#) (see chapter 8.5)



6. ENDPOINT MANAGEMENT

Devices (cameras, document readers, etc.), locations, and the sections (required for average speed measurement) can be defined in the menu entry named: **Devices**. This function is only available to members of the Administrator user group.

6.1 DEVICES

There are two methods to register a device:

- During automatic registration, AR cameras and document readers automatically access the GDS based on the IP address specified on their interface. As soon as the device reaches the address, authenticates itself, and receives a response from the GDS, it sends information of device characteristics to the GDS. This data is loaded onto the device data sheet and only needs to be verified and approved by an admin-level user to start its operation.
- During manual registration, clicking the **Add New Device** button will pop up a blank form and the user will need to fill in the device information. This is required when registering third party devices (cameras, document readers, etc.).

Device ID	Name	Device type	Location	Accepted	Active
AD41	AD41	Trafficspot Platinum	Alkotás u. 41.	☑	☑
DOCA	d-DOCA	Trafficspot Platinum	Budapesti Liszt Ferenc Nemzetközi Repülőtér	☑	☑
DOCB	d-DOCB	Trafficspot Platinum	Budapesti Liszt Ferenc Nemzetközi Repülőtér	☑	☑
N039	d-N039	Trafficspot Platinum	Nagyjend u 10.	☑	☑
P001	Perbál Device	Trafficspot Platinum	Perbál Posta	☑	☑
U001	d-U001	Trafficspot Platinum	Villányi ut 91.	☑	☑

fig.34: List of connected devices

Upon manually registering a new device, the following parameters shall be declared:

- **ID** – Assigned by the user based on a number or name (such as a serial number) that is unique to each device.
- **Name** – Any name given to the device assigned by the user.
- **Device type** – Can be selected by the user from a list of specified device types or filled in freely.
- **Event Table** – To be selected from the options provided in the drop-down menu. By default, the “multi_event” table contains traffic data, while the “documents” table contains document data.
- **Connection method** – To be defined based on the contact direction, depending on the communication of the device (PUSH or PULL communication protocol).

- **Server URLs** – The server’s access link is required only when the connection mode is “Server” (ws://a_server_address:port/url).
- **Active** – Disabling the Active section will make the device inactive, so it will be kept registered but will not communicate with the server.
- **Video URLs** – The RTSP link of the device (which provides video streams) is required to access the live footage (H.264) and display it in the **Live** section of the GUI (see Chapter 7.4).
- **Location name** – To be selected from existing list of Locations or assigned to a new location using the new location shortcut.

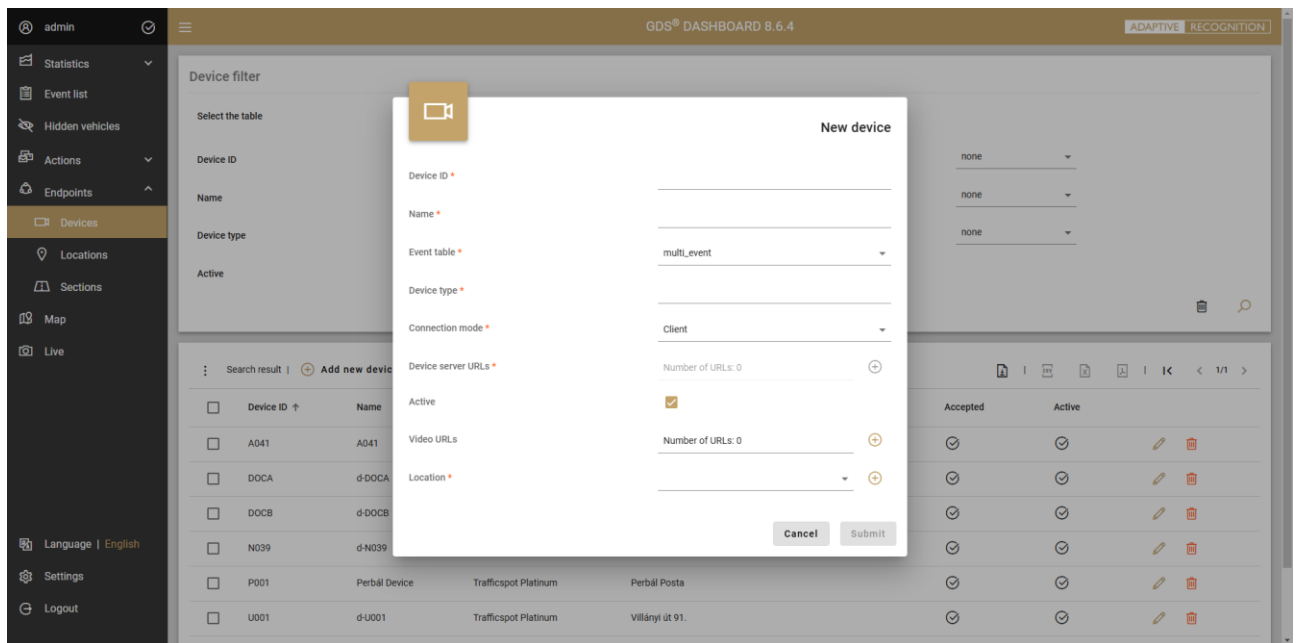


fig.35: Registering a new device manually

It is also possible to accept the automatic registration of devices in the Map menu (see chapter 7.3).

6.2 LOCATIONS

Devices are grouped by Locations, that correspond to an installation site (i.e. checkpoint or gantry). Defining locations is a pre-requirement of initiating average speed measurement feature of GDS.

New location can be added by entering latitude and longitude coordinates, or by entering an identification name. In addition to the basic data (ID, name, type, table, location), filtering between devices is also possible according to the status of registration and the person accepting it.

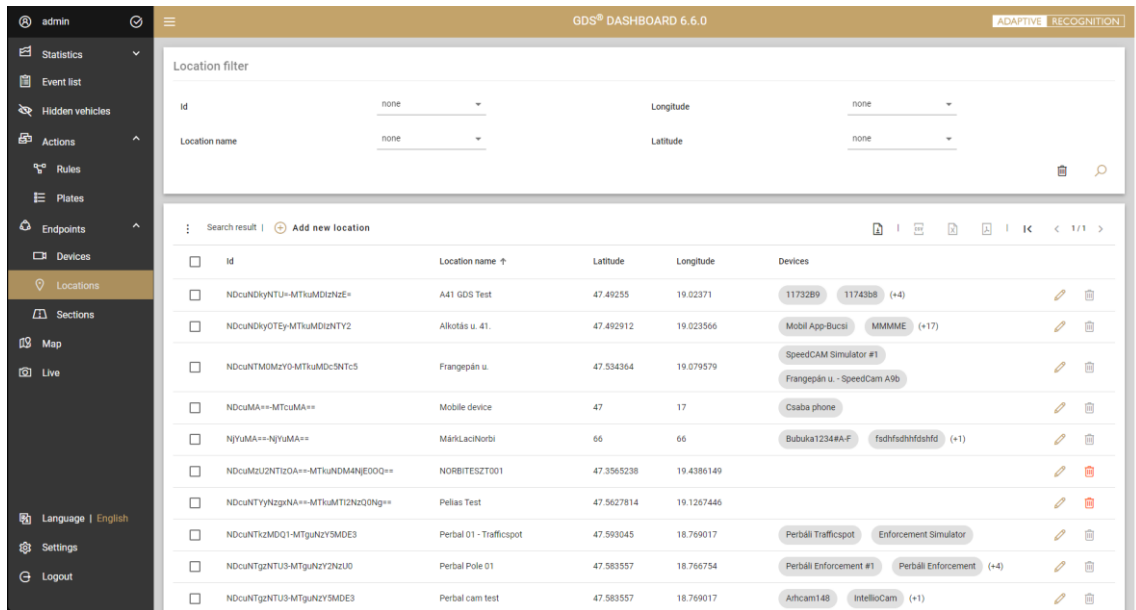


fig.36: List of locations

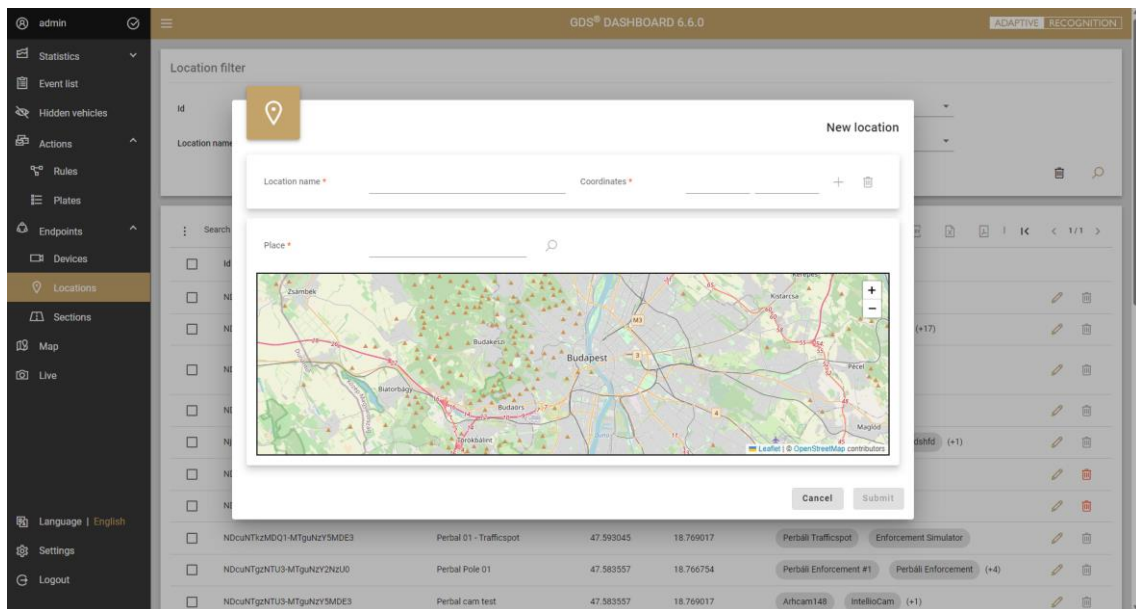


fig.37: Registering a new location

6.3 SECTIONS (AVERAGE SPEED ENFORCEMENT)

Globessey Data Server provides a convenient solution for **certified average speed enforcement**, thus efficiently promoting safe driving behavior and reducing road traffic externalities (noise and pollution) throughout the control sections – such as bridges and tunnels – that may not be feasible to cover with traditional speed traps.

Unique vehicle identifiers – plate numbers or anonymized tags – are tracked through the monitored sections (and section groups in case of multi lane roads) defined between Locations. Since Adaptive Recognition devices are registered automatically by GDS, all the operator has to do is defining the applicable driving distance and tolerance levels for average speed calculation and select the

corresponding entry & exit locations. In order to provide accurate statistics, the system only records relevant travel-times of uninterrupted journeys along each control section (the average speed and transit time are recorded for the exit event). The pairing logic of entry and exit events can be customized on the user interface, according to the application environment.

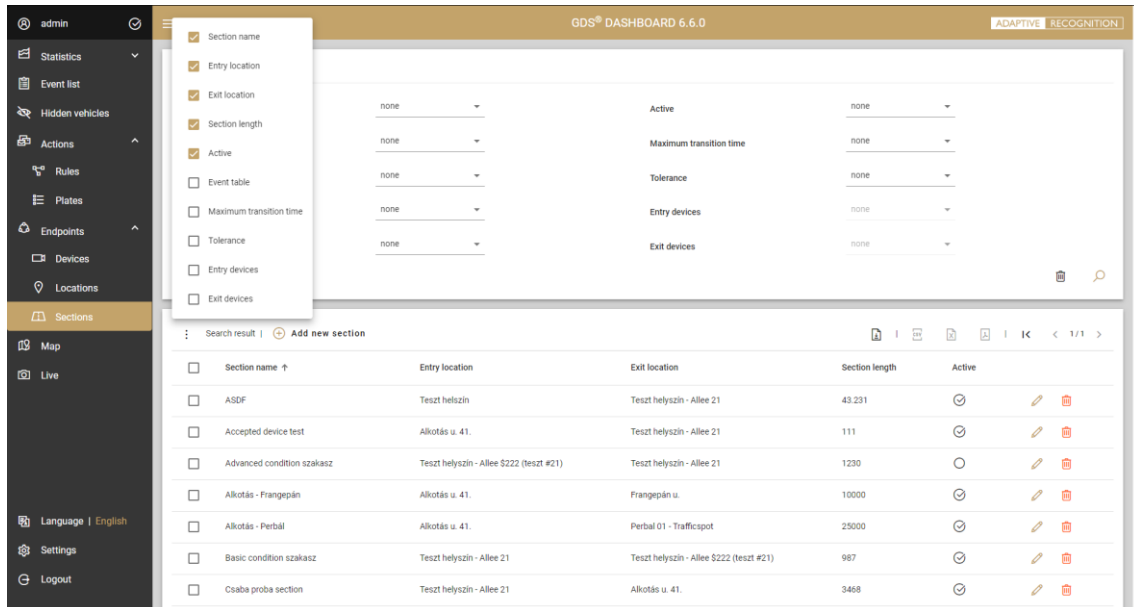


fig.38: List of sections

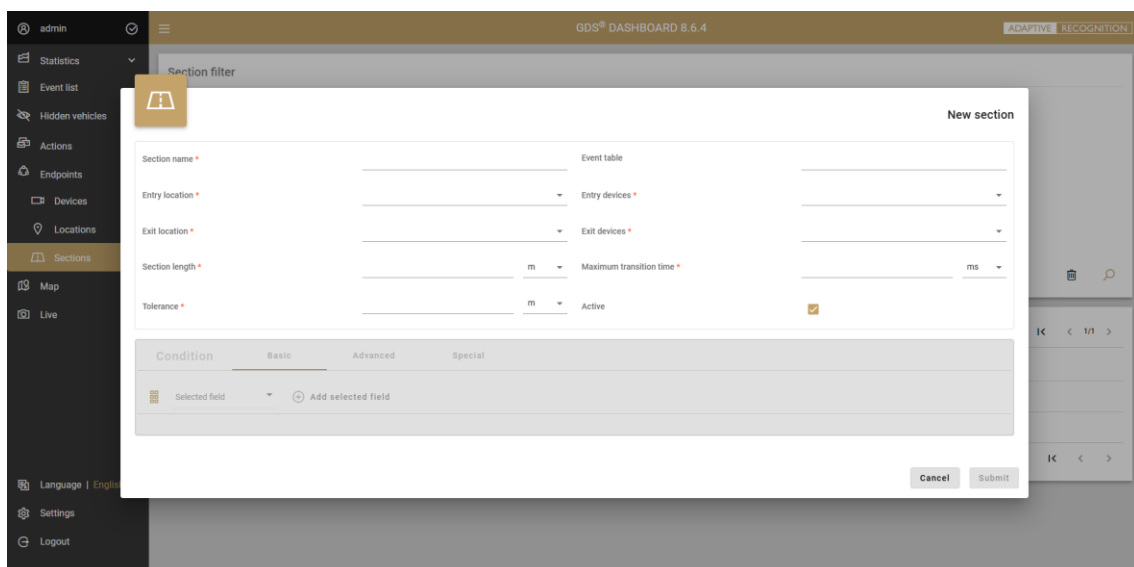


fig.39: Registering a new section

Upon registering a new section, the following parameters shall be declared:

- **Section Name** – A name that identifies the section.
- **Event Table** – Defining the traffic table structure (currently: multi_event). This entry is automatically filled in based on the devices on the selected entry and exit points.
- **Entry Point** – The beginning of the section (must be added to the Locations in advance).

- **Entry Devices** – Device selected to record at the entry point of the section, registered at the Entry Location (must be added to Devices in advance).
- **Exit Location** – The end point of the section (must be added to the Locations in advance).
- **Exit Devices** – Device selected to record at the exit point of the section, registered at the Exit Location (must be added to Devices in advance).
- **Section Length** – The distance in meters between the entry and exit locations / devices.
- **Maximum transit time** – Average speed data will NOT be calculated for vehicles passing this timeout limit.
- **Tolerance** – Tolerance / uncertainty of the length of the road section (e.g. standard deviation of measurement).
- **Active** – Activate or deactivate the given section.

The screenshot shows a web interface for editing section conditions. The main form has the following fields:

- Section name: Section A-V
- Entry location: Alkotás u. 41.
- Exit location: Villányi út 91.
- Section length: 1200 m
- Tolerance: 12 m
- Event table: multi_event
- Entry devices: A041
- Exit devices: 6-U001
- Maximum transition time: 1800000 ms
- Active:

Below the form, there are three tabs: 'Condition', 'Basic', 'Advanced', and 'Special'. The 'Basic' tab is selected. Underneath, there is a 'Selected field' dropdown and an 'Add selected field' button. Two fields are currently selected: 'Plate' and 'Nationality', each with a close button (X).

fig.40: Editing section conditions

Conditions for identifying & pairing events from two points in the section can be set up in the lower section of the editing interface, using **Basic** – **Advanced** – **Special** methods.

The following parameters can be selected from the list as Basic condition:

- Category
- Nationality
- License plate number
- Rear nationality
- Rear plate number

In cases the entry and exit parameters – according to which events shall be paired – are different (e.g.: first license plate for entry and rear license plate for exit), it is necessary to set the conditions on the Advanced tab by utilizing AND / OR / NOT / XOR logical operators.

In the Special menu, these conditions, and the relationships between them can be specified with SQL command. Saved sections can be filtered and exported in the same way as the Event list, and the list of columns to be displayed can be expanded by clicking on the three dots icon in the upper corner.

7. VISUALIZATION

7.1 STATISTICS

The Statistics module based on the market-leader **KIBANA** framework offers data visualization solution tailored to your needs. These dashboards are built up with interactive, cross-linked elements that are updated in real time as the user applies different filtering options.

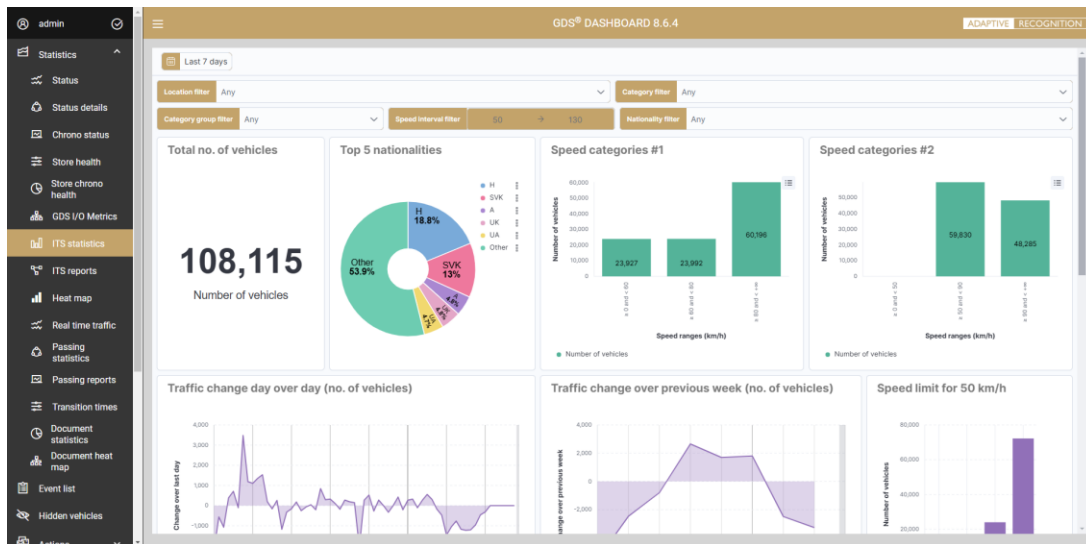


fig.41: Traffic data visualization in Statistics module

These modules are prepared to offer various graphs of time-series, pie charts, bar charts that can be displayed with arbitrarily configurable parameters, summaries, and metrics in configurable timeframe for all sorts of business intelligence activities. Relative and absolute timeframes can be applied with the help of the calendar widget in the upper corner of the statistics window.

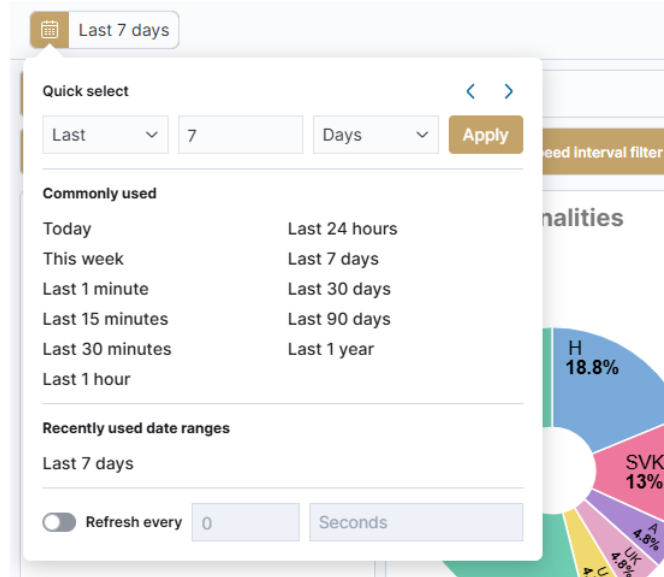

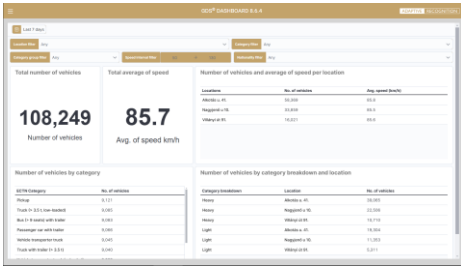
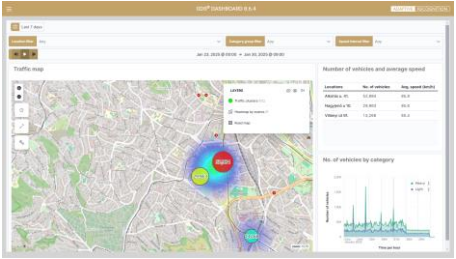
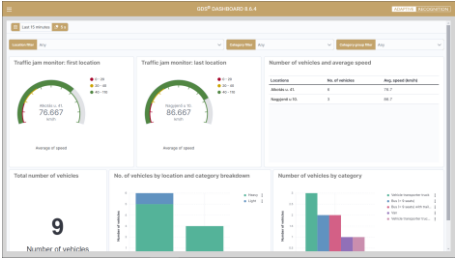
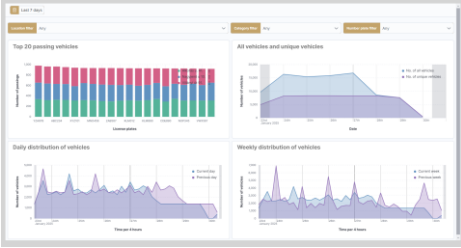
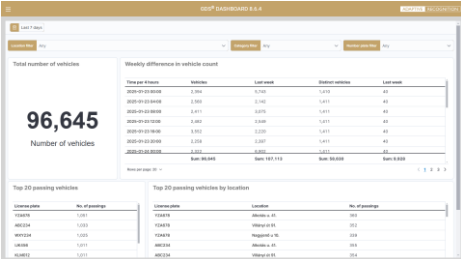
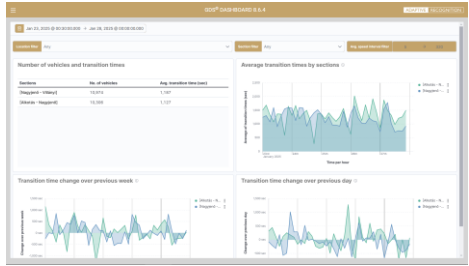
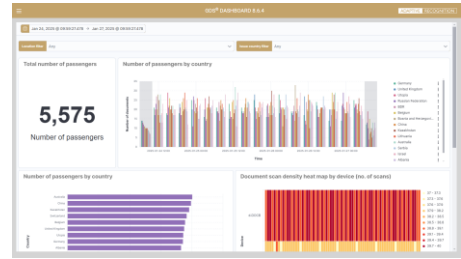
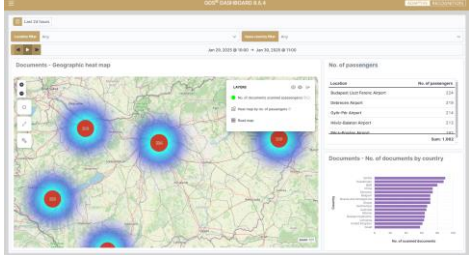


fig.42: Calendar widget for easy filtering

Traffic-related statistics modules	Layout (sample illustration)
<p>ITS statistics</p> <ul style="list-style-type: none"> total number of vehicles top nationalities speed categories hourly traffic intensity change of traffic intensity speed offense statistics distribution of vehicle categories traffic density heatmap 	
<p>ITS reports</p> <ul style="list-style-type: none"> total number of vehicles average speed number and average speed per location distribution of vehicle categories distribution of vehicle categories per location 	
<p>Heat map</p> <ul style="list-style-type: none"> Interactive heat map of traffic clusters 	
<p>Real time traffic</p> <ul style="list-style-type: none"> traffic jam monitoring average speed total number of vehicles number of vehicles by location number of vehicles by category 	
<p>Passing statistics</p> <ul style="list-style-type: none"> top 20 passing vehicles all vehicles and unique vehicles daily distribution of vehicles weekly distribution of vehicles 	
<p>Passing reports</p> <ul style="list-style-type: none"> total number of vehicles weekly difference in vehicle count top 20 passing vehicles top 20 passing vehicles by location 	

Traffic-related statistics modules	Layout (sample illustration)
<p>Transition times (Average speed section transition times)</p> <ul style="list-style-type: none"> number of vehicles and transition times average transition times by sections transition time change over previous week transition time change over previous day 	

Metrics-related statistics modules	Layout (sample illustration)
<p>Document statistics</p> <ul style="list-style-type: none"> total number of passengers number of passengers by country speed categories number of passengers by country document scan density heat map by device (no. of scans) weekly passenger flow comparison daily passenger flow comparison 	
<p>Document heat map</p> <ul style="list-style-type: none"> geographic heat map number of passengers 	

7.2 HEALTH REPORTING

GDS offers key status information about the host system (server) that the GDS is running on:

- database health
- connection status
- storage (Used/Free/Reserved)

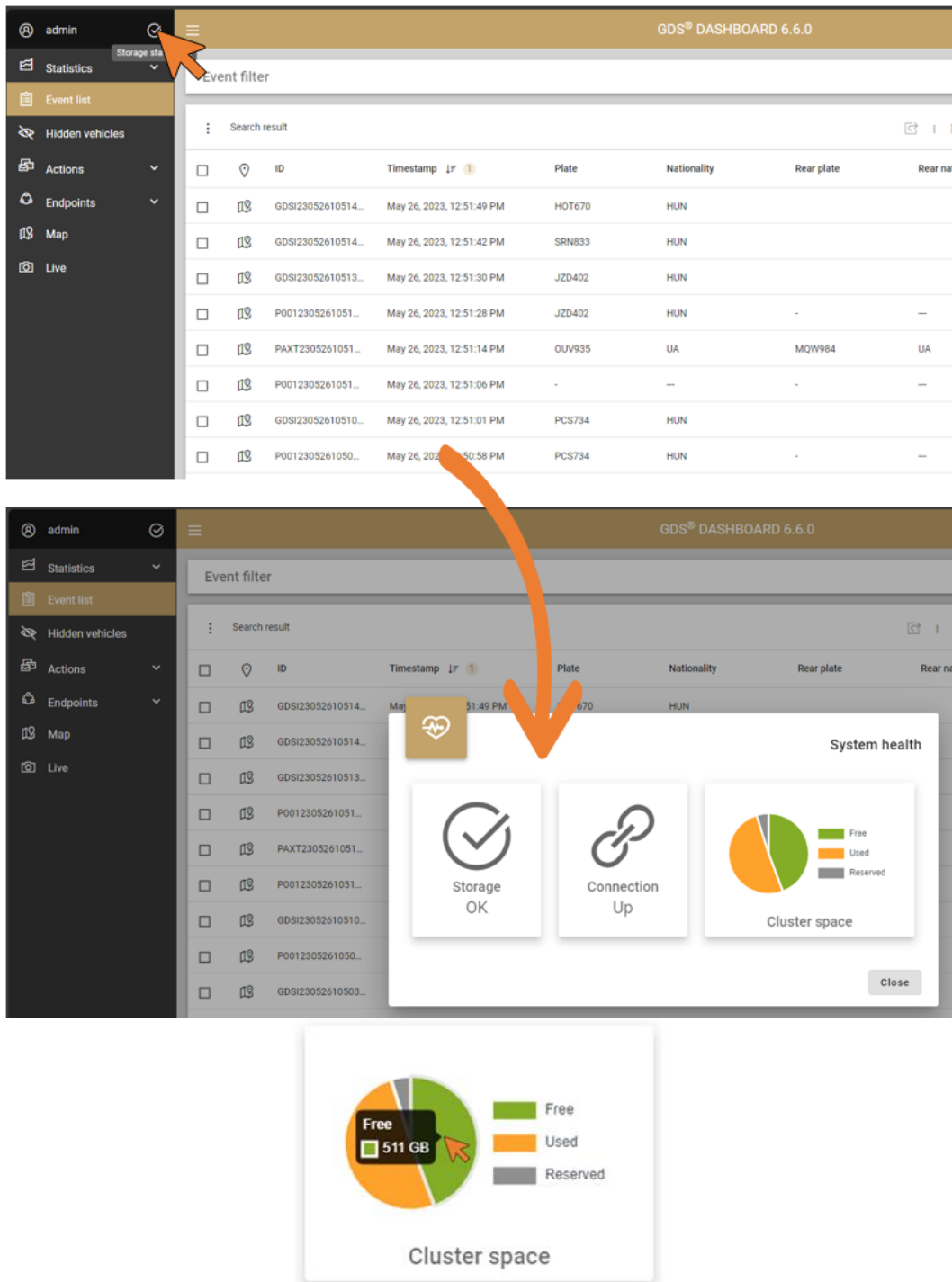


fig.43: Server status widget

In case of an issue (i.e.: no connection, storage full) the users are notified on the login screen.

Live status of registered endpoints (devices) is presented in a tabular and pie chart format on the **Statistics / Status** screen.

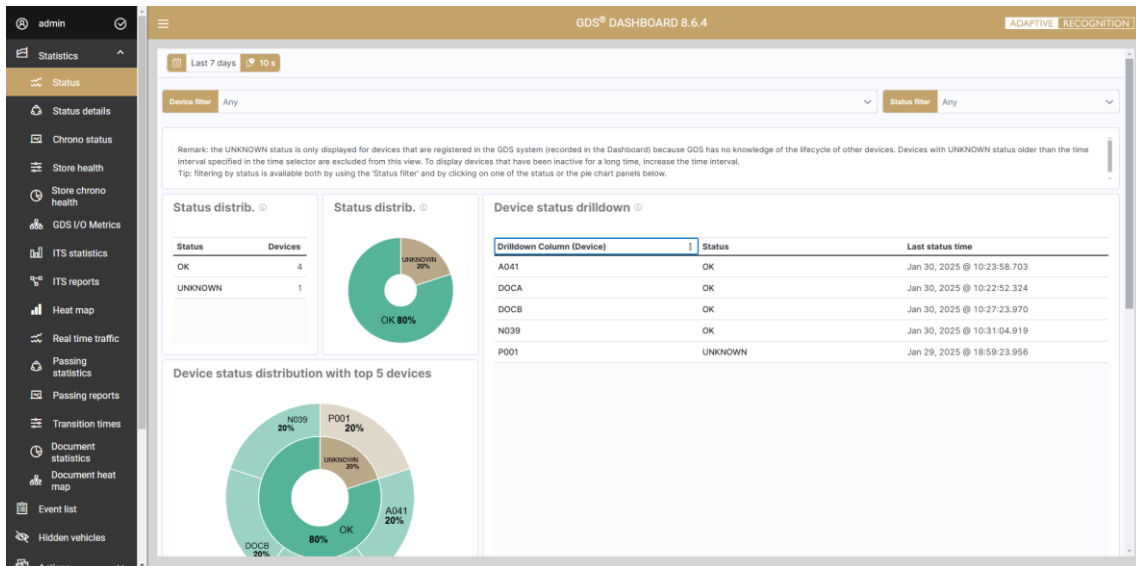


fig.44: Device live status

Live status details of registered endpoints (devices) are presented in a tabular format on the **Statistics / Status details** screen.

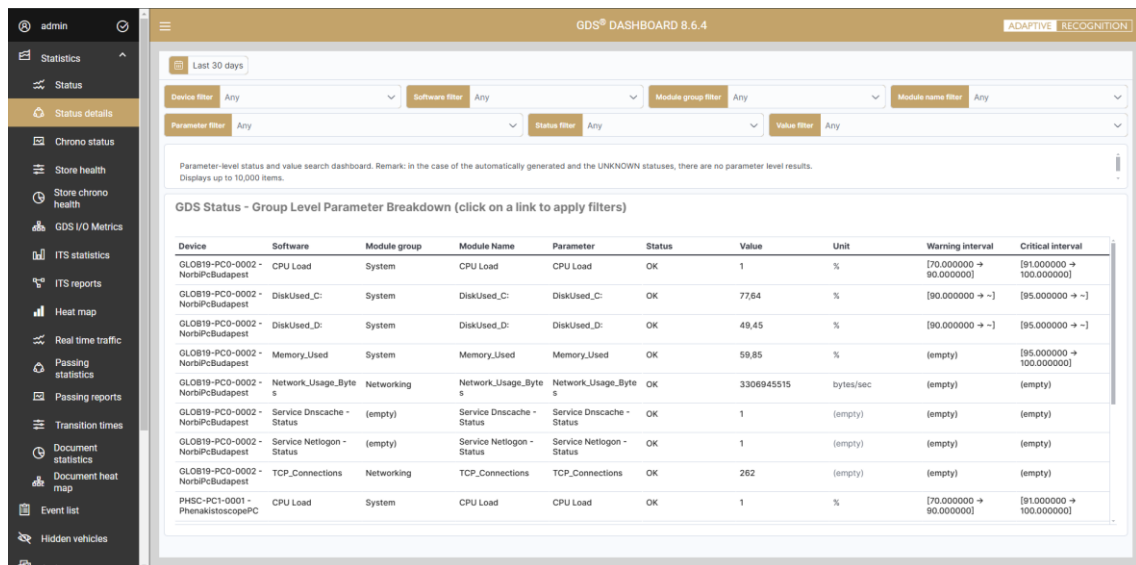


fig.45: Device live status details

Chronological status of registered endpoints (devices) is available on the [Statistics / Status](#) screen.

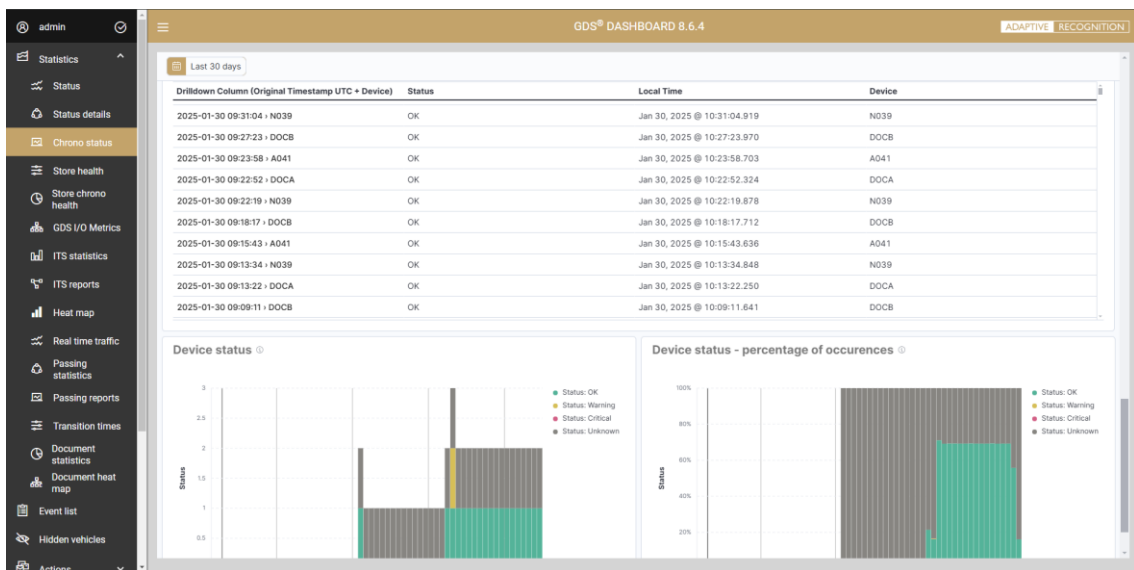


fig.46: Device chronological status

Live status of the underlying database clusters and nodes is available on the [Statistics / Store health](#) screen.

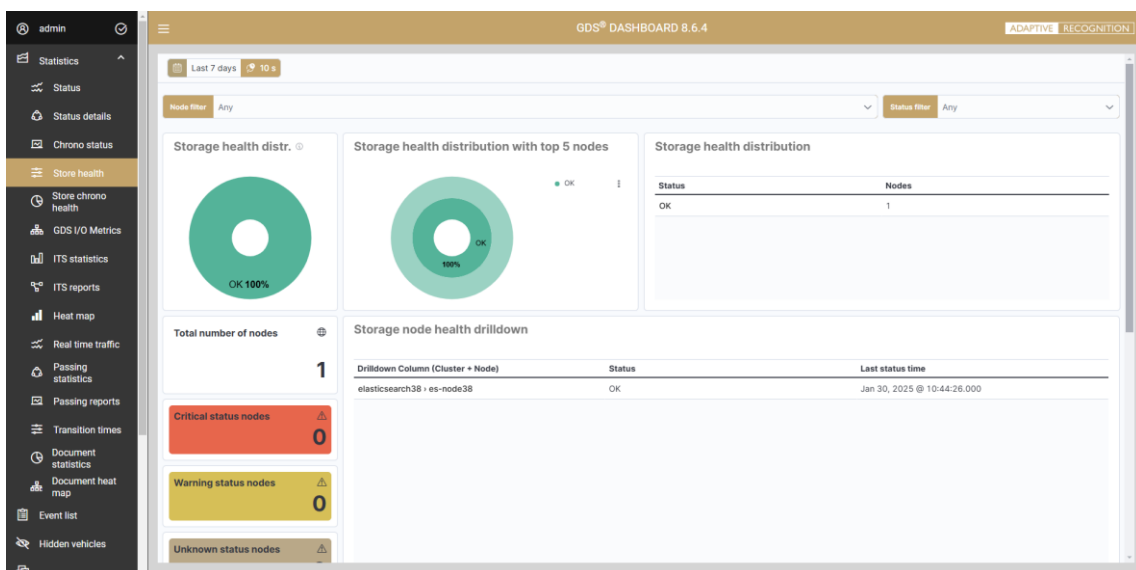


fig.47: Database live status

Chronological status of the underlying database cluster and nodes is available on the [Statistics / Store chrono health](#) screen.

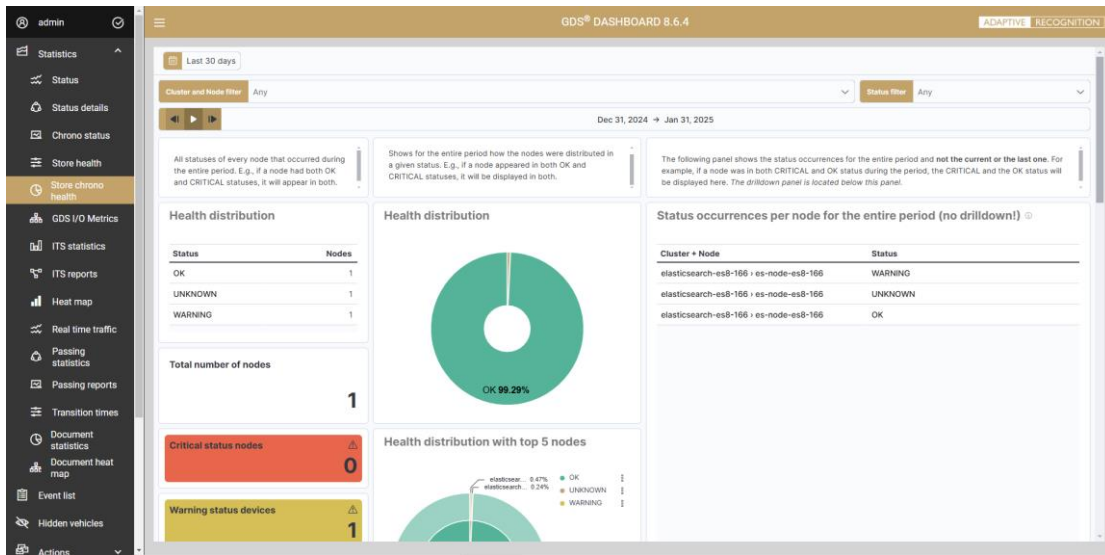


fig.48: Database chronological status

I/O metrics of the GDS is available on the [Statistics / GDS I/O metrics](#) screen.

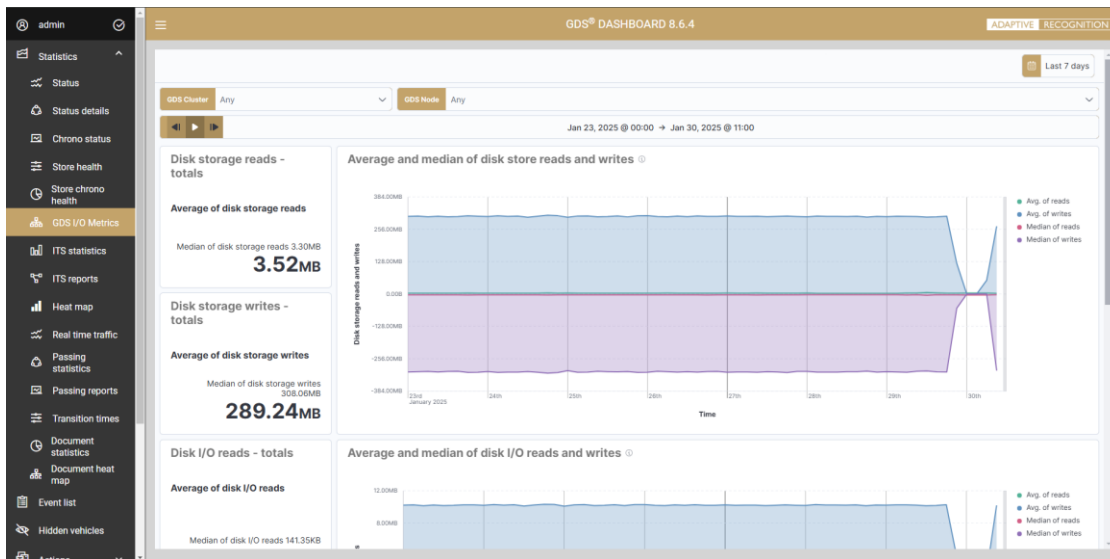


fig.49: GDS I/O metrics

7.3 MAP VIEW

The Map interface is used to present the registered locations. The specified locations on the map are indicated by marker pins. The color of the pins reflects the status of the devices assigned to that location (status that the system receives from the current monitoring system) and the number inside corresponds to the number of devices presenting that status.

- **Blue** - The number of devices that have been automatically registered but not yet accepted
- **Green** - Number of devices with OK status
- **Orange** - Number of devices with Warning status
- **Red** - Number of devices with Critical status
- **Gray** - Number of devices with Unknown status

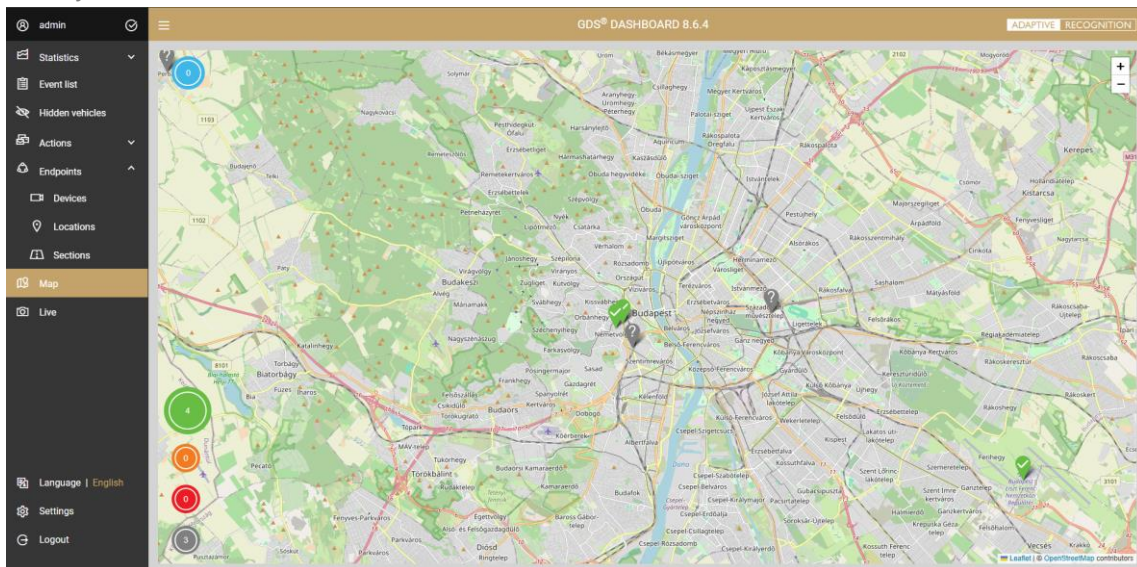


fig.50: Locations on Map view

Click on the markers to see the list of devices assigned to that location. The information about the devices that appears here are ID, Name, and Status. (The color of the pins for each endpoint locations are determined by the worst-performing device at that endpoint.)

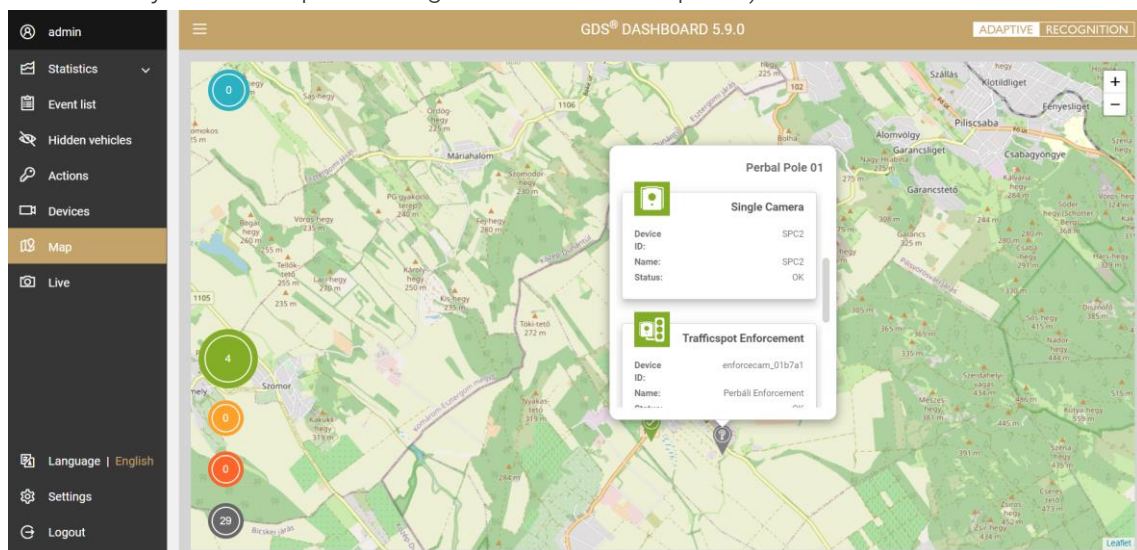


fig.51: Devices listed on the selected Location

7.4 LIVE VIEW

Video streams of configured devices can be accessed via the Live menu entry, by selecting the Location and the specific Device from the list. A device that provides multiple streams can be displayed in parallel windows. Streams show the **live footage**, followed by events that are recorded continuously during the session and displayed in a tabular form similar to the Event list. As a result, real-time events can be tracked in live video streams.



fig.52: Live view

The displayed content of record metadata can be configured by clicking on the three dots (**Hide/Show Columns**) in the upper corner.

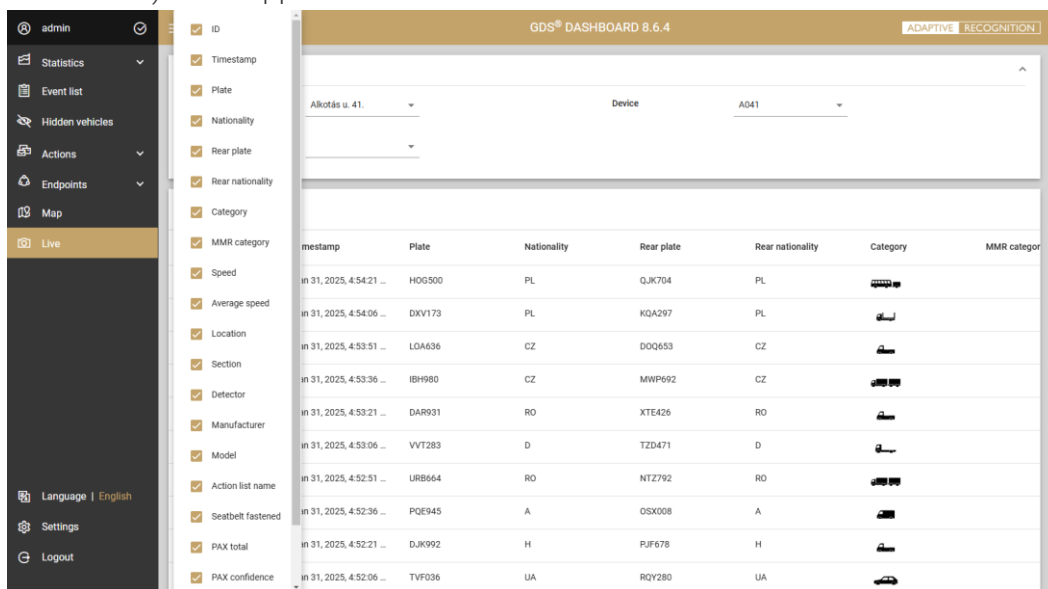


fig.53: Configuring the list of real-time records

Important!

Some portable/handheld GDS compatible device - e.g.: Carmen Mobile, ARH S1 - does not provide live image stream to be displayed on the Live menu of the Dashboard.

8. CONFIGURATION

Under the hood setting prepared for system administrators can be found in the menu entry named: **Settings**. This function is only available to members of the Administrator user group.

Menu items can be expanded and minimized by clicking on their respective headers.

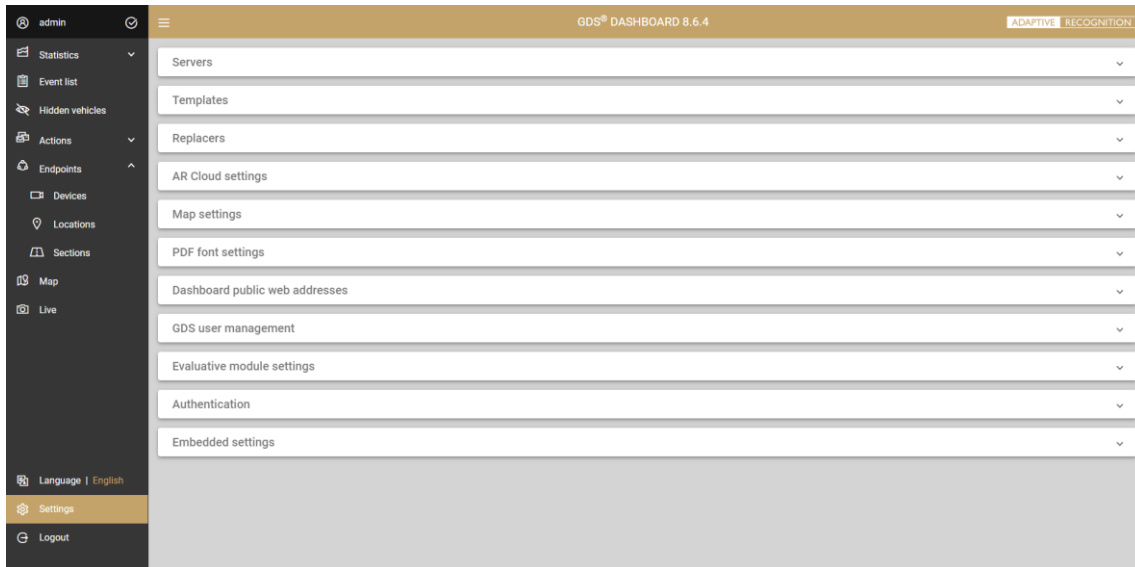


fig.54: Content of the Settings menu

8.1 NOTIFICATION SETTINGS

The configuration of e-mail, SMS, Webhook (structure of messages generated by the Actions) and lost password message templates are available here, including the server settings and the creation of message content. Step-by-step description of sample settings can be found in the Appendix.

Servers section contains the list of email or SMS gateway servers and Webhook web servers. New **SMTP servers** can be registered by clicking on **Add server** button on the **SMTP servers / Web servers** tab.

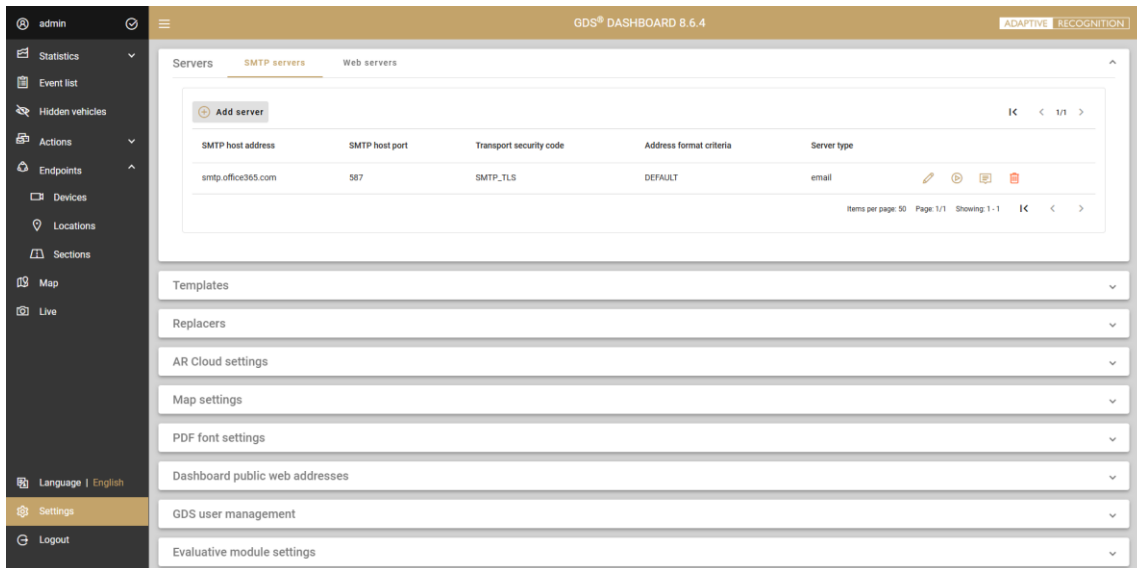


fig.55: SMTP server's settings

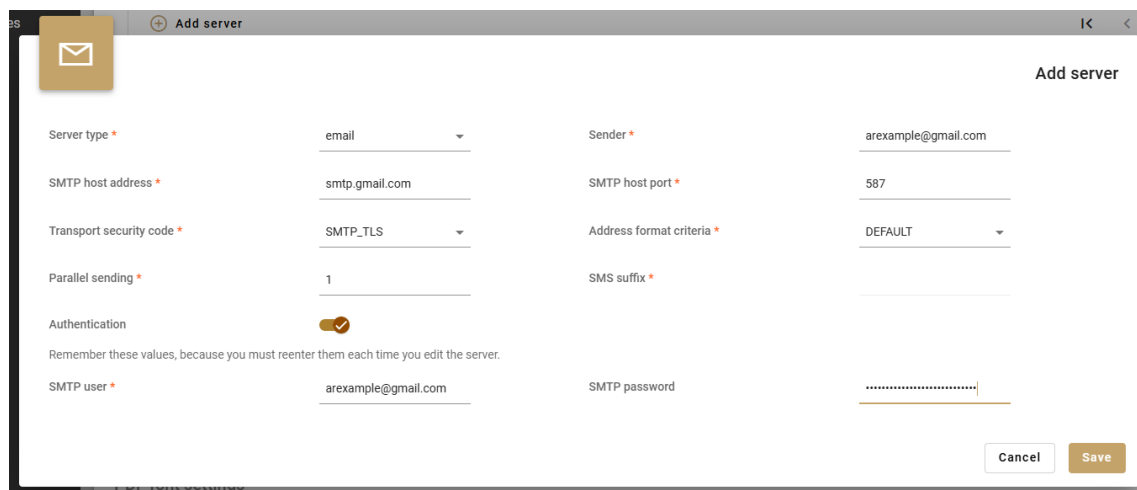


fig.56: Adding new SMTP email server (sample)

After clicking on **Save**, the registered server appears in the list. The server configuration allows to set the number of outgoing notifications at the same time (parallel sending), the standard of address format, SMTP user credentials, and the suffix of the SMS gateway server (containing the domain to be placed after the mobile phone number, e.g. @ sms.clicksend.com) within the **SMS suffix** field.

Transport security code can be designated as

- **SMTP** - standard protocol for sending messages between servers
- **SMTPS** - secured SMTP by providing authentication of the communication partners using SSL
- **SMTP_TLS** - secured SMTP by providing authentication of the comm. partners using TLS

Depending on the network topology, unencrypted SMTP communication can be susceptible to attacks, such as the contents of a message modified or rerouted to a malicious party.

The address format criteria shall be selected as:

- **RFC_COMPLIANT** – Messages comply to the RFC standard published by IETF.
- **DEFAULT** – In addition to RFC compliance, the following restrictions are applied:
 - Disallow IP Address Domain: emails with an IP address in their domain are often rejected from mail servers or only used for spam.
 - Require a Top Level Domain: This rule reject all emails without a TLD (top-level domain, or “suffix”) as recommended by ICANN.
 - Disallow Explicit Source Routing: Explicit source routing has been deprecated as of RFC 5321, thus should not be used.

Users are encouraged to select the default address format criteria, except under special/unusual circumstances, when the highlighted restrictions must be bypassed.

Important!

Setting up the SMTP Server is fundamentally necessary for the **forgotten password** feature to work , since it is an email-based notification.

New web servers for the **Webhook** notifications can be registered by clicking on **Add server** button on the **Web servers** tab.

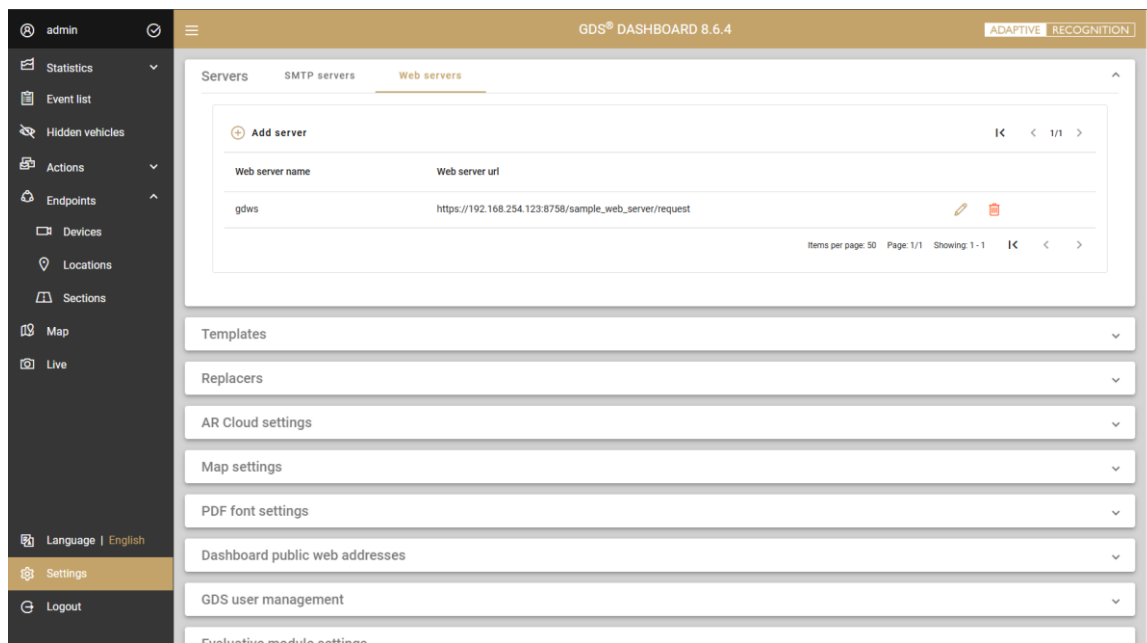


fig.57: Web server's settings

The screenshot shows a form titled 'Add server' with the following fields and values:

- Web server name: Sample Web Server #1
- Web server url: https://192.168.254.123:8
- Authentication:
- Remember these values, because you must reenter them each time you edit the server. (checkbox)
- Username: [empty]
- Password: [empty]

Buttons: Cancel, Save

fig.58: Adding new Web server (sample)

After clicking on **Save**, the registered server appears in the list. The server configuration allows to set the URL of the web server and the authentication properties. Both HTTP and HTTPS communication are supported.

Templates interface enables to set the local time zone and date format. Subject and Body text of E-mail, SMS and forgotten password notifications can be submitted here with the help of smart replacers. Default templates are available upon clean installation.

The screenshot shows the 'Email templates settings' interface with the following configuration:

- Table: multi_event
- Locale: English (EN)
- Time zone: GMT
- Date format: dd/MM/yyyy HH:mm:ss
- Subject: %action.names%
- Content:


```

      Action: %action.names%
      Reason: %action.reason%
      Event ID: %record.id%
      Event Time: %record.timestamp%
      
```
- Global replacers: Timestamp, @updated, Action list name, Action rule, Action list type, Notification type, adr_bgcolor, adr_color, adr_confidence, adr_frame, More..., Seatbelt image, Front plate image, Images, Overview image, rear_cul_image, Rear plate image, strip_image, Video

Buttons: Delete, Revert, Submit

fig.59: Email templates settings

Note, that the **Reason** data field defined while creating Actions (see chapter 5.1) can be inserted into the content of the notification, hence a unique message is sent out depending on the type of the Action rule.

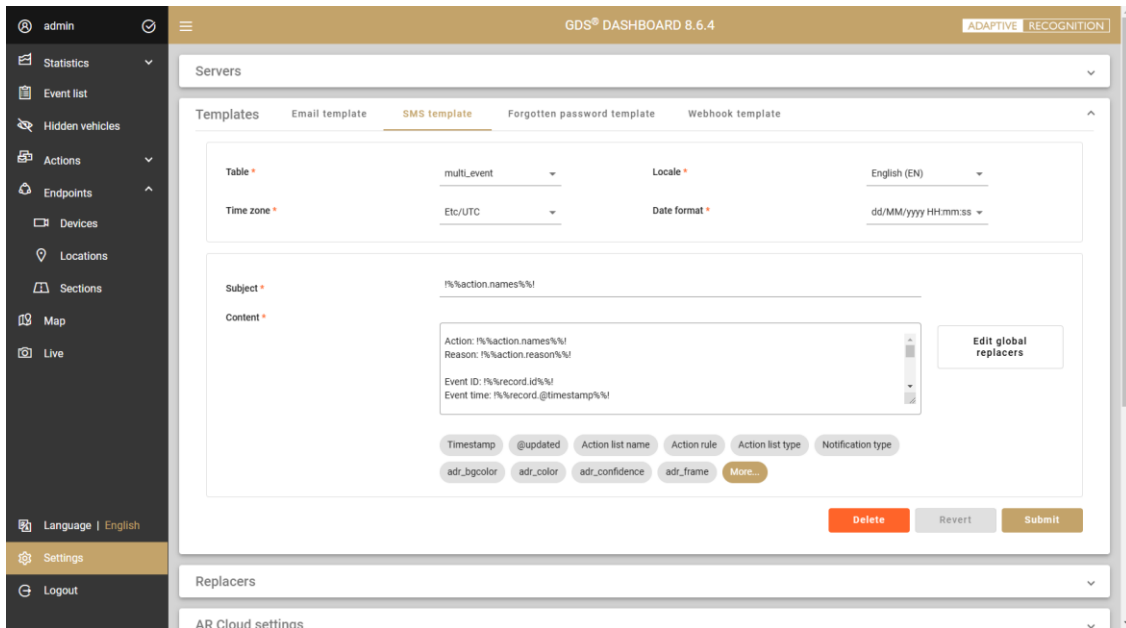


fig.60: SMS templates settings

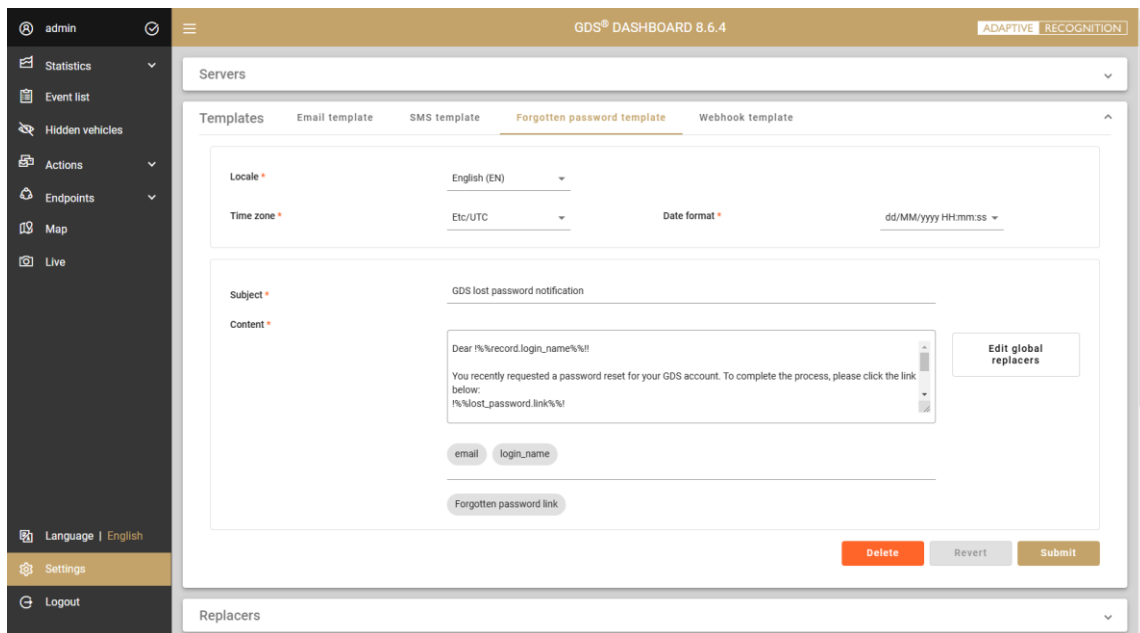


fig.61: Forgotten password template settings

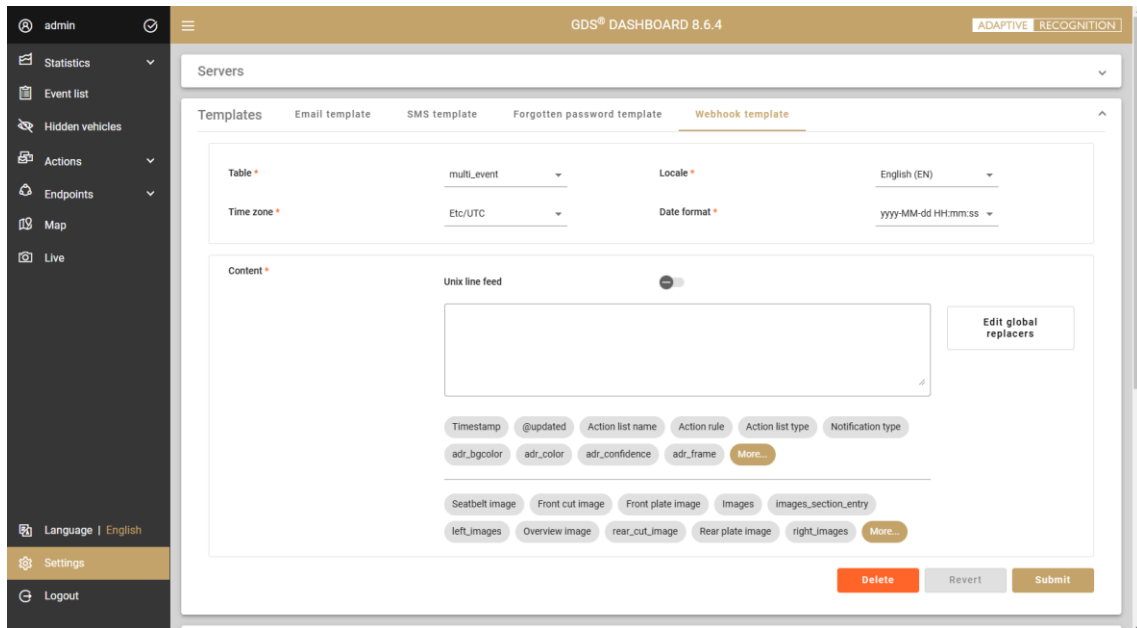


fig.62: Webhook template settings

Replacers interface lists the available ‘interactive components’ used to build the textual contents of the notifications.

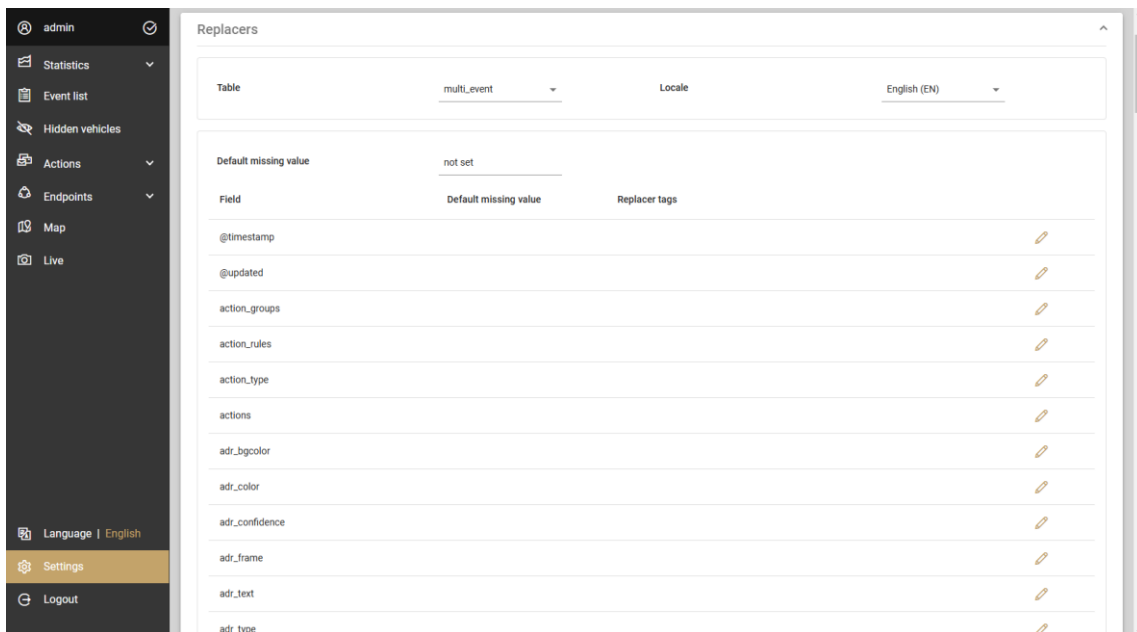


fig.63: Replacers settings

In addition to invoking the given metadata of the record into the notification, Replacers are subject to be assigned with default missing value (to be displayed in case a specific field of a record is empty) and smart tags. This way the GUI presents the user with human readable information instead of coded or boolean type information.

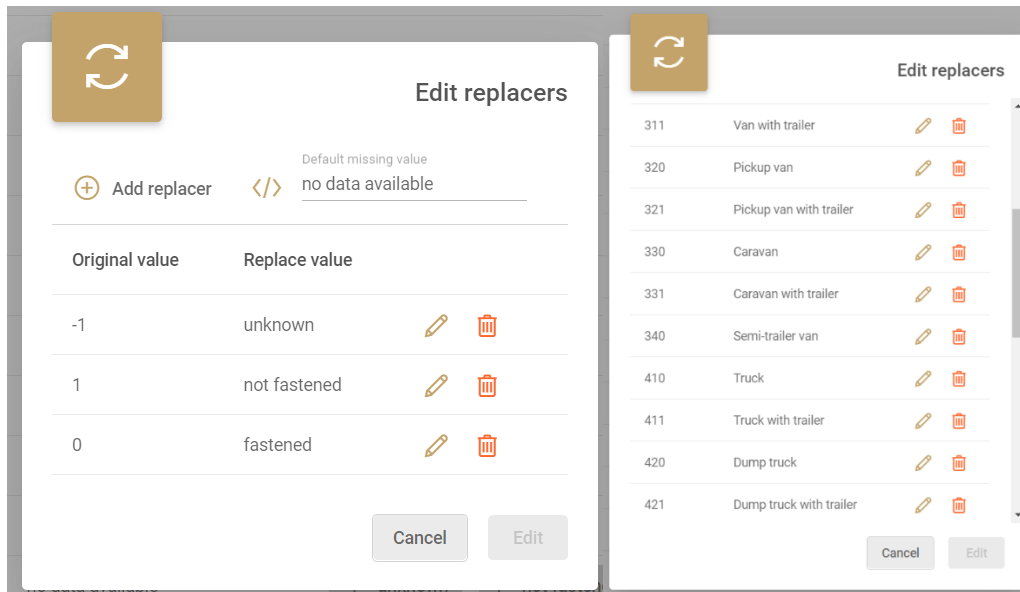


fig.64: Using replacers to make event information human readable

Replacers can be configured to reflect the professional terminology commonly used by the clients. Note: in the case of a Webhook (and only in the case of a Webhook), the type of the replacer field content must match the type of the original table field. For example, in the case of an integer type, only an integer value can be specified.

8.2 AR CLOUD SETTINGS

With the API key registered on the Carmen Cloud web interface (carmencloud.com), the user can configure the Cloud service to automatically send data recognized from submitted images to the GDS via Webhook protocol. All related settings can be performed on the frontend interface. Additionally, it can be configured which data from Cloud services should be stored, and the mapping between the fields of the submitted data and the GDS fields can be freely configured. For troubleshooting purposes, an error log is available, and simple statistics can also be accessed.

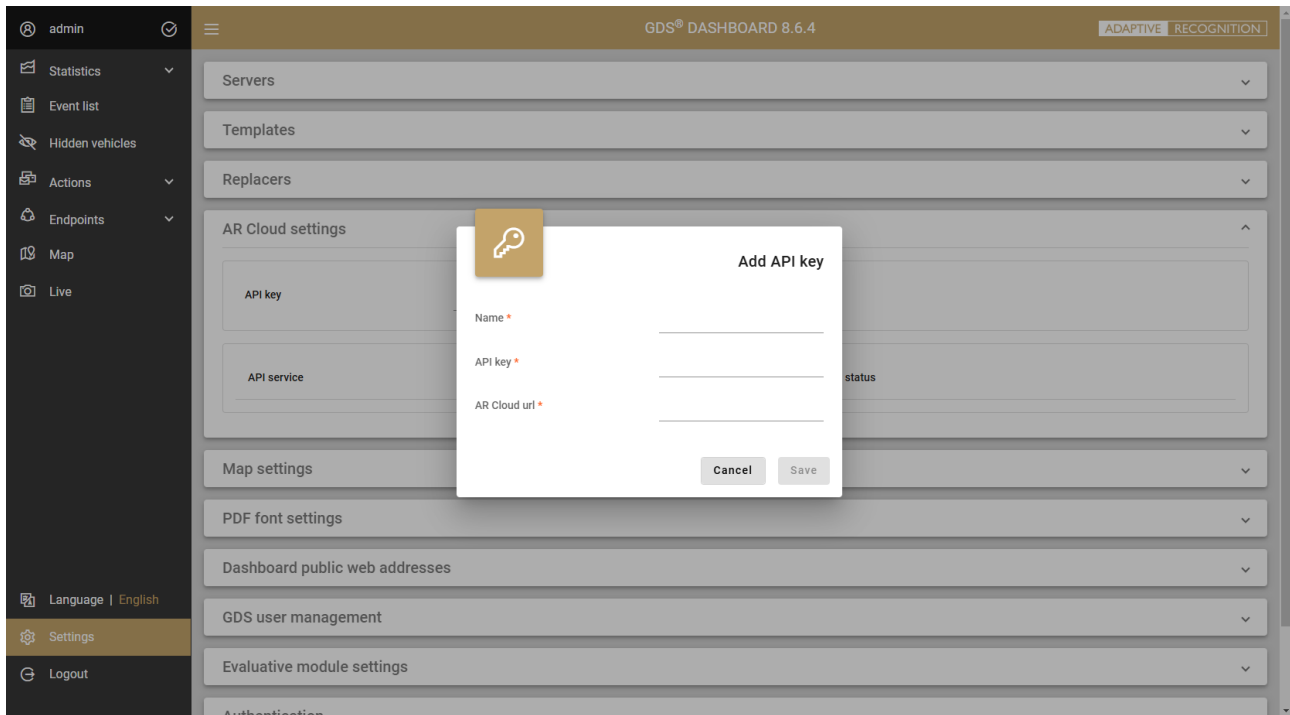


fig.65: AR Cloud settings

8.3 MAP SETTINGS

A map tile service uses standard protocols for serving pre-rendered or run-time computed georeferenced map tiles over the network that is recognized across different platforms and clients. GDS Dashboard uses this service to display the world map – background layer – for geo-fencing (location-based filtering of events) and enable device management on map view.

On leaflet settings, the **map tile server** can be specified along with the GPS coordinates and zoom level of the position that is displayed by default when opening the map. **Map data reloading** field defines the update interval of the map tiles. The map server must support Leaflet API (see [reference](#)).

The screenshot shows the 'Map settings' form with the 'Leaflet settings' tab selected. The form contains the following fields:

Field	Value
Map enabled	<input checked="" type="checkbox"/>
Tile server url *	https://(s).tile.openstreetmap.org/{z}/{x}/{y}.png
Start zoom level *	11
Center latitude *	47.492983
Center longitude *	19.023988
Map data reloading *	30000

Buttons: Revert, Submit

fig.66: Leaflet settings for Map view

On Pelias settings section, the **geocoder service** URL can be specified. In case no has been registered, or the registered geocoder service is not available, then an alert is indicated on the geographical event filter interface (see chapter 3.4). GDS Dashboard is compatible with [Pelias](#), a modular, open-source geocoder built on top of Elasticsearch for fast and accurate global search.

The screenshot shows the 'Map settings' form with the 'Pelias settings' tab selected. The form contains the following field:

Field	Value
Pelias url	https://gds-dev.inet.arip.hu:9080

Buttons: Revert, Submit

fig.67: Geocoder (Pelias) settings for geo filtering

The screenshot shows the 'Map filter' interface with the 'Circle' tab selected. The search results for 'Liszt' are displayed in a pop-up window:

Location *	Coordinates *
Budapest Liszt Ferenc International Airport	
Budapest Liszt Ferenc Nemzetközi Repülőtér 1	
Franz Liszt Academy of Music	
Liszt Ferenc Emlékmúzeum és Kutatóközpont	

Buttons: +, -

fig.68: Search results of geocoder engine

The proper operation of the geocoder service can be checked by opening the event filter and initiating a location search within the pop-up window.

8.4 PDF FONT SETTINGS

The fonts of the PDFs to be exported can be uploaded in this menu item (TTF font formats only). By adding new typefaces, the use **custom fonts** can be achieved, including special character sets, such as Arabic. The uploaded fonts can be named individually, and in addition to the normal font, bold versions can also be uploaded, thus providing better legibility of the exported tables.

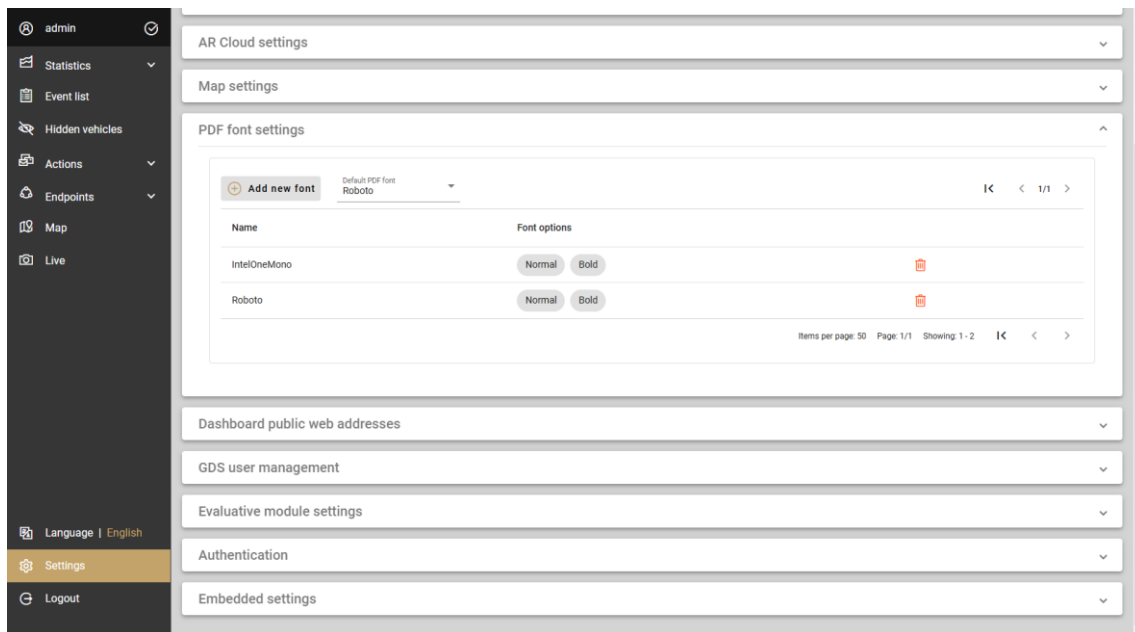



fig.69: PDF font settings

8.5 WEB ADDRESS SETTINGS

Multiple public IPs and PORTs can be declared by system administrators in this section to access:

- GDS backend
- GDS frontend
- GDS WebSocket interface

from outside the local network of the server. Addresses can be created by clicking the **Add new address** button and filling in the name and URL. Existing addresses can be shared with on-screen generated QR code by clicking the () button.

! Important!

Specifying the **Backend web addresses** is necessary for the links to attachments (images, videos, etc.) sent in notifications to work. Setting the **Frontend web addresses** is essential for the **forgotten password** feature.

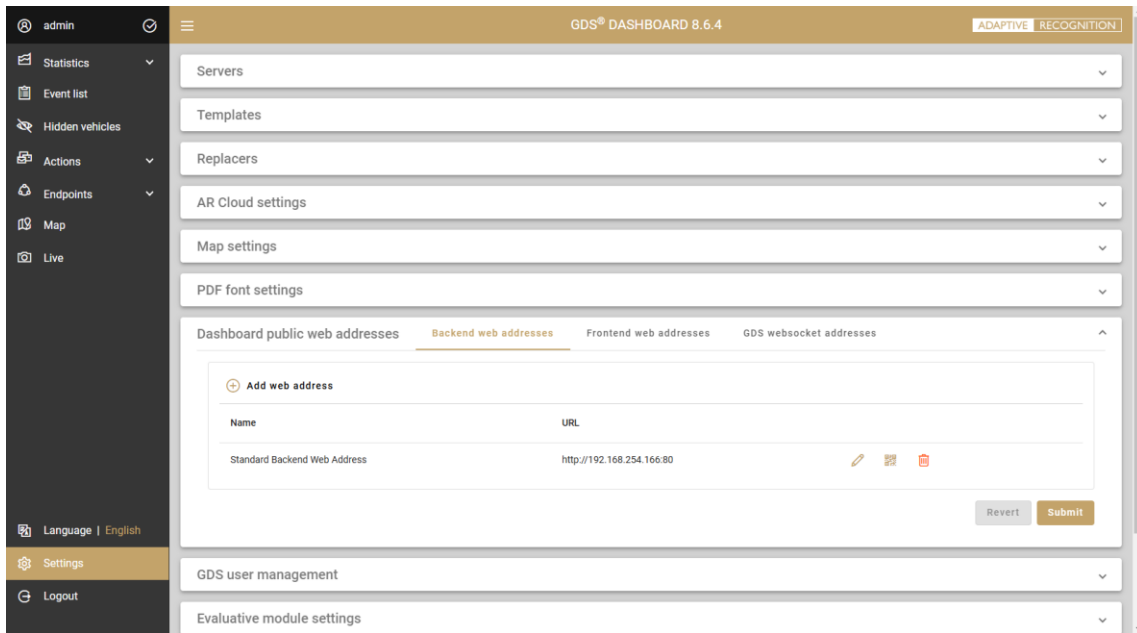


fig.70: Public web address settings

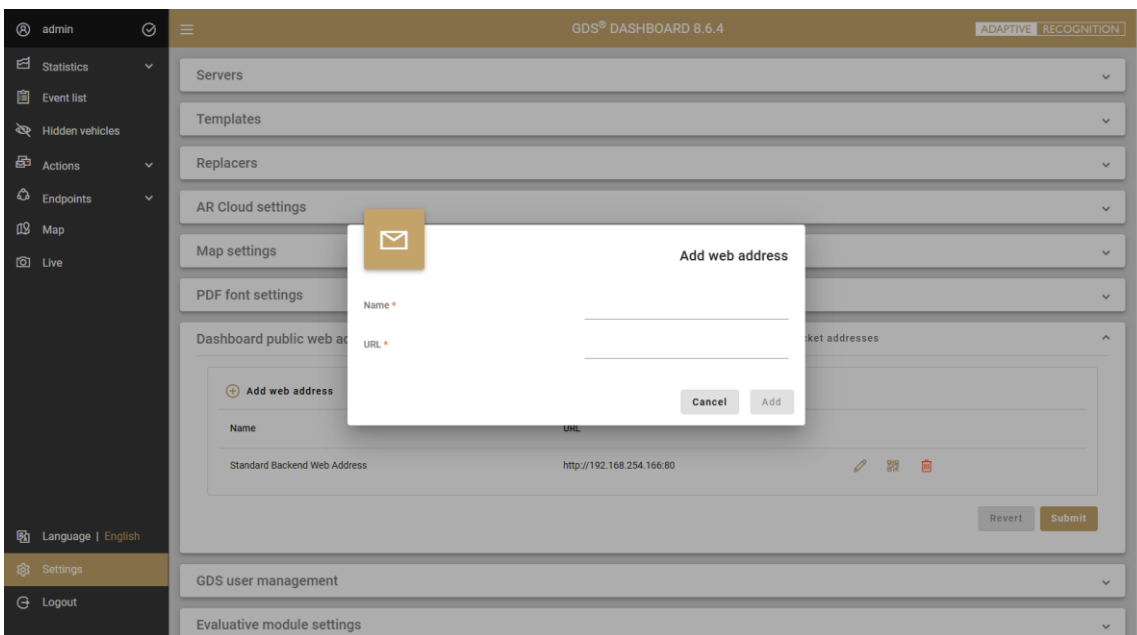


fig.71: Adding a new web address

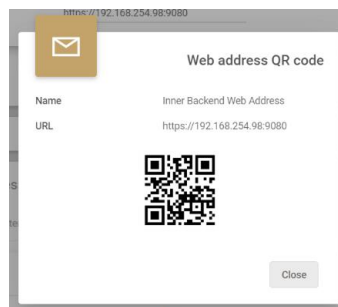


fig.72: Details of an existing web address

8.6 EXTERNAL CLIENTS

External systems (other GDS servers or custom 3rd party business intelligence) can be authorized to access the GDS in [GDS user management](#) section, by defining hook-rule and insert-rule tables.

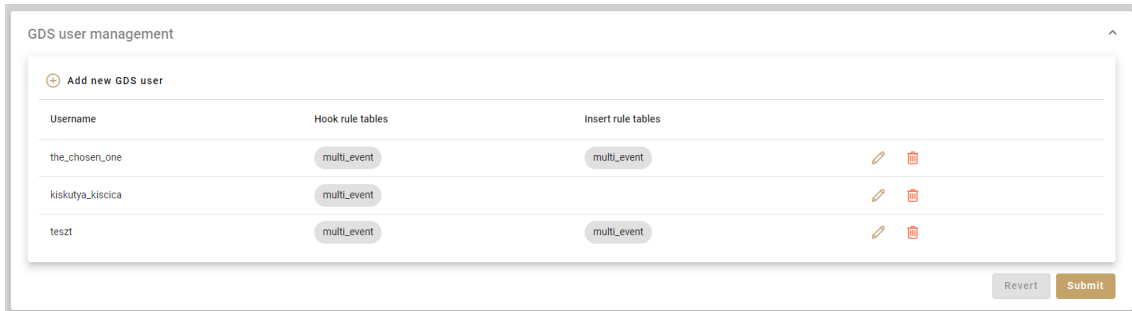


fig.73: GDS user management

8.7 EVALUATIVE MODULE SETTINGS

Connection limitations for the GDS Evaluative module (which is responsible for evaluating actions and sending notifications) may be set under the [Evaluative module settings](#).

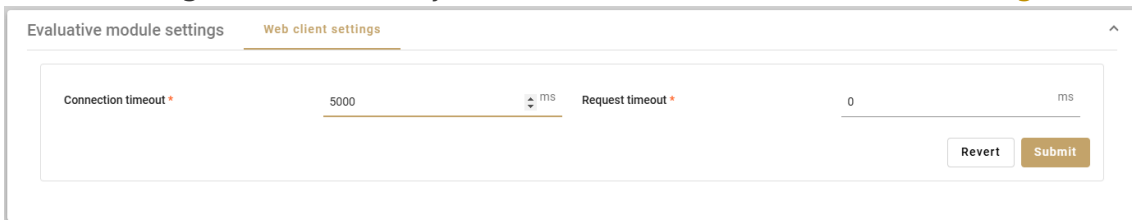


fig.74: Evaluative module settings

8.8 LDAP AUTHENTICATION

The GDS Dashboard provides the option for users to log in using the [LDAP](#) protocol instead of the built-in authentication system. The necessary settings for this can be configured on this interface.

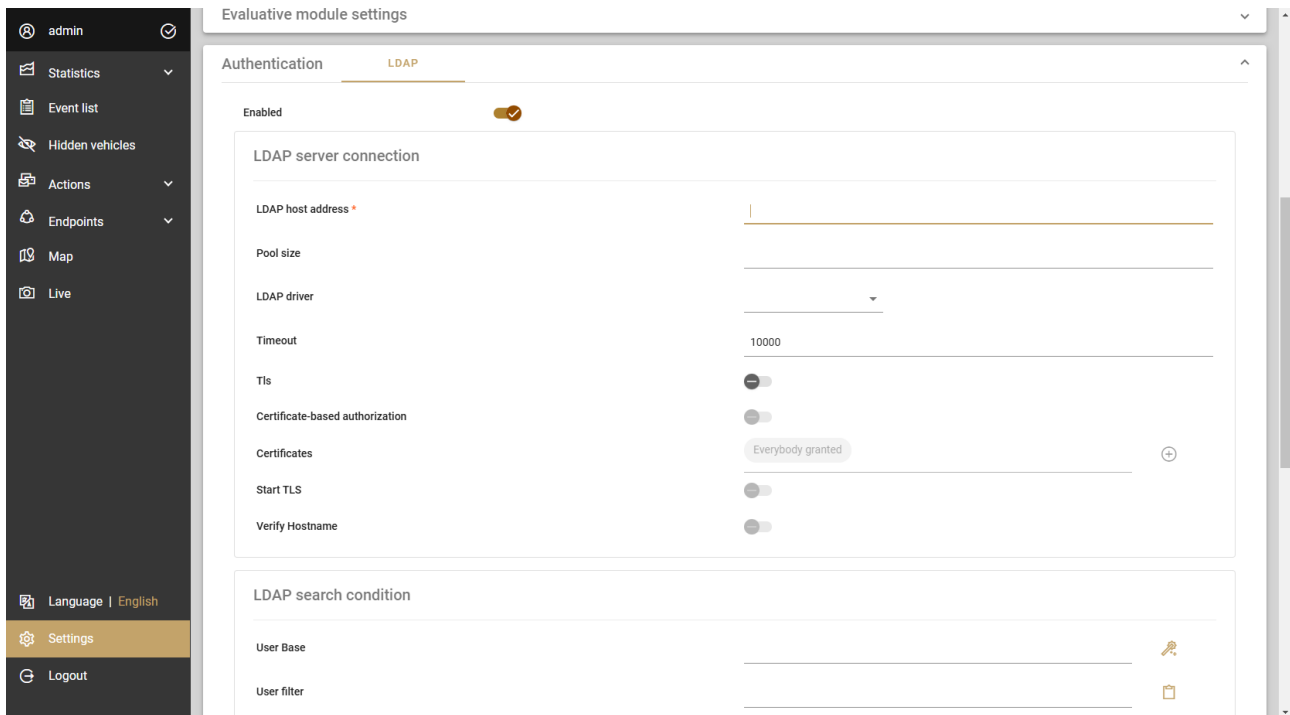
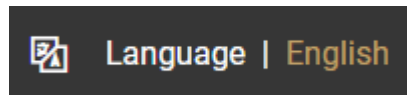


fig.75: LDAP settings

8.9 DISPLAY LANGUAGE

Interface language can be changed any time by clicking on the available [display languages](#) on the menu bar.



9. APPENDIX

System Requirements

Supported operating systems	64-bit Windows environment (Windows Server 2019/2022, Windows 10/11) 64-bit Linux distributions (Ubuntu, Red Hat Enterprise, Fedora) with systemd (system and service manager)
Supported platforms	x86_64 PPC
CPU requirements	4 cores/8 threads, 2.5 GHz (Recommended: 6 cores/12 threads, 3.5 GHz)
Memory requirements	16 GB RAM (Recommended: 32 GB RAM)
Network connectivity	1 Gigabit Ethernet interface for every network the server is connected to, appropriate routing between the site(s) and the server
System storage*	Min. 128 GB
Event storage*	Depends on traffic volume Contact AR for more details
Licensing	Licensing based on number of devices Contact AR for a quote
User interface	Mainstream browsers (Chrome, Firefox, Edge)
Development tools (underlying technologies)	Java, Elasticsearch, Spring WebFlux, Angular, Kibana
Supported programming languages for integration	SDK available for Java, C++, C#, python, php **

* The system and events can be stored on the same storage medium.

** SDK examples available online: <https://github.com/arh-eu/gds#sdk-examples> Simulator project is also accessible on our GitHub page (simulating standard GDS communication, receiving messages and sending a regular responses, serving PUSH communication): <https://github.com/arh-eu/gds-server-simulator>

System requirements are calculated for a typical application scenario.

For more on integration and development, visit <https://github.com/arh-eu/gds>

Online Document and Video Library

An up-to-date version of this manual and a series of practical examples (including the configuration of SMTP email and SMS server, and setting up Actions on basic and advanced level) are available as [guided video tutorials](#) on our website:

<https://adaptiverecognition.com/doc/>



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AR Technical Support System (ATSS) is designed to provide you the fastest and most proficient assistance, so you can quickly get back to business.

Information regarding hardware, software, manuals, and FAQ are easily accessible for customers who previously registered to enter the dedicated ATSS site. Besides offering assistance, the site is also designed to provide maximum protection while managing your business information and technical solutions utilized.

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If this is your first online support request, please create an account by clicking on this [link](#).

Returning User

All registered ATSS customers receive a personal access link via e-mail. If you previously received a confirmation message from ATSS, it contains the embedded link that allows you to securely enter the support site.

If you need assistance with login or registration, please contact atsshelpp@adaptiverecognition.com for help.

