

ADAPTIVE RECOGNITION



Lynet Speed

User Manual



This manual contains instructions on accessing the web interface, system settings and setup guidelines, and usage and maintenance.

Lynet Speed

USER MANUAL

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1. ABOUT THIS MANUAL

The structure of this manual follows the approach of configuring a new camera for its first-time use.

- The camera provides access to all its features through a web interface, its entire configuration control is available using a web browser. No external components need to be installed.
- First, system settings are discussed, so that the device will be operational.
- Next, the user will be guided through the process of setting up the image capturing process, so that the camera will provide good quality images both for internal use and for the video feed streamed with the chosen encoding.
- In the third part, the manual will discuss how to capture events using internal or external triggers, and depending on the model, read, store, and transfer ANPR data corresponding to the event.
- In the last section, the tools of camera maintenance (firmware update, logs, etc.) are described.



2. SOFTWARE CONFIGURATION INTERFACE OVERVIEW

The Lynet Speed camera system features a dedicated configuration interface that enables customers to setup and calibrate the device with precision. This interface is especially relevant during initial setup, field adjustments.

2.1. LIVE VIEW

Once the interface is loaded, the following elements become available:

http://camera_ip/#lynetspeed

Sensor selection

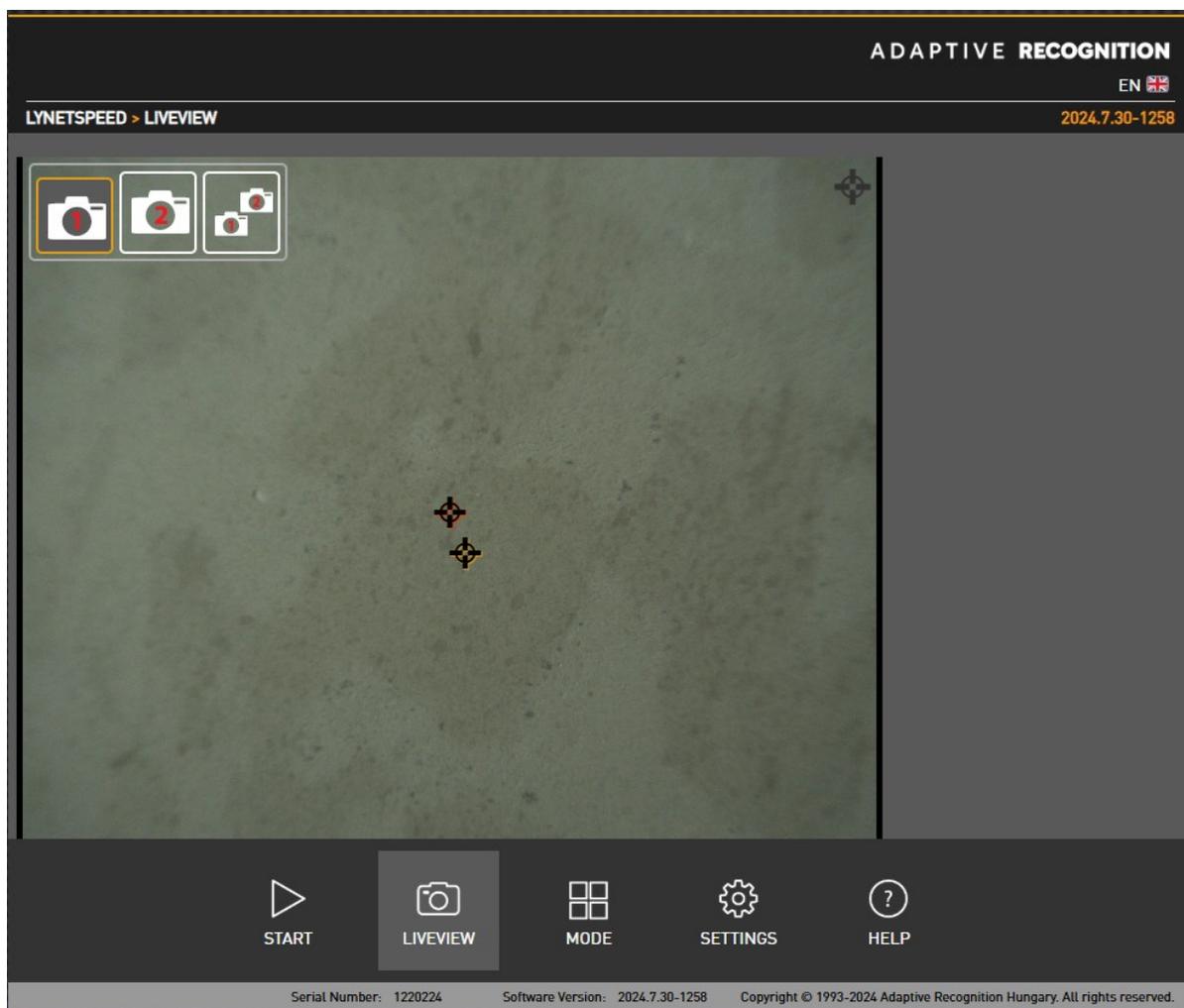
Users can select between:

- **Sensor 1 (left lens)**
- **Sensor 2 (right lens)**
- **Dual view (both lenses simultaneously)**

Each sensor's image stream is displayed in the center of the screen, overlaid with the following visual guides:

- **Red crosshair:** Indicates the **physical center** of the image sensor.
- **Yellow crosshair:** Indicates the **optical alignment center**, calculated from offset values

These markers help installers align the system correctly during mounting and calibration. During calibration, the yellow crosshair must align with the target point at the configured Trigger Distance to ensure accurate measurement.



2.2. ZOOM AND FOCUS ADJUSTMENT

- After selecting the appropriate sensor (typically Sensor 2), use the zoom control in the http://camera_ip/#liveview/optics to frame the area corresponding to the configured Trigger Distance (e.g. 20 m).
- It is recommended to perform zoom and focus adjustment already during crosshair alignment, so that the optical markers (red and yellow crosshairs) can be positioned with maximum precision.
- Verify image clarity both in daylight and low-light conditions. Save the settings and validate with live traffic.

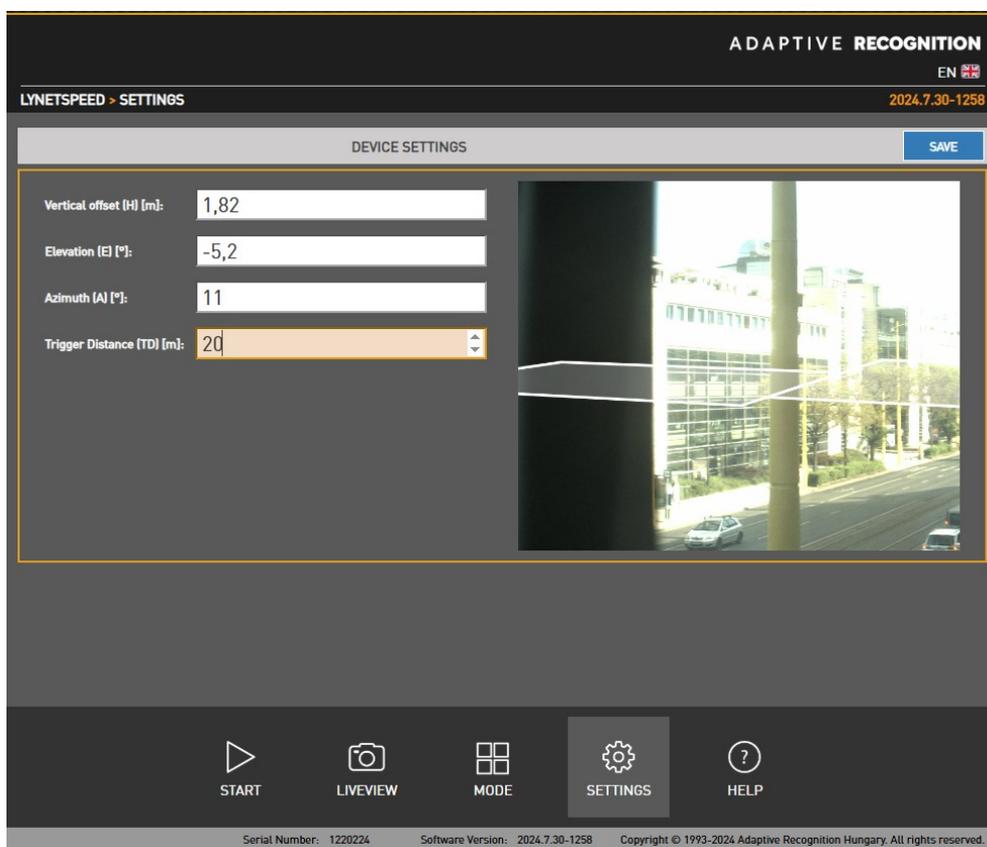
2.3. SETTINGS

In the "Settings" tab, advanced calibration options become available:

- **Vertical offset (H) [m]:** Represents the vertical distance in meters, between the optical center of the camera and a predefined reference point—typically the ground level.
- **Elevation (E) [°]:** It is calculated from **Vertical offset (H)** and **Trigger Distance (TD)**.
- **Azimuth (A) [°]:** The azimuth angle describes the horizontal rotation of the camera or lens, measured in degrees relative to a straight-ahead (forward-facing) orientation. It is used to determine how much the optical axis is turned left (negative angle) or right (positive angle) from the ideal forward direction.
- **Trigger Distance (TD) [m]:** Users can set a target distance (e.g., 20 meters), and the system will auto-calculate the ideal radar tilt based on installation height.
- **Save & Apply:** All changes made through the interface are stored persistently and take effect upon activation.

Note

First set **Vertical offset (H)** and **Trigger distance (TD)** and rest is filled automatically. Check the resulting **E**, then adjust **A** based on the crosshair alignment in Live View.



2.4. MODES

The system allows loading of **preconfigured presets** for different operating modes (Tripod, Stationary, Patrol, Interceptor). This feature enables quick switching between deployment scenarios without re-entering all calibration parameters.

Each mode optimizes camera behaviour, triggering logic, and data handling for specific use cases:

Tripod

- Designed for mobile deployments where the camera is mounted on a tripod.
- Ideal for temporary roadside speed enforcement.
- Often used in covert operations or quick-response setups.

Stationary

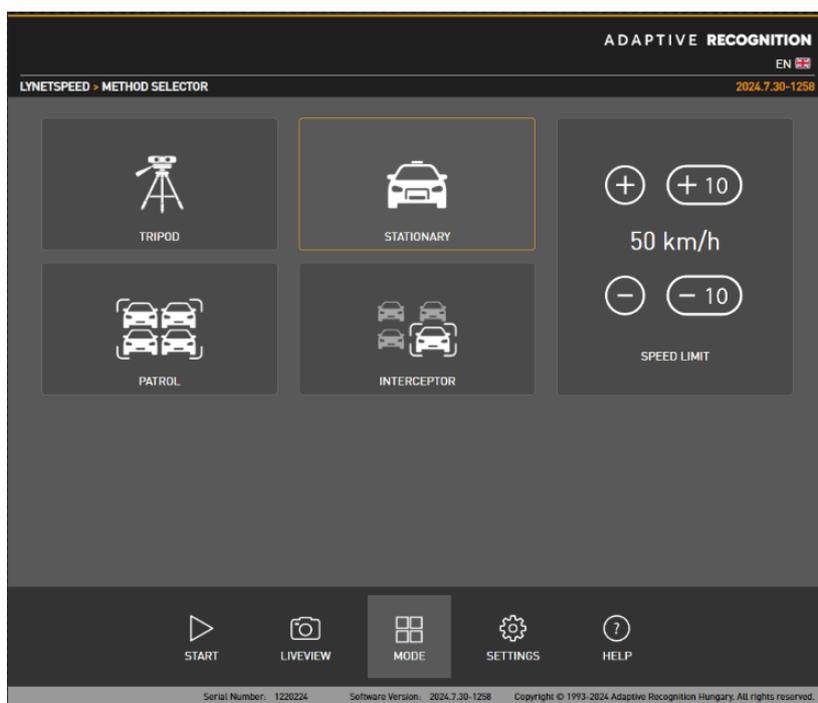
- For fixed installations such as roadside poles or gantries.
- Offers stable long-term measurement and minimal recalibration needs.
- Frequently used for permanent speed enforcement points.

Patrol

- Suited for onboard vehicle operation while in motion.
- Used when monitoring traffic during driving without direct pursuit.

Interceptor

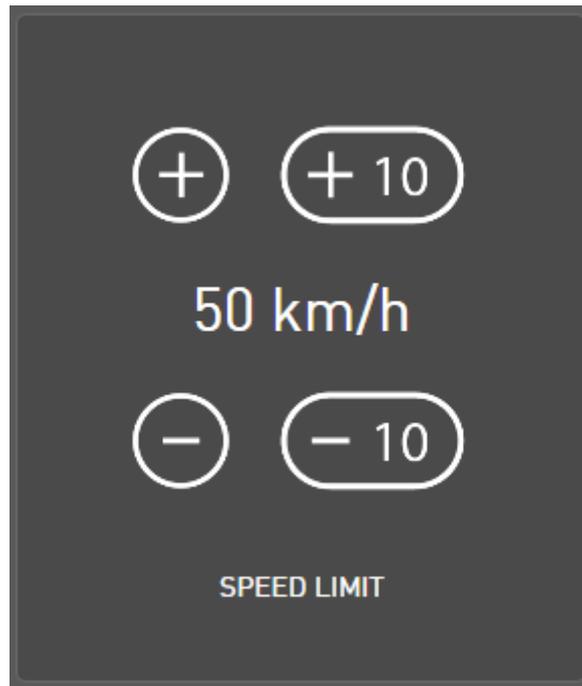
- For active pursuit situations.
- Allows continuous tracking and speed capture of a specific target vehicle.



2.5. SPEED LIMIT CONFIGURATION PANEL

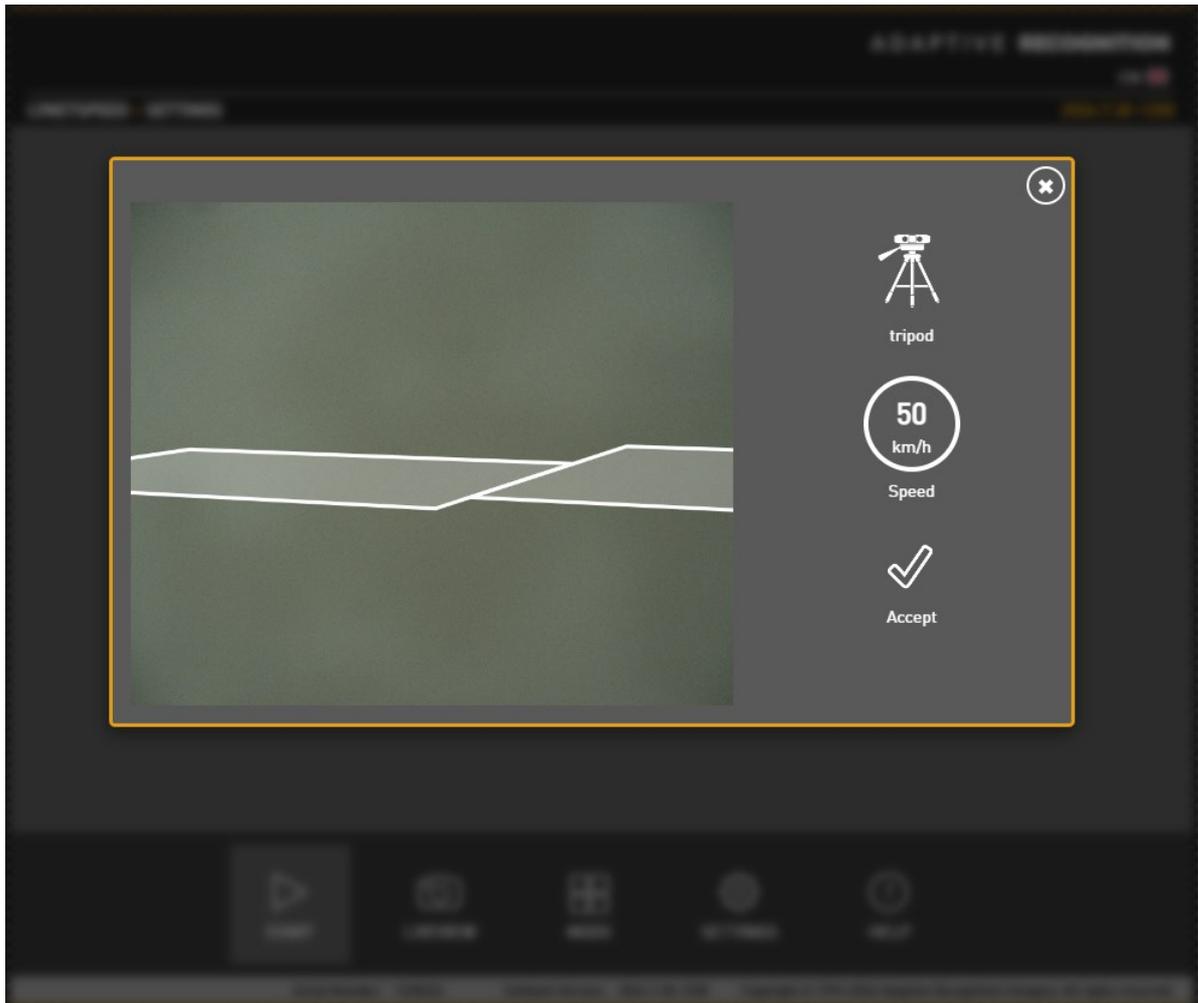
On the right side, the operator can define the active speed threshold used for triggering events.

- Adjustments:
 - + / – buttons change the value by ± 1 km/h
 - +10 / –10 buttons allow for fast changes in larger steps
- Enables quick adaptation to changing road sections or mobile patrol conditions.



2.6. START

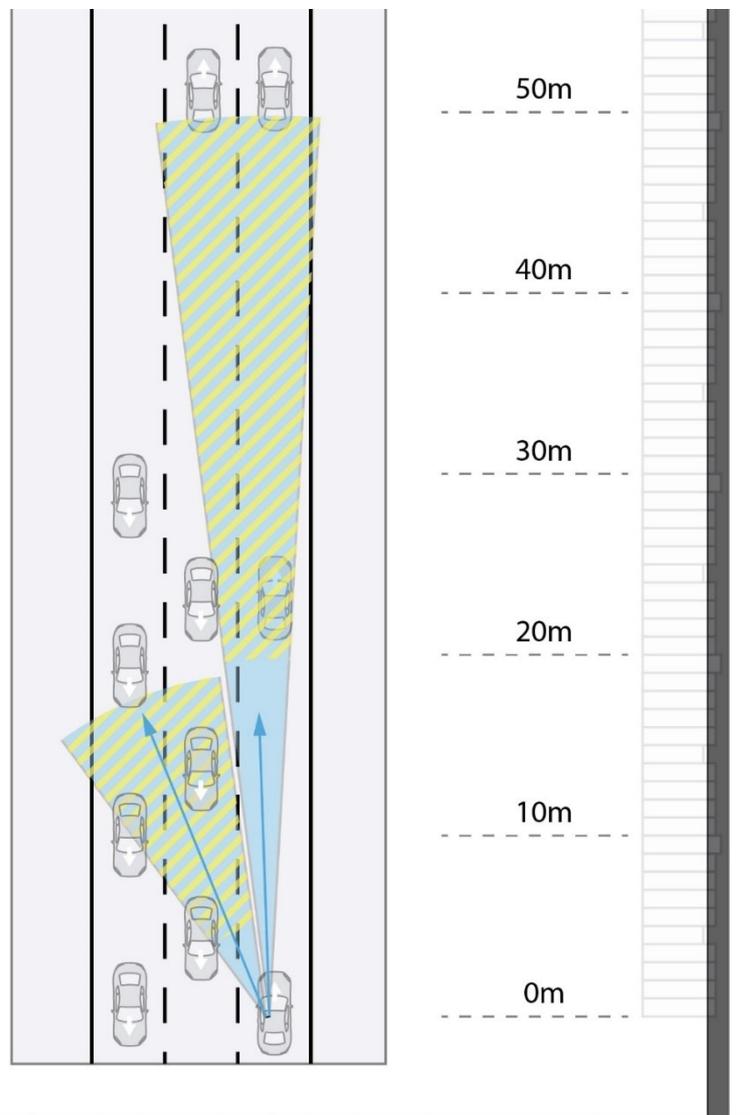
- Real-time events, including vehicle speed, license plate, and localization data, appear as individual events within the interface.
- Each event tile is clickable and opens a zoomed-in view of the captured frame and metadata.
- **Save** the configuration by the **Accept** button.



2.7. START

- Real-time events, including vehicle speed, license plate, and localization data, appear as individual events within the interface.
- Each event tile is clickable and opens a zoomed-in view of the captured frame and metadata.

The Lynet Speed software interface combines simplicity and technical depth, allowing full control over the system during installation, calibration, and operation. From precise trigger zone definition to dynamic preset loading, the interface empowers users to deploy the system with confidence and accuracy—whether on vehicles, tripods, or fixed installations.



2.8. INSTALLATION EXAMPLE

To illustrate the procedure, here is a practical example:

1. Lynet Speed is installed inside a 2020 Toyota Corolla.
2. The measured mounting height from the ground to the right lens center is 1.62 meters. For calibration purposes, this is rounded to 1.6 meters.
3. From the calibration table, a forward target distance of 20 meters is selected, as it is optimal for this height.
4. A marker is placed 20 meters ahead of the vehicle, aligned with the optical axis of the right lens.
5. The device is tilted downward until the yellow marker from Sensor 2 (right lens) hits the 20-meter mark on the ground.
6. Simultaneously, the point where the yellow marker from Sensor 1 (left lens) strikes the ground is measured. The diagonal distance is found to be approximately 22 meters, which is sufficiently close to the forward distance.
7. Based on the table:
 - The right (20 m) angle = -4.57°
 - The left (22 m) angle = -4.16°
8. Calculating the average:
$$(-4.57 + -4.16) / 2 = -4.36^\circ$$
9. The value -4.36° is entered into the "Elevation" field in the system's graphical user interface.

By carefully following these steps, you ensure that the Lynet Speed camera is optimally positioned, providing the highest possible measurement accuracy and compliance with regulatory standards.

3. SYSTEM SETTINGS

3.1. DATE & TIME

WEB INTERFACE > BASIC SETUP > DATE AND TIME

The screenshot displays the 'DATE AND TIME' configuration page in the Adaptive Recognition web interface. The page is titled 'ADAPTIVE RECOGNITION' and shows the current date and time as 2024.11.29-1523. The left sidebar contains a menu with options: BASIC SETUP, LIVE VIEW, USERS, DATE AND TIME (highlighted), NETWORK, WIZARD, ADVANCED SETUP, ANPR, MAINTENANCE, and HELP. The main content area is divided into sections: 'DATE AND TIME' with a 'SAVE' button and a help icon; 'SYSTEM TIME' with a 'GET CLIENT TIME' button; 'Date:' (2024-12-12) and 'Time:' (14:53:47) input fields; and 'Time zone:' (Etc/UTC) dropdown menu. Below this is the 'NETWORK TIME PROTOCOL' section, which includes a checked checkbox for 'Windows NTP server', and two NTP server entries: 'NTP server #1' (pool.ntp.org) and 'NTP server #2' (hu.pool.ntp.org), both with checked checkboxes. A green star icon next to the first server indicates it is available. The 'NTP diff [µs]' is set to +90. The footer contains the following information: Serial Number: 121D21D, Software Version: 2024.11.29-1523, and Copyright © 1993-2024 Adaptive Recognition Hungary. All rights reserved.

Current date and time and timekeeping settings are managed from this page. Users can set date and time by using a time synchronization protocol (NTP), which will keep time synchronized to a server over network.

Before you set the time, please make sure that your time zone is valid (has the correct continent / Capital City). You can do this by using the Time zone's drop-down list.

Querying the camera's time zone via URL:

http://{camera_ip}/setup/time?section=time&gettz&wfilter=1

or

The list used for the time zone dropdown menu can be accessed here in .JSON format:

http://{camera_ip}/js/cam/data/timezones.js

The URL command is used to synchronize the camera's internal time with the PC's system time. This command allows precise time configuration:

http://{camera_ip}/setup/time?wfilter=1§ion=time&save=&year={year}&month={month}&day={day}&hour={hour}&min={minute}&sec={sec}&tzone={time_zone}

Note

Settings are applied after clicking **SAVE**.

Continuous synchronization is based on NTP (Network Time Protocol). The following settings are available with **NTP client**:

- **NTP server #1, 2:** Several NTP servers can be set up if more precise time synchronization is the goal (can also be GPS-based). The address of the NTP server. (If the NTP server does not run on the default port (123), specify the port in the following format: [hostname/ip]:[port]).
- **NTP diff [μ s]:** The current deviation of the camera's system time from the time received from the NTP server(s).

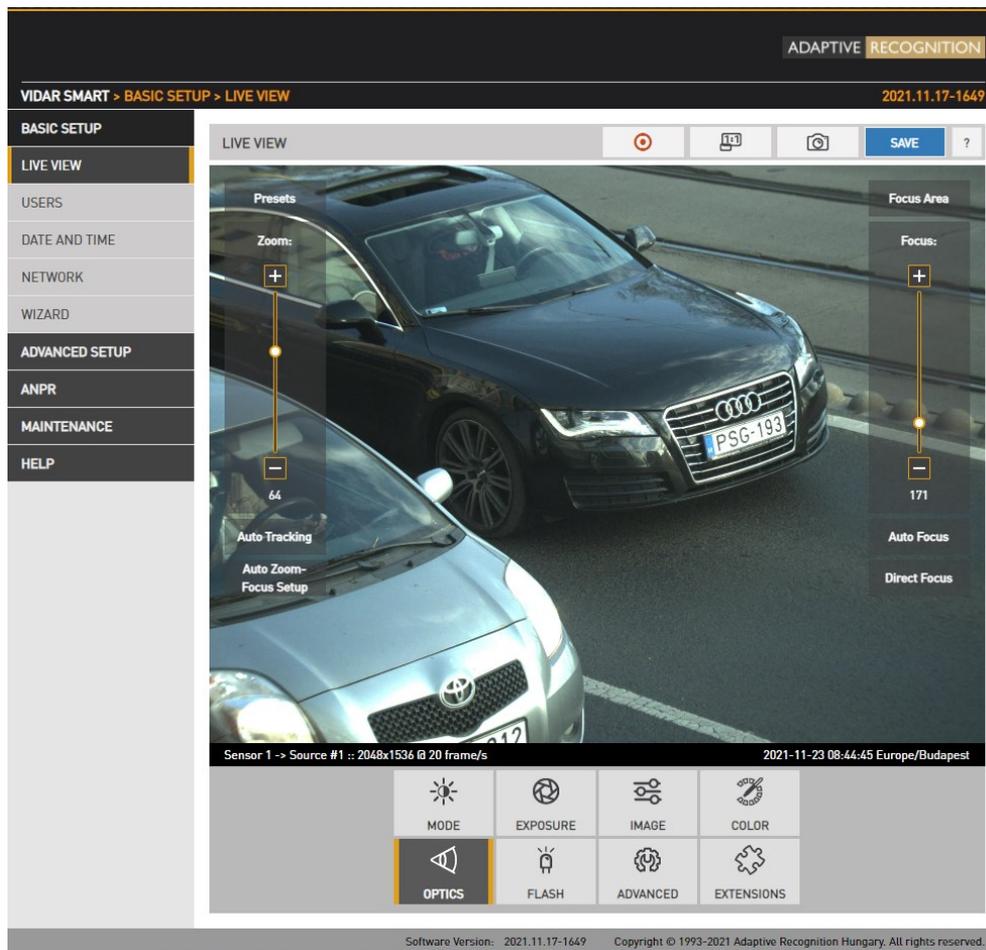
To initiate an immediate synchronization to the NTP server, click the  button.

Note

The camera has an internal battery feeding its Real Time Clock (RTC) while the camera is powered off. In a power down state the battery is able to provide power to the RTC for approximately 2 weeks. It takes about 12 hours in a power up state for the battery to completely recharge.

3.2. OPTICS

WEB INTERFACE > BASIC SETUP > LIVE VIEW > OPTICS



Models equipped with motorized lenses will show this menu item. Both lenses can be adjusted individually by switching between the two sensors in the Live view menu. Use the left slider (Zoom) to change the field of view from wide angle (0) to telephoto (100). Use the right slider (Focus) to manually adjust focus from near to far.

Clicking the **Auto Focus** button will execute one time autofocus performance. It is possible to change between short range and full range options. By clicking the **Focus Area** button, moving and resizing the yellow rectangle, the area of interest can be defined, and then this part of the image will be sharp after autofocusing.

Auto tracking is enabled by clicking the **Auto Tracking** button. The essence of this function is to set the zoom to a specific position and then sharpen the image with one of the image sharpening functions. After adjustment, the focus will be adjusted automatically after. It follows from the

operation described that if the **Auto Tracking** function is activated when the image is not in the sharp position, the focus retraction after zooming will also result in a blurred image.

To use auto tracking, an anchor point must be defined, that is the image that needs to be sharp when enabling this function. It is best to set this anchor point (enable auto tracking) with the following conditions met:

- Zoom is at telephoto end
- Iris fully open
- Image is sharp

A number of zoom/focus pairs may be set and recalled as presets using the Presets menu.

Note

Due to the nature of the optics, enabling Auto Tracking at zoom positions close to the wide-angle position may result in inaccurate image refocus at zoom positions close to telephoto.

There are two new buttons on the Live view optics interface: **Auto Zoom-Focus Setup** and **Direct Focus**.

Auto Zoom-Focus Setup button:

Its function is to automatically adjust the zoom (appropriate viewing angle) and focus (focusing on a specific subject). Its current operation is trying to determine the distance from the camera to the object in the optical center of the camera, and then adjusting the optics to the appropriate zoom position based on the resulting distance and the desired angle of view. It will then automatically refocus the image according to the specified distance. (Currently, the viewing angle can be specified in Plain config (URL: http://CAM_IP/#plainconfig) in the setup / geometry module with the parameters 'lane_width' and 'lane_count'. Their default values are 3 and 1.)

Direct Focus button:

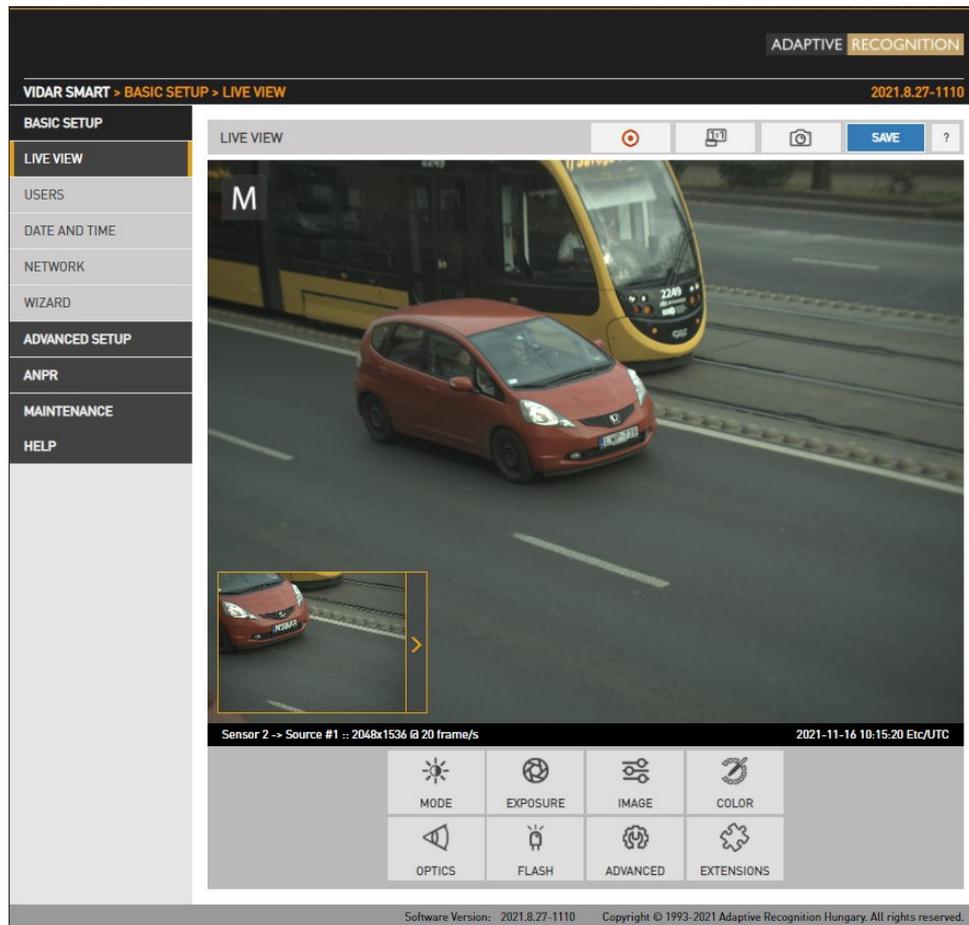
The distance-based focus function can be triggered with the button. By clicking the button, the camera calculates where to focus at a given zoom position so that the image is sharp at the measured or calculated subject distance. Two options are available here:

- **Laser+AF:** Combined distance-based and fine-tuned auto focus for a fast and accurate focus adjustment.
- **Laser only:** Fast distance-based focus adjustment using only the built-in laser unit.

 **Important!**

Both function keys are currently only displayed for cameras with **LIDAR!**

3.3. SECONDARY SENSOR



The live stream of the secondary sensor is shown in the box below (picture in picture). By clicking the live stream box, the main view switches to the secondary sensor, and all settings (Brightness control, Color, Optics etc.) will be applied to the secondary sensor.

Use the left slider (Zoom) to change the field of view from wide angle (0) to telephoto (100). Use the right slider (Focus) to manually adjust focus from near too far.

Clicking the **Autofocus** button will execute one time autofocus performance. By clicking the **Focus Area** button, moving and resizing the yellow rectangle, the area of interest can be defined, and then this part of the image will be sharp after autofocusing.

Auto Tracking, Auto Zoom-Focus Setup and Direct Focus can be adjusted the same method as Sensor 1.

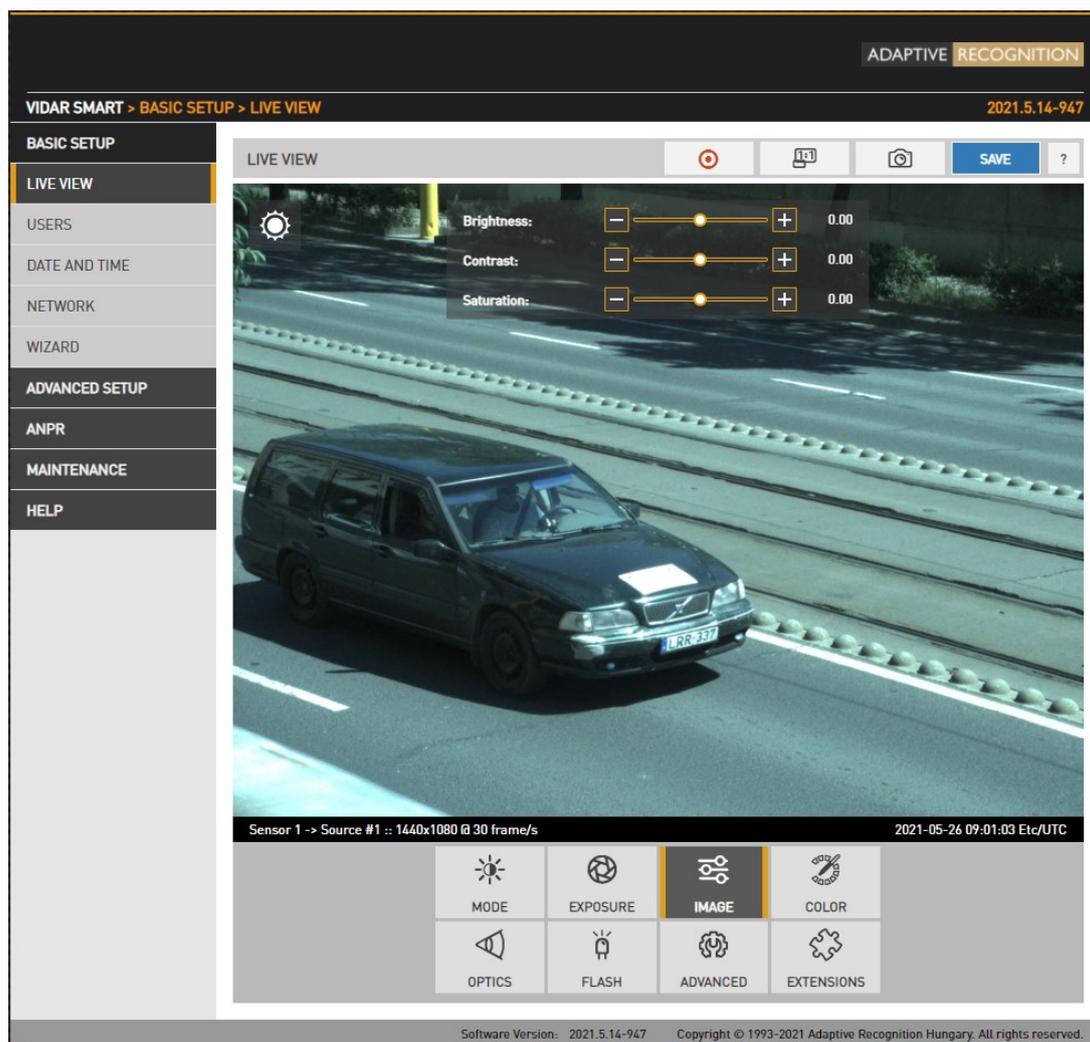
The secondary sensor box will be shown only if none of the on-screen tools are active.

3.4. POST-PROCESSING

From the post-processing stages, the following 3 configuration options are the most important first steps (Image, Color, Advanced). The other 5 Live View menu configurations (Mode, Exposure, Optics, Flash, Extensions) will be detailed further in the User Manual.

3.4.1. IMAGE

WEB INTERFACE > BASIC SETUP > LIVE VIEW > IMAGE

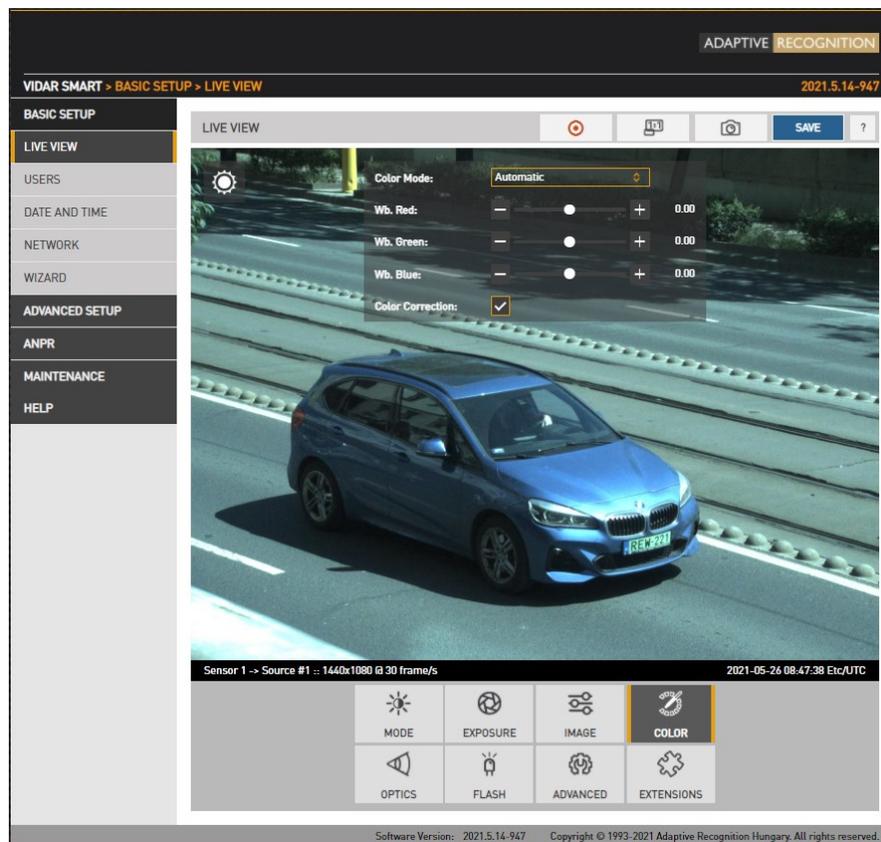


The basic post-processing settings are configured here:

- **Brightness:** Increase/decrease the brightness of the image
- **Contrast:** Increase/decrease the luminance contrast of the image
- **Saturation:** Increase/decrease the chrominance contrast of the image

3.4.2. COLOR

WEB INTERFACE > BASIC SETUP > LIVE VIEW > COLOR



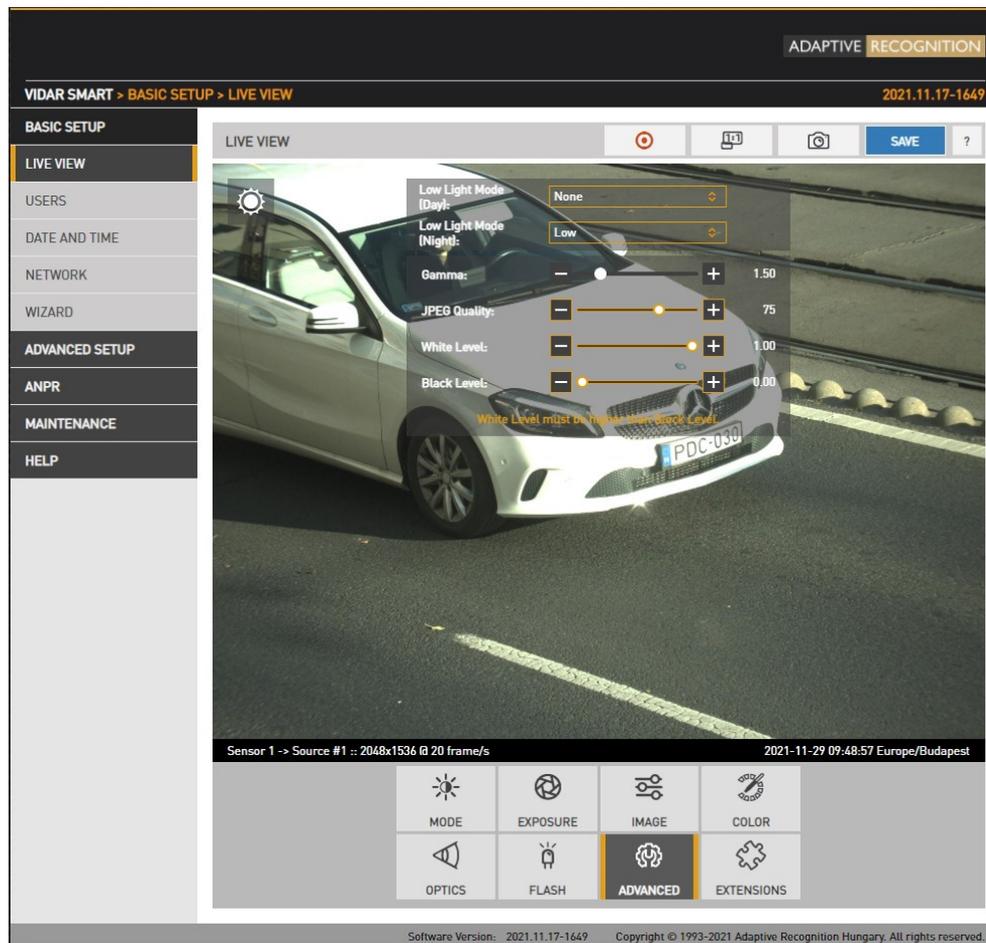
Color settings are configured here:

- **Color Mode:** Automatic/Color/Gray mode
 - **Automatic:** in the case of a color sensor, the switching of the infrared filter determines its status: if the infrared filter is active (filters out infrared), then it is in color mode, if not active (allows infrared), then in gray mode.
 - **Color:** Color mode
 - **Gray mode:** ideal for night time IR mode
- **Wb. Red:** Red channel gain
- **Wb. Green:** Green channel gain
- **Wb. Blue:** Blue channel gain

Color Correction: Automatic compensation for the color of the illumination. If the factory setting is not suitable, there are two options: automatic and manual. The manual option is worth using if the user can set it better than the default or the automatic. The difference between the two is that the automatic continuously adjusts to external changing conditions, while the manual is a fixed setting. The white balance tries to adjust the white balance.

3.4.3. ADVANCED

WEB INTERFACE > BASIC SETUP > LIVE VIEW > ADVANCED

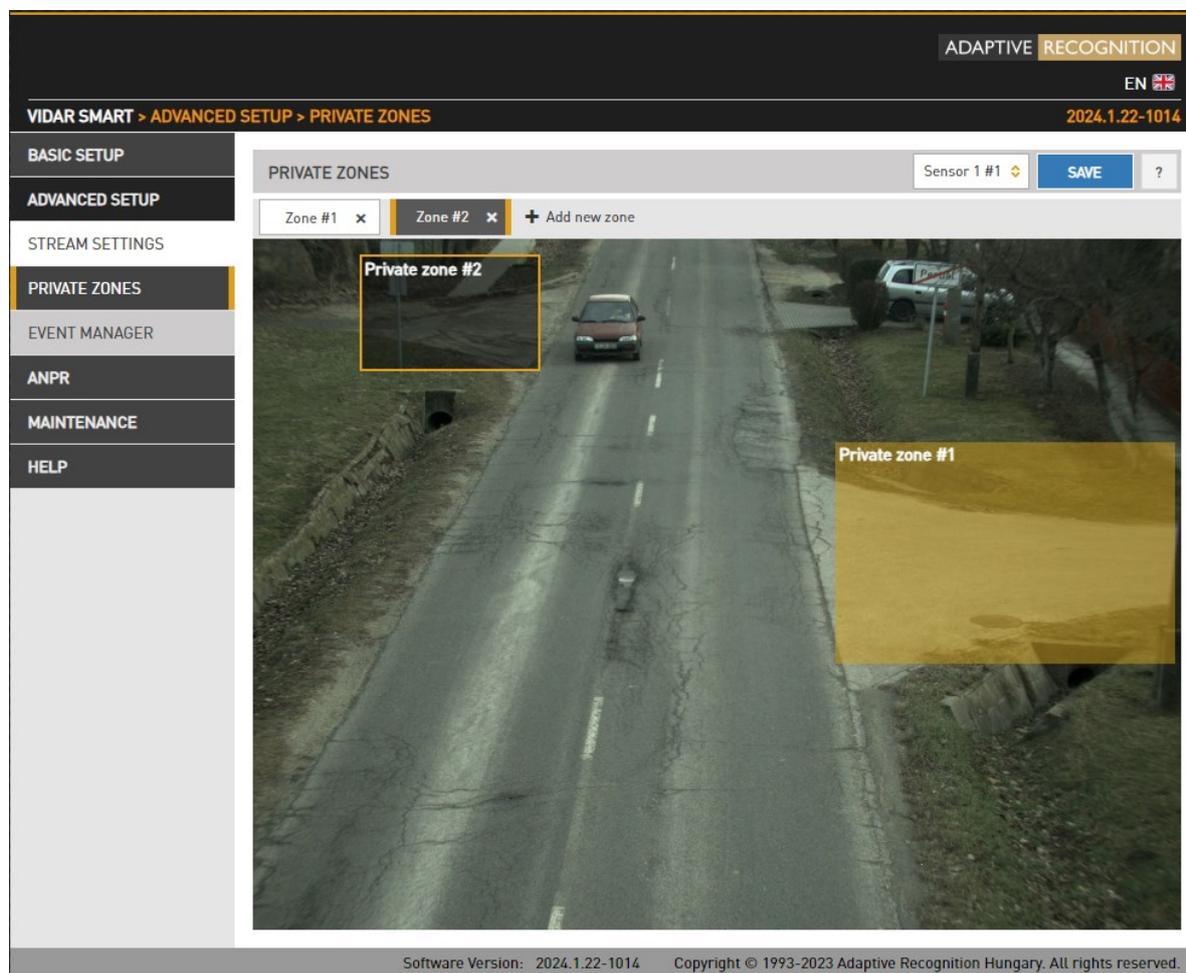


Advanced post-processing settings are configured here:

- **Low light mode:** Under low illumination conditions an algorithm tunes sensor and post processing parameters to still be able to capture an adequate image. The level of these settings may be selected from a drop-down menu, featuring none, low, medium, intermediate, and high. The higher the value, the higher the image noise. Set the appropriate values accordingly.
- **Gamma:** Gamma correction of the image
- **JPEG Quality:** Affects the JPEG compression rate of the image – higher quality setting means lower compression.
- **White Level:** Defines the pixel value above which all pixels will be mapped to white
- **Black level:** Defines the pixel value below which all pixels will be mapped to black

3.4.4. PRIVATE ZONES

WEB INTERFACE > ADVANCED SETUP > PRIVATE ZONES

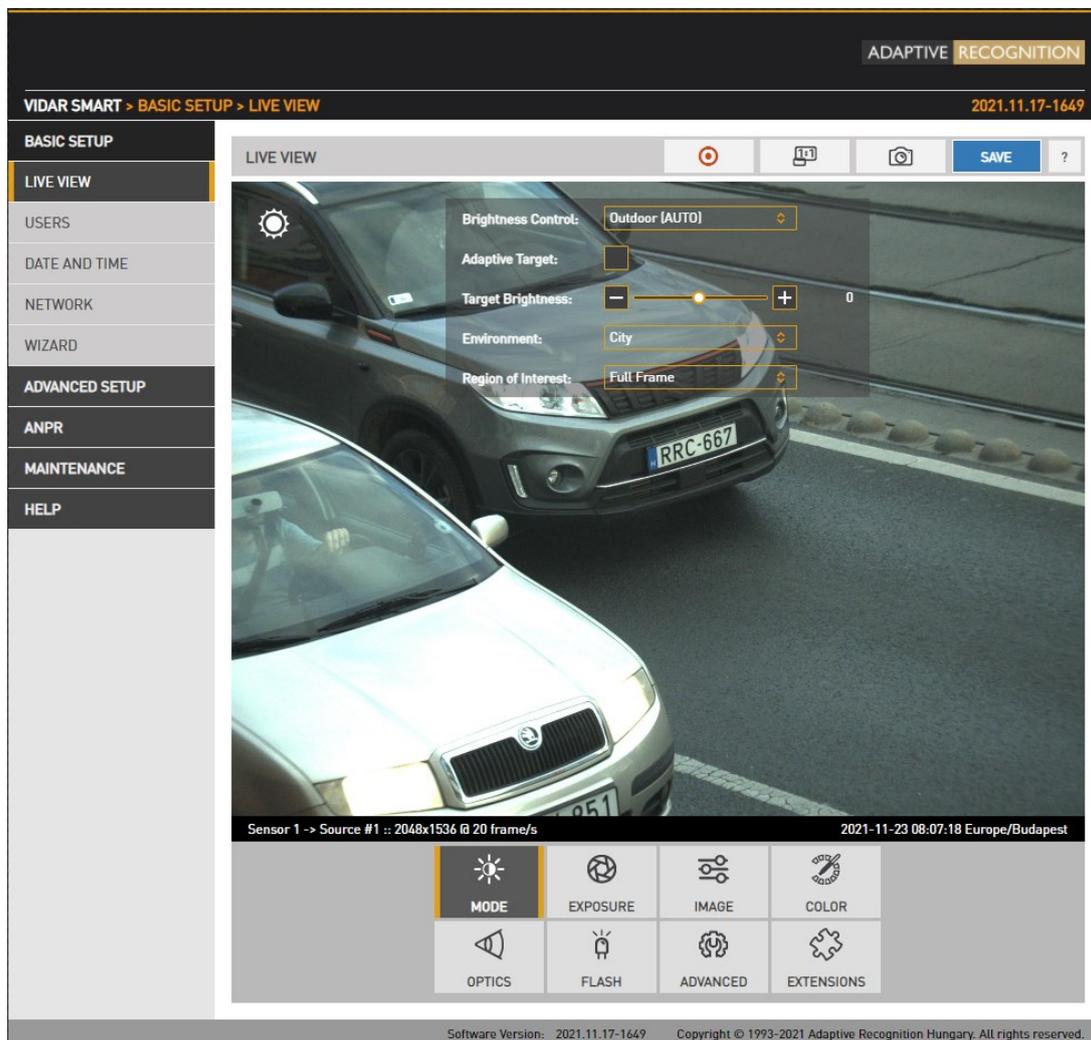


In certain circumstances it may be necessary to cover a part of the image, for instance, a parking place near the monitored lane, where the stationary vehicles should not be in the image, and their license plates should be excluded from processing, or when private property is displayed. These unwanted parts can be covered with a maximum number of 3 rectangular zones using the Private zones tool.

Each time an area is added, a rectangular box (with yellow edges) shows up in the left upper corner. This rectangle is resizable and can be positioned on the image field in the required position. After clicking on the **SAVE** button, the defined area will be filled with black color, which you can be seen on the live view and on the streams as well.

3.5. BRIGHTNESS CONTROL

WEB INTERFACE > BASIC SETUP > LIVE VIEW > MODE



Brightness control will automatically monitor and control the exposure of the image, with license plate reading as a priority.

Brightness control principally adjusts exposure time (shutter) and gain. As ambient light level decreases, both shutter open time and gain may be increased, but only up to a level (Shutter Max. and Gain Max. - It can be set under the Exposure menu) because a too long shutter value will result in motion blur, too much gain will result in excessive noise. Brightness control will also switch to night mode (engaging built in LEDs) if illumination levels fall to a level, where capturing a color image is not possible.

The icon top left shows the current state:



– Manual mode



– Day mode



– Night mode

Hovering the mouse over the controls provides more information.

- **Brightness Control:** In different illumination situations different strategies are required to maintain a balanced exposure level. The camera offers one manual and one automatic strategies:
 - **indoor (manual)** – For indoor use. In Manual mode **Shutter** and **Gain**, and in models equipped with motorized lenses **Iris** are freely adjusted.
 - **outdoor (auto)** – For outdoor use.
- **Adaptive Target (ATT):** The ATT module is disabled by default; it can be activated in the brightness control interface on the GUI.
The ATT adjusts the brightness control target value. If the license plate is too dark, it increases it, if it is light, it decreases it.

 Note

If Adaptive Target is enabled, it sets the Target brightness and this field cannot be adjusted.

- **Target Brightness:** This control allows the user to correct the exposure of the image. Larger numbers will result in a brighter image (Please note that limits apply because of Condition).
- **Environment:** Four conditions are available, each corresponding to a range of the traffic's speed and the type of traffic configuration. Please note that these conditions determine the maximal exposure time, limiting the illumination of the scene, under which night mode will be engaged.



| Outdoor | Max. speed [km/h] | Default Max. Shutter [μ s] |
|---------|-------------------|---------------------------------|
| Parking | 10 | 5000 |
| City | 50 | 3000 |
| Highway | 255 | 250 |

- **Region of Interest:**

- **Full frame** – Current image illumination is measured in the complete image.
- **Manual frame** – Current image illumination is measured in the selected region. You can resize and move the rectangle representing the region of interest.

 Note

Please note that in mobile mode, Vidar corresponds eventually to a lower speed, as on Freeway the velocity of the camera and the target vehicle is in the same direction, as opposed to Highway use, monitoring oncoming traffic.

3.6. EXPOSURE CONTROL

WEB INTERFACE > BASIC SETUP > LIVE VIEW > EXPOSURE

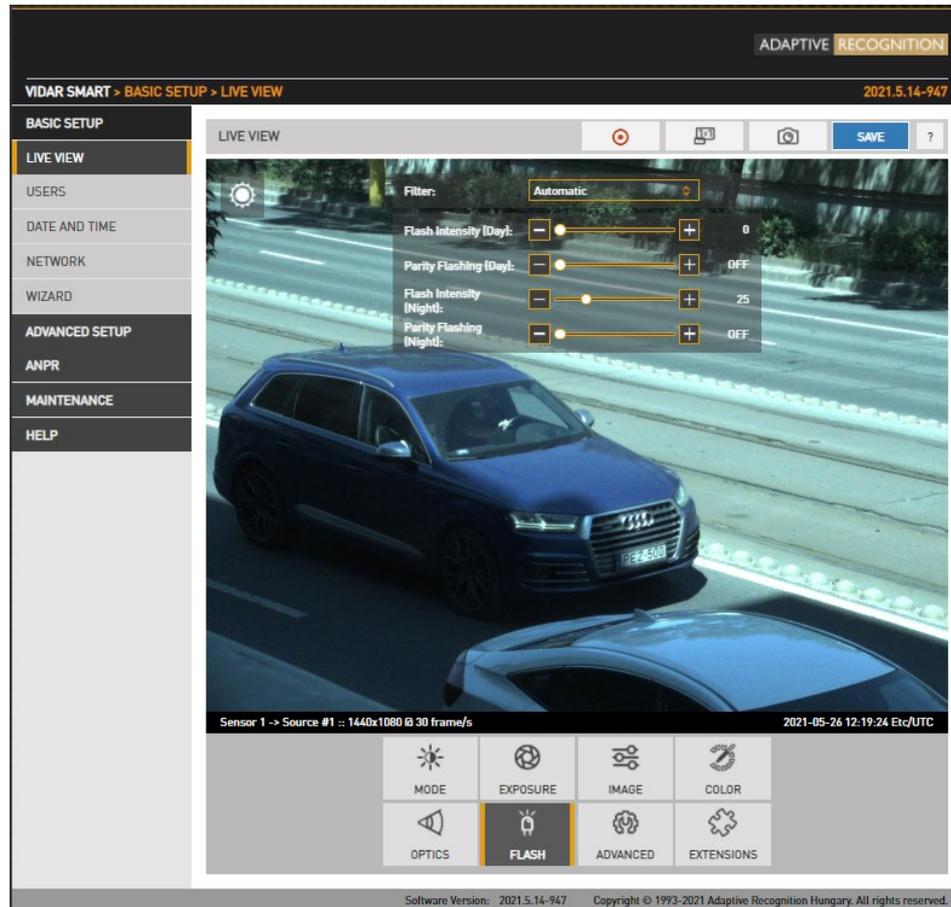
- In **Manual** mode **Shutter** and **Gain** are freely adjusted.
- In **Outdoor** mode both Shutter and Gain are adjusted by the controller. However, their maximum: **Shutter Max.** is adjustable and Gain Max. is available in day/night mode, where a user defined value may be entered. Selecting **Environment** on the **Mode** tab affects these values.

3.7. FLASH CONTROL

WEB INTERFACE > BASIC SETUP > LIVE VIEW > FLASH

The settings of the built-in illuminator and filter exchanger can be managed by clicking in the FLASH

 button at the Live View  menu.



Outdoor mode:

- **Filter:** Switch between the three states: Automatic, All pass and Infra Cut
- **Flash Intensity:** Set the intensity of the built-in illuminator between 0 and 100%
- **Flash ID:** For some models (only on **Ultrascale** cameras), an external illuminator can be set.
- **Parity Flashing:** If set, odd frames will be illuminated with reduced intensity. For example, if this value is set to 50%, odd frames will be illuminated with 50% of the intensity of the even frames.

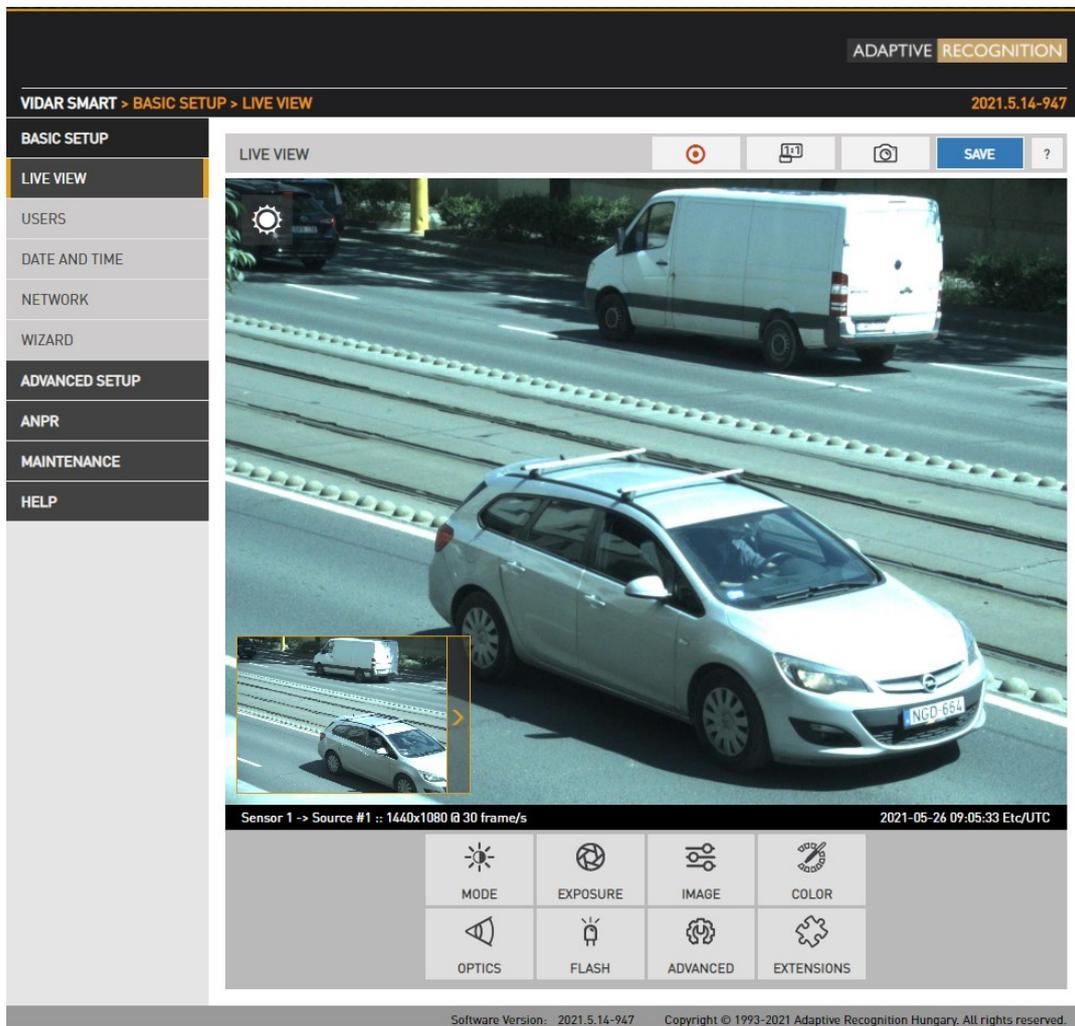
Note

- Both Flash Intensity and Parity Flashing can be defined for day and night mode.
- "Parity Flashing" is expressed as a percentage of "Flash Intensity".

3.8. MISCELLANEOUS

3.8.1. SNAPSHOT, 1:1 VIEW, RECORDING A STREAM

WEB INTERFACE > BASIC SETUP > LIVE VIEW



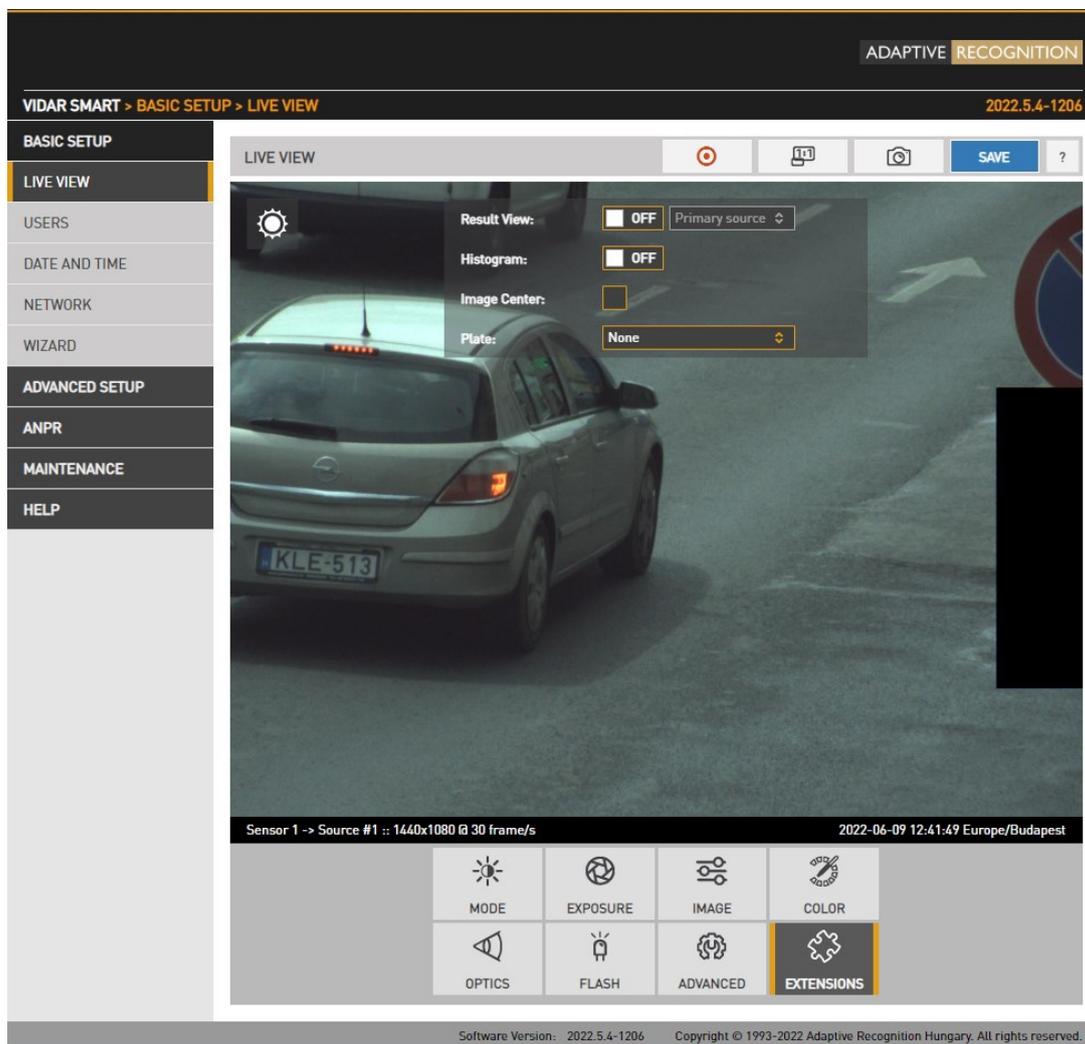
To record the live video stream to a file, click on the  icon in the top menu.

To open live video stream in 1:1 full screen in a pop-up window, click on the  icon in the top menu.

To save snapshot from the live video stream, click on the  icon in the top menu.

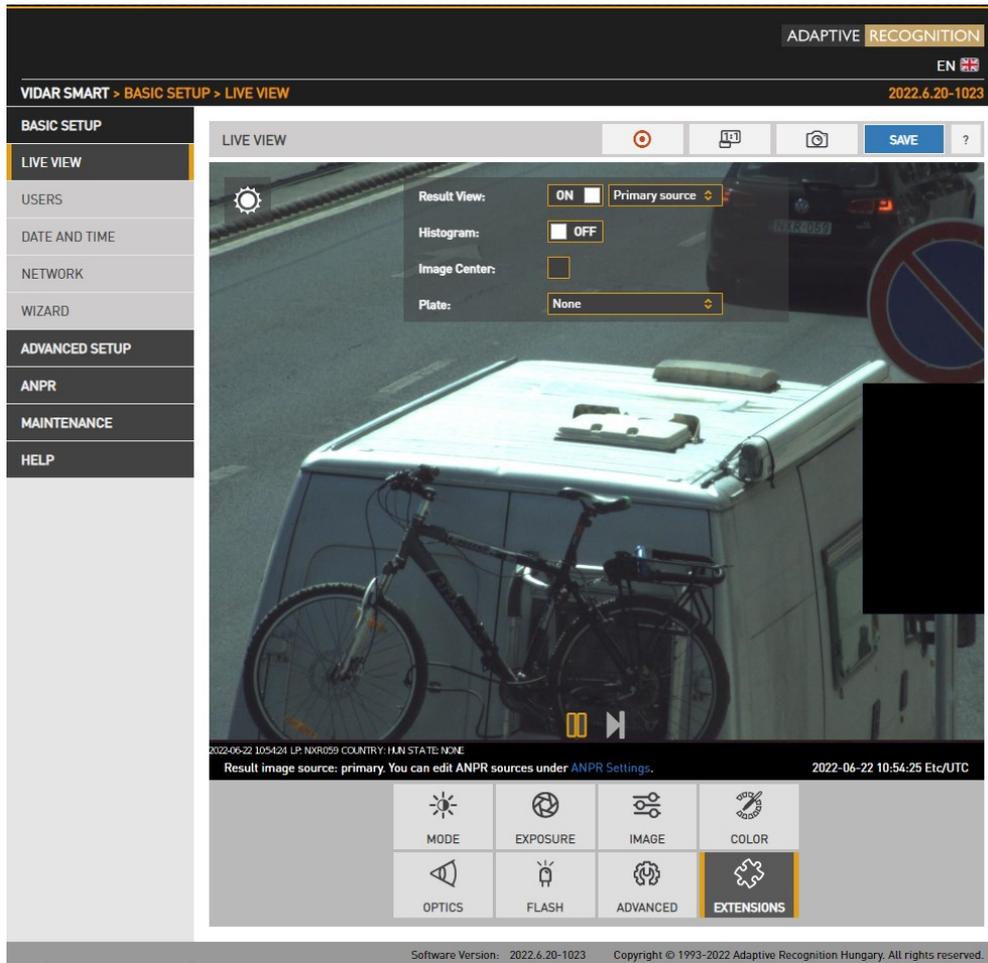
3.8.2. VISUAL AIDS

WEB INTERFACE > BASIC SETUP > LIVE VIEW > EXTENSIONS

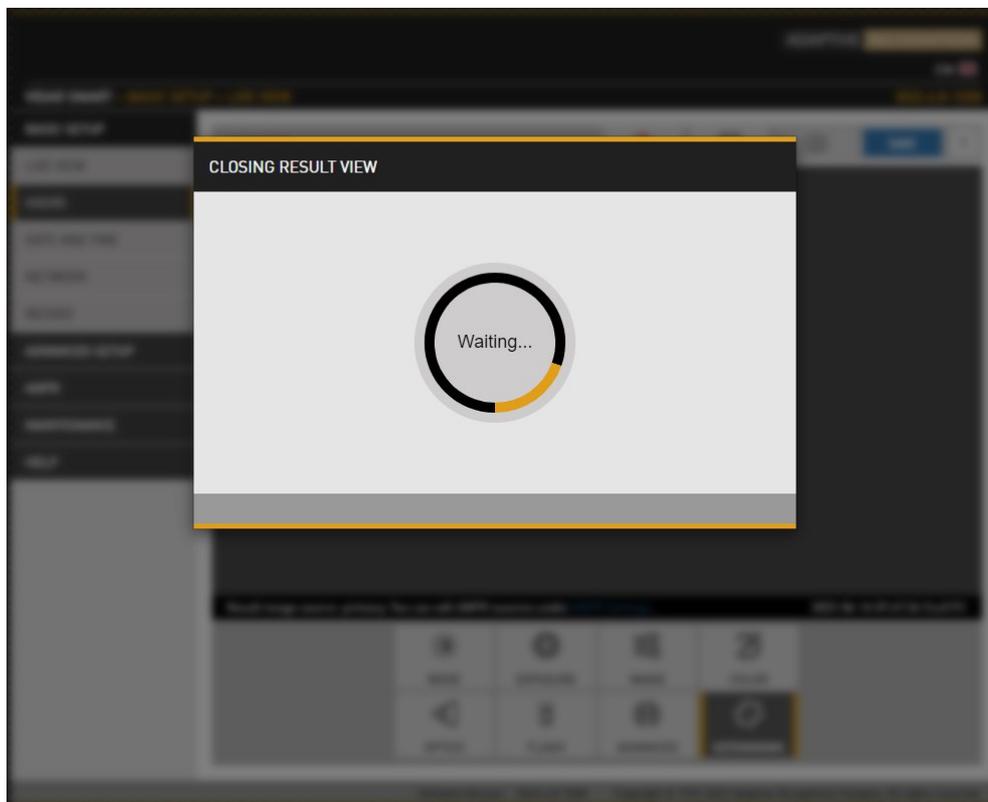


This menu offers visual aids to set up the camera.

- Result View:** When this function is turned on, it always shows the last trigger image of the current event. This feature helps you set the right focus for instance, always making changes to the current event. You can edit ANPR sources under ANPR Settings.
- You can pause and jump between events with the appropriate buttons. You can click between tabs in the Live View menu, but if you click elsewhere in the sidebar, the feature will turn off.



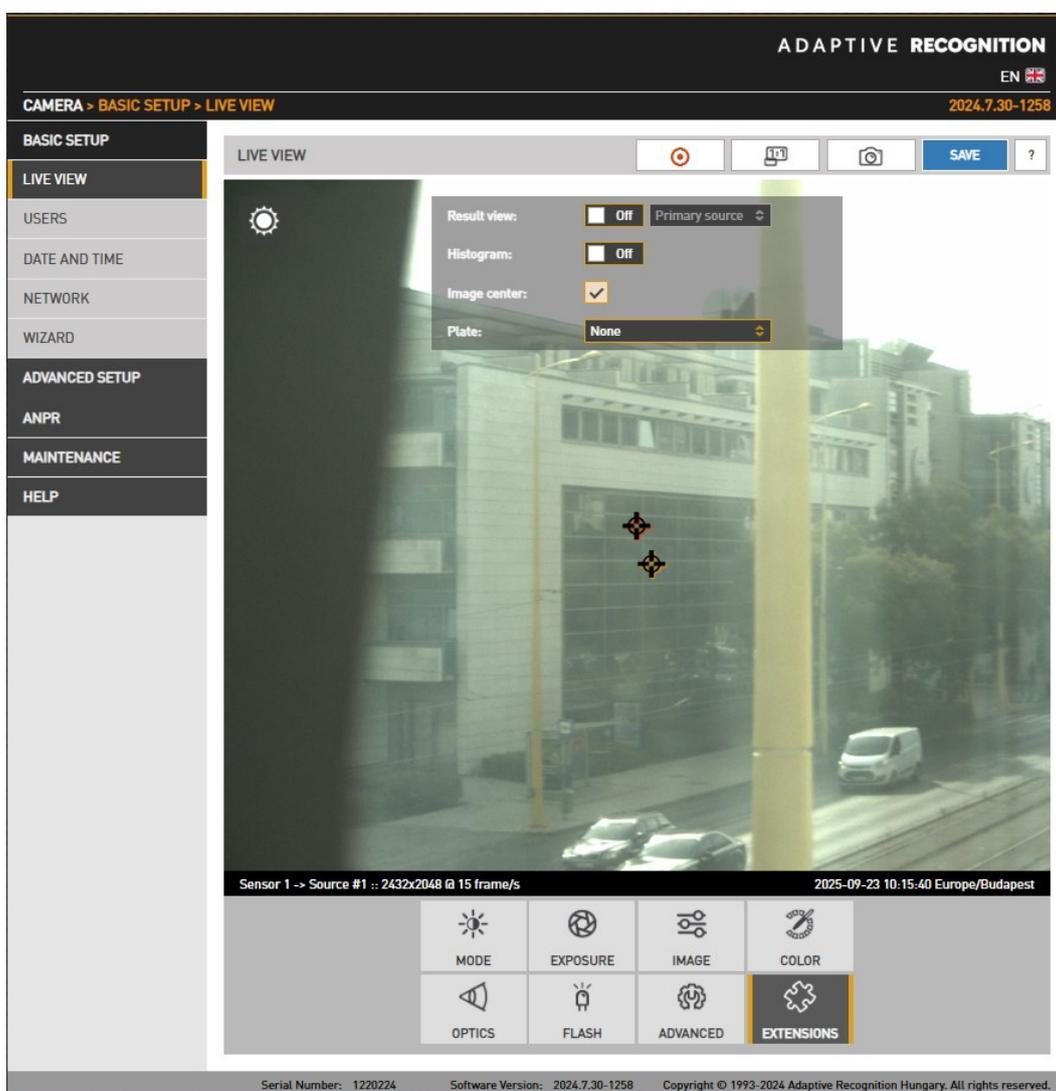
Software Version: 2022.6.20-1023 Copyright © 1993-2022 Adaptive Recognition Hungary. All rights reserved.



 Note

It may take some time to stop the Result View function. Wait until "Closing" window is disappearing.

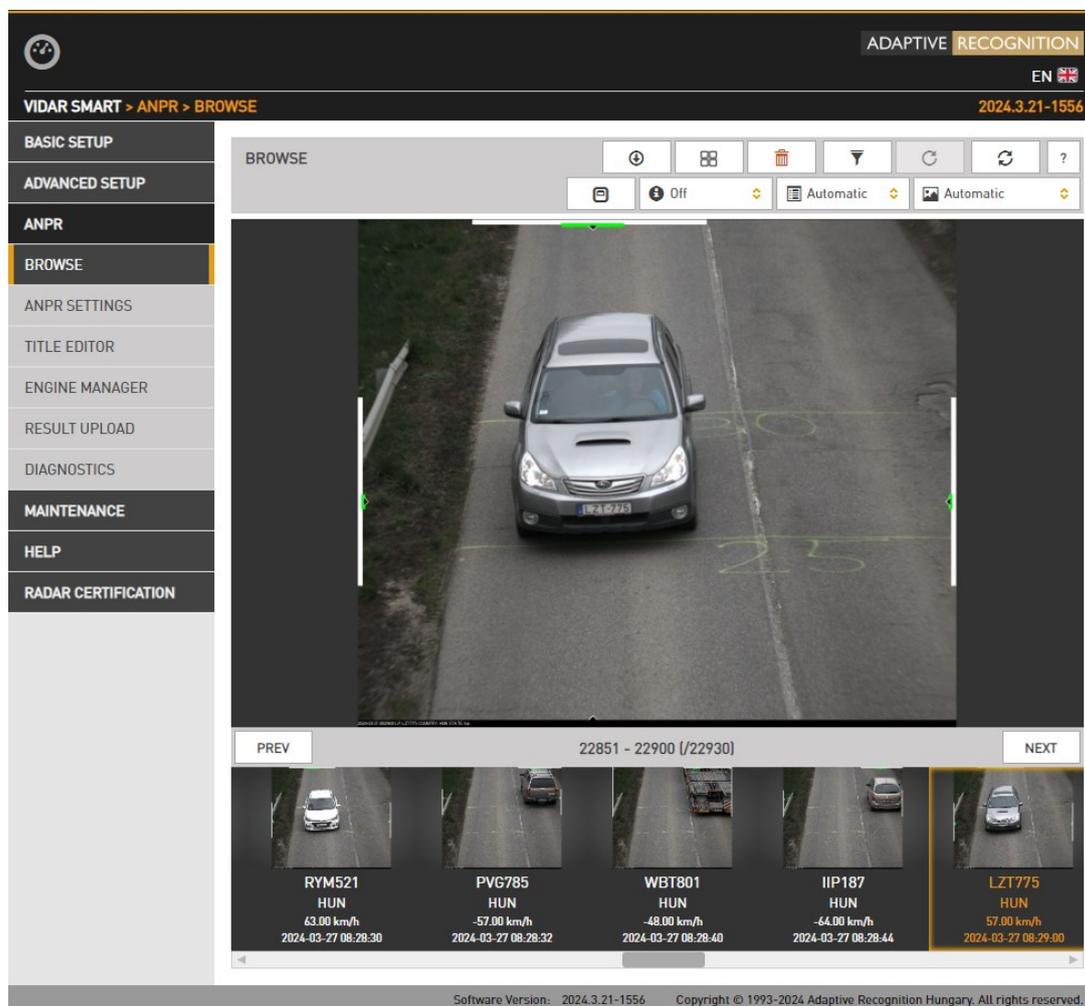
- **Histogram:** Enable it to draw a luminance histogram on the live video stream
- **Plate:** There is an optimal character size for license plate recognition. With this visual aid, a frame will be shown (either for Latin or Arabic license plates): if the license plate of the vehicle fits into and fills completely, the frame drawn on the live video stream, the character size will be optimal. Use the mouse to drag the frame on the image field to the required position.
- **Image Center:** Black cross is positioned to the center of the image.



3.9. ANPR

3.9.1. BROWSE

WEB INTERFACE > ANPR > BROWSE

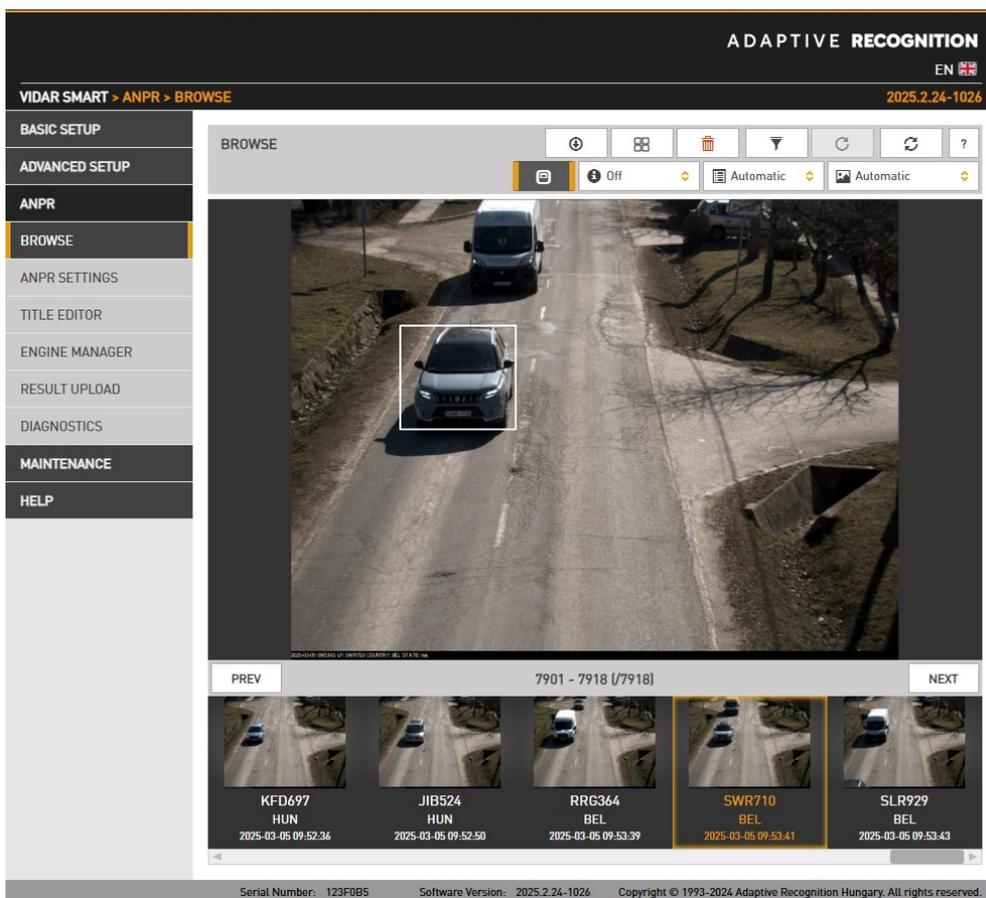


Recorded events are listed on the bottom timeline in ANPR/BROWSE. Use the icons on the top to:

-  Off  – List event data
-  Automatic  – Data below the preview image
-  Automatic  – Image display by default
-  – Select/unselect all records
-  – Delete record(s)

-  – Reload events using filter criteria
-  – Reload database
-  – Filter events
-  – Download the actual event
-  – Show/hide ANPR ROI frame:

- When the button is in the activated state , the event-requested ANPR ROI frame is overlaid on the 'primary image' loaded in the large-scale image viewer. The frame is always drawn in white, and the delimited area is in the plane of the ground. The ANPR ROI is available only for events that include license plate data. The ANPR ROI indicates the area of the event image where the license plate recognition was conducted.

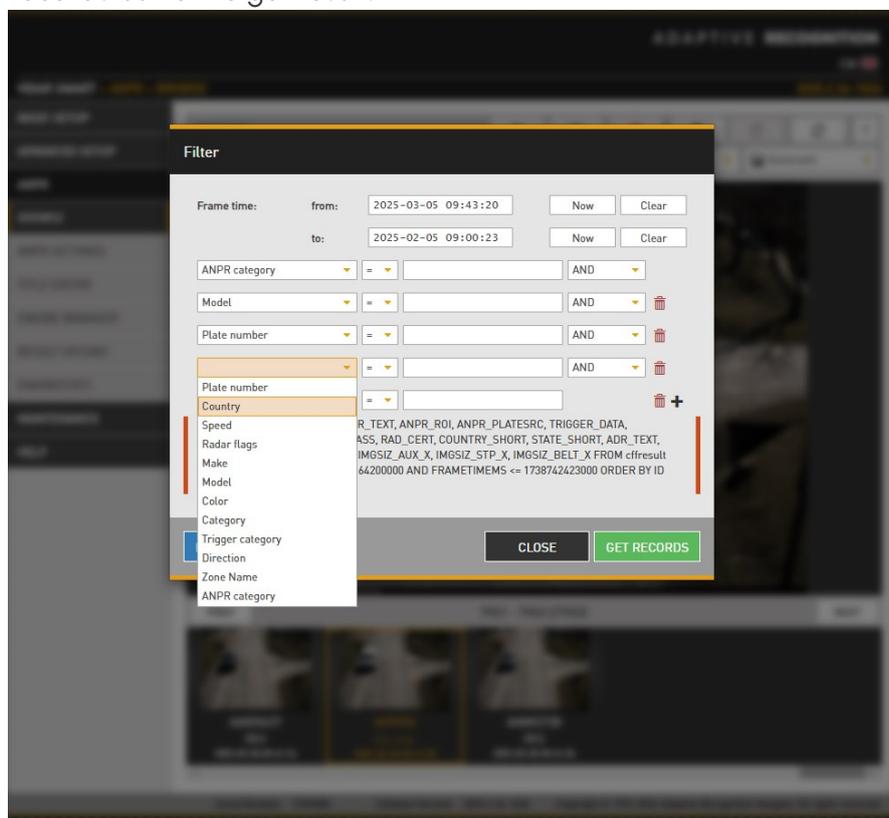


3.9.2. FILTER EVENTS

The filtering function allows users to perform advanced searches on the ANPR database. This enables more precise data retrieval and easier identification of relevant records.

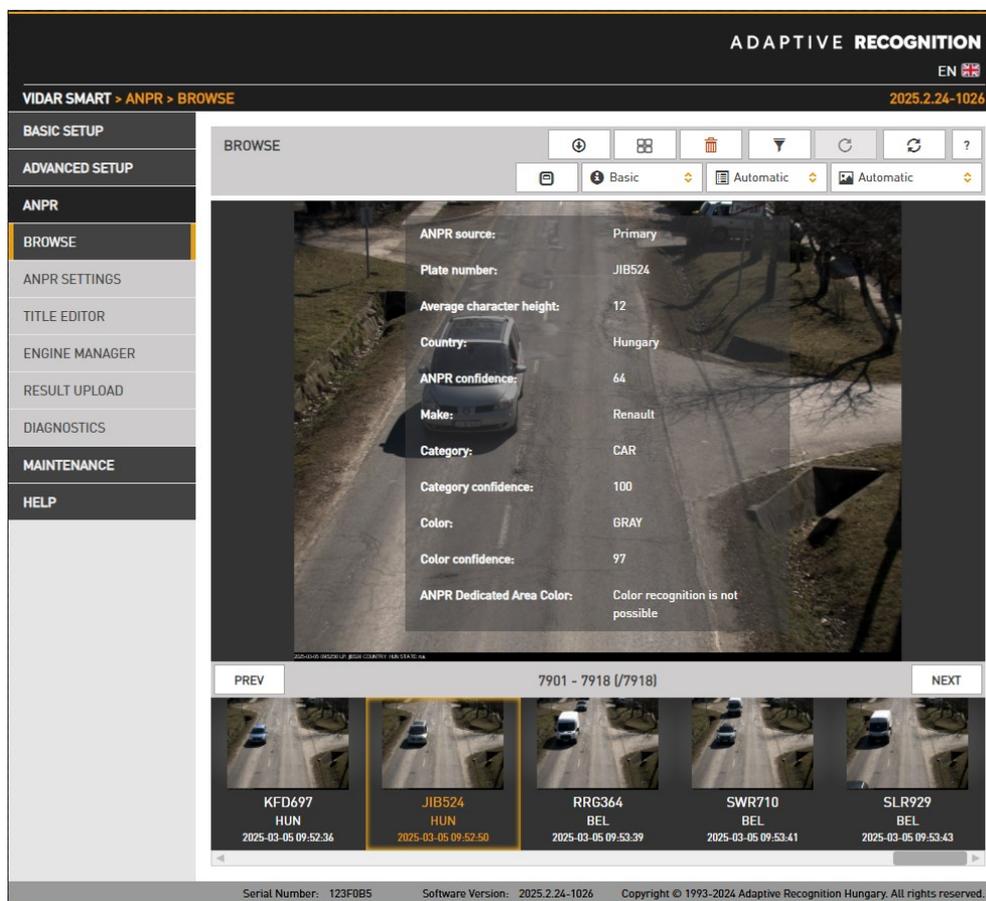
Filtering Features:

- Users can filter based on **multiple fields**, similar to SQL queries.
- Custom filtering conditions can be set using various **comparison operators** (e.g., =, !=, <, >).
- Filters can be combined using **AND/OR** logic for complex queries.
- A **dropdown menu** allows users to select the field they want to filter by.
- After selecting a field, users can input the desired value and select an operator.
- Additional conditions can be added using the **+ sign** option, allowing multiple filters to be applied simultaneously.
- The system automatically generates an **SQL-like query in the background** to retrieve the relevant records.
- SQL query visualization is enabled for debugging purposes, but can be disabled if necessary.
- The filtering logic is optimized for performance, ensuring fast query execution even on large datasets.
- Use **Get Records button** to get result.



List image data

- Basic Data group
- Extended Data group
- Trigger Data



If you hover the mouse over the image, thumbnails will appear in the bottom of the screen, clicking these the main image will switch to:

- Event image: main image in which the license plate was found
- Overview image: the image of the overview sensor
- LP image: the license plate

Strip image: the index images of the event containing all triggered images



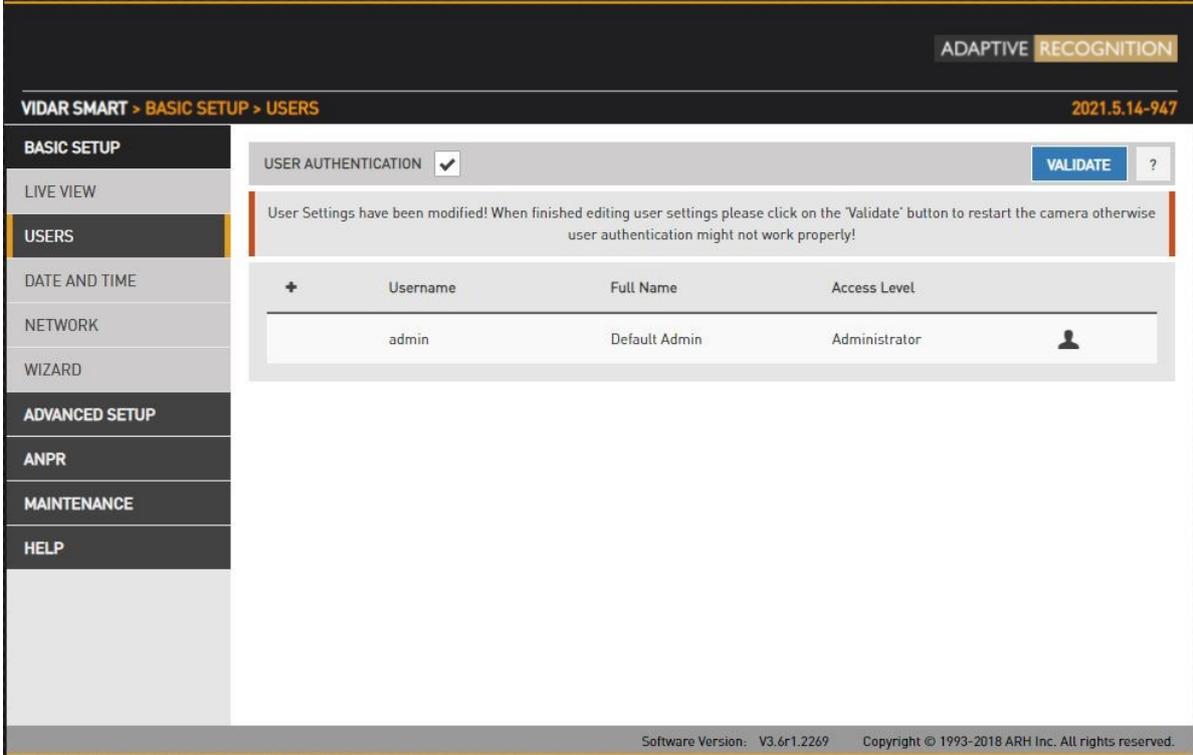
3.10. USERS

WEB INTERFACE > BASIC SETUP > USERS

User management settings are displayed in this page.

If user management is not required, it can be turned off with the  checkbox. This increases performance. Administrator rights will be granted to all. This is also the factory default state. In order to create new users, a user with 'Administrator' privileges must be created first.

Users can be added , deleted  and edited  with the corresponding buttons.



ADAPTIVE RECOGNITION

VIDAR SMART > BASIC SETUP > USERS 2021.5.14-947

BASIC SETUP

LIVE VIEW

USERS

DATE AND TIME

NETWORK

WIZARD

ADVANCED SETUP

ANPR

MAINTENANCE

HELP

USER AUTHENTICATION VALIDATE ?

User Settings have been modified! When finished editing user settings please click on the 'Validate' button to restart the camera otherwise user authentication might not work properly!

| | Username | Full Name | Access Level |
|--|----------|---------------|---|
| | admin | Default Admin | Administrator  |

Software Version: V3.6r1.2269 Copyright © 1993-2018 ARH Inc. All rights reserved.

Important!

If you enable 'User authentication', all connections to the camera will require username and password.

Adding a new user: On clicking the plus ('+') button a form appears requesting the following fields:

- **Name:** The user's name, this will be used to login.

Important!

User name cannot be 'root'. User name must contain only letters of the English alphabet, numbers or underscore ('_') (with regular expression: /^[0-9A-Za-z_]*\$/)

- **Full name:** The full name of the user.

Important!

Full name should contain only letters of the English alphabet, numbers, space or the following characters: !,/,_,'+','-',';' (with regular expression: /^[0-9A-Za-z\.\V_\+|- ,]*\$/)

- **Password:** Corresponding password.

Important!

Password should contain only letters of the English alphabet, numbers or underscore ('_') (with regular expression: /^[0-9A-Za-z_]*\$/)

- **Confirm password:** Confirm the given password to rule out mistyping.

- **Access Level:** Check the table below for the extent of each access level.

| Access Level | Privileges |
|---------------|---|
| Viewer | Login Live View Help |
| Normal | Login Basic Setup – Live View Advanced Setup – Private Zone, Event Manager ANPR – Browse Maintenance – System Info, Sensors, Camera Log Help |
| Power | Login Basic Setup – Live View Advanced Setup – All Menu Items ANPR – All Menu items Maintenance – System Info, Sensors, Camera Log, Restart Help |
| Administrator | Access to every camera feature |

- **Edit/Delete:** It is possible to edit user parameters or delete existing users from the system with the exception of the main "admin" user. This user cannot be deleted and its username and access level cannot be modified.

 Note

Settings will be applied only after restarting the camera. If you click VALIDATE after modification the camera will automatically restart.

3.11. NETWORK

WEB INTERFACE > BASIC SETUP > NETWORK

This page provides access to the network settings of the camera.

The screenshot displays the 'NETWORK SETUP' configuration page. The left sidebar contains navigation options: BASIC SETUP, LIVE VIEW, USERS, DATE AND TIME, NETWORK (highlighted), WIZARD, ADVANCED SETUP, ANPR, MAINTENANCE, and HELP. The main content area is titled 'NETWORK SETUP' and includes a 'SAVE' button and a help icon. Below this are several configuration sections:

- Hostname:** ARHInc | **Title of this site:** Adaptive Recognition
- DHCP:**
- IPV4 SETTINGS:** Includes fields for IP address (10.0.7.95), Netmask (255.255.254.0), IP address 2 (...), Netmask 2 (...), Gateway, Primary DNS IP (8.8.8.8), and Secondary DNS IP (...). A 'SET DEFAULT IP' button is present.
- IPV6 SETTINGS:** Includes fields for IP address (:::::), Subnet bits, Primary DNS IP (:::::), and Secondary DNS IP (:::::).
- HTTPS:** Includes a 'CONFIGURE' button.
- IP FILTER:** Includes a 'CONFIGURE' button.
- ADVANCED CAMERA INTERFACE PROTOCOLS:** Includes checkboxes for Enable ONVIF, Enable SSH (checked), Enable Bonjour, Enable RTP, Enable NTCIP, HTTPS only, and Enable link-local address (IPv4).
- IEEE 802.1X:** Includes a 'CONFIGURE' button.
- SNMPV3:** Includes a 'CONFIGURE' button.
- PNE 199142-3:** Includes a 'CONFIGURE' button.
- DYNAMIC DNS:** Includes 'Enabled' checkbox, 'Update period [min]:' (5), 'URL:' (url), and 'Status:' (INIT).
- MIB FILES FOR NTCIP/SNMP:** Includes links for 'NTCIP MIB file' and 'MIB file for ARH-specific features'.

At the bottom of the page, the footer contains: Serial Number: 112B7C8 | Software Version: 2024.5.3-1051 | Copyright © 1993-2024 Adaptive Recognition Hungary. All rights reserved.

3.11.1. NETWORK SETUP

- **Hostname:** The name of the device in the network.
- **Title of this site:** Textual description of the device, for example Adaptive Recognition, that will appear as the title of the browser tab.
- **DHCP:** Check this checkbox to have the camera to operate in DHCP mode, that is to obtain its.
 - IP address
 - Netmask
 - Gateway
 - Primary and Secondary DNSfrom a DHCP server (DHCP mode).

3.11.2. IP VERSION 4 AND 6

The camera supports IPv4 and IPv6. Both versions can be enabled simultaneously. At most two IPs can be assigned to a device.

- **Set default IP:** This button restores the original IP address of the camera and the corresponding netmask setup.
- **IPv4:** The IP address for the camera can be set
 - Automatically via DHCP (see option above), or
 - Manually, by entering a static IP address.
- **IPv6:**
 - Only static IP addresses are supported.
 - The /16 option stands for the length of the subnet mask (16 refers to a 8 characters long mask)

3.11.3. HTTPS

The camera's onboard webserver is capable of running in HTTPS mode, which ensures an encrypted, secure channel between the user and the camera.

How to create and install a Signed certificate:

- Set date and time, otherwise the device will not accept the uploaded certificate.
- Generate and download the "Certificate signing request" (**.csr extension**) file on your device.
- Sign certificate with a Certificate Authority, for instance Symantec, Trustwave... or a self-generated top-level certification, like RootCA.
- After signing, upload it to your device with the public key of the RootCA certificate.
- After installation and restart, your device is available with HTTPS protocol.

ADAPTIVE RECOGNITION

VIDAR SMART > BASIC SETUP > NETWORK > HTTPS 2021.10.14-1810

BASIC SETUP

LIVE VIEW

USERS

DATE AND TIME

NETWORK

WIZARD

ADVANCED SETUP

ANPR

MAINTENANCE

HELP

HTTPS ?

SELF-SIGNED CERTIFICATE GENERATE

Hostname: 121d219.ar.local Validity [days]: 365

Press 'Generate' if you'd like to create a Self-Signed Certificate.

SIGNING CERTIFICATE

1. Generate/Download Certificate Signing Request

2. Upload/Install Signed Certificate

3. Certificate Ready

CERTIFICATE SIGNING REQUEST GENERATE DOWNLOAD

Hostname: 121d219.ar.local

Press 'Generate' if you'd like to create a Certificate Signing Request.
After generation you can download it and send it to a Certificate Authority for signing.

Software Version: 2021.10.14-1810 Copyright © 1993-2021 Adaptive Recognition Hungary. All rights reserved.

3.11.4. IP FILTER

The screenshot shows the 'IP FILTER' configuration page. The breadcrumb trail is 'CAMERA > BASIC SETUP > NETWORK > IP FILTER'. The page title is 'IP FILTER' with a 'SAVE' button and a help icon. The 'Default policy' is set to 'Accept All'. A message states: 'There are no addresses set. All incoming connections will be accepted.' Below this is the 'ADD IP ADDRESS TO FILTER LIST' section, which includes an 'ADD' button and a 'REMOVE SELECTED' button. The 'IP address' field contains '...', and the 'Subnet' field contains '255.255.255.255'. The 'Type' is set to 'HTTP + STREAM'. The footer of the page indicates 'Software Version: 2024.1.12-1539' and 'Copyright © 1993-2023 Adaptive Recognition Hungary. All rights reserved.'

Note

The IP filter module blocks HTTP and stream access only. It does not affect SSH and FTP access.

Default Policy: The policy can be of two types

- Reject All – in this case access is denied to all IPs except those listed
- Accept All – in this case access is granted to all IPs except those listed

The exceptions to the default policy can be added and removed in the **Add IP Address to Filter List** section.

IP address: The system accepts IPv4 and IPv6 addresses as well.

Type: The range of IP filtering

- HTTP+STREAM: the settings are applied to both HTTP and stream requests
- HTTP: the settings are applied to HTTP requests
- STREAM: the settings are applied to stream requests

Subnet: Subnet mask of the IP address being added. This has to be expressed in dot-decimal, just like the address itself. (e.g., 255.255.255.0)

After clicking the Add button, the new exception will appear in the BLOCKED/ACCEPTED ADDRESSES table above the edit fields. The elements of the table can be removed by clicking the check box of the row and then clicking the Remove button. The above settings (default policy, exceptions) will not be applied until clicking the Save button.

 **Important!**

Before clicking the Save button, make sure that all settings are configured correctly, an incorrect setup can block the user from accessing the camera. In this case may be applied.

3.11.5. ADVANCED CAMERA INTERFACE PROTOCOLS

Enable ONVIF: Checking this checkbox will enable the ONVIF interface of the camera. Please note that with ONVIF enabled the amount of memory available for image buffering will be smaller.

Enable RTP: Select this option to enable RTP streaming.

Enable NTCIP: Enables the National Transportation Communications for Intelligent Transportation System (ITS) Protocol (NTCIP) which creates a seamless integration into standardized ITS systems. For more information on NTCIP, please check the NTCIP Guide in the HELP menu of the web interface.

HTTPS only: Enables HTTPS protocol which is encrypted using Transport Layer Security (TLS).

Enable SSH: When this box is ticked out, access will be denied through the service port (SSH). When disabled, the Adaptive Recognition Support will have limited tools to recover the camera when inaccessible!

Enable link-local address (IPv4): If the PC is running on a DHCP network, it is possible to revive network communication with improperly configured IP devices to correct the IP address. This can be accomplished using the so-called link-local IPv4 address of the network device.

Enable Bonjour: The program is able to detect Adaptive Recognition (VIDAR) cameras on the Ethernet network using the Bonjour protocol.

The program recognizes all devices connected to the network: it can query their IP address (via the Bonjour protocol), but it will only end up fully communicating with those that are configured on the same subnet as the PC.

Enable RTP: RTP is a fundamental protocol for real-time media transmission over IP networks, providing the necessary tools to deliver synchronized and reliable video streams.

These steps are needed for the setup:

1. In the Browse menu, under the Network submenu, in the Advanced Camera Interface Protocols section, check the **Enable RTP** checkbox to use the function.

Important!

It is very important to save the operation by pressing the **Save** button afterward. At this point, the camera will restart and an RTSP Port will appear.

At this point, the camera will restart and an **RTSP Port** will appear. The default port number is **554**.

2. The other settings can be found on the Advanced Setup -> Stream Settings page. At the bottom of the page, if RTP is enabled, a Multicast Stream block will appear. You can set three main parameters:
 - **RTP Multicast** (format: ip:port, with the IP range: 224.0.0.0 - 239.255.255.255)
 - **Auto Start** checkbox
 - **RTP TTL** (between 1-255, with 64 as the default value). If any format is incorrect, the camera will send an error message.

There are also two buttons on the interface, which are used to **start** and **stop** the **stream**.

3. The interface has been expanded with the option to download an **SDP file**. The link only appears if a valid value is entered in the **RTP Multicast** field. If the field's value changes, the link disappears and will only reappear after saving. Similarly, if you enter the value for the first time, the link will only appear after **saving** it.

This **SDP file** can be opened in media player programs, for instance in VLC, and it contains the stream parameters, allowing the camera's image to be displayed in the player.

3.11.6. IEEE 802.1X

The settings on the web interface of the camera is available at BASIC SETUP/NETWORK/IEEE 802.1X. It can be achieved by using the Configure button.

Based on the network created by the network administrator, these are the following options:

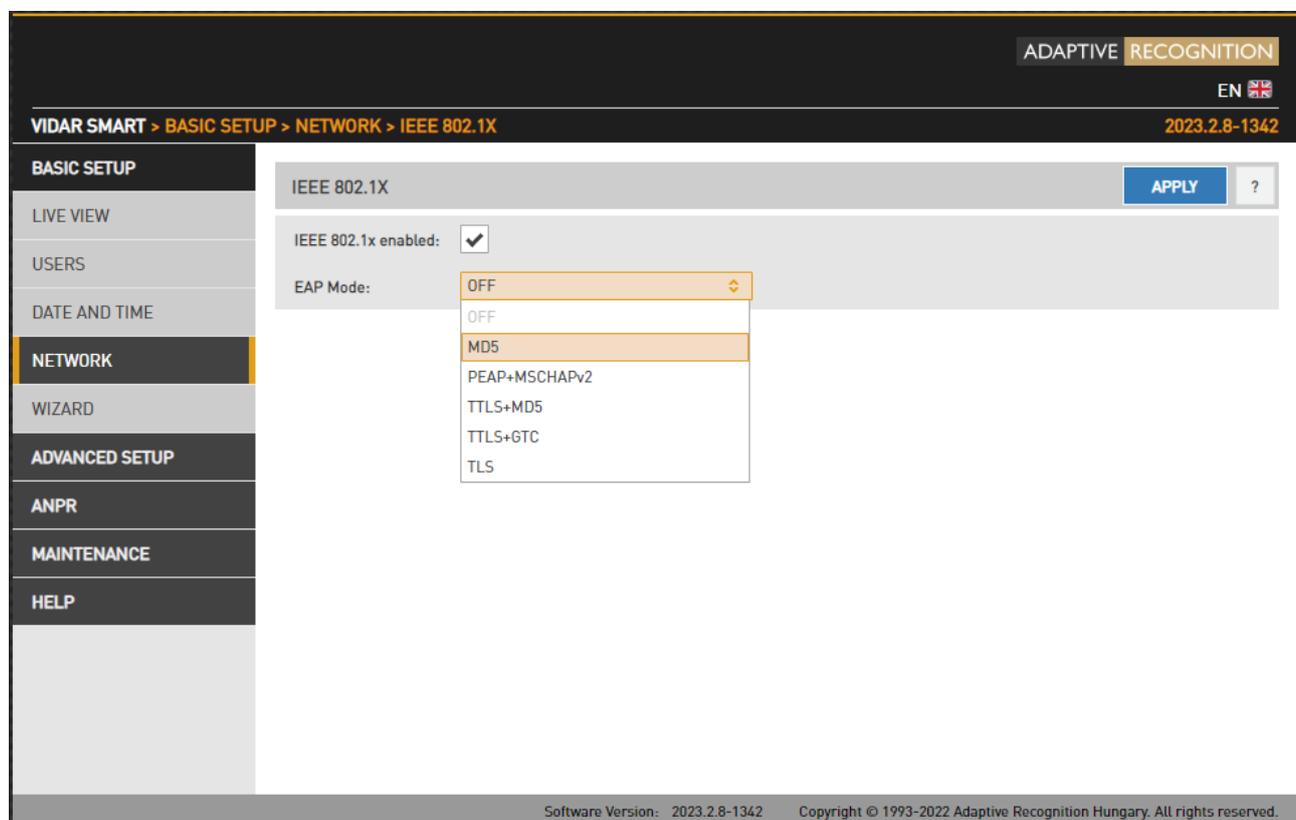
EAP Mode = MD5 (Challenge): the user only on the HP V1920 switch configured. Entering a password is mandatory.

EAP Mode= PEAP+MSCHAPv2: the user through a RADIUS server can be entered. Entering a password is mandatory, certificates are optional.

TTLS+MD5: the user can be logged in via a RADIUS server. Entering a password is mandatory, certificates are optional.

TTLS+GTC: the user can be logged in via a RADIUS server. Entering a password is mandatory, certificates are optional.

TLS: the user can be logged in via a RADIUS server. The client uploading the (side) certificate and the private key is mandatory (The private key password must also be entered. If there is no private key password, the previous password can be deleted by entering the minus sign. The camera does not check whether the uploaded private key is encrypted and does not validate the entered password).



The screenshot displays the configuration page for IEEE 802.1X. The interface includes a top navigation bar with 'ADAPTIVE RECOGNITION' and a language selector set to 'EN'. The breadcrumb trail is 'VIDAR SMART > BASIC SETUP > NETWORK > IEEE 802.1X'. On the left, a sidebar menu lists 'BASIC SETUP', 'LIVE VIEW', 'USERS', 'DATE AND TIME', 'NETWORK' (highlighted), 'WIZARD', 'ADVANCED SETUP', 'ANPR', 'MAINTENANCE', and 'HELP'. The main configuration area for 'IEEE 802.1X' shows a checked 'IEEE 802.1x enabled' checkbox and a dropdown menu for 'EAP Mode' currently set to 'MD5'. The dropdown menu lists the following options: OFF, MD5, PEAP+MSCHAPv2, TTLS+MD5, TTLS+GTC, and TLS. An 'APPLY' button is located in the top right of the configuration area. The footer contains the text 'Software Version: 2023.2.8-1342' and 'Copyright © 1993-2022 Adaptive Recognition Hungary. All rights reserved.'

Entering a user ID (Identity) is mandatory in all cases. The anonymous identity option is not yet supported, so when logging in a user ID can be interrogated on the network.

The general rule for filling in text fields is that if you leave them blank, the camera takes into consideration a previously specified or default value, although it may not accept it. Some cases, text data can be deleted by entering the minus sign (This can happen if the field is not mandatory, e.g. in case of private key password).

The settings applied only after pressing the Apply button, and if this succeeded, the interface will offer to restart the camera.



3.11.7. SNMPV3

SNMP (Simple Network Management Protocol) is an internationally standardized communication protocol that has been available for several decades, and is widely used to query and monitor the status of network devices (such as printers, switches, routers, and cameras). SNMP allows a client software to **query** various operational parameters of the device, for example:

- device name,
- software version,
- hardware identifiers,
- network addresses,
- operational status.

The protocol operates based on the logic of **standardized questions** and **answers**. The questions from the client and the responses from the device follow a structure defined in the **MIB** (Management Information Base) file.

SNMP versions

The Vidar camera supports multiple SNMP versions:

- **SNMPv1** – the first generation, with basic functionality and minimal security.
- **SNMPv2 / v2c** – extended functionality, faster data transfer, but still limited security.
- **SNMPv3** – the latest and most secure version, with username/password authentication and optional encryption of data traffic.

Advantages of SNMPv3

SNMPv3 is more secure and flexible than the previous versions in several aspects:

- **User-based authentication:** each client must have a valid username/password pair.
- **Encryption:** traffic can be encrypted so the data is protected.
- **Access levels:** it can be configured what type of data a user is allowed to query (for example, read-only access or broader data access).
- **Protocol exclusivity:** Vidar offers the option of "SNMPv3 only" mode, in which older SNMP versions are completely disabled.

Note

If the "SNMPv3 only" option is checked, the camera will **only** accept SNMPv3 requests and will reject SNMPv1 and SNMPv2/v2c protocols. This ensures that only clients using the most secure procedure can access the data.

Enabling SNMPv3

1. Log in to the camera's web interface.
2. Select **Network > Advanced Camera Interface Protocols**.
3. Click on the **Configure** button.
4. Check the **Enable SNMPv3** option.

Download the required **MIB** files in the **MIB Files for NTCIP/SNMP** section:

- MIB file for ARH-specific features
- NTCIP MIB file

Creating and managing SNMP users

If SNMPv3 is enabled, you must create users so the device can respond to queries.

1. If you want only SNMPv3 users to be able to access the data, check the **SNMPv3 only** option.

Note

To use SNMPv3, you must also **turn on NTCIP** under Network. To use any SNMP (including v1/v2c), either uncheck "SNMPv3 only" or create at least one SNMPv3 user.

The screenshot shows the 'SNMPV3' configuration page in the Adaptive Recognition web interface. The page has a dark header with 'ADAPTIVE RECOGNITION' and 'EN' with a language selector. The breadcrumb is 'VIDAR SMART > BASIC SETUP > NETWORK > SNMPV3'. The 'SNMPv3 only' checkbox is checked. A message box contains the following text: 'To use SNMPv3, turn on NTCIP under Network. To use any SNMP, turn off SNMPv3 only or add at least one user! SNMPv3 settings have been modified. When you have finished editing, please click on the 'APPLY' button to restart the camera, otherwise the SNMPv3 may not work properly!'. Below the message is a table with columns 'Username:', 'Access level:', and 'Security level:'. The table is empty with the message 'There is no user created yet.' and buttons for '+ Add new user', 'Modify user', and 'Delete user'. The footer contains 'Serial Number: 121D21D Software Version: 2025.7.21-1740 Copyright © 1993-2025 Adaptive Recognition. All rights reserved.'

2. Use the user management buttons to perform operations:

- **Add new user** – create a new user
- **Modify user** – modify an existing user
- **Delete user** – delete a user

3. When creating a new user, specify:

- **Username** – the name of the user
- **Access level**
 - **Normal user:** standard operational access.
 - **Read-only user:** can query data but cannot modify settings.
 - **Superuser:** extended privileges, including advanced configurations
 - **Administrator:** full access to all SNMP-related data and configurations.
- **Security level**
 - **Off:** no authentication, no encryption.
 - **MD5:** authentication using the MD5 hash algorithm (no encryption).
 - **SHA1:** authentication using the SHA1 hash algorithm (no encryption).
 - **MD5+DES:** MD5 authentication with DES encryption.
 - **SHA1+DES:** SHA1 authentication with DES encryption.
 - **MD5+AES:** MD5 authentication with AES encryption.
 - **SHA1+AES:** SHA1 authentication with AES encryption.

 Note

Choosing a method with **+DES** or **+AES** enables encryption in addition to authentication, providing **better data security**.

4. After making changes to SNMPv3 settings, click the **"APPLY"** button to restart the camera.

Using a client program

To query SNMP data, you will need a client program. As an example, the **SnmpB** (open-source SNMP MIB Browser) can be used.

Installation and setup:

1. Download the SnmpB program: <https://sourceforge.net/projects/snmpb/>
2. Start the program and **load the downloaded MIB files**.
3. Enter the **camera's IP address**.
4. When using SNMPv3, configure:
 - Username
 - Password
 - Security level
 - Encryption algorithm
5. In the tree structure, select the object you want to query (for example, *softwareVersion*), then **run the query**.

MIB Files

The MIB (Management Information Base) file contains the structure of all **queryable data** and their access paths (OID – Object Identifier).

Camera provides two MIB files:

- **NTCIP MIB file** – extension for standard network cameras
- **ARH-specific MIB file** – version extended with unique data defined by Adaptive Recognition

! Important!

The client software must know the camera's MIB files in order to query the data correctly. If the MIB files are not loaded, the client will only see limited or unknown data structures.

ARH-specific MIB file

This MIB file was created for cameras and contains manufacturer specific SNMP objects (OIDs) provided by the camera.

It serves as the primary MIB for querying the camera's own status and system information.

Main content sections:

- **General system statistics (stat)**
 - *identify* – data for identifying the device (e.g., device name, software version, serial number, MAC address, kernel version, boot version, device type).
 - *system* – data related to the system's operational state.
- **Hardware layer statistics (hwlayer)**
 - Peripheral information, module details, and a list of connected devices.
- **Software and firmware information**
 - Version numbers, build dates, version descriptions.
- **Detailed system parameters**
 - CPU and memory usage, network interface details, uptime, etc.

This file ensures that an SNMP client (e.g., SnmpB) can accurately determine which ARH-specific data can be queried from the camera. If the user wants to monitor the manufacturer-specific status, hardware information, or software version of the camera, this is the MIB file to load.

NTCIP MIB file

This MIB file contains objects defined by the **NTCIP (National Transportation Communications for ITS Protocol)** standard, specifically for integration into **traffic management systems (TMS)**.

It ensures that the camera is compatible with standardized communication systems used in traffic management infrastructure.

Main content sections:

- **Globally applicable NTCIP objects**
 - Communication settings (community name, access masks).
 - Module and device descriptions (manufacturer, model, version, type).
- **Camera control objects**
 - Data related to camera positioning (pan/tilt limit values, zoom ranges).
 - Zone configurations (e.g., prohibited/allowed areas).
- **Additional data required for traffic management environments**
 - Objects enabling the traffic control center to query and remotely modify the camera's status and configuration.

If the camera is integrated into a traffic management system, this MIB file should also be loaded into the SNMP client alongside the manufacturer specific MIB file.

This allows the TMS to communicate with the camera using standardized commands, without the need for a separate ARH-specific implementation.

3.11.8. DYNAMIC DNS

Dynamic DNS services provide a consistent addressing method for devices that change IP address frequently. The host device needs to periodically (**Update Period**, given in minutes) ask for an update at the dynamic DNS service provider (**URL**, as given by the DDNS provider), which will in turn keep the DNS tables (where the domain/host names are translated to the corresponding IP addresses) of the service provider up to date. The current status of the process is shown in **Status**. Please note that network settings such as IP domains, gateway settings, etc. may affect this feature, in short: the DDNS service provider must be accessible from the device.



3.11.9. BANDWIDTH PLANNING AND RECOMMENDATIONS

Bandwidth requirements – VIDAR Event Upload

To ensure the reliable operation and data transfer of VIDAR cameras, it is essential to provide adequate network bandwidth. These devices can be deployed in a wide range of environments where the frequency of traffic events, image quality, type of live video streams, and data upload configurations all significantly affect network load.

During operation, cameras may upload not only XML-based event data but also processed or simple image data – such as cropped license plate images or full-resolution vehicle captures. In addition, live video streams (e.g., SENSOR1 – ANPR view, SENSOR2 – overview view) contribute continuous traffic to the network.

The following tables are based on real measurements and aim to offer practical guidance for the bandwidth requirements of various data upload configurations (XML only, license plate image, full image) and live stream settings. These values support proper network dimensioning, especially when multiple cameras operate simultaneously or when data is processed remotely via a central server or cloud-based system.

| Application | Average bandwidth [Kbit/s] | Peak bandwidth [Kbit/s] | 10x Load [Kbit/s] | 100x Load [Kbit/s] |
|--|----------------------------|-------------------------|-------------------|--------------------|
| Event upload (XML only) | 1.52 | 6.12 | 61.2 | 612 |
| Event upload (XML + license plate image) | 2.09 | 7.55 | 75.5 | 755 |
| Event upload (XML + image strip) | 7.76 | 33.81 | 338.1 | 3381 |
| Event upload (XML + native full image) | 44.49 | 190.91 | 1909 | 19091 |

Explanation for the table

- **Application:** Indicates the type of data being uploaded from the camera.
- **Average bandwidth:** The mean bandwidth used during one hour of operation.
- **Peak bandwidth:** The maximum bandwidth usage during a high-traffic hour.
- **10x Load:** Estimated bandwidth requirement if traffic increases tenfold.
- **100x Load:** Estimated bandwidth requirement if traffic increases hundredfold.

This table is based on real-life, hourly segmented data from multiple days and camera configurations (XML logs, cropped plate images, and native full images).



Bandwidth requirements – Live Stream

VIDAR cameras are capable of transmitting two separate live video streams simultaneously. **SENSOR1** is typically used for ANPR, focusing on a narrow field of view, while **SENSOR2** provides a wider overview of the traffic scene. Both streams can be configured in either MJPEG or H.264 formats, across multiple resolutions and frame rate (fps) settings.

These video streams generate a constant load on the network, especially at higher resolutions and frame rates. Since **SENSOR1** and **SENSOR2** streams can be configured independently, each combination results in different bandwidth requirements that must be carefully considered during system planning. This makes bandwidth planning a critical step during system design, especially for large-scale deployments or remote processing environments.

The following tables present **hourly average bandwidth numbers** for both **SENSOR1** and **SENSOR2** streams, measured during actual camera operation. The values are broken down by resolution and frame rate, and serve as a guide to help system integrators select the most appropriate stream settings based on the available network capacity.

SENSOR1 Live Stream – Bandwidth Comparison (MJPEG vs. H.264)

| Resolution / FPS | MJPEG Avg Bandwidth [Kbit/s] | H.264 Avg Bandwidth [Kbit/s] |
|--------------------|------------------------------|------------------------------|
| 2432x2048 @ 10 fps | 27,67 | 6,02 |
| 1216x1024 @ 30 fps | 23,62 | 2,76 |
| 608x512 @ 10 fps | 2,42 | 1,72 |

The **H.264** drastically reduces the bandwidth requirement for **SENSOR1** streams, particularly at higher resolutions. While MJPEG may offer simpler decoding and frame-by-frame access, H.264 is strongly recommended for bandwidth-constrained environments or remote processing setups.

SENSOR2 Live Stream – Bandwidth Comparison (MJPEG vs. H.264)

| Resolution / FPS | MJPEG Avg Bandwidth [Kbit/s] | H.264 Avg Bandwidth [Kbit/s] |
|--------------------|------------------------------|------------------------------|
| 1440x1080 @ 30 fps | 9470.36 | 184.28 |
| 704x540 @ 10 fps | 906.03 | 182.81 |
| 352x256 @ 20 fps | 712.07 | 1773.39 |

As with SENSOR1, this table clearly demonstrates that **H.264 compression offers significant bandwidth savings** compared to MJPEG, especially at higher resolutions. However, at **lower resolutions** (e.g., 352x256), **MJPEG may sometimes be more efficient**, particularly in scenarios with limited motion or simple scenes, where H.264 encoding overhead is less effective.

Recommended network capacity for Live Stream

To ensure reliable operation of live video streams, it is **recommended to provide at least a 100 Mbps network connection** between the camera and the processing server. This capacity offers sufficient spare for simultaneous SENSOR1 and SENSOR2 streams, and accounts for potential traffic fluctuations.

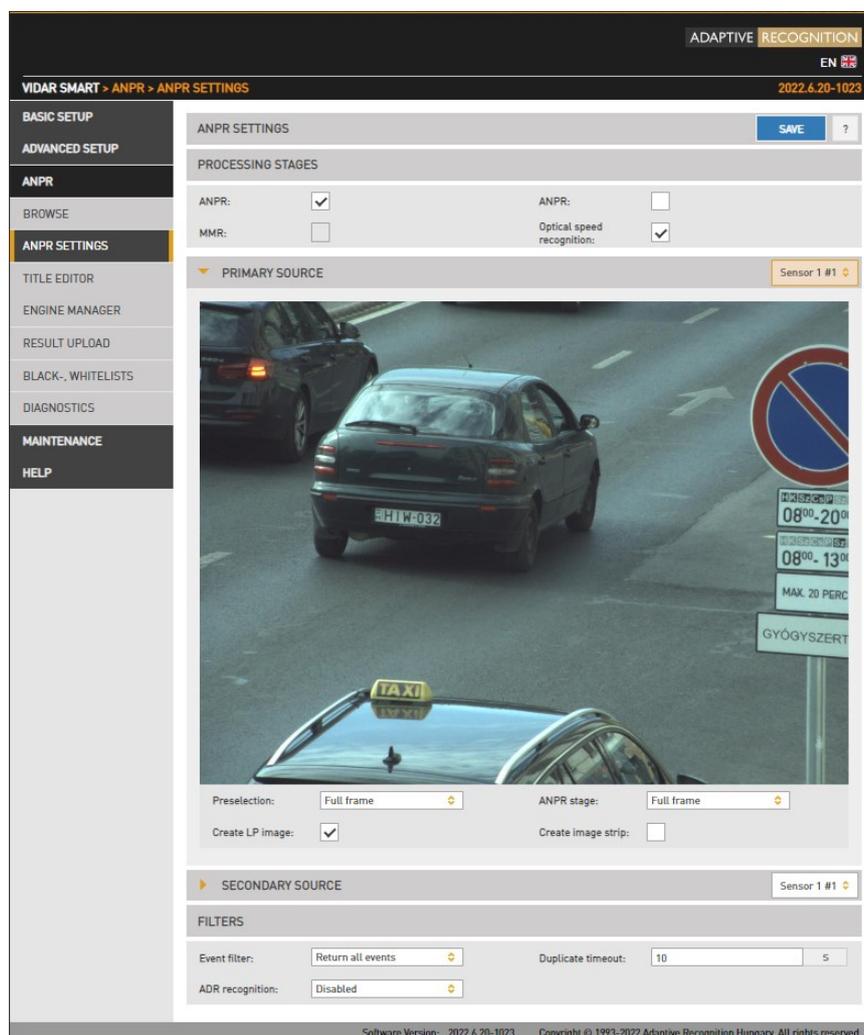
Based on practical experience:

- During **daytime**, the typical live stream bandwidth usage is around **40–45 Mbps**
- At **night**, this may drop to approximately **10 Mbps**

The variation is due to differences in lighting conditions and scene complexity – daylight scenes contain more visual detail, requiring higher data rates, while nighttime footage with uniform dark areas results in lower bandwidth usage, especially when using H.264 compression.

3.12. ANPR SETTINGS

WEB INTERFACE > ANPR > ANPR SETTINGS



Processing stages:

You can configure the ANPR pipeline in the following three modes:

ANPR - A single ANPR stage follows the Preselection stage

ANPR+MMR - A single ANPR and an MMR stage follows the Preselection stage. The MMR stage adds make and model info to the event. This stage has no configurable parameters. MMR engine updates can be uploaded in the Engine Manager menu, in the same manner as an engine update. Please note that in order to use MMR a corresponding MMR Hardware Key License must be purchased and installed in the device.

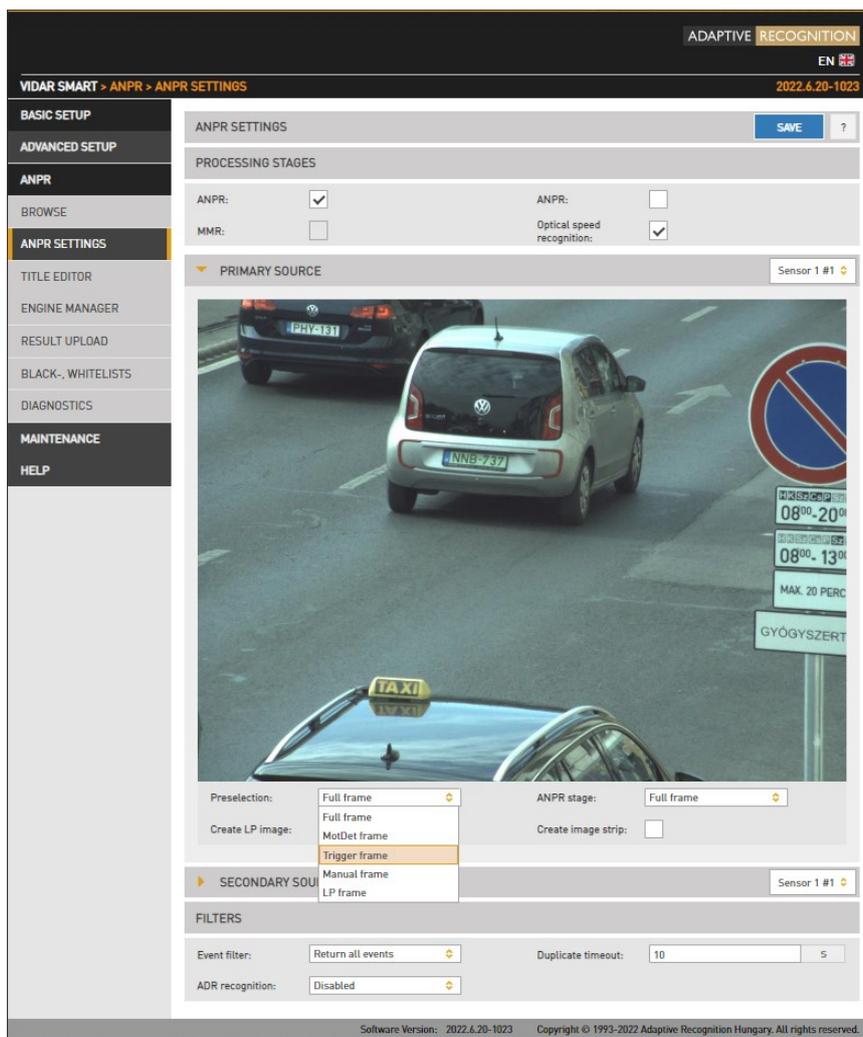
ANPR+ANPR - Two ANPR stages follow the [Hiba! A hivatkozási forrás nem található.](#) (See Preselection stage for a use case).

OPTICAL SPEED RECOGNITION - By entering multiple license plate frames (Figure 8-10), it calculates the speed of the vehicle based on the movement and the size of the license plate.

The main properties of the license plate recognition pipeline are configured here.

Performance (both accuracy and speed) is higher if license plate recognition is limited to the part of the image in which the vehicle is likely to be found. Vehicle Detection, Motion Detection can provide such a frame, and users can define a manual frame also. Moreover, the preliminary license data provided by the Preselection stage contains a license plate frame which can be used at the ANPR stage.

In devices equipped with two image sensors, you can set up a secondary source functioning as either **Overview** or **ANPR**. In ANPR mode, the system will attempt to find a license plate in the secondary image.



- **Preselection engine:** the frame used by the Preselection stage. Select Manual frame to draw a user defined frame.

The Preselection stage will use:

- **Full Frame:** the entire frame
 - **Manual Frame:** the frame drawn by the user
 - **Motdet Frame:** the frame returned by motion detection
 - **Trigger Frame:** the frame returned by other trigger sources
 - **LP frame:** the license plate frame as returned by the previous stage
-
- **ANPR engine:** the frame used by the ANPR stage

The ANPR stage will use:

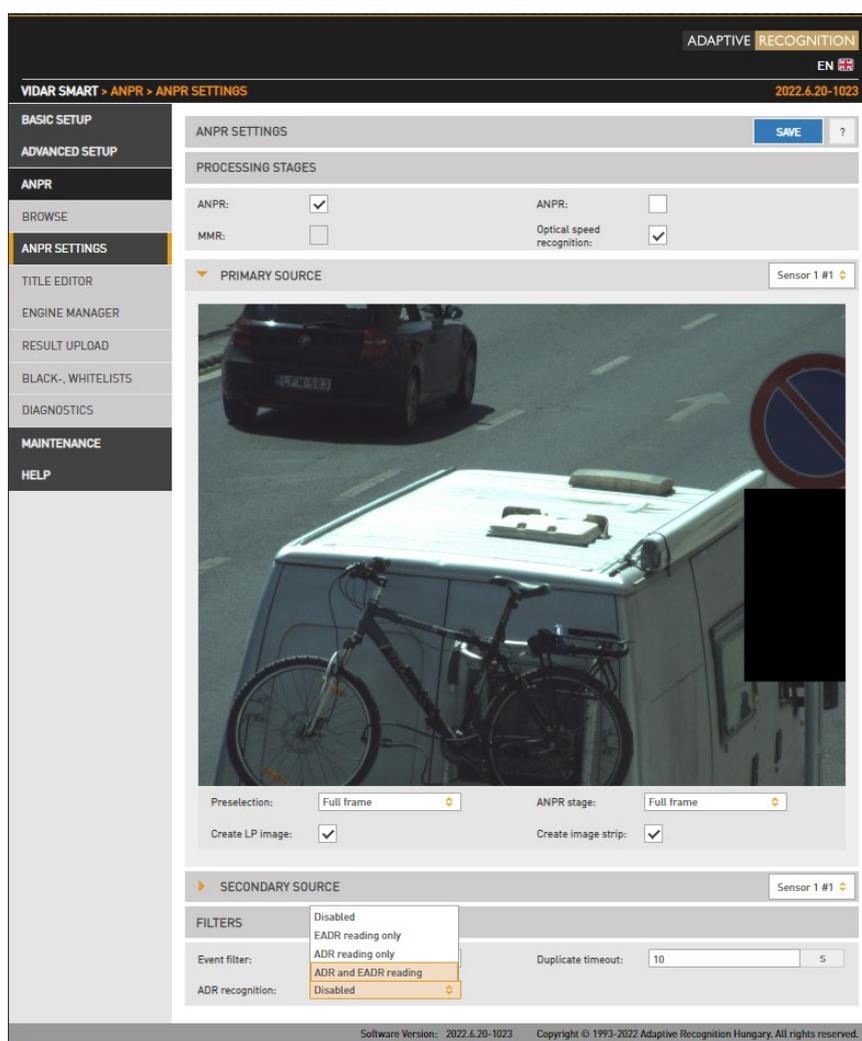
- **Full Frame:** the entire frame
 - **Manual Frame:** the frame drawn by the user
 - **Motdet Frame:** the frame returned by motion detection
 - **LP frame:** the license plate frame as returned by the previous stage
-
- **Create LP images:** Create a cropped image containing the license plate only
 - **Create image strip:** All triggered images are minified and joined to form an index image, which may help to set up trigger timing.

Filtering results can be configured with the following two options:

- **Event filter:**
 - **Return all events:** create a record in the database based on all trigger signals, even if a license plate was not found
 - **Return events with license plate:** Create a record in the database only if a license plate was found
 - **Return events with license plate and type:** Create a record in the database only if both a license plate was found and its nationality was determined.
- **Duplicate timeout:** the time frame in which the same license plate will not be registered again if once read.

- **ADR Recognition:**
 - Disabled
 - ADR plates reading only
 - EADR plates reading only
 - ADR and EADR plates reading

Open Browse menu and click on Info button to see ADR and EADR plate recognition among the events.



Note

Please note, that the time requirement of reading ADR/EADR plates is comparable to that of reading license plates, thus the net throughput (vehicles processed per seconds) will be affected.

3.13. TITLE EDITOR

WEB INTERFACE > ANPR > TITLE EDITOR

ADAPTIVE RECOGNITION
EN

VIDAR SMART > ANPR > TITLE EDITOR
2022.6.20-1023

BASIC SETUP

ADVANCED SETUP

ANPR

BROWSE

ANPR SETTINGS

TITLE EDITOR

ENGINE MANAGER

RESULT UPLOAD

BLACK-, WHITELISTS

DIAGNOSTICS

MAINTENANCE

HELP

TITLE EDITOR
SAVE ?



2022-06-22 11:08:28 LP: ARH001 COUNTRY: USA STATE: FL

Please keep in mind, that the labels under the live view on this page serve demonstration purposes only! The actual labels will be based on valid information.

CAMERA CONSTANTS

| | | | |
|-----------------------------|---|-------------------------|--|
| Device ID string: | <input type="text" value="Smart/SpeedCAM"/> | Device location string: | <input type="text" value="Test location"/> |
| Approaching vehicle string: | <input type="text" value="APPROACHING"/> | Leaving vehicle string: | <input type="text" value="LEAVING"/> |
| Unknown vehicle direction: | <input type="text" value="UNKNOWN"/> | | |

LINE EDITOR

Line editor:

SAMPLE LIBRARY

| | |
|---|--|
| Year (4 digits): <input type="text" value="\$y"/> | Year (2 digits): <input type="text" value="\$r"/> |
| Month: <input type="text" value="\$o"/> | Day: <input type="text" value="\$d"/> |
| Hour: <input type="text" value="\$h"/> | Minute: <input type="text" value="\$m"/> |
| Second: <input type="text" value="\$s"/> | '\$' character: <input type="text" value="\$S"/> |
| Device ID string: <input type="text" value="\$E"/> | Device location: <input type="text" value="\$G"/> |
| GPS latitude: <input type="text" value="\$A"/> | GPS longitude: <input type="text" value="\$O"/> |
| Vehicle e-length: <input type="text" value="\$c"/> | Category string: <input type="text" value="\$C"/> |
| Speed: <input type="text" value="\$x"/> | Speed (2 decimal places): <input type="text" value="\$X"/> |
| Direction: <input type="text" value="\$i"/> | License plate text: <input type="text" value="\$p"/> |
| Capture time (ms): <input type="text" value="\$t"/> | Device ID: <input type="text" value="\$S"/> |
| Country (long): <input type="text" value="\$e"/> | Country (short): <input type="text" value="\$f"/> |
| State (long): <input type="text" value="\$g"/> | State (short): <input type="text" value="\$j"/> |
| ANPR confidence: <input type="text" value="\$u"/> | Make: <input type="text" value="\$J"/> |
| Model: <input type="text" value="\$K"/> | Submodel: <input type="text" value="\$L"/> |
| Model confidence: <input type="text" value="\$P"/> | Category: <input type="text" value="\$M"/> |
| Category confidence: <input type="text" value="\$Q"/> | Color: <input type="text" value="\$N"/> |
| Color confidence: <input type="text" value="\$R"/> | Vehicle view: <input type="text" value="\$U"/> |
| Optical speed: <input type="text" value="\$n"/> | Optical speed confidence: <input type="text" value="\$b"/> |
| Seatbelt confidence: <input type="text" value="\$a"/> | |

Software Version: 2022.6.20-1023 Copyright © 1993-2022 Adaptive Recognition Hungary. All rights reserved.

The subtitles added to the image are configured here.

In the Camera Constants tab users can assign a string to variables which will be printed according to the value detected.

- **Device ID string:** Device identifier
- **Device location string:** Location identifier
- **Approaching vehicle string:** The string that gets printed in the subtitle when an approaching vehicle is detected (only in models with speed measurement)
- **Leaving vehicle string:** The string that gets printed in the subtitle when a leaving vehicle is detected (only in models with speed measurement)
- **Unknown vehicle direction:** The string that gets printed in the subtitle when vehicle direction cannot be determined.

In the Line Editor tab users can customize the subtitle using the wildcards listed below.

3.14. BLUR MASK

The Blur Mask feature automatically detects and blurs license plates, vehicles, and passengers within recorded footage to protect personal data.

In many evidentiary recordings, more than just the offender's vehicle is captured—other vehicles and their occupants may also appear, raising data privacy concerns. Since license plates and passengers can be considered personally identifiable information (PII), these elements must be obscured if they are not relevant to the case.

Traditionally, this would require manually reviewing and editing each frame to ensure that unrelated license plates and individuals are rendered unrecognizable—a process that is both time-consuming and error-prone.

The Blur Mask function eliminates this burden by efficiently and accurately masking unrelated vehicles and passengers. This automation ensures compliance with data protection regulations such as the GDPR, while significantly reducing the need for manual post-processing.

Available mask types:

The screenshot displays the 'ADAPTIVE RECOGNITION' software interface. The top navigation bar shows 'VIDAR SMART > ANPR > BLUR MASK' and the version '2025.7.17-1220'. A sidebar on the left lists menu items: BASIC SETUP, ADVANCED SETUP, ANPR, BROWSE, ANPR SETTINGS, TITLE EDITOR, BLUR MASK (highlighted), ENGINE MANAGER, RESULT UPLOAD, DIAGNOSTICS, MAINTENANCE, and HELP. The main content area is titled 'BLUR MASK' and contains four sections, each with an 'Enabled' checkbox, a 'Polarity' dropdown, and a 'Fallback' dropdown. A 'SAVE' button and a help icon are at the top right of the settings area.

| Mask Type | Enabled | Polarity | Fallback |
|---------------|-------------------------------------|----------|---------------|
| License plate | <input checked="" type="checkbox"/> | Normal | Vehicle |
| Vehicle | <input type="checkbox"/> | Normal | License plate |
| Trigger | <input checked="" type="checkbox"/> | Invert | License plate |
| Full image | <input type="checkbox"/> | Normal | License plate |

Serial Number: 123F0B5 Software Version: 2025.7.17-1220 Copyright © 1993-2025 Adaptive Recognition. All rights reserved.

The interface allows configuring **4 separate blur layers** independently:

| Mask Type | Meaning |
|---------------|--|
| License plate | Blurring the license plate |
| Vehicle | Blurring the entire vehicle |
| Trigger | Blurring the area around the trigger event |
| Full image | Blurring the entire image |

These can be combined, allowing configurations like **only the license plate visible**, or **only the vehicle blurred**, etc.

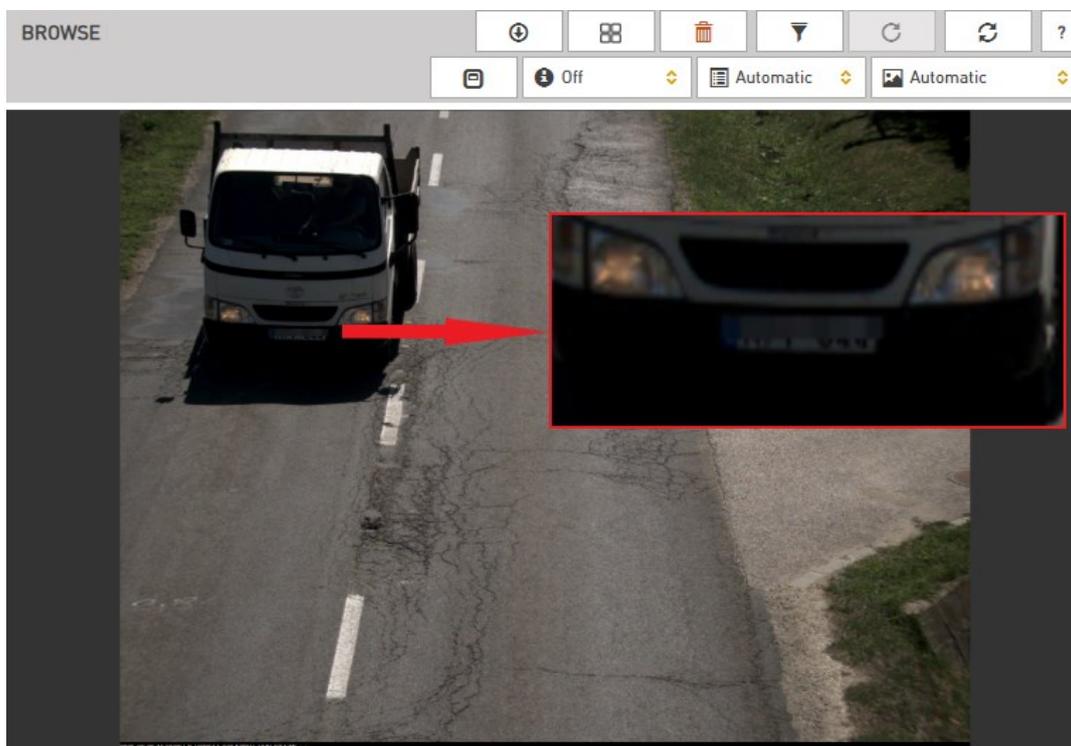
Polarity:

Each mask layer has an individually adjustable **Polarity** setting:

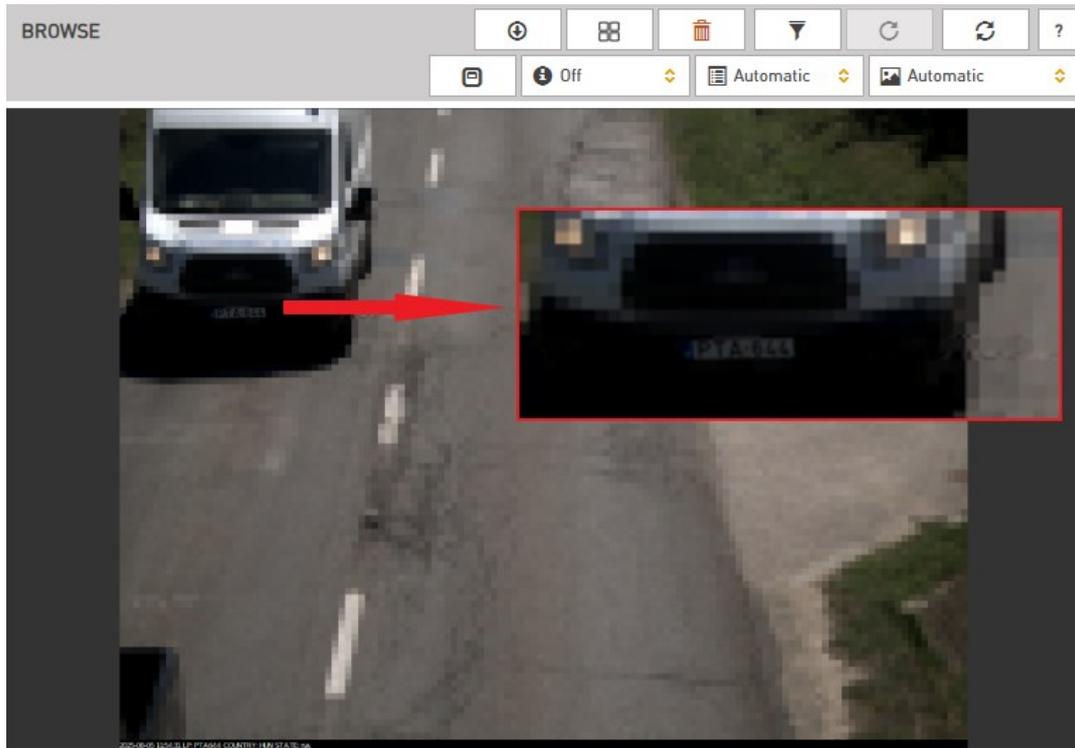
- **Normal:** the specified object is blurred.
- **Invert:** **everything except** the specified object is blurred.

Examples:

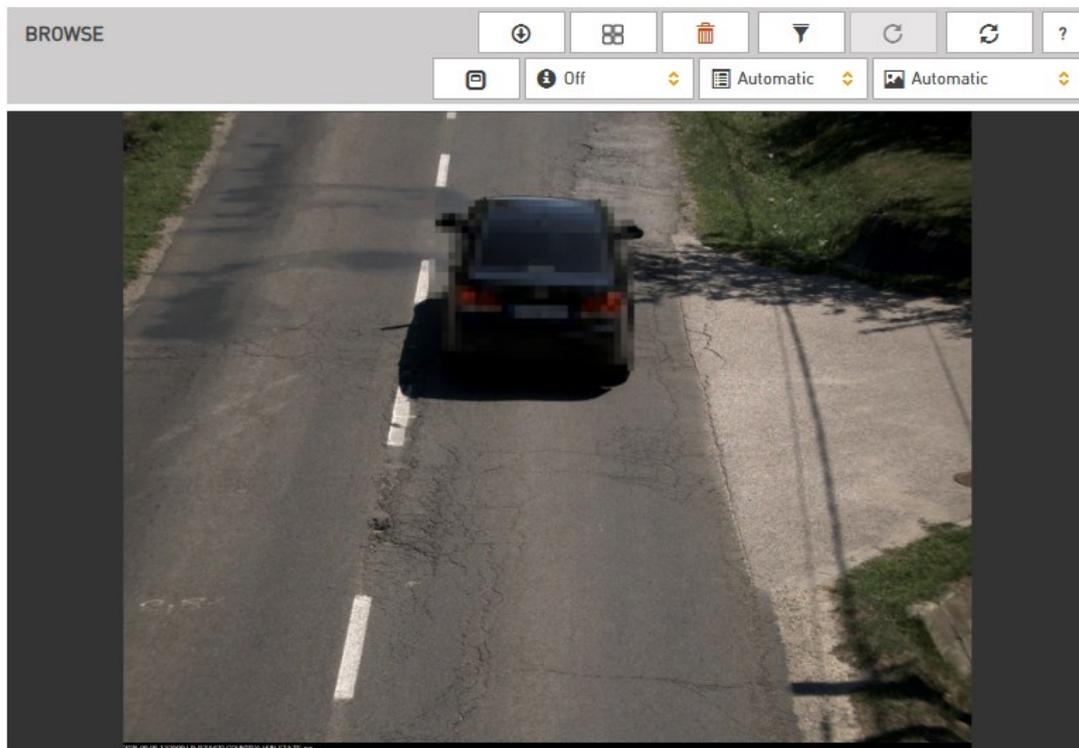
- **License plate + Normal** → only the license plate is blurred.



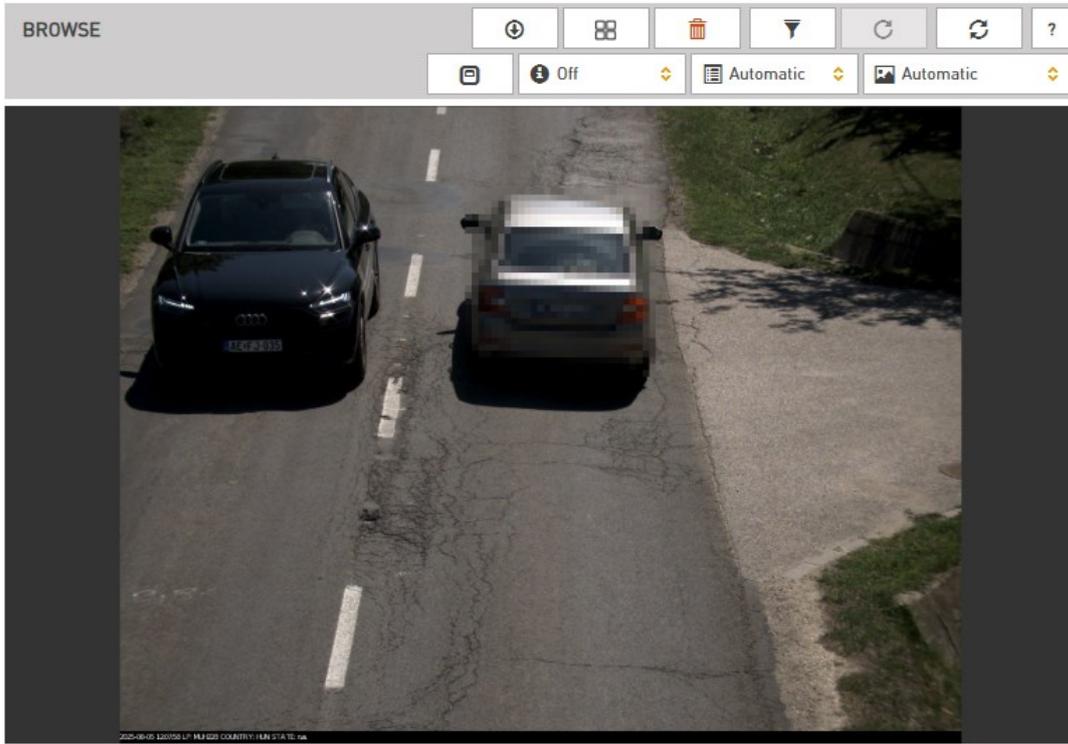
- **License plate + Invert** → *only* the license plate is visible, **everything else** is blurred.



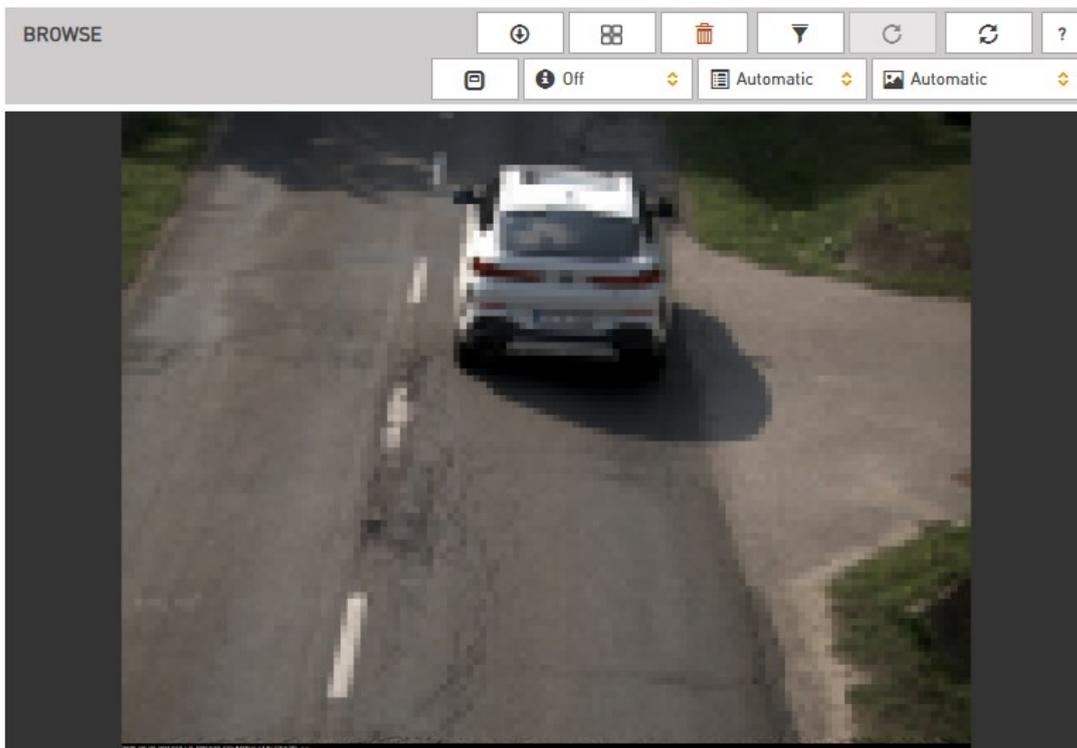
- **Vehicle + Normal** → detects the vehicle in the image and specifically masks (blurs) this object.



Trigger + Normal → detects the trigger zone and blurs exactly that area, while all other regions of the image remain visible.



Full Image + Normal → the **entire image** is blurred.



Fallback:

The **Fallback** option defines what should happen if the selected target object **cannot be detected** in the image (e.g., no license plate is found). It allows specifying an **alternative masking target**.

For example:

- the license plate is not visible,
- the vehicle is only partially in the frame,
- or the system is unable to reliably detect the object in that particular frame.

The fallback mechanism ensures that if the system cannot apply masking based on the primary frame, it will automatically attempt to use a secondary, predefined frame. This sequence continues until a valid frame is found and masking can be applied accordingly.

This provides a safety solution to ensure that masking is always applied, even when the originally intended object is not detectable in the image.

Example:

- If License plate masking is active, but **no plate is detected**, and **Fallback = Vehicle** is selected, the vehicle will be blurred as a backup.

3.15. ENGINE MANAGER

This tool allows for installing, removing and configuring the Carmen ANPR engines used in the system. The **Install Engines** tab lists the engines currently installed on the camera. Unused engines can be removed with the "x" icon to the right. A new engine can be installed by clicking on the + icon.

Currently used engines are listed in the **Selected Engines** tab.

Engine properties are configured in the bottom tab. Please check the [Carmen ANPR Manual](#) for details.

The screenshot displays the 'ENGINE MANAGER' interface. On the left is a navigation sidebar. The main area shows the 'ENGINE MANAGER' tab with a 'LICENSE MANAGER' link. Below this are two sections: 'INSTALLED ENGINES' and 'SELECTED ENGINES'. The 'INSTALLED ENGINES' section contains a table with columns for 'Engine name' and 'Used as'. The 'SELECTED ENGINES' section includes dropdown menus for 'Preselection engine', 'ANPR engine', and 'MMR engine'. At the bottom, the 'ENGINE PROPERTIES' section is visible, with 'PRE' and 'ANPR' tabs. The 'PRE' tab is active, showing a list of configuration parameters and their corresponding values.

| Engine name | Used as |
|-----------------------|---------|
| cmnpr-7.3.12.81.vq | |
| cmnpr-7.3.12.248.arab | |
| cmnpr-7.3.12.203.sas | |
| cmnpr-7.3.11.152.eur | |
| cmnpr-7.3.12.238.eur | ANPR |
| cmnpr-7.3.13.5.gen | PRE |
| cmnpr-7.3.13.7.nam | |
| mmr-7.3.2.4.mmr-eur | MMR |

| Parameter | Value |
|-----------------------|-------|
| adapt_environment: | 0 |
| analyzecolors: | 0 |
| autotypemodification: | 0 |
| colortype: | 0 |
| confidencemode: | 7 |
| contrast_min: | 10 |
| convertto0: | 0 |
| cyrillic_style: | 0 |
| depth: | 100 |
| gamma: | 0 |
| gaptospace: | 0 |
| general: | 4 |
| heapfreefreq: | 0 |

Hardware Key Licenses currently available in the device are listed in the **License Manager** section. Additional licenses (sold separately) can be installed in the **Upload License** menu.

Even with expired license your camera will function as previously (will return license plates), but you will be unable to install engines released after the Expiration Date. Therefore, please contact your sales person or write to requestinfo@adaptiverecognition.com and request an update and your latest engine to keep the highest performance!

ADAPTIVE RECOGNITION

EN

CAMERA > ANPR > ENGINE MANAGER > LICENSE MANAGER 2024.7.30-1258

- BASIC SETUP
- ADVANCED SETUP
- ANPR
- BROWSE
- ANPR SETTINGS
- TITLE EDITOR
- ENGINE MANAGER
- RESULT UPLOAD
- DIAGNOSTICS
- MAINTENANCE
- HELP

LICENSE MANAGER

UPLOAD LICENSE

No file selected (*.bin)

DEVICES

| | |
|----------------------|--------------------|
| HW key serial | Device type |
| 1230124 | CARMEN SPI |

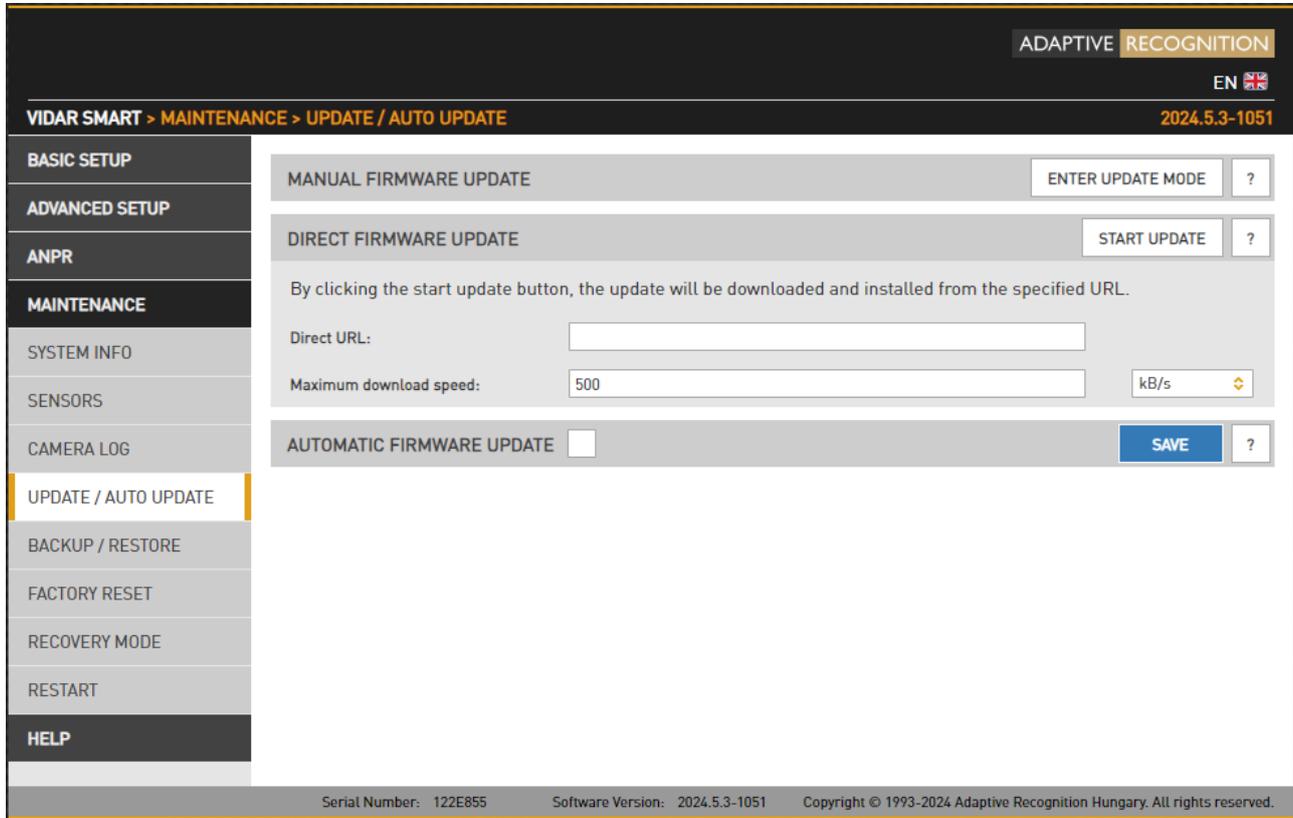
LICENSES FOR DEVICE [1230124]

| License ID | Description | Expiration date | License date |
|------------|---------------------|-----------------|--------------|
| 1222594 | CARMEN Ocr (UNI) | 2025.09.30 | 2024.06.14 |
| 1222595 | CARMEN Anpr (UNI) | 2025.09.30 | 2024.06.14 |
| 1222596 | CARMEN Anpr (UNI) | 2025.09.30 | 2024.06.14 |
| 1222597 | CARMEN Anpr (UNI) | 2025.09.30 | 2024.06.14 |
| 1222598 | CARMEN Anpr (UNI) | 2025.09.30 | 2024.06.14 |
| 1222599 | CARMEN Core 4 | 2025.09.30 | 2024.06.14 |
| 1222600 | MMR v4 (UNI) | 2025.09.30 | 2024.06.14 |
| 1222601 | ODVEHICLE | 2025.09.30 | 2024.06.14 |
| 1222602 | ODVEHICLE | 2025.09.30 | 2024.06.14 |
| 1222603 | VAC | 2025.09.30 | 2024.06.14 |

Serial Number: 1220224 Software Version: 2024.7.30-1258 Copyright © 1993-2024 Adaptive Recognition Hungary. All rights reserved.

3.16. UPDATE/AUTO UPDATE

WEB INTERFACE > MAINTENANCE > UPDATE/AUTO UPDATE



ADAPTIVE RECOGNITION

EN 

VIDAR SMART > MAINTENANCE > UPDATE / AUTO UPDATE 2024.5.3-1051

BASIC SETUP

ADVANCED SETUP

ANPR

MAINTENANCE

SYSTEM INFO

SENSORS

CAMERA LOG

UPDATE / AUTO UPDATE

BACKUP / RESTORE

FACTORY RESET

RECOVERY MODE

RESTART

HELP

MANUAL FIRMWARE UPDATE ?

DIRECT FIRMWARE UPDATE ?

By clicking the start update button, the update will be downloaded and installed from the specified URL.

Direct URL:

Maximum download speed:

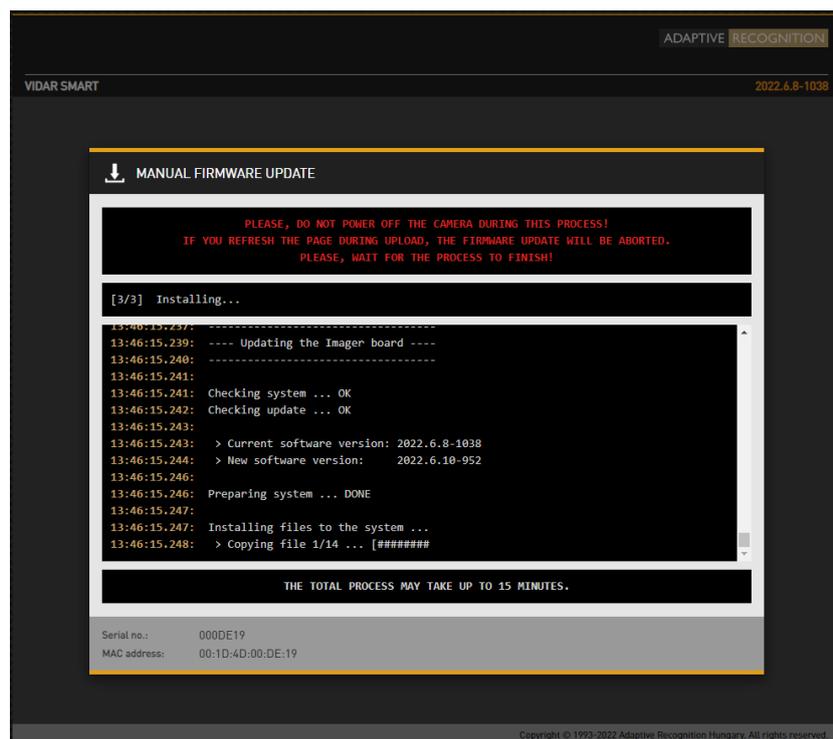
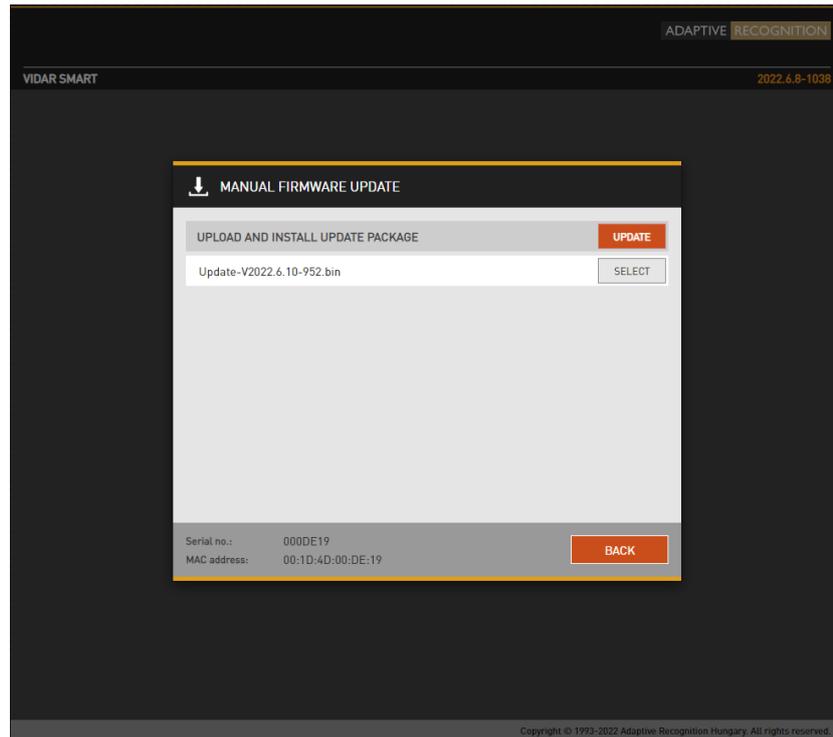
AUTOMATIC FIRMWARE UPDATE ?

Serial Number: 122E855 Software Version: 2024.5.3-1051 Copyright © 1993-2024 Adaptive Recognition Hungary. All rights reserved.

This menu provides tools to manage camera firmware.

Use to upload a new firmware.

First step is to tap „Select” button to choose update package from your computer. When you have loaded, tap „Update” button to start installing the update package.



The total process may take up to 15 minutes.

! Important!

If you power off the camera or refresh the page, the firmware update will be aborted!

Encrypted update

The update can only execute on a camera with firmware version 2021.10.14-1810. For version 2021.10.14-1810, a temporary package called must be installed first.

After that, the operation becomes available. Once the temporary package has been uploaded, it can only be upgraded to later versions than the temporary package.

3.16.1. DIRECT FIRMWARE UPDATE

The **Maintenance -> Update/Auto update** page has been expanded with a new section called Direct Firmware Update.

Here, you can specify a **URL** (the system checks if the format is correct) from which it tries to download and install the update package.

The download speed is common with the auto-update section; changing one affects the other.

By clicking the **Start Update button**, the values are stored, and the update process starts. The camera starts in update mode, and if the package is not valid, the user receives a notification on that interface.

DIRECT FIRMWARE UPDATE START UPDATE ?

By clicking the start update button, the update will be downloaded and installed from the specified URL.

Direct URL:

Maximum download speed: kB/s ⌵

3.16.2. AUTO UPDATE

The screenshot displays the 'UPDATE / AUTO UPDATE' configuration page in the Adaptive Recognition web interface. The page is divided into several sections:

- MANUAL FIRMWARE UPDATE:** Includes an 'ENTER UPDATE MODE' button.
- DIRECT FIRMWARE UPDATE:** Includes a 'START UPDATE' button and a note: 'By clicking the start update button, the update will be downloaded and installed from the specified URL.' It features a 'Direct URL:' input field and a 'Maximum download speed:' dropdown set to '5001 kB/s'.
- AUTOMATIC FIRMWARE UPDATE:** This section is checked and includes a 'SAVE' button. It contains:
 - DOWNLOAD SETTINGS:** A table with columns for '+', 'URL', and 'Description'. Below it, a 'Maximum download speed:' dropdown is set to '5001 kB/s'.
 - UPDATE SCHEDULER:** Includes a 'Check for new update:' dropdown set to 'Hourly', an 'Advanced schedule:' checkbox which is checked, and a 'Cron configuration:' field with five input boxes for 'minute', 'hour', 'day of month', 'Month', and 'day of week', each containing an asterisk (*).

The footer of the interface shows: 'Serial Number: 112B7C8 Software Version: 2024.5.3-1051 Copyright © 1993-2024 Adaptive Recognition Hungary. All rights reserved.'

Auto update function provides to the customer to configure hundreds of cameras updated automatically without install them one by one.

The auto update used in ARH OS is able to retrieve installation packages from a server and automatically install it immediately or on time. By default, it operates in a client-server system.

It can be used to install the following packages:

- Complete firmware update packages
- Smaller patch packages
- License / certificate packages
- Engines
- Configuration packages
- Custom OEM packages, additions

Supported servers:

- HTTP
- HTTPS

Settings:

- Multiple servers can be specified (up to 99), these will go through the list and use the first one that works
- Create a HTTP webserver on your computer
- Copy the actual firmware update package in the folder (.bin, .chk and GET files)
- It contains the update package and a GET file

GET file example:

```
V1.3|*|*|arm64|*|Update-V2.0.bin|N
```

Column's description:

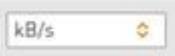
- Version number
- Type
- Serial number
- Architecture
- Tag
- Update file
- Flags

The flag field (string) can be several characters long.

Contents:

- First character '**N**': normal mode, does not start the update process immediately.
- '**F**': force - start immediately the downloaded update package.
- If there is no flag field, '**N**' is the default value.

On the camera web interface:

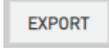
1. Check  column to switch on Auto Update.
2. Plus sign  can be used to add the webservers path. The servers will check camera updates for software.
3. The name/description of the server. 
4. Change or delete the current URL. 
5. The maximum adjustable download speed and unit of measure for the software package. This is important because downloading during the periods of high data traffic with too much bandwidth, it can slow down the camera's data transfer. 
6. If the  field is not checked, the top input field is active. If it is enabled, the bottom is active. The top field check every hour / day / month that new software version is available on servers (for day and month at midnight). In the Advanced schedule case, Cron configuration can be specified (this is a Linux scheduler, more complicated scheme can be specified as well, like the first day of the month and the middle day, every Wednesday, etc ...)

 Note

Do not forget to save settings by clicking **Save**.

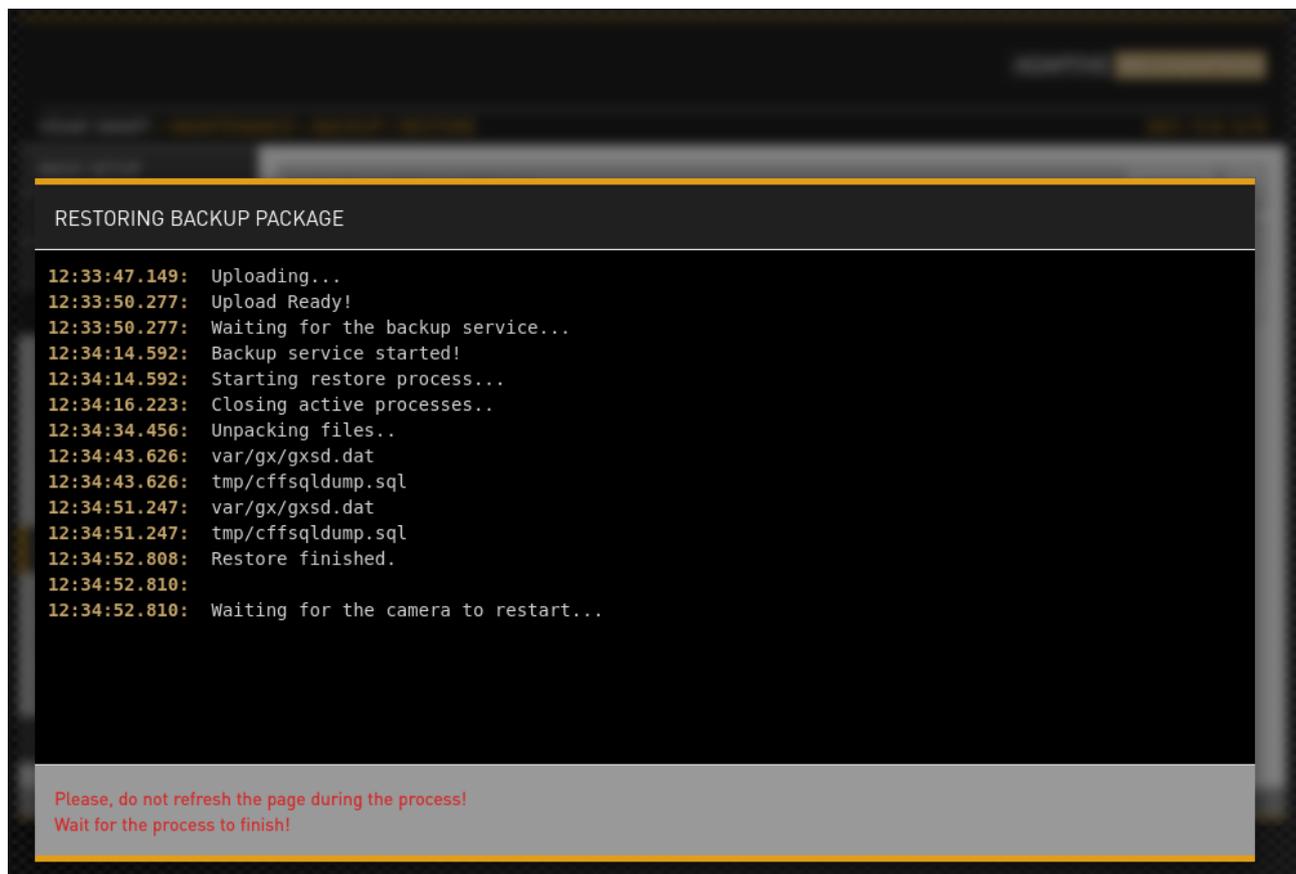
3.17. BACKUP/RESTORE

Encrypted backup

In the "Backup / Restore" menu, press the Export button  to download the backup, which will be encrypted.

To restore a downloaded backup, first select the backup file you want to restore using the Select button  on the camera's "Backup / Restore" menu, then press the Import button  and confirm the restore intention in the pop-up window. A backup can only be restored on the same type of camera where the full hardware and software package are the same.

This is the import process when we restore the backup file. Wait until the process is finished.



3.18. RESULT UPLOAD

WEB INTERFACE > ANPR > RESULT UPLOAD

The screenshot displays the 'ADAPTIVE RECOGNITION' web interface. The top navigation bar includes 'CAMERA > ANPR > RESULT UPLOAD' and the version '2024.1.12-1539'. A sidebar on the left lists menu items: BASIC SETUP, ADVANCED SETUP, ANPR, BROWSE, ANPR SETTINGS, TITLE EDITOR, ENGINE MANAGER, RESULT UPLOAD (highlighted), DIAGNOSTICS, MAINTENANCE, and HELP. The main content area is titled 'RESULT UPLOAD' and contains a 'RULES' table with one entry: 'default'. The 'default' rule is marked as 'ACTIVE' with a green checkbox. Action buttons for 'ADD', 'CLEAR', 'EDIT', and 'RESET' are visible. A footer at the bottom states: 'Software Version: 2024.1.12-1539 Copyright © 1993-2023 Adaptive Recognition Hungary. All rights reserved.'

By default, there is a default Rule set. Additionally, multiple Rules can be defined.

As a first step, a Rule needs to be added by pressing the Add button. In the following window, you can set which times the Rule should work.

ADAPTIVE RECOGNITION

EN

VIDAR SMART > ANPR > RESULT UPLOAD 2023.12.12-1331

RESULT UPLOAD ?

EDIT RULE BACK SAVE

Rule Name:

ACTIVE PERIODS

| | All | Begin | End | |
|-----|--------------------------|---------------|-----|----------------------------------|
| | <input type="checkbox"/> | 00:00 - 24:00 | End | Set for the selected days |
| Mon | <input type="checkbox"/> | 00:00 - 24:00 | End | All day <input type="checkbox"/> |
| Tue | <input type="checkbox"/> | 00:00 - 24:00 | End | All day <input type="checkbox"/> |
| Wed | <input type="checkbox"/> | 00:00 - 24:00 | End | All day <input type="checkbox"/> |
| Thu | <input type="checkbox"/> | 00:00 - 24:00 | End | All day <input type="checkbox"/> |
| Fri | <input type="checkbox"/> | 00:00 - 24:00 | End | All day <input type="checkbox"/> |
| Sat | <input type="checkbox"/> | 00:00 - 24:00 | End | All day <input type="checkbox"/> |
| Sun | <input type="checkbox"/> | 00:00 - 24:00 | End | All day <input type="checkbox"/> |

NUMBER PLATES CLEAR ADD IMPORT EXPORT

PREV NEXT

There is no number plate added.

EVENT NOTIFICATION ADD

There is no action added.

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Under Event Notification, click the Add button, where the Type option will display Upload. Afterward, use the Add button to specify this option.

Press the Edit button to open a window where you can configure the Upload Settings - Upload Manager 0 settings if checked.

▼ UPLOAD SETTINGS - UPLOAD MANAGER 0 SAVE ?

| EVENT NOTIFICATION | | ADD |
|--------------------|------------------|---|
| Type | Target | |
| Upload | Upload Manager 0 |   |

▼ **UPLOAD SETTINGS - UPLOAD MANAGER 0** **SAVE** ?

UPLOAD CONNECTION TEST

| | |
|--|--|
| Upload method: <input type="text" value="FTP"/> | Max. connection attempts: <input type="text" value="1"/> |
| Persist: <input type="checkbox"/> | Attempt time: <input type="text" value="0"/> day |
| Host: <input type="text" value="192.168.1.250"/> | Port: <input type="text" value="default"/> |
| Username: <input type="text" value="user"/> | Password: <input type="password" value="...."/> |
| Remote directory: <input type="text"/> | Timeout of one attempt: <input type="text" value="2000"/> ms |

UPLOAD CONTENT

| | |
|--|--|
| Image: <input checked="" type="checkbox"/> | Plate image: <input checked="" type="checkbox"/> |
| Result data: <input checked="" type="checkbox"/> | Secondary image: <input type="checkbox"/> |
| Image strip: <input type="checkbox"/> | |

Recognition results can be uploaded using the HTTP, FTP or SFTP and *HTTPS protocol. In case of FTP and SFTP the following fields are available and editable:

- **Upload Method:** The protocol used.
- **Max. connection attempts:** In case of failure this is the number of repeated upload attempts.
- **Persist:** You can enable it to try uploading multiple times by checking the persist box.
- **Attempt time:** after checking the Persist checkbox, you can set how many days it will attempt to upload.
- **Host:** Upload target host.
- **Port**:** This allows to easily and visually specify the server port. If no port is specified, a default placeholder is displayed, indicating that the default ports will be used.
- **Username and Password*:** User credentials.
- **Remote directory**:** The directory that the files should be uploaded to.
- **Timeout of one attempt:** The maximal duration of an upload attempt.

*: use this request to upload using HTTPS protocol:

http://cam_ip/lpr/cff?cmd=setproperty&name=/default/cfs/uplm/http/cert_vfy&value=0

***: only present in FTP, SFTP configuration

The upload URL now adheres to a standard format that allows the explicit specification of the port number at the end of the URL in case of FTP and SFTP configuration. The format is as follows:

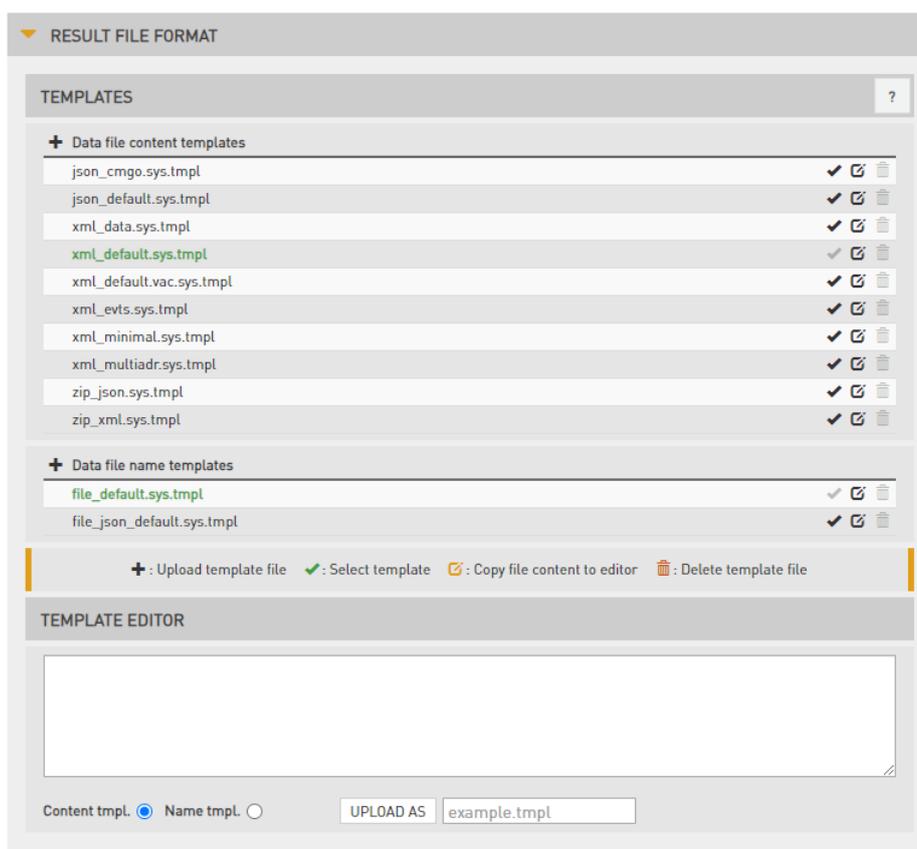
[protocol://server_name_or_IP:PORT_NUMBER](#)

Example of a custom Port:

- ftp://example.com:2121 → The FTP connection will use port **2121**.
- sftp://192.168.1.1:2200 → The SFTP connection will accept requests on port **2200**.

Upload Content: The selected data and images will be uploaded.

Result file format: You can edit and check trigger information in a selected format.



The upload button  has been added to the header. First part of the filenames has been separated into filename and content templates.

The pencil button  inserts the content into the Template editor field. Clicking on the pencil button enters the contents of the file into the editor, sets the file type, and enters the file name in the appropriate field. After that it is possible to edit, change, and save it. If you save it under an existing name or change it, you will be asked before it. In case that you want to upload under an inadequate name or modify .sys file, it will not allow.

If you change an active template, it will restart automatically afterwards.

Template Editing

The interface for querying HTTP events and editing templates can be accessed via the following URL:

http://camera_ipl/getdata_template

This interface allows users to **customize the response of HTTP queries** using templates. Specifically, it enables users to **modify how queried events from the database (DB) are displayed** using custom templates, ensuring flexibility in event data presentation.

Functionality and Usage

- The template editor visually and functionally resembles the **upload template editor**.
- The key difference is that this editor modifies the value of:
 - **gxProperty/default/cfs/template/template**
- Users can **edit and save templates** directly through this interface, ensuring seamless adjustments.
- This feature enables **tailoring the HTTP response output** for queried events from the system's database, allowing customized display and processing of retrieved event data.

The screenshot displays the 'TEMPLATES' management interface. At the top, there is a header 'TEMPLATES' with a search icon. Below it, a section titled '+ Data file event template' contains a list of template files. Each file name is followed by three icons: a checkmark, a copy icon, and a delete icon. The file 'xml_data.sys.tpl' is highlighted in green. Below the list, a legend explains the icons: a plus sign for 'Upload template file', a checkmark for 'Select template', a copy icon for 'Copy file content to editor', and a trash can for 'Delete template file'. The main area is titled 'TEMPLATE EDITOR' and features a large text input field. At the bottom, there is a label 'Event tpl.' with a radio button, an 'UPLOAD AS' button, and a text input field containing 'example.tpl'.

The content of the result data file (and the file name) is customizable using templates. The following short example, which will describe a result formatted as an XML contains all features:

1. `<?xml version="1.0" encoding="UTF-8"?>`
2. `<result>`
3. `<ID value ="$(ID);"/>`
4. `<text value="$(DB2XML($(ANPR_TEXT)));"/>`
5. `<location value="$(location);"/>`
6. `<image value="$(normal_img);"/>`
7. `</result>`

Lines #1, #2 and #7 are text only (of course in this example we have to adhere to the XML standard). Line #3 is an example of a database field, line #4 is an example of a function, line 5 and 6 are examples of a property/special field. This template may evaluate to something like:

```
<?xml version="1.0" encoding="UTF-8"?>
<result>
<ID value ="123456789"/>
<text value="ABC123"/>
<location value="Test Site 34b"/>
<image value="/9j/4AAQSkZJRgABAQAAQABA[... a base 64 encoded image...]/>
</result>
```

The same content in a different format might be:

1. `event_id=$(ID);`
2. `plate_text=$(DB2XML($(ANPR_TEXT)));`
3. `camera_location=$(location);`
4. `vehicle_image=$(normal_img);`

which will evaluate to:

1. `event_id=123456789`
2. `plate_text=ABC123`
3. `camera_location=Test Site 34b`
4. `vehicle_image=/9j/4AAQSkZJRgABAQAAQABA[... a base 64 encoded image...`

Database fields

The contents of the database can be injected using the following syntax:

`$(database field id)`

Functions

To format the output the following functions are provided, with the general syntax:

`$(function name)([argument1],[argument2],...,[argumentN]);`

Plate text formatting:

DB2XML(text,flags:optional)-converts the license plate text *text* from DB to XML format, where flags may be one of the following;

- **ARABIC2LATIN**-convert all Arabic characters to their latin equivalent
- **ENCODE_ALL**-encode all characters in `쳌`; format

DB2JSON(text,flags:optional)-converts the license plate text *text* from DB to JSON format

DB2UTF8(text,flags:optional)-converts the license plate text *text* from DB to UTF8

Time formatting:

Format Time(timestamp,format_string:optional)- formats timestamp given in milliseconds according to the optional format_string (see the POSIX strftime function). For example:

"\$FormatTime(\$(FRAMETIMEMS),%Y%m%dT%H%M%S%z)" evaluates to "20180419T145713+0200". If the format string is omitted, the same timestamp is evaluated as "2018.04.19 14:57:13.594"

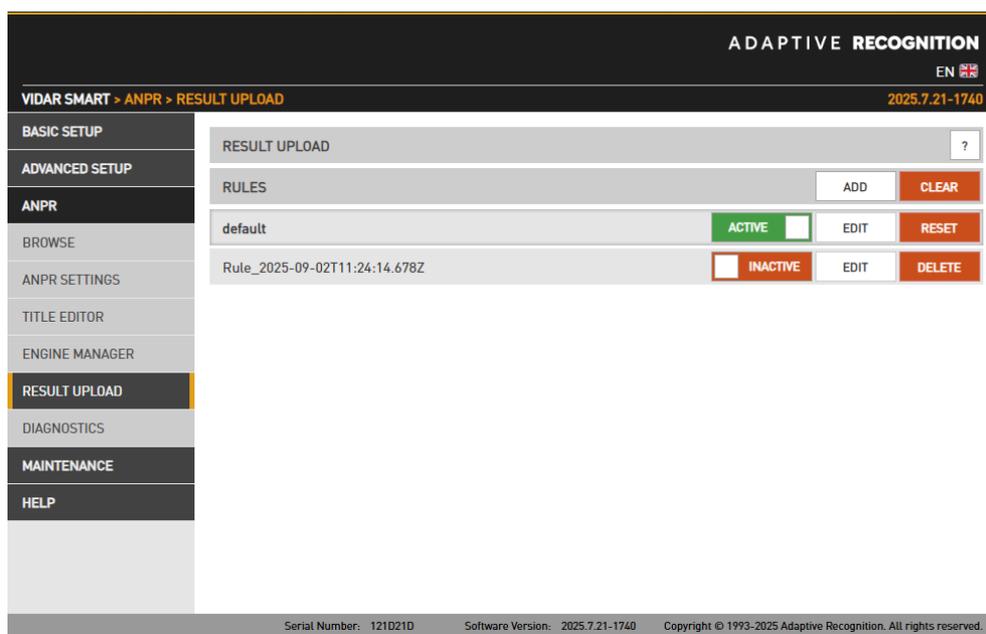
Note

Please note that in the case when special rules apply to using the string compiled from the template (for example a file name template that will be used as a part of an URL of an FTP upload), you need to make sure to adhere to these rules. In the previous example it means that spaces will have to be replaced by '%20', filenames on certain systems can't contain ':', etc.

Data file name template

During upload, the camera assigns a file name to each event. The structure of the file name is defined by the **Data file name template** section.

1. Go to **ANPR → RESULT UPLOAD → RESULT TEMPLATES → ADD RULE** or **EDIT** an existing rule



2. In the **Event Notification** section, press the **ADD** button.
3. In the appearing row, select the appropriate values for **Type** and **Target** (e.g. *Upload* and *Upload Manager 0*)
4. Click the **ADD** button again to save the setting.

EVENT NOTIFICATION
ADD

Type: CANCEL ADD

Target:

There is no action added.

5. In the created row, click the **edit** icon for detailed configuration.

| Type | Target | |
|--------|------------------|--|
| Upload | Upload Manager 0 | |

6. In the edit view, expand the **Result File Format** drop-down to access the upload templates.
7. Expand the **Data file name templates** section.
8. Select the required template (e.g. *file_default.sys.tpl*) and click the edit icon.
9. In the **Template editor**, switch to **Name tpl** mode (this lets you edit the file name template).

The screenshot displays the user interface for configuring upload templates. At the top, there is an 'EVENT NOTIFICATION' section with an 'ADD' button. Below it is a table with columns 'Type' and 'Target', showing 'Upload' and 'Upload Manager 0'. The 'UPLOAD SETTINGS - UPLOAD MANAGER 0' section has a 'SAVE' button. The 'RESULT FILE FORMAT' section is expanded to show 'TEMPLATES'. Under 'Data file content templates', various templates are listed with checkmarks, edit icons, and delete icons. Under 'Data file name templates', 'file_default.sys.tpl' is highlighted in green. A legend below the templates explains the icons: a plus sign for 'Upload template file', a checkmark for 'Select template', an edit icon for 'Copy file content to editor', and a trash icon for 'Delete template file'. The 'TEMPLATE EDITOR' at the bottom has 'Name tpl.' selected with a radio button and an 'UPLOAD AS' button followed by a text input field containing 'file_example.tpl'.

! Important!

The *default* templates (.sys.tpl) **cannot be overwritten directly**. If you want to modify one, you must **save it under a new name** (e.g. *file_custom.tpl*) and use that instead.

Template language:

- **Variables:** \$(ID), \$(FRAMETIMEMS)
- **Formatting function:** \$FormatTime(<time_value>, <pattern>)
- Anything you type literally appears in the file name (e.g. result_), while variables/functions are evaluated.

Examples**Date-based folder + ID:**

- result_{\$FormatTime(\$(FRAMETIMEMS),%Y%m%d)}_\$(ID).xml

This template creates a **result_20200204 directory** and stores the file 123456789.xml inside.

 **Note**

It is possible that the "/" character will **not work**, since not all servers support folder structures. Safer alternative: _

Replacing "ms" with "s"

If you want `_ms` in the file name to appear as `_s` instead:

- `$FormatTime($(FRAMETIMEMS),%Y.%m.%d.%H.%M.%S)_s.xml`

This only changes the **label** from "ms" to "s"; the actual timestamp remains unchanged.

Save and verify

1. Always save the edited template **under a new name** (e.g. `file_custom.tmpl`). Default templates cannot be overwritten.
2. Select the template and click **SAVE**.
3. Make sure the file extension matches the selected content template (`.xml` → XML template, `.json` → JSON template).
4. Run a test upload; in the POST request header the modified file name will appear.

Special fields

The following keywords are defined:

`normal_img` - the image representing the event, Base64 encoded

`lp_img` - the cropped license plate image, Base64 encoded

`aux_img` - the overview image, Base64 encoded

`strip_img` - the image strip, Base64 encoded

`location` - the location string as defined in `default/cfs/db/location`

`cameraid` - the camera HW id, may be overridden with `default/cfs/db/cameraid`

! Important!

Special characters: The character '\$' must always be escaped with '\'. Within an expression the characters '\$', '(', ')', '|', and ';' have to be escaped with a '\' character.

For example the following expression:

```
();$TEST(a\${a}\,,$(LP));
```

will evaluate as

```
();a$a,DATA
```

provided that the function TEST concatenates its arguments and the field LP contains the text 'DATA'.

Globessey Data Server

ADAPTIVE RECOGNITION
EN

VIDAR SMART > ANPR > RESULT UPLOAD 2023.12.12-1331

BASIC SETUP
ADVANCED SETUP
ANPR
BROWSE
ANPR SETTINGS
TITLE EDITOR
ENGINE MANAGER
RESULT UPLOAD
DIAGNOSTICS
MAINTENANCE
HELP

RESULT UPLOAD ?

EDIT RULE BACK SAVE

Rule Name: Rule_2024-01-16T08:26:52.147Z

ACTIVE PERIODS

| All | Begin | End | Set for the selected days |
|------------------------------|-------|-------|----------------------------------|
| <input type="checkbox"/> | 00:00 | 24:00 | |
| Mon <input type="checkbox"/> | 00:00 | 24:00 | All day <input type="checkbox"/> |
| Tue <input type="checkbox"/> | 00:00 | 24:00 | All day <input type="checkbox"/> |
| Wed <input type="checkbox"/> | 00:00 | 24:00 | All day <input type="checkbox"/> |
| Thu <input type="checkbox"/> | 00:00 | 24:00 | All day <input type="checkbox"/> |
| Fri <input type="checkbox"/> | 00:00 | 24:00 | All day <input type="checkbox"/> |
| Sat <input type="checkbox"/> | 00:00 | 24:00 | All day <input type="checkbox"/> |
| Sun <input type="checkbox"/> | 00:00 | 24:00 | All day <input type="checkbox"/> |

NUMBER PLATES CLEAR ADD IMPORT EXPORT

PREV NEXT

There is no number plate added.

EVENT NOTIFICATION ADD

| Type | Target |
|------|-------------------------|
| GDS | Globessey Data Server 0 |

UPLOAD SETTINGS - GLOBESSEY DATA SERVER SAVE ?

Host: gds_url Path: gds_path
Port: 8888 Username: gds_user
Table name: gds_table Device ID: gds_devid

Software Version: 2023.12.12-1331 Copyright © 1993-2023 Adaptive Recognition Hungary. All rights reserved.

GDS deals with the most complex traffic management challenge in an effortless manner: simultaneously managing data collection from numerous endpoints and serving queries of various business units.

EVENT NOTIFICATION ADD

| Type | Target |
|--------|-------------------------|
| Upload | Upload Manager 0 |
| GDS | Globessey Data Server 0 |

UPLOAD SETTINGS - GLOBESSEY DATA SERVER SAVE ?

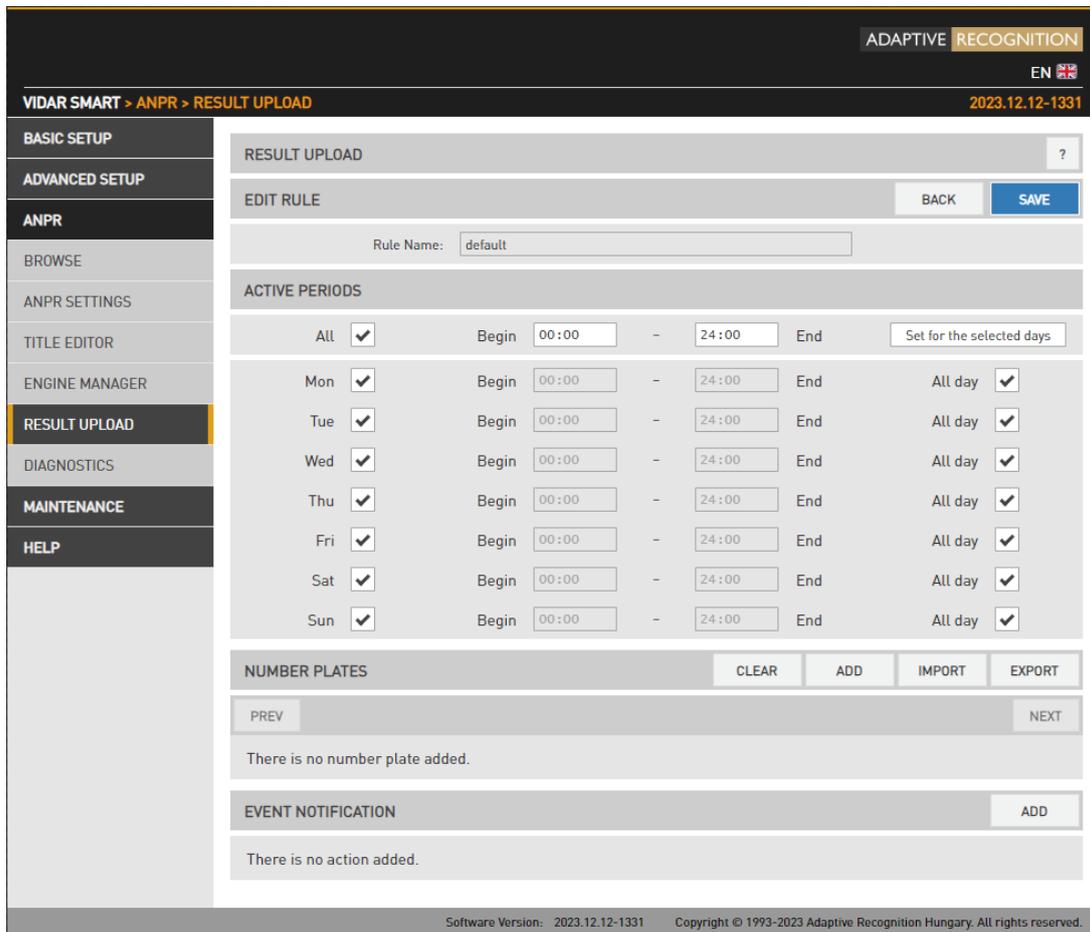
Host: gds_url Path: gds_path
Port: 8888 Username: gds_user
Table name: gds_table Device ID: gds_devid

Tick in **UPLOAD SETTINGS - GLOBESSEY DATA SERVER** checkbox to activate the function.

Under Upload Settings, enter the requested parameters and press the Save button to validate the changes.

3.18.1. NUMBER PLATES

WEB INTERFACE > ANPR > RESULT UPLOAD



ADAPTIVE RECOGNITION

EN  

VIDAR SMART > ANPR > RESULT UPLOAD 2023.12.12-1331

BASIC SETUP

ADVANCED SETUP

ANPR

BROWSE

ANPR SETTINGS

TITLE EDITOR

ENGINE MANAGER

RESULT UPLOAD

DIAGNOSTICS

MAINTENANCE

HELP

RESULT UPLOAD ?

EDIT RULE BACK SAVE

Rule Name:

ACTIVE PERIODS

| | All <input checked="" type="checkbox"/> | Begin | | End | |
|---|---|------------------------------------|---|------------------------------------|--|
| | | <input type="text" value="00:00"/> | - | <input type="text" value="24:00"/> | End <input type="text" value="Set for the selected days"/> |
| Mon <input checked="" type="checkbox"/> | | <input type="text" value="00:00"/> | - | <input type="text" value="24:00"/> | End All day <input checked="" type="checkbox"/> |
| Tue <input checked="" type="checkbox"/> | | <input type="text" value="00:00"/> | - | <input type="text" value="24:00"/> | End All day <input checked="" type="checkbox"/> |
| Wed <input checked="" type="checkbox"/> | | <input type="text" value="00:00"/> | - | <input type="text" value="24:00"/> | End All day <input checked="" type="checkbox"/> |
| Thu <input checked="" type="checkbox"/> | | <input type="text" value="00:00"/> | - | <input type="text" value="24:00"/> | End All day <input checked="" type="checkbox"/> |
| Fri <input checked="" type="checkbox"/> | | <input type="text" value="00:00"/> | - | <input type="text" value="24:00"/> | End All day <input checked="" type="checkbox"/> |
| Sat <input checked="" type="checkbox"/> | | <input type="text" value="00:00"/> | - | <input type="text" value="24:00"/> | End All day <input checked="" type="checkbox"/> |
| Sun <input checked="" type="checkbox"/> | | <input type="text" value="00:00"/> | - | <input type="text" value="24:00"/> | End All day <input checked="" type="checkbox"/> |

NUMBER PLATES CLEAR ADD IMPORT EXPORT

PREV NEXT

There is no number plate added.

EVENT NOTIFICATION ADD

There is no action added.

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The purpose of this feature is to execute tasks upon reading a certain license plate.

To enable the Number Plates feature, use the Add button.

 Note

If the feature is disabled, the settings under Upload Manager 0 will be applied. That is all license plates will be uploaded if Upload Manager 0 is enabled and configured. This way compatibility is ensured with previous releases.

The Number Plates feature is based on **rules**. Rules consist of a **time condition** (e.g., workdays 9:00-16:00), a **license plate condition** (ABC123 and DEF456) and an **event notification** (pull GP output to high or upload event data to an FTP server). If and only if both the time and license condition is satisfied, then the event notification will be executed.

Rules must have unique names (LP's corresponding to one rule must be unique). A rule can be deactivated, so users don't have to delete/re-enter the rule if they want to temporarily suspend its action. If it exists, a special rule named 'default' will be executed if no other rule applies. You can add/edit a rule by clicking add/edit.

3.18.2. RULES

A rule will be created with an automatically generated name. It is good practice to change this to a more descriptive name. If the rule is named 'default', then it will be applied if no other rule can be satisfied.

3.18.3. TIME SETTINGS

The day and time range during which the rule applies can be specified. Alternatively, you can use the **All day** check box.

3.18.4. LICENSE PLATES

License plates can be added manually one by one or imported from a CSV file. A license plate can be removed by hovering over the text and clicking the **Trash bin** icon. Alternatively clicking the Clear button all items will be cleared.

3.18.5. EVENT NOTIFICATIONS

You can add multiple tasks to a rule, each will be executed if the conditions are satisfied. The following actions can be:

- Upload via an Upload Manager
- Execute a GPIO 100msec signal
- Execute an RS232 or GPIO output for Wiegand26 Communication protocol

If a task has any settings, those are available clicking the **Cogwheel icon** beside the event notification task list entry. An entry can be removed by clicking the **Trash bin icon**.

EXAMPLES

3.18.6. REPORTING STOLEN VEHICLES

Create a rule, select all week/all day and add the license plates and an Upload type Event Notification. The plates on the list will be reported. You can specify up to 8 receiving servers (Upload Manager 0-7), event data will be uploaded to each.

3.18.7. OPENING A GATE FOR VEHICLES

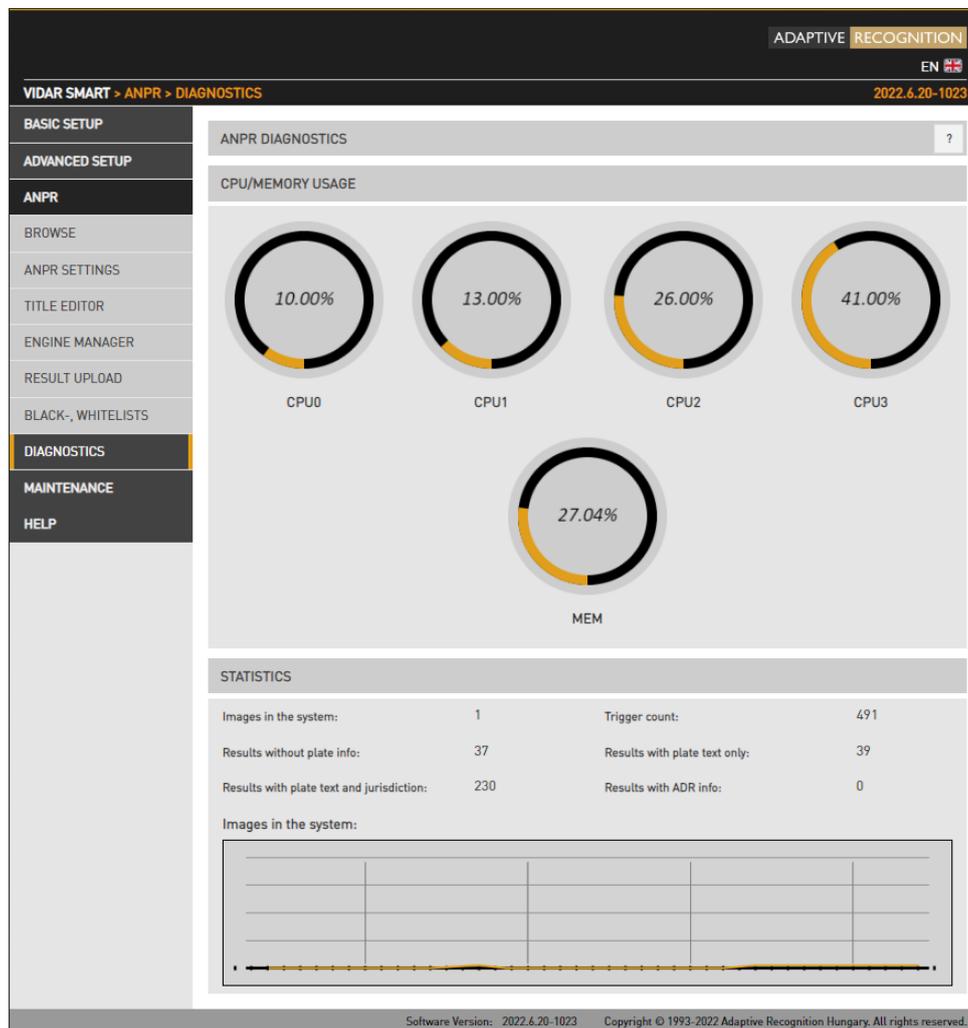
Create a rule, select workdays and add the license plates and an Exec/GPIO type Event Notification. GP output will be triggered when a plate on the list has been read.

3.18.8. REPORTING UNAUTHORIZED USE OF TOLL ROAD

Edit the default rule (named 'default'), add an Upload type Event Notification which by default will forward all license plates to the tolling backend. Now create a second rule (named 'exempt'), and add the license plates that are exempt from paying tolls (ambulance, police, road works). Do not add any Event Notifications, consequently those on this list will not be reported via the Upload feature. Edit time/date settings accordingly, for example if tolls apply only on weekdays uncheck Saturday and Sunday in both rules.

3.19. DIAGNOSTICS

WEB INTERFACE > ANPR > DIAGNOSTICS



Use this tool to monitor system workload.

The results in **STATISTICS** will inform you about current and recent specific tasks like:

- **Images in the system:** the number of captured images waiting for process.
- **Trigger count:** the number of triggers received from the trigger sources
- **Results without plate info:** # of events where no license plate could be recognized
- **Results with plate text only:** # of events where only the license plate text is available (most likely originating from the Preselection stage)
- **Results with plate text and jurisdiction:** # of events where complete ANPR info is available
- **Results with ADR info:** # of events where ADR info is available.

4. MAINTENANCE

4.1. SYSTEM INFO

WEB INTERFACE > MAINTENANCE > SYSTEM INFO

The screenshot shows the 'SYSTEM INFO' page in the Adaptive Recognition web interface. The page is divided into several sections:

- IDENTIFY:**
 - HwVersion: 308.1.0.0
 - Serial: 1220224
 - Mac: 00:1d:4d:00:ee:5e
 - CFF version: 2.5.4.45
 - Firmware: 2024.7.30-1258
 - Boot loader: 2022.01 [Oct 28 2024 - 21:12:15 +0100] Xilinx ZynqMP LYNETLVDS2x
 - Kernel: 6.6.0-zynqmp #1 SMP PREEMPT Mon Oct 28 21:34:10 CET 2024
- HARDWARE UNITS:**
 - Board #1 type: 4x1.2 GHz CPU / X154000
 - Board #2 type: Unknown
 - Sensor #1 type: CMOS 5MP 2432x2048/GS (Color)
 - Sensor #2 type: CMOS 5MP 2432x2048/GS (Color)
 - NNC serial: 1230124
- MEMORY USAGE:**
 - Device:** 71.47% (2719.30/3805.02 MB)
 - Buffer:** 100.00% (3072.00/3072.00 MB)

At the bottom of the page, the following information is displayed: Serial Number: 1220224, Software Version: 2024.7.30-1258, Copyright © 1993-2024 Adaptive Recognition Hungary. All rights reserved.

The most important details about the device are listed here.

- **IDENTIFY** tab lists values identifying the system. Please refer to these values when reporting a bug. Be sure to include your HW Version and the Serial Number.
- **HARDWARE UNITS** lists the hardware components of the camera.
- **MEMORY USAGE** provide info about memory usage. It is normal to have both memory usage stats at or near to 100 %.

4.2. SENSORS

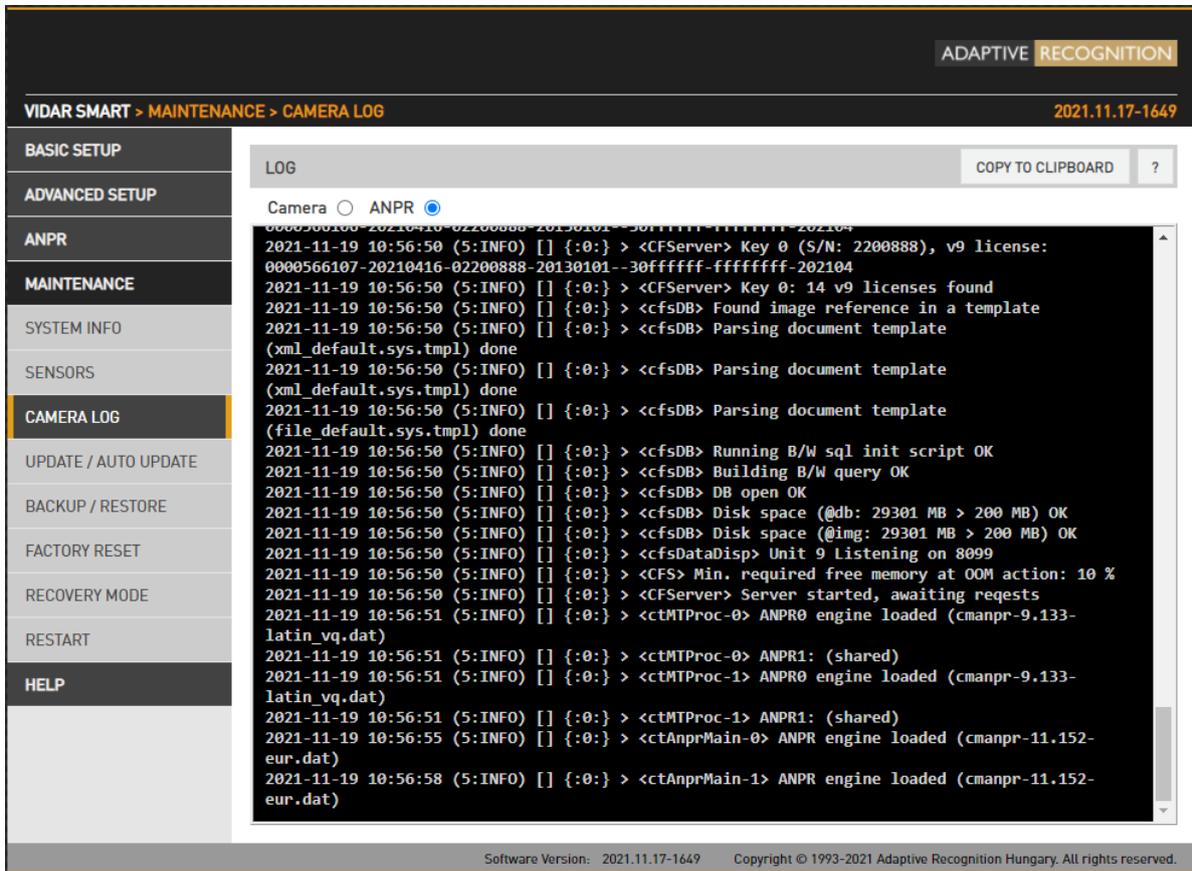
WEB INTERFACE > MAINTENANCE > SENSORS

The screenshot shows the 'ADAPTIVE RECOGNITION' web interface. At the top right, it says 'ADAPTIVE RECOGNITION' and 'EN' with a flag icon. Below that, the breadcrumb 'VIDAR SMART > MAINTENANCE > SENSORS' is visible, along with the version '2025.6.27-1329'. A sidebar menu on the left lists various settings: BASIC SETUP, ADVANCED SETUP, ANPR, MAINTENANCE (highlighted), SYSTEM INFO, SENSORS (highlighted), CAMERA LOG, UPDATE / AUTO UPDATE, BACKUP / RESTORE, FACTORY RESET, RECOVERY MODE, RESTART, and HELP. The main content area is titled 'SENSORS' and is divided into two sections: 'HORIZON (CAMERA)' and 'LIGHT SENSOR / TEMPERATURE'. The 'HORIZON (CAMERA)' section shows a circular level indicator with blue lines and text indicating 'Tilt: 3.0°' and 'Roll: 0.0°'. The 'LIGHT SENSOR / TEMPERATURE' section shows two circular gauges: one for light intensity at '17.00 lux' and one for temperature at '48.00 °C'. At the bottom of the interface, the footer contains: 'Serial Number: 122E925', 'Software Version: 2025.6.27-1329', and 'Copyright © 1993-2025 Adaptive Recognition. All rights reserved.'

The built-in accelerometer may provide help aligning the camera and provide info about temperature and light levels.

4.3. CAMERA LOG

WEB INTERFACE > MAINTENANCE > CAMERA LOG



ADAPTIVE RECOGNITION

VIDAR SMART > MAINTENANCE > CAMERA LOG 2021.11.17-1649

BASIC SETUP

ADVANCED SETUP

ANPR

MAINTENANCE

SYSTEM INFO

SENSORS

CAMERA LOG

UPDATE / AUTO UPDATE

BACKUP / RESTORE

FACTORY RESET

RECOVERY MODE

RESTART

HELP

LOG COPY TO CLIPBOARD ?

Camera ANPR

```

0000500100-20210416-02200888-20130101--30111111-11111111-202104
2021-11-19 10:56:50 (5:INFO) [] {0:} > <CFServer> Key 0 (S/N: 2200888), v9 license:
0000566107-20210416-02200888-20130101--30111111-11111111-202104
2021-11-19 10:56:50 (5:INFO) [] {0:} > <CFServer> Key 0: 14 v9 licenses found
2021-11-19 10:56:50 (5:INFO) [] {0:} > <cfsDB> Found image reference in a template
2021-11-19 10:56:50 (5:INFO) [] {0:} > <cfsDB> Parsing document template
(xml_default.sys.tmpl) done
2021-11-19 10:56:50 (5:INFO) [] {0:} > <cfsDB> Parsing document template
(xml_default.sys.tmpl) done
2021-11-19 10:56:50 (5:INFO) [] {0:} > <cfsDB> Parsing document template
(file_default.sys.tmpl) done
2021-11-19 10:56:50 (5:INFO) [] {0:} > <cfsDB> Running B/W sql init script OK
2021-11-19 10:56:50 (5:INFO) [] {0:} > <cfsDB> Building B/W query OK
2021-11-19 10:56:50 (5:INFO) [] {0:} > <cfsDB> DB open OK
2021-11-19 10:56:50 (5:INFO) [] {0:} > <cfsDB> Disk space (@db: 29301 MB > 200 MB) OK
2021-11-19 10:56:50 (5:INFO) [] {0:} > <cfsDB> Disk space (@img: 29301 MB > 200 MB) OK
2021-11-19 10:56:50 (5:INFO) [] {0:} > <cfsDataDisp> Unit 9 Listening on 8099
2021-11-19 10:56:50 (5:INFO) [] {0:} > <CFS> Min. required free memory at OOM action: 10 %
2021-11-19 10:56:50 (5:INFO) [] {0:} > <CFServer> Server started, awaiting requests
2021-11-19 10:56:51 (5:INFO) [] {0:} > <ctMTProc-0> ANPR0 engine loaded (cmanpr-9.133-
latin_vq.dat)
2021-11-19 10:56:51 (5:INFO) [] {0:} > <ctMTProc-0> ANPR1: (shared)
2021-11-19 10:56:51 (5:INFO) [] {0:} > <ctMTProc-1> ANPR0 engine loaded (cmanpr-9.133-
latin_vq.dat)
2021-11-19 10:56:51 (5:INFO) [] {0:} > <ctMTProc-1> ANPR1: (shared)
2021-11-19 10:56:55 (5:INFO) [] {0:} > <ctAnprMain-0> ANPR engine loaded (cmanpr-11.152-
eur.dat)
2021-11-19 10:56:58 (5:INFO) [] {0:} > <ctAnprMain-1> ANPR engine loaded (cmanpr-11.152-
eur.dat)

```

Software Version: 2021.11.17-1649 Copyright © 1993-2021 Adaptive Recognition Hungary. All rights reserved.

Camera and ANPR logs provide information about the processes in the camera and the license plate recognition module respectively. Log entries can be copied to the clipboard COPY TO CLIPBOARD and attached to a bug report.

4.4. FACTORY RESET

WEB INTERFACE > MAINTENANCE > FACTORY RESET

The screenshot displays the web interface for Adaptive Recognition. The top navigation bar includes the title 'ADAPTIVE RECOGNITION', the language 'EN', and the version '2024.11.29-1523'. The breadcrumb trail is 'VIDAR SMART > MAINTENANCE > FACTORY RESET'. A left sidebar menu lists various settings categories: BASIC SETUP, ADVANCED SETUP, ANPR, MAINTENANCE (highlighted), SYSTEM INFO, SENSORS, CAMERA LOG, UPDATE / AUTO UPDATE, BACKUP / RESTORE, FACTORY RESET (highlighted), RECOVERY MODE, RESTART, and HELP. The main content area is titled 'FULL FACTORY RESET' and features a 'RESET' button and a help icon. Below the title, there are two options with checkboxes: 'Reset the network settings:' and 'Erase the camera securely:'. The footer contains the serial number '121D21D', software version '2024.11.29-1523', and copyright information: 'Copyright © 1993-2024 Adaptive Recognition Hungary. All rights reserved.'

The factory reset process behaves differently depending on the selected options.

Detailed explanation of the behavior and recommendations for each reset options below:

- 1. Default full factory reset without any option selected:**

If no options are selected during the factory reset process, the camera automatically resets itself to the factory default settings after restarting.

Note

After every firmware update, it is strongly recommended to perform a factory reset, if possible, as it ensures stable and reliable operation.

2. Reset the network settings:

Use this option if you want to do a factory reset and restore the default IP address of the camera to its factory IP address (192.0.2.3). This is particularly useful if network configurations need to be reset for troubleshooting.

3. Erase the camera securely:

This option securely deletes all data stored on the camera. We recommend using this option, only if you need to completely delete all data from the camera for security reasons.

4. Selecting both options (“Reset the network settings” + “Erase the camera securely”):

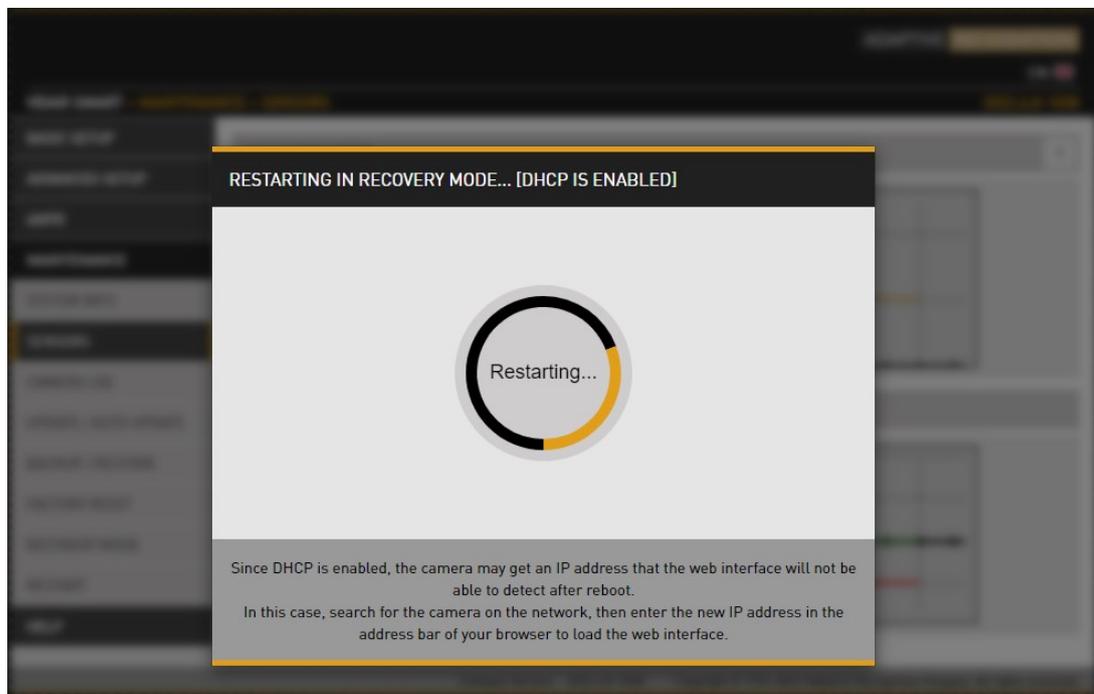
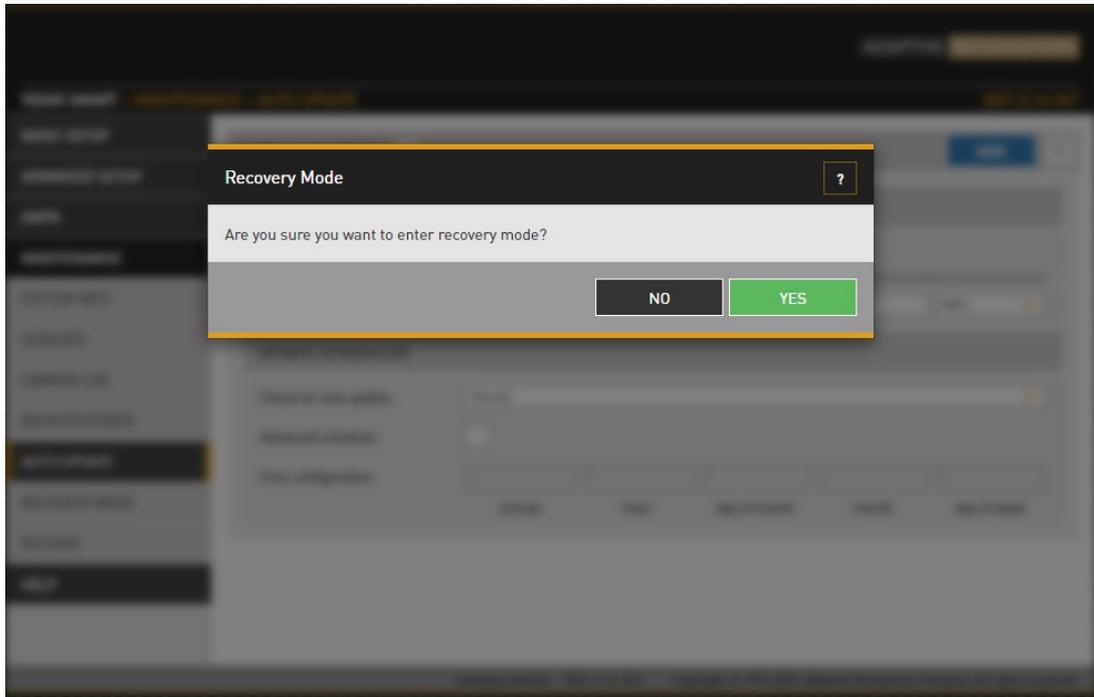
If both options are selected, the camera will perform a secure erase and also reset the IP address to the default IP address (192.0.2.3).

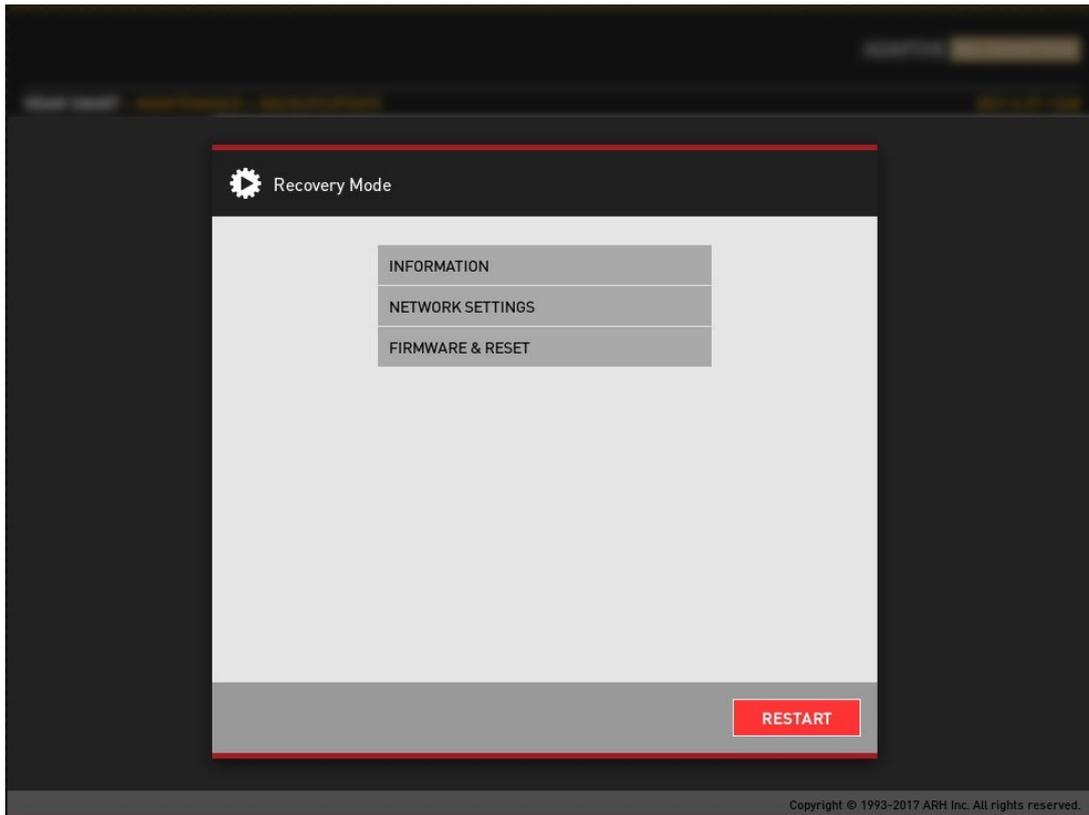
! Important!

These two options should only be selected simultaneously if the camera is being uninstalled or being sold. Make sure to backup any important data before initiating the reset.

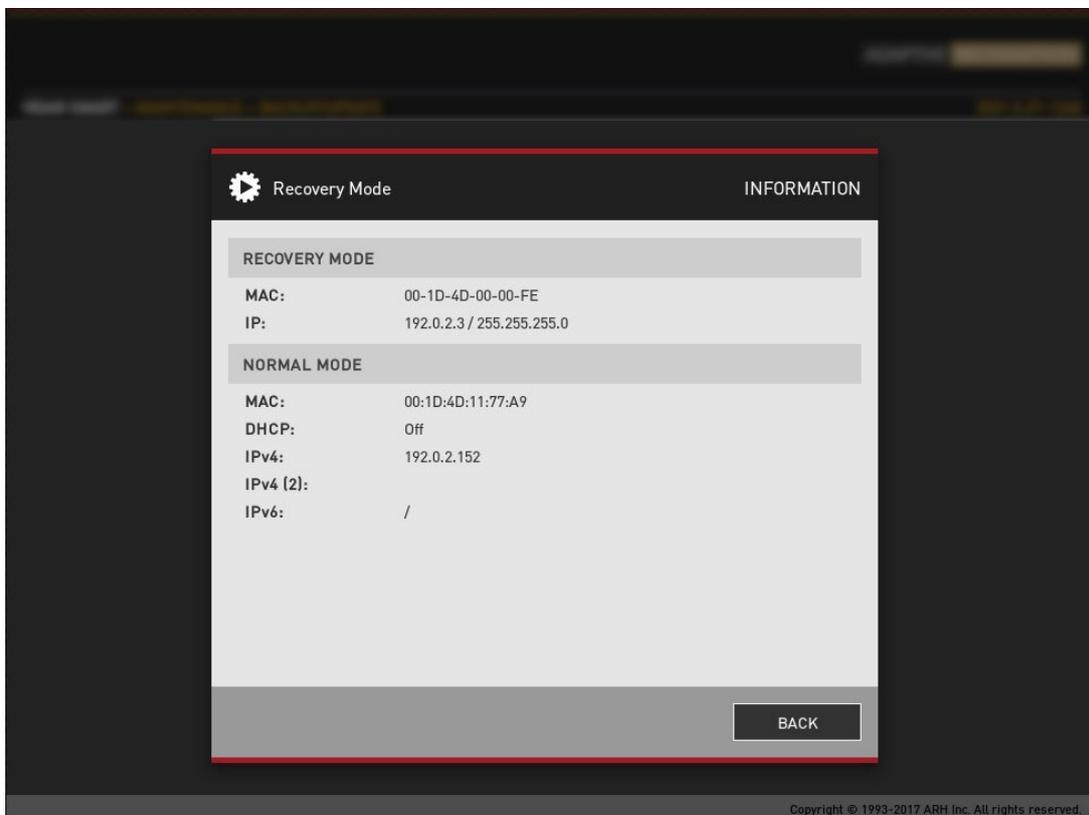
4.5. RECOVERY MODE

WEB INTERFACE > MAINTENANCE > RECOVERY MODE

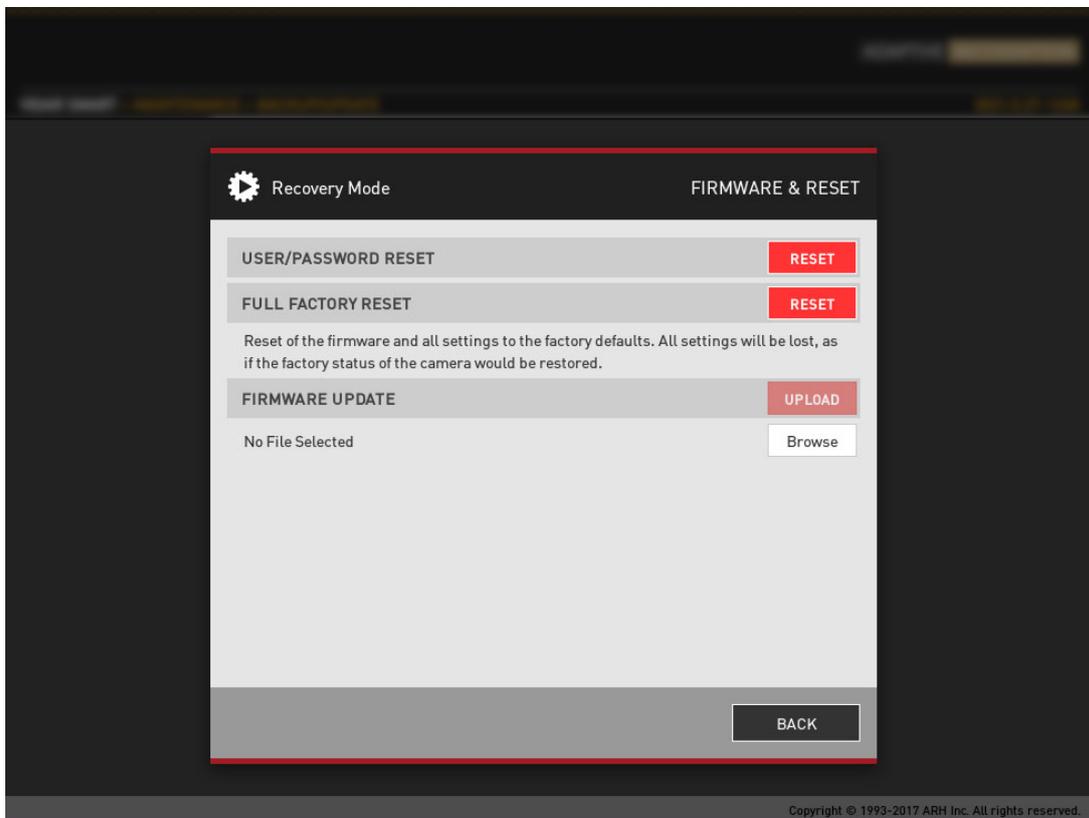
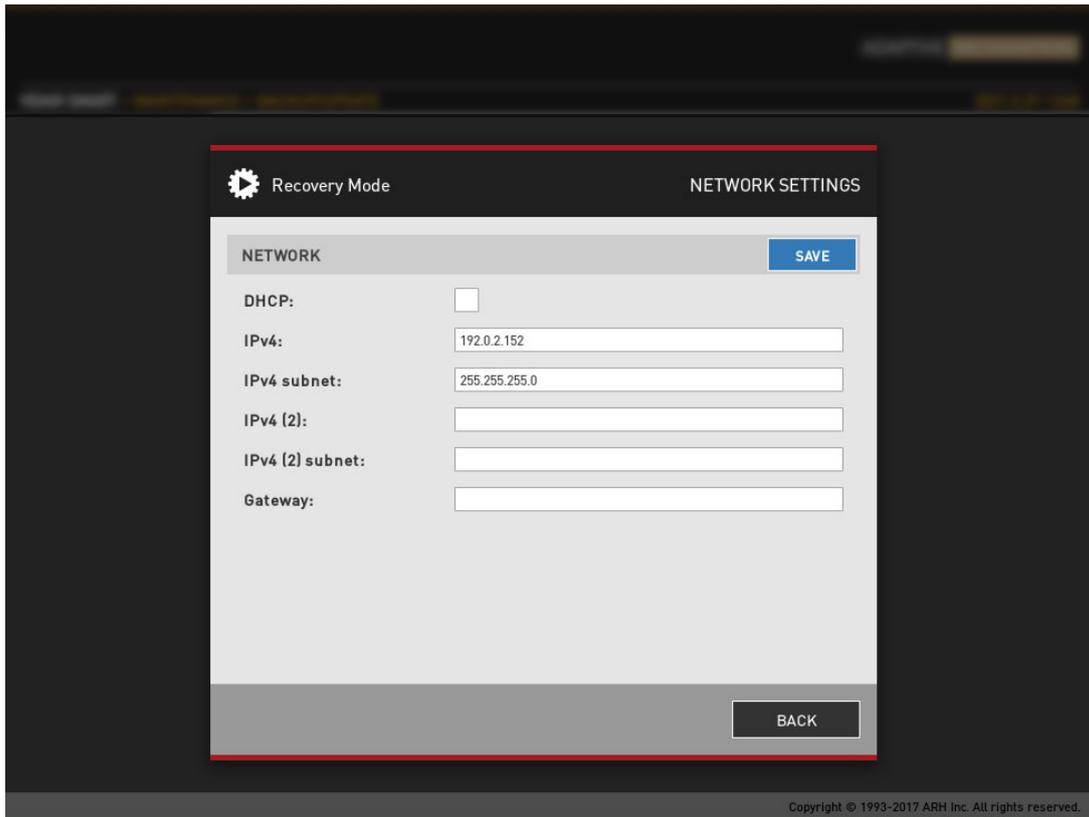




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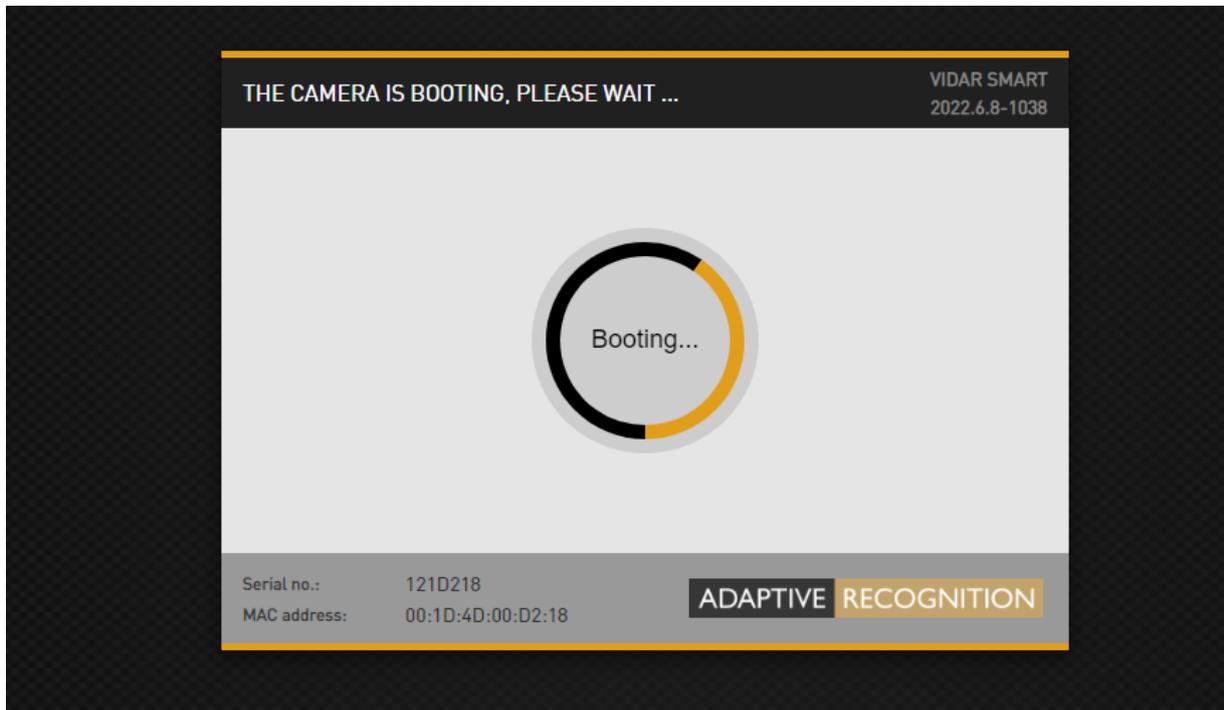
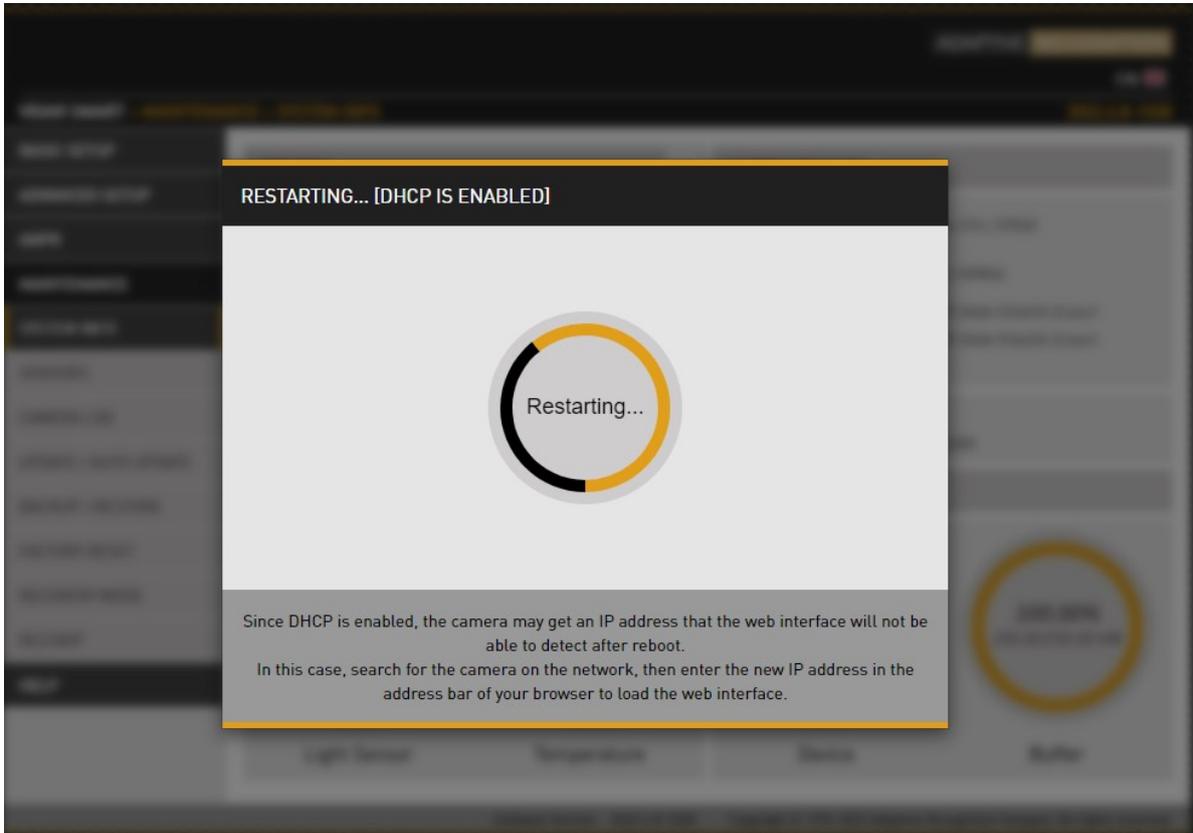


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4.6. RESTART

WEB INTERFACE > MAINTENANCE > RESTART



4.7. COMPLIANCES

CE Certificates:

The AR FreewayCAM4 ANPR digital camera (VIDAR) family complies with the European CE requirements specified in the EMC Directive 2014/30/EU.

The ANPR cameras conform to the following Product Specifications:

Emission and Immunity:

EN 55032:2015, EN 55024:2010+A1:2015

Declaration of RoHS Compliance for Electrical and Electronic Products:

Adaptive Recognition Hungary ("the Company") hereby declares that the VIDAR ANPR camera family placed on the European Community market by the Company after 1st July 2006 are compliant with EC Directive 2002/95/EC on the Restrict of Certain Hazardous Substances in Electrical and Electronic Equipment (commonly known as the EU RoHS Directive.)

Compliance with RoHS means that where the product falls under the scope of the EU RoHS Directive, the product does not contain the following substances:

- Mercury (Hg) 0.1%
- Lead (Pb) 0.1%
- Cadmium (Cd) 0.01%
- Hexavalent Chromium (Cr+6) 0.1%
- Polybrominated Biphenyls (PBB) 0.1%
- Polybrominated Diphenyl Ethers (PBDE) 0.1%

above the indicated maximum concentration values by weight in homogeneous materials unless the substance is subject to an exemption specified in the Directive or in subsequent Commission Decisions.

This declaration represents the Company's best knowledge, which is partially based on information provided by third party suppliers.

Laser safety compliance:

All models of VIDAR ANPR camera which are equipped with a measuring laser module are Class 1 laser products according to the IEC 60825-1:2014 standard.





The FCC declaration of conformity

47 CFR PART 15 SUBPART B

VIDAR

FCC statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference, and

This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

Warning: Where shielded interface cables or accessories have been provided with the product or specified additional components or accessories elsewhere defined to be used with the installation of the product, they must be used in order to ensure compliance with FCC. Changes or modifications to product not expressly approved by Adaptive Recognition Hungary could void your right to use or operate your product by the FCC.

5. CARMEN ANPR REFERENCE MANUAL

The **latest Carmen ANPR Reference Manual** can be found on this page:
https://adaptiverecognition.com/app/uploads/DOC/Software/Carmen/ANPR/carmen_anpr_reference_manual.pdf



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Adaptive Recognition Hungary 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 your hardware, latest software updates and manuals are easily accessible for customers via our [Documents Site \(www.adaptiverecognition.com/doc\)](http://www.adaptiverecognition.com/doc) after a quick registration.

New User

If this is your first online support request, please contact your sales representative to register you in our Support System. More help [here \(www.adaptiverecognition.com/support/\)](http://www.adaptiverecognition.com/support/)!

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.

