

QCAM5



Configuration Guide

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Disclaimer: visuals/screenshots in this guide might slightly differ with software running on the QCAM5. These differences are minor and purely aesthetic, hence do not affect core functionality of the camera.

Document version

Version number	Release date
V1	15/06/2021
V2	12/08/2021
V3	29/10/2021
V4	08/11/2021

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Overview

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OVERVIEW

Access to QCAM5 web interface

Default camera network configuration

- IP address : 192.168.8.2/24
- Gateway IP : 192.168.8.1
- Second fixed IP for support : 172.23.23.23/24
- Wifi-access : 192.168.5.1 (computer directly connected to the QCAM5 via WiFi)

Computer directly connected to QCAM5

1. Connect the camera with a RJ45 cable
2. Set the IP address of the PC → 192.168.8.43 (example)
3. On a web browser, navigate to: <https://192.168.8.2>

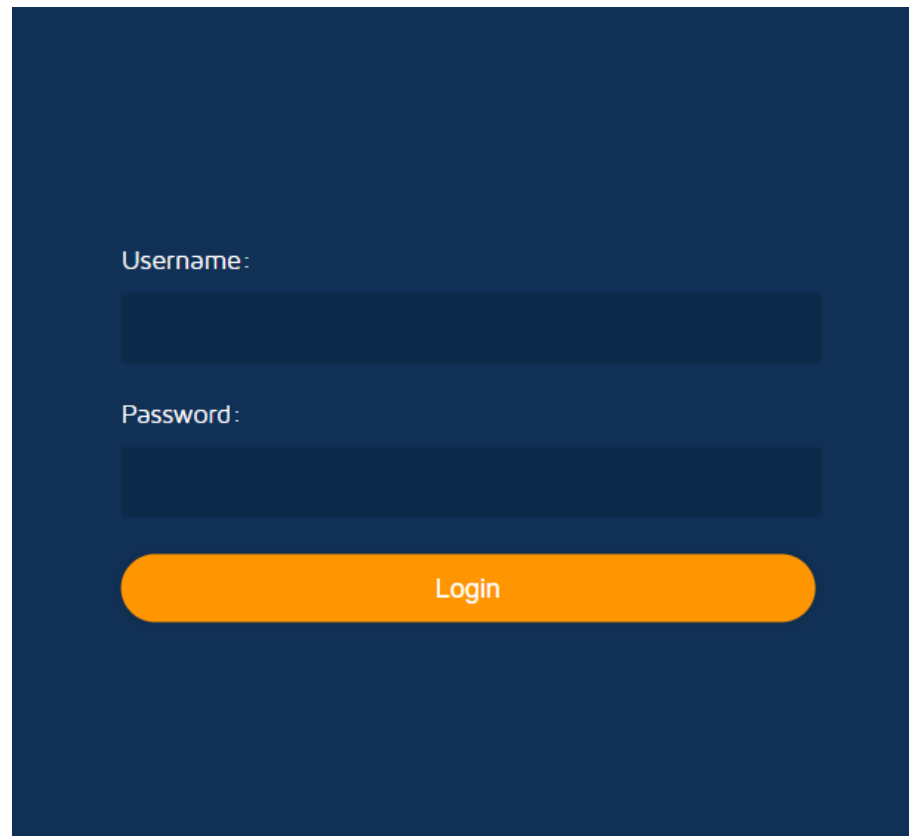
Access via a web browser

1. On a web browser, navigate to: [https://\[IP address of the camera\]](https://[IP address of the camera])

OVERVIEW

Access to QCAM5 web interface

User login Interface

A screenshot of the user login interface for the QCAM5 web interface. The interface has a dark blue background. It features two input fields: one for 'Username:' and one for 'Password:'. Below these fields is a large orange button labeled 'Login'.

DEFAULT CREDENTIALS

Username	admin
Password	admin

OVERVIEW

Main menu

The screenshot shows the QCAM web interface. On the left is a dark blue sidebar menu with the 'QCAM' logo at the top. Below the logo are several items: a user profile 'sales2', a clock showing '10:52 11/05/2021' and location 'Europe/Brussels (CEST, +0200)', a 'Live' button, 'Settings', 'Monitoring', and a 'Logout' button at the bottom. On the right is a large live video feed of a car on a street, with a 'Camera name' label pointing to it. To the right of the video is a 'Detections' panel with a search bar and a list of detected vehicles with their license plates and status icons. At the bottom of the interface are several status indicators: a red car icon with '39319', a green bus icon with '532', a yellow truck icon with '39', and a refresh icon.

Callouts from the image:

- NTP or GPS date and time
- Live stream & recognition
- Network & image settings
- Camera monitoring
- Logout from the interface
- Camera name

QCAM

sales2

10:52 11/05/2021
Europe/Brussels (CEST, +0200)

Live

Settings

Monitoring

Logout

Live

Camera name

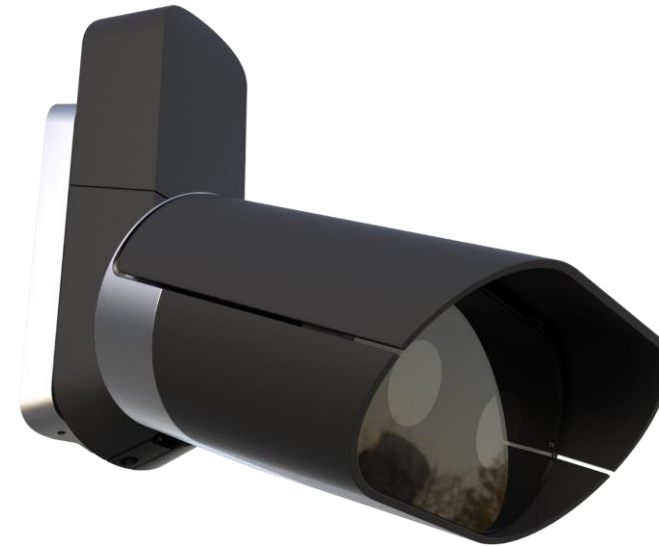
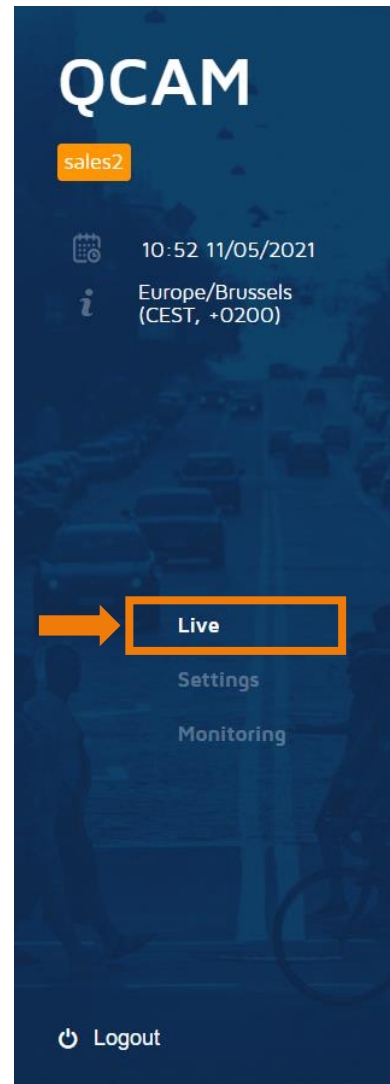
Detections

Search x Q

- + 7 seconds
1PYL606
- + 12 seconds
1VMV447
- + 14 seconds
1YKB229
- + 20 seconds
1BDI290
- + 21 seconds
1VPW986
- + 1 minutes
1UFH608
- + 1 minutes
2AFC088

39319 532 39

LIVE MENU



OVERVIEW

MENU PRESENTATION

Live menu

The screenshot displays the QCAM Live menu interface. On the left is a dark blue sidebar with the QCAM logo, a 'sales2' tag, and user information: '10:52 11/05/2021' and 'Europe/Brussels (CEST, +0200)'. Below this are links for 'Live', 'Settings', and 'Monitoring'. At the bottom of the sidebar is a 'Logout' button. A callout box labeled 'Logout from the interface' points to this button. The main area features a 'Live' video feed of a car on a road. A callout box labeled 'Plate search' points to a magnifying glass icon in the top right corner of the video feed. Another callout box labeled 'Toggle between color to B&W video feed' points to a square icon in the top right corner of the video feed. Below the video feed is a status bar showing counts: '39319' (with a car icon), '532' (with a truck icon), and '39' (with a motorcycle icon). A callout box labeled 'Counts per vehicle category' points to these counts. To the right of the status bar is a 'Reset counts' button (a circular arrow icon). A callout box labeled 'Real-time detections' points to the 'Detections' panel on the right. The 'Detections' panel has a search bar and a list of detected vehicles with their license plates and timestamps. A callout box labeled 'Live stream (press play to launch)' points to a play button icon at the bottom of the detections panel.

QCAM
sales2
10:52 11/05/2021
Europe/Brussels (CEST, +0200)
Live
Settings
Monitoring
Logout

Live

Plate search

Toggle between color to B&W video feed

Real-time detections

Live stream
(press play to launch)

Detections
Search x Q

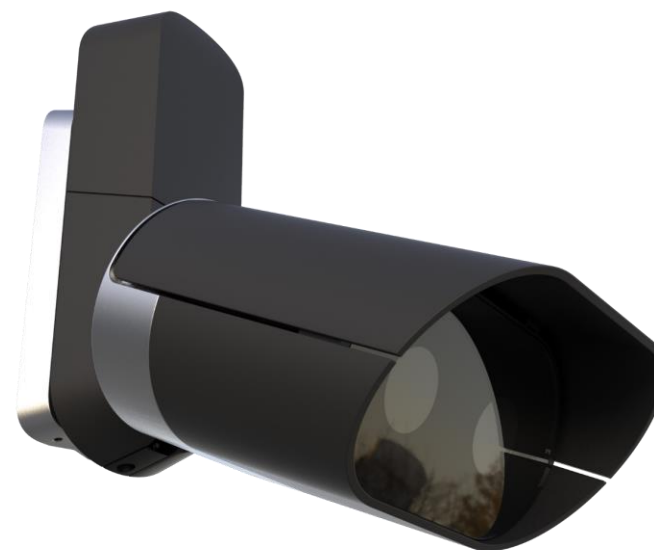
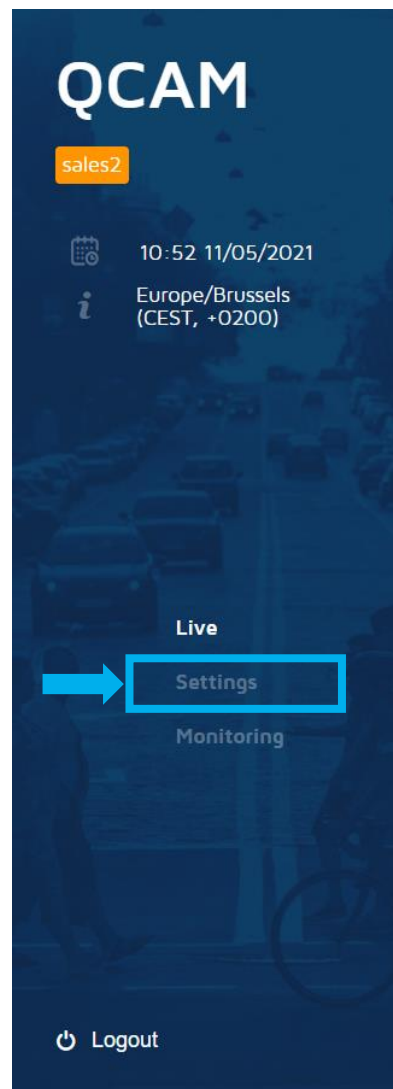
- + 7 seconds
1PYL606
- + 12 seconds
1VMV447
- + 14 seconds
1YKB229
- + 20 seconds
1BDI290
- + 21 seconds
1VPW986
- + 1 minutes
1UFH608
- + 1 minutes
2AFC088

Logout from the interface

Counts per vehicle category

Reset counts

SETTINGS MENU



OVERVIEW

Menu presentation

Settings menu

1	Network settings : network & date/time synchronisation settings
2	Central server : connect camera to M ³ or other server(s)
3	Camera : image settings & camera orientation
4	Region of interest : define important zones in the image
5	iCar5-AverageSpeed : average speed certified application
6	Certified modules : modules required for official certification

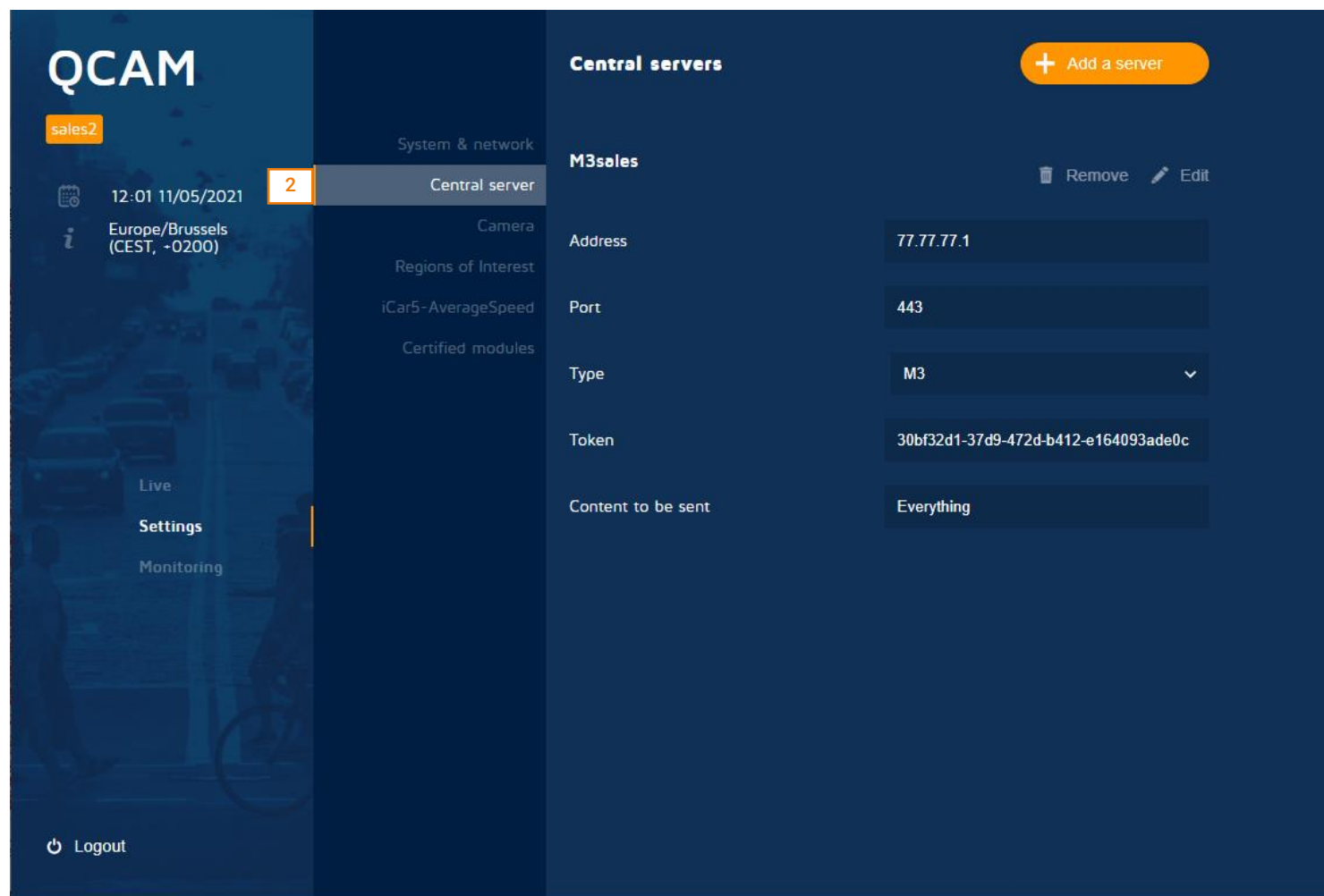
The screenshot displays the QCAM web interface. On the left, a sidebar menu includes 'sales2', a clock showing '11:59 11/05/2021', location 'Europe/Brussels (CEST, +0200)', and navigation links for 'Live', 'Settings', and 'Monitoring'. The 'Settings' link is highlighted. The main content area shows the 'System & network' settings. At the top, there are tabs for 'System', 'Ethernet', 'Wi-Fi', and 'WWAN'. The 'System' tab is active, showing fields for 'Camera name' (sales2), 'Serial number' (I5-9484-113M-150-000283), 'Date / Time' section with 'Time zone' (Europe/Brussels) and 'Synchronization type' (GPS and NTP, with NTP selected), 'NTP server address' (10.2.40.251), and 'NTP peers'. At the bottom of the settings panel are 'Cancel' and 'Save' buttons. A 'Logout' button is visible in the bottom left corner of the interface.

OVERVIEW

Menu presentation

Settings menu

1	Network settings : network & date/time synchronisation settings
2	Central server : connect camera to M ³ or other server(s)
3	Camera : image settings & camera orientation
4	Region of interest : define important zones in the image
5	iCar5-AverageSpeed : average speed certified application
6	Certified modules : modules required for official certification

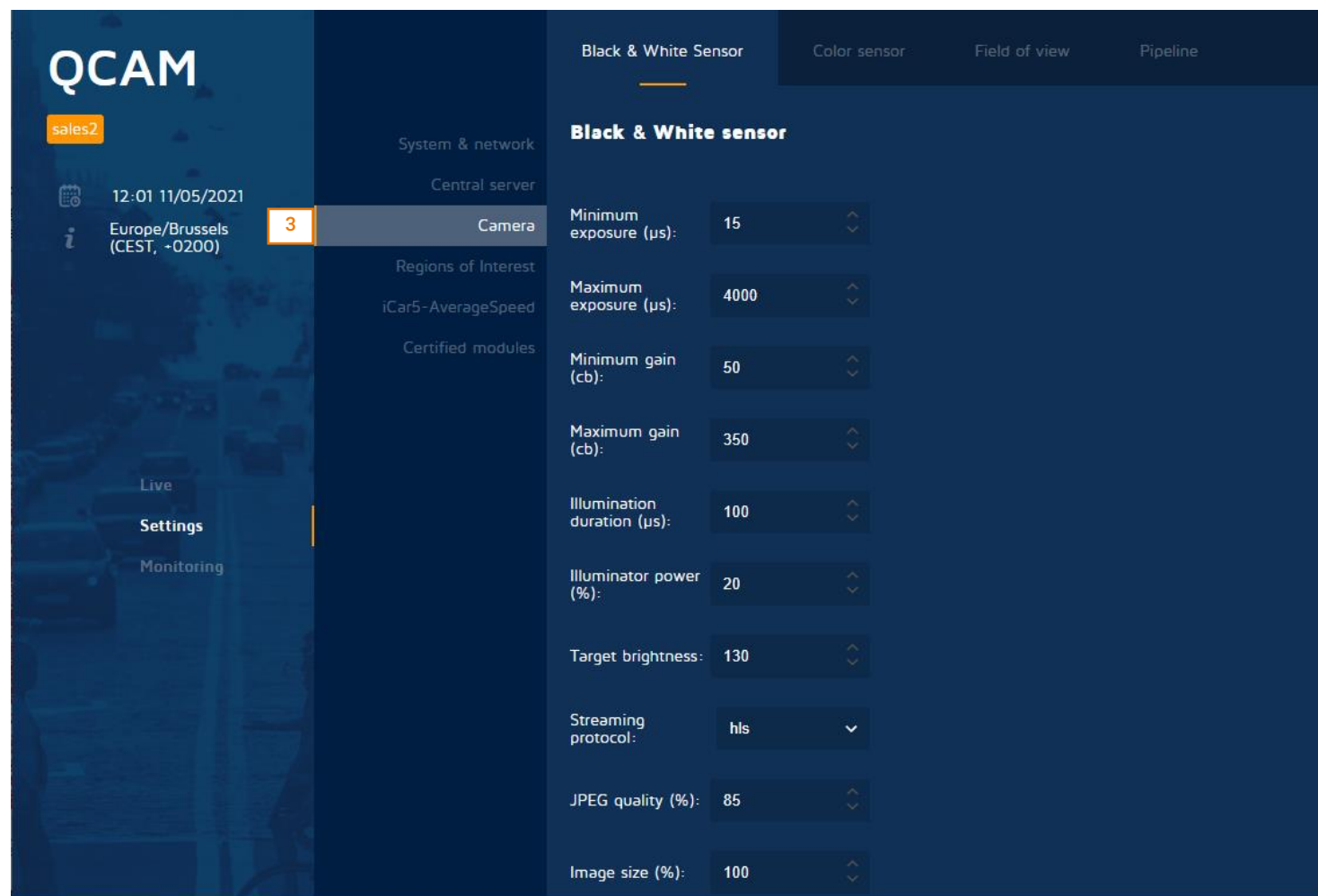


OVERVIEW

Menu presentation

Settings menu

1	Network settings : network & date/time synchronisation settings
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4	Region of interest : define important zones in the image
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6	Certified modules : modules required for official certification

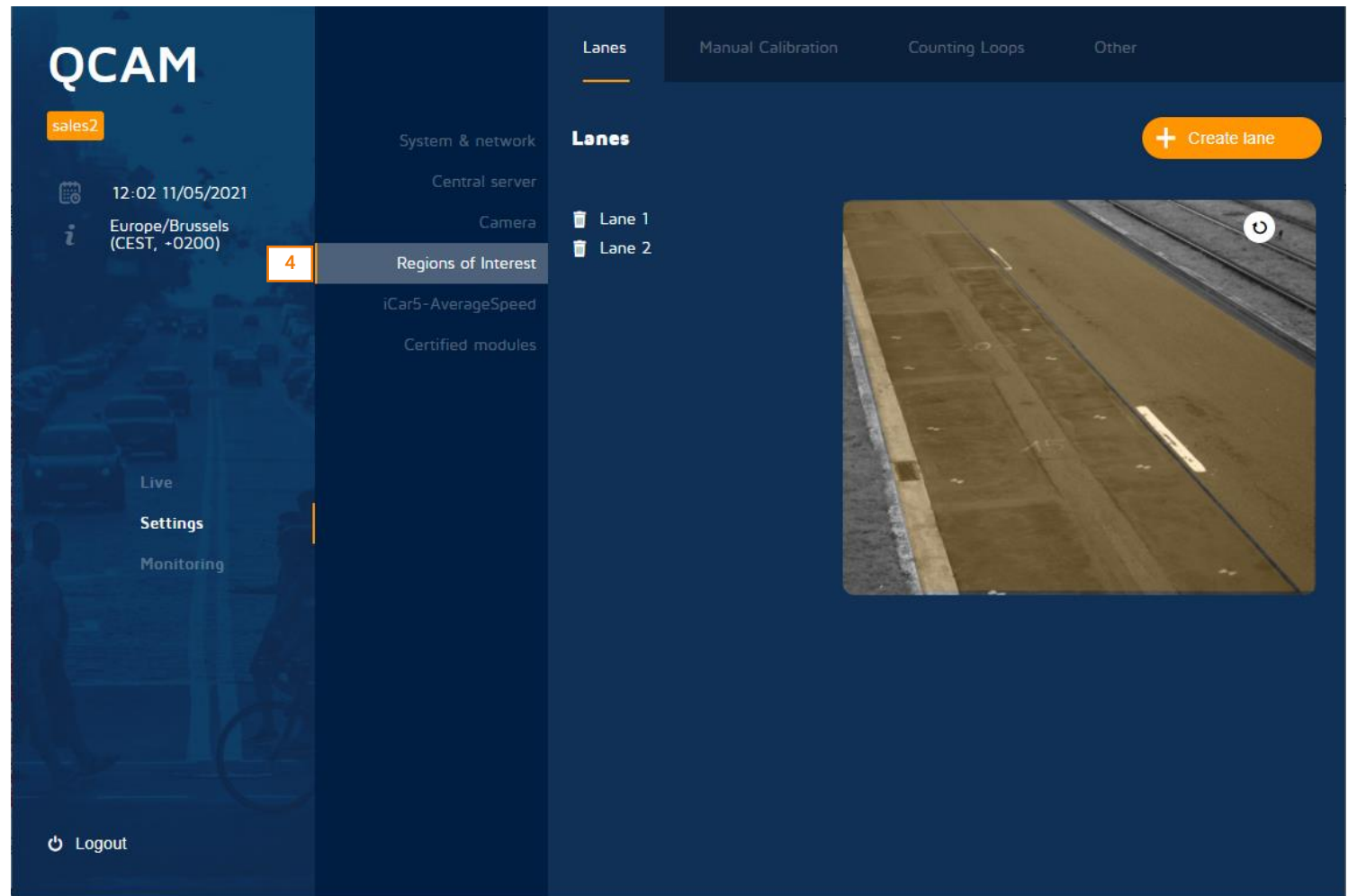


OVERVIEW

Menu presentation

Settings menu

1	Network settings : network & date/time synchronisation settings
2	Central server : connect camera to M ³ or other server(s)
3	Camera : image settings & camera orientation
4	Region of interest : define important zones in the image
5	iCar5-AverageSpeed : average speed certified application
6	Certified modules : modules required for official certification

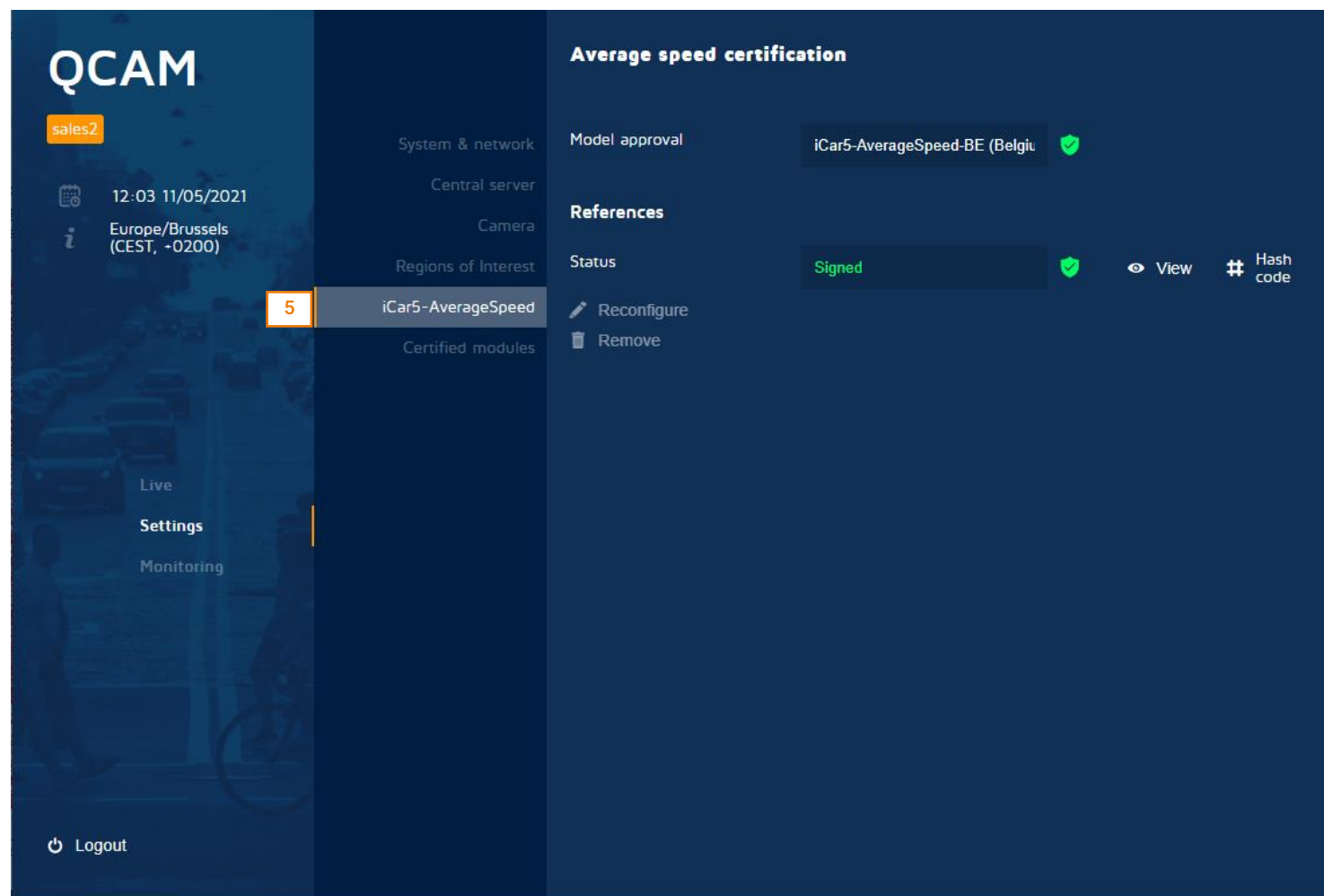


OVERVIEW

Menu presentation

Settings menu

1	Network settings : network & date/time synchronisation settings
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OVERVIEW

Menu presentation

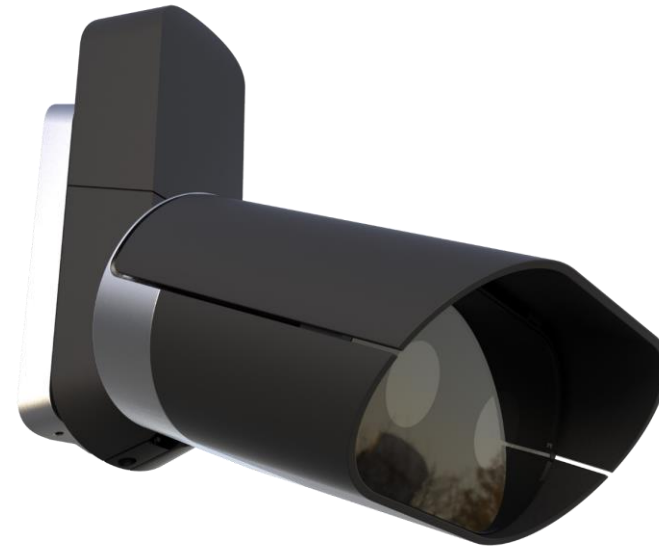
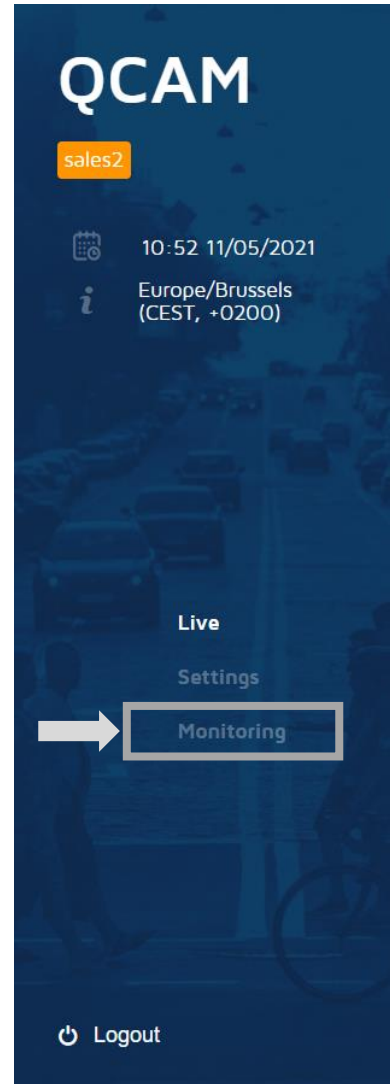
Settings menu

1	Network settings : network & date/time synchronisation settings
2	Central server : connect camera to M ³ or other server(s)
3	Camera : image settings & camera orientation
4	Region of interest : define important zones in the image
5	iCar5-AverageSpeed : average speed certified application
6	Certified modules : modules required for official certification

The screenshot shows the QCAM web interface. On the left, a sidebar contains a menu with items: 'System & network', 'Central server', 'Camera', 'Regions of Interest', 'iCar5-AverageSpeed', 'Certified Modules' (highlighted with an orange box and the number 6), 'Live', 'Settings', and 'Monitoring'. The main content area displays the 'Certified Modules' section for 'iCar5-AverageSpeed-BE'. It features a table with columns: Name, Verified, Version, and Hash. The table lists four modules: 'ntp', 'nmead', 'macq-cryptic5', and 'macq-cam5-winner-selection', all with a 'Verified' status of '✓'.

Name	Verified	Version	Hash
ntp	✓	1:4.2.8p15+dfsg-1	9e882a5f2e60428cba4b2e15e94ab862
nmead	✓	1.5.0-3.macq	15abf8ab432281bb674c70b59ce3ee58
macq-cryptic5	✓	1.0.1-0	c8f39de3005c613e09c857eb95ae25f7
macq-cam5-winner-selection	✓	1.0.0-0	3a4cb673c51a509e072123136fb92dd1

MONITORING MENU



OVERVIEW

Menu presentation

Monitoring
menu

General System Information

- CPU usage
- Disk usage
- GPS
- Hardware components (e.g. illuminator)
- Macq Packages

NTP Monitoring

remote	refid	st	t	when	poll	reach	delay	offset	jitter
*10.2.40.251	193.190.198.10	3	u	304	1024	377	0.255	-3.218	2.167

Test Campaigns

Network Information

```
eth0    Link encap:Ethernet  HWaddr 00:04:4b:8c:ea:75
        inet addr:10.2.41.66  Bcast:10.2.255.255  Mask:255.255.0.0
        inet6 addr: fe80::204:4bff:fe8c:aa75/64 Scope:Link
        UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
        RX packets:2166367045  errors:0  dropped:0  overruns:0  frame:0
        TX packets:2708999973  errors:0  dropped:0  overruns:0  carrier:0
        collisions:0  txqueuelen:1000
        RX bytes:222731552204 (222.7 GB)  TX bytes:67029555358785 (67.0 TB)
        Interrupt:42

eth0:0  Link encap:Ethernet  HWaddr 00:04:4b:8c:ea:75
        inet addr:172.23.23.23  Bcast:0.0.0.0  Mask:255.255.255.0
        UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
        Interrupt:42

lo      Link encap:Local Loopback
        inet addr:127.0.0.1  Mask:255.0.0.0
        inet6 addr: ::1/128 Scope:Host
        UP LOOPBACK RUNNING  MTU:65536  Metric:1
        RX packets:545914652  errors:0  dropped:0  overruns:0  frame:0
        TX packets:545914652  errors:0  dropped:0  overruns:0  carrier:0
        collisions:0  txqueuelen:1
        RX bytes:623783567660 (623.7 GB)  TX bytes:623783567660 (623.7 GB)

tun0    Link encap:UNSPEC  HWaddr 00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00
        inet addr:77.77.77.2  P-t-P:77.77.77.2  Mask:255.255.255.0
        UP POINTOPOINT RUNNING NOARP MULTICAST  MTU:1500  Metric:1
        RX packets:587098079  errors:0  dropped:0  overruns:0  frame:0
        TX packets:984467705  errors:0  dropped:2003159  overruns:0  carrier:0
        collisions:0  txqueuelen:100
        RX bytes:32179626263 (32.1 GB)  TX bytes:1298298633873 (1.2 TB)

wlan0   Link encap:Ethernet  HWaddr 00:04:4b:8c:ea:73
        inet addr:192.168.5.1  Bcast:192.168.5.255  Mask:255.255.255.0
        inet6 addr: fe80::204:4bff:fe8c:aa73/64 Scope:Link
        UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
        RX packets:64470  errors:0  dropped:0  overruns:0  frame:0
        TX packets:143  errors:0  dropped:0  overruns:0  carrier:0
        collisions:0  txqueuelen:1000
        RX bytes:5438444 (5.4 MB)  TX bytes:21914 (21.9 KB)
```



Configuration

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Configuration

1. **System & network**
2. M³ server connection
3. Camera settings
4. Region of interest
5. Icar5 Average speed

CONFIGURATION

Camera & NTP configuration

Settings menu

1. Camera name : local naming of the equipment
2. Serial Number : customised with
 - Lens type
 - Serial number
 - Usage type**→ Not editable**
3. Time zone
4. Synchronisation type
 - GPS : clock from GPS module
 - NTP : clock through NTP
5. NTP server address (only appears if NTP radio button is active)

The screenshot displays the QCAM configuration interface. On the left, a sidebar shows the 'System & network' menu item highlighted. The main content area is titled 'System' and contains the following fields:

- Camera name:** sales2 (indicated by a red box with the number 1)
- Serial number:** 15-9484-113M-150-000283 (indicated by a red box with the number 2)
- Date / Time**
 - Time zone:** Europe/Brussels (indicated by a red box with the number 3)
 - Synchronization type:** GPS (radio button) and NTP (radio button, selected) (indicated by a red box with the number 4)
 - NTP server address:** 10.2.40.251 (indicated by a red box with the number 5)
 - NTP peers:** (empty text area)

At the bottom of the interface, there are 'Cancel' and 'Save' buttons. The left sidebar also includes a 'Logout' button.

CONFIGURATION

Ethernet configuration

Settings menu

1. Camera hostname
2. Connection configuration
(DHCP selected)

QCAM

sales2

12:21 18/05/2021

Europe/Brussels (CEST, +0200)

Live

Settings

Monitoring

Logout

System Ethernet Wi-Fi WWAN

System & network

Central server

Camera

Regions of Interest

iCar5-AverageSpeed

Certified modules

Ethernet

Hostname: sales2

Ethernet connection: DHCP Static IP

Cancel Save

CONFIGURATION

Ethernet configuration

Settings menu

1. Camera hostname
2. Connection configuration
(Static selected)
3. Static IP configuration

QCAM

sales2

12:22 18/05/2021

Europe/Brussels (CEST, +0200)

Live

Settings

Monitoring

Logout

System & network

Central server

Camera

Regions of Interest

iCar5-AverageSpeed

Certified modules

System Ethernet Wi-Fi WWAN

Ethernet

Hostname: sales2

Ethernet connection: ☐ DHCP ☒ Static IP

IP address: 10.2.40.66

Netmask: 255.255.0.0

Gateway: 10.2.40.251

Cancel Save

CONFIGURATION

Wi-Fi configuration

Settings menu

1. Wi-Fi network name (SSID)
2. Wi-Fi frequency
3. Wi-Fi channel

The screenshot displays the QCAM web interface. On the left, a sidebar contains the 'QCAM' logo, a user identifier 'sales2', a clock showing '12:00 11/05/2021', location information 'Europe/Brussels (CEST, -0200)', and navigation links for 'Live', 'Settings', and 'Monitoring'. The 'Settings' link is highlighted. The main content area has tabs for 'System', 'Ethernet', 'Wi-Fi', and 'WWAN', with 'Wi-Fi' being the active tab. Under the 'Wi-Fi' tab, the 'WIFI' section is visible. It includes fields for 'SSID' (containing 'cam5-000283'), 'Mode' (with radio buttons for '5.0 GHz (IEEE 802.11a)' and '2.4 GHz (IEEE 802.11g)', where the latter is selected), and 'Channel' (a dropdown menu showing '2.4 GHz - Channel 1'). At the bottom of this section are 'Cancel' and 'Save' buttons. A 'Logout' button is located at the bottom left of the interface.

CONFIGURATION

4G configuration

Settings menu

1. PIN code
2. APN name
3. Roaming
4. MTU (use 1400 by default)
5. **Save** : allows the user to save the parameters without relaunching the connection
6. **Connect** : once parameters saved, click on connect to launch the connection

The screenshot shows the QCAM application interface. On the left, a sidebar contains the QCAM logo, a device ID 'cam5-000296', a clock showing '00:58 07/07/2021', location information 'Europe/Brussels (CEST, +0200)', and navigation buttons for 'Live', 'Settings' (highlighted), and 'Monitoring'. The main area has a top navigation bar with 'System', 'Ethernet', 'Wi-Fi', and 'WWAN' (selected). Below this is a 'System & network' menu with options like 'Central server', 'Camera', 'Regions of Interest', 'iCar5- AverageSpeed', and 'Certified Modules'. The 'Wireless internet access' section contains fields for 'PIN code' (1), 'APN' (2) set to 'anpr.pza.be', 'Roaming' (3) set to 'Disabled', and 'MTU' (4) set to '1400'. At the bottom are three buttons: 'Cancel', 'Save' (5), and 'Connect' (6).

CONFIGURATION

4G configuration

Settings menu

1. Informations regarding the 4G modem and the 4G interface (WWAN)
2. Information of the SIM card

1

Modem

wwan module	up
Service status	connected
Pin code	Ok
Manufacturer	SIMCOM INCORPORATED
Model	SIMCOM_SIM7600G-H
Revision	SIM7600M22_V2.0
IMEI	868822040627273

2

SIM

IMSI	206710000000042
Home network	206 71

CONFIGURATION

4G configuration

Settings menu

1. Radio information (signal quality, SNR, service type,...)
2. IP of the WWAN interface
3. Automatic connection : this option should be enable when the camera is totally configured (with the SIM). It allows the camera to reconnect to the 4G network if the connection is lost

→ **Deactivate this option before changing a SIM card**, otherwise the camera will try to connect with the credentials of the old SIM card

Network	
Cell ID	2304
MCC	206
MNC	71
Service type	LTE
Tracking Area Code	1
RSSI	-58 dBm
RSRQ	-7 dB
RSRP	-81 dBm
SNR	12.8 dB
IP	192.168.35.12
Automatic connection: <input checked="" type="radio"/> enable <input type="radio"/> disable	

Configuration

1. System & network
2. **M³ server connection**
3. Camera settings
4. Region of interest
5. Icar5 Average speed

CONFIGURATION

M³ Server connection

Settings menu

This menu allows you to connect the camera to different M³ servers
→ Multiple servers are possible, depending on your needs

The screenshot shows the 'Central server' configuration interface. It includes fields for Name, Address, Port, Token, Server type, and Content to be sent. A blue arrow points from the '+ Add a server' button to the configuration form. Numbered callouts (1-6) are placed next to each field: 1. Name (m3acceptance), 2. Address (10.1.253.157), 3. Port (443), 4. Token (7617177b-2fdc-4825-9d21-9844bd6639ee), 5. Server type (M3), and 6. Content to be sent (Everything). At the bottom are 'Cancel' and 'Save' buttons.

Once completed, click the **Save** button to load the connection

1. Name of the M³ server
2. IP address of M³ server
3. Port number of M³ (HTTPS : 443)
4. Token generated on the M³ server by the administrator (token generation is explained in our M³ documentation)
5. Type of server
 - Icar Manager – old version of M³
 - M³
 - Custom – if the images needs to be sent on another client's server
6. Choose the type of content that needs to be sent
 - Everything – Images + metadata (aka. detections)
 - Metadata – No images, only detections
 - B&W images + metadata
 - Color images + metadata

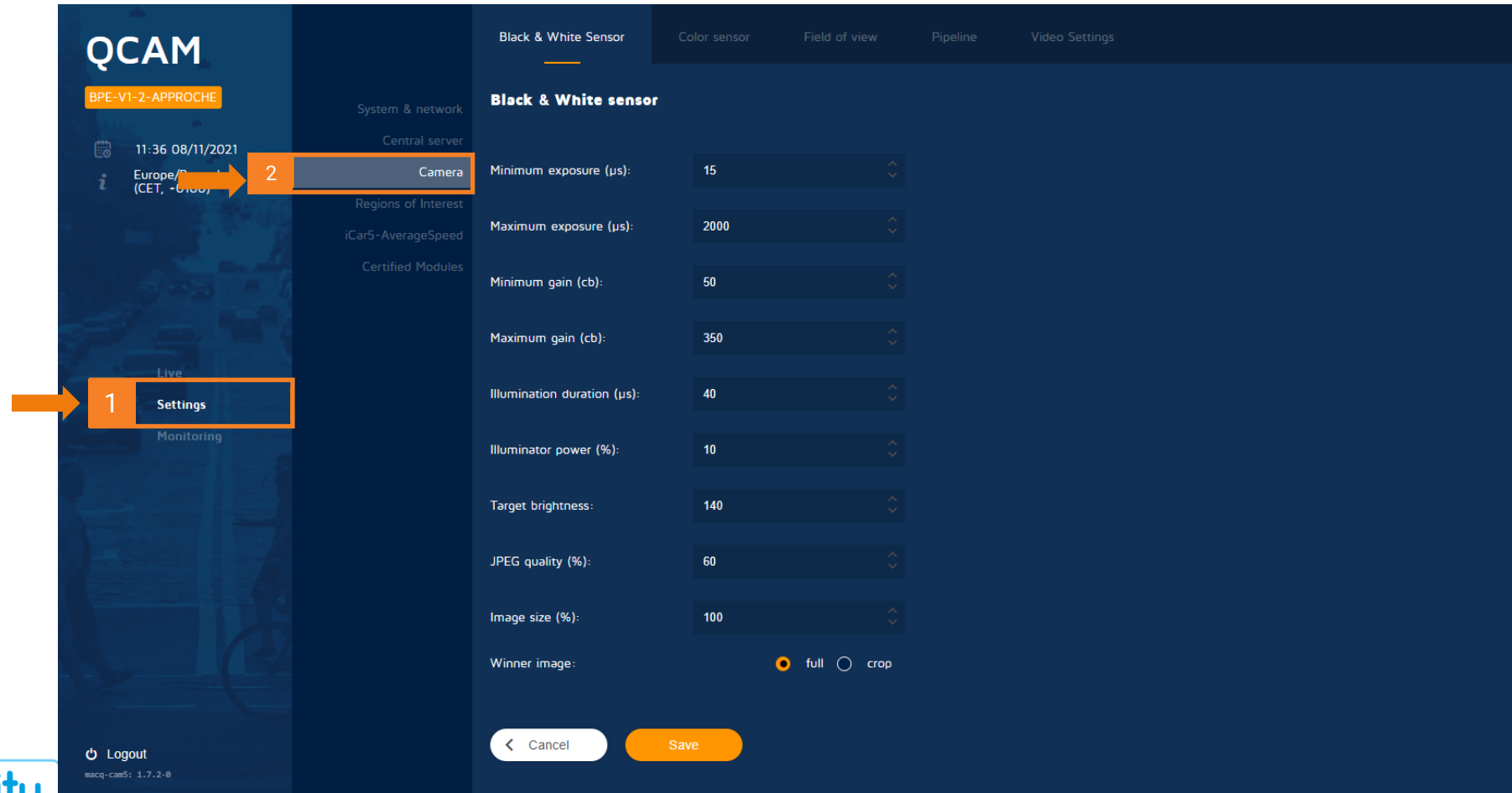
Configuration

1. System & network
2. M³ server connection
3. **Camera settings**
4. Region of interest
5. Icar5 Average speed

CONFIGURATION

Camera settings – access the menu

Settings menu



CONFIGURATION

Camera Settings

Settings menu

4 tabs in this menu

- Black & white sensor
 - configure the B&W sensor (exposure times, gain values, brightness, compression and image size, etc.) and illuminator
- Color sensor
 - configure the color sensor (exposure times, gain values, brightness, compression and image size, etc.)
- Field of view
 - rotate the camera by changing tilt and pan angles
- Pipeline
 - enable a software image enhancer that will modify the image received from the sensor to make it more pleasant for a human eye
 - Select appropriate license plate detection module
 - Restart/Stop the QCAM5 processing pipeline

CONFIGURATION

Camera Settings

Settings menu

Black & White sensor

Minimum exposure (μs):	20	1
Maximum exposure (μs):	4000	2
Minimum gain (cb):	50	3
Maximum gain (cb):	350	4
Illumination duration (μs):	100	5
Illuminator power (%):	20	6
Target brightness:	120	7
Streaming protocol:	no stream	8
JPEG quality (%):	80	9
Image size (%):	100	10
Winner image:	<input checked="" type="radio"/> full <input type="radio"/> crop	

	Parameter	Description	Recommended values
1	Minimum exposure	Time span during which the sensor of the camera is exposed to light when taking a picture (microseconds)	15
2	Maximum exposure		Highway (high speed vehicles): 2000 Urban: 5000
3	Minimum gain	Controls amplification of the image coming from the sensor (centibel)	10
4	Maximum gain		350
5	Illumination duration	Duration of the infrared light pulse (microseconds)	100
6	Illuminator power	Adjust the power of infrared illuminator (%)	Gantry on highway (no public lighting): 30-40 Urban pole: 10-30
7	Target brightness	Adjust average brightness of the picture (0-255)	140 (the higher this value the brighter the image)
8	Streaming protocol	hls / webrtc / no stream webrtc currently not supported (future development)	hls
9	JPEQ quality	Adjust the compression level of the picture	60
10	Image Size	Resize of the image	100

CONFIGURATION

Camera Settings

Settings menu

Black & White sensor

Minimum exposure (μs):	20	⬇
Maximum exposure (μs):	4000	⬆
Minimum gain (cb):	50	⬇
Maximum gain (cb):	350	⬆
Illumination duration (μs):	100	⬆
Illuminator power (%):	20	⬆
Target brightness:	120	⬆
Streaming protocol:	no stream	⌵
JPEG quality (%):	80	⬆
Image size (%):	100	⬆
Winner image:	<input checked="" type="radio"/> full <input type="radio"/> crop	

Winner image configuration

Full



Crop



CONFIGURATION

Camera Settings – color sensor

Settings menu

Color sensor

Minimum exposure (μs): 15 1

Maximum exposure (μs): 4000 2

Minimum gain (cb): 10 3

Maximum gain (cb): 350 4

Target brightness: 130 5

Streaming protocol: hls 6

JPEG quality (%): 80 7

Image size (%): 100 8

	Parameter	Description	Recommended values
1	Minimum exposure	Time span during which the sensor of the camera is exposed to light when taking a picture (microseconds)	60
2	Maximum exposure		4000
3	Minimum gain	Controls amplification of the image coming from the sensor (centibel)	100
4	Maximum gain		350
5	Target brightness	Adjust average brightness of the picture (0-255)	140
6	Streaming protocol	hls / webrtc / no stream webrtc currently not supported (future development)	hls
7	JPEQ quality	Adjust the compression level of the picture	60
8	Image Size	Resize of the image	100

CONFIGURATION

Camera Settings – field of view

Warning

Due to the delay caused by the HLS streaming protocol, you won't see the camera move instantly.
Adjust angles gradually when changing the position of the camera.

There is no stopping limit on the motors. If you reach the end of the maximum motion, the gears may disengage from the lead screw.

The screenshot displays the Macq Mobility configuration interface. At the top, there are tabs for 'Black & White Sensor', 'Color sensor', 'Field of view', and 'Pipeline'. The 'Field of view' tab is selected. On the left, a sidebar lists 'System & network', 'Central server', 'Camera' (highlighted), 'Regions of Interest', 'iCar5-AverageSpeed', and 'Certified modules'. The main area shows 'Field of view' settings with 'Tilt' and 'Pan' controls, each with a circular diagram and a slider. A live video feed of a street scene with a white van is shown on the right. A settings menu icon (a circle with a gear) is in the top right corner of the video feed.

Settings menu

Switch between B&W and color streams

Set the tilt and the pan angles of the camera

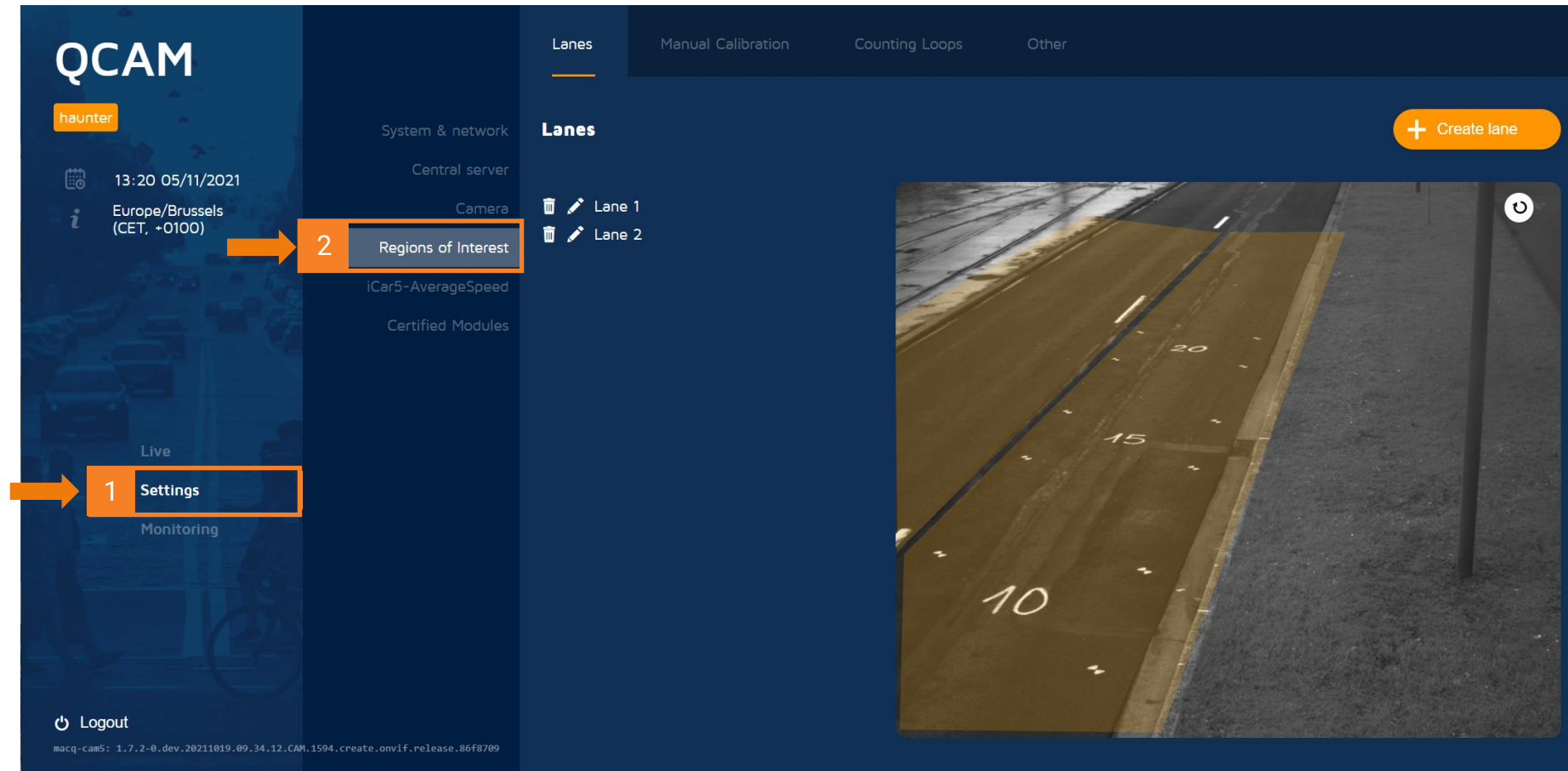
Configuration

1. System & network
2. M³ server connection
3. Camera settings
- 4. Region of interest**
5. Icar5 Average speed

CONFIGURATION

Region of interest – access the menu

Settings menu



CONFIGURATION

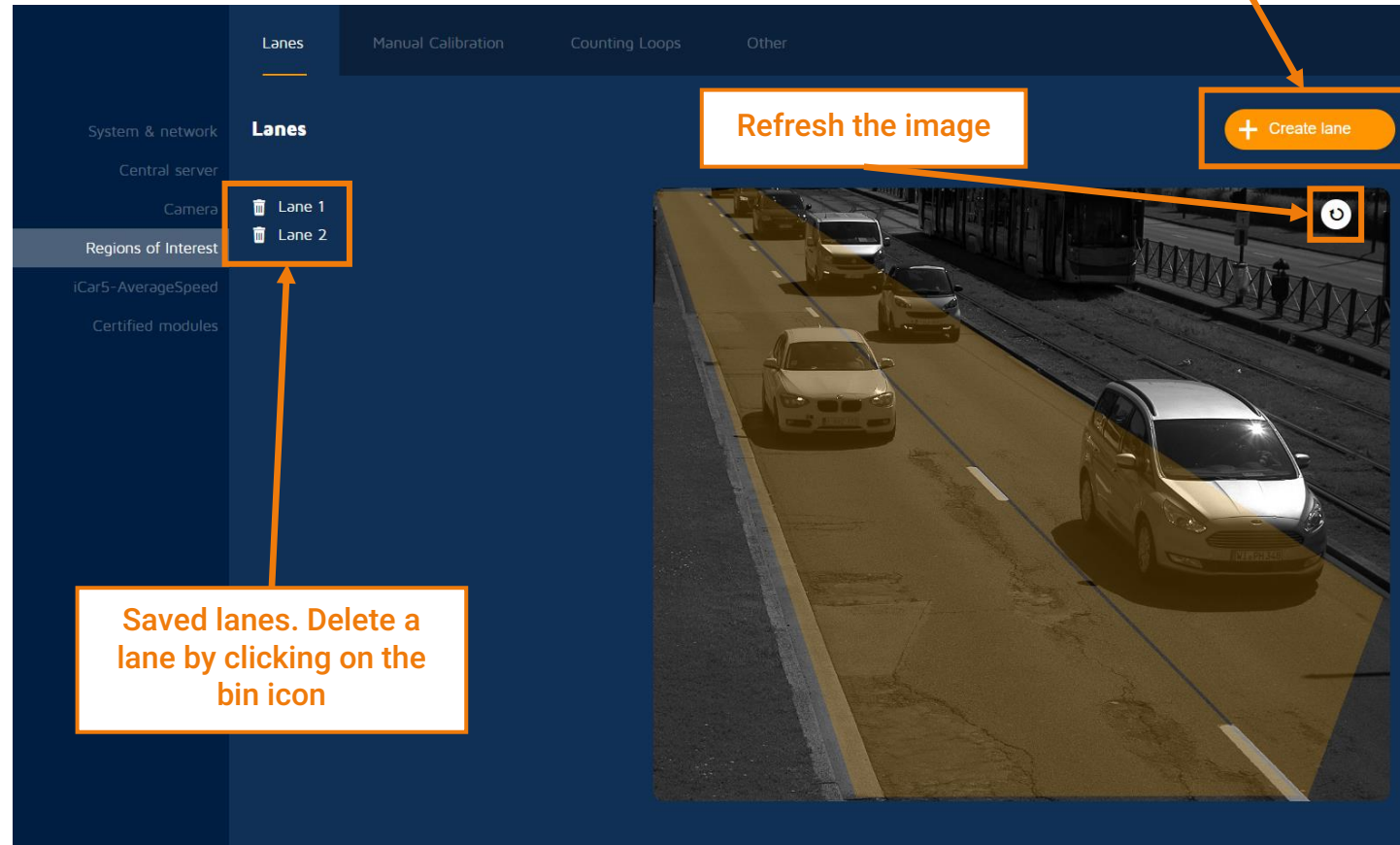
Region of interest – Lanes

Lane definition (max 4)

1. Click on the **Create lane** button
2. Shape the lane directly on the preview image
3. Save your configuration

Defining Lanes

Lanes are used to identify the traffic lane in which the license plate of a vehicle spends most of its time (optional metadata field)



CONFIGURATION

Region of interest – Speed estimation

Settings menu

QCAM

haunter

13:26 05/11/2021

Europe/Brussels (CET, +0100)

Live

Settings

Monitoring

Logout

macq-cam5: 1.7.2-0.dev.20211019.09.34.12.CAM

< Back to live

Download

Detection details

Plate
1UFM817

Country
BE

Type
CAR

Make
Fiat

Model
500

Color
WHITE

Speed (km/h)
0

Direction
Going away

Lane
Lane 2

Regulation

Detections

Search

+ 6 seconds
1UFM817

+ 13 seconds
1FEL691

+ 15 seconds
KKT330

+ 16 seconds
1KKT307

+ 22 seconds
1FPP852

+ 25 seconds
1PNY053

+ 34 seconds

555453 8438 4250

Speed estimates of 0 km/h

CONFIGURATION

Settings menu

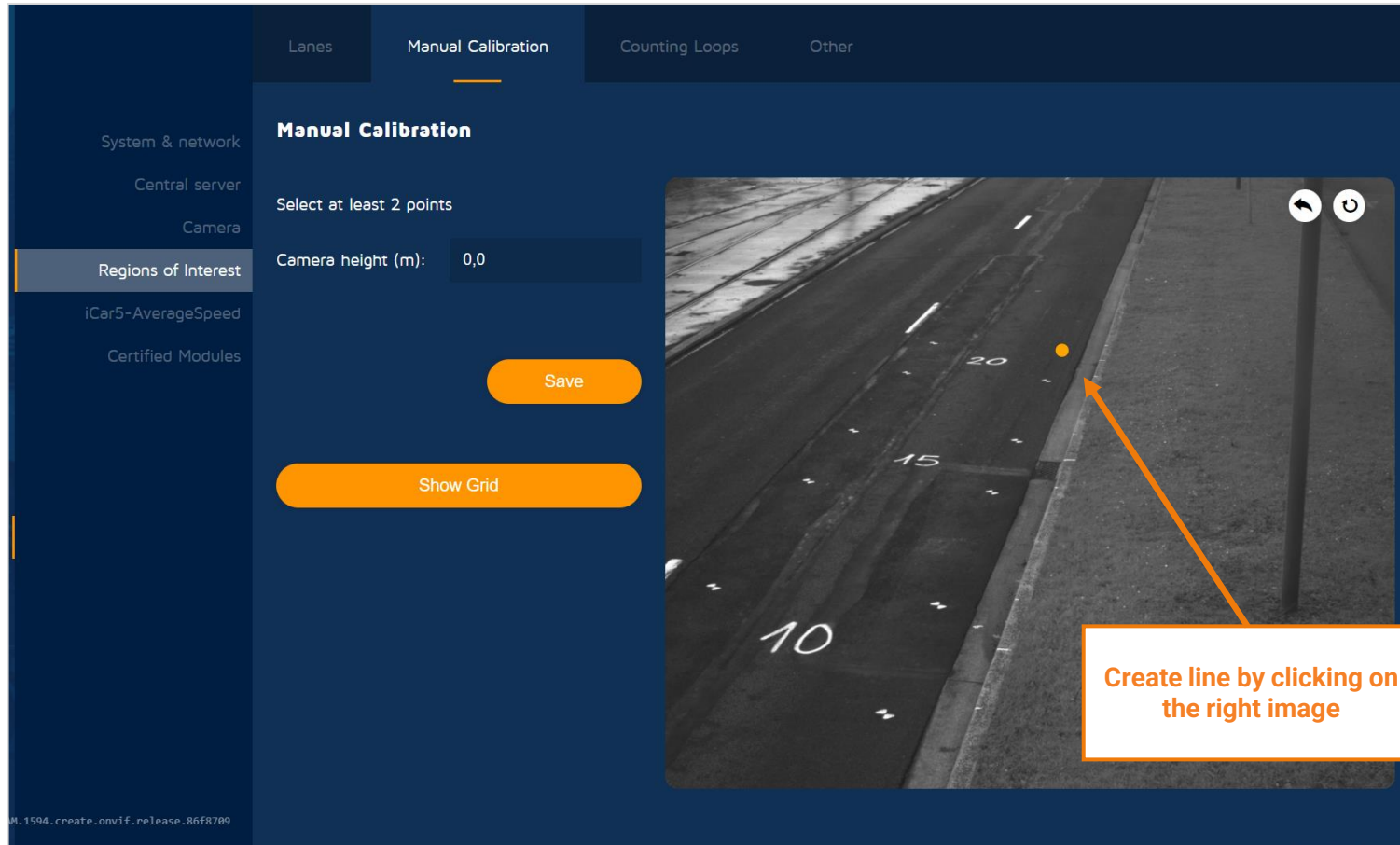
Region of interest – Speed estimation

The screenshot displays the QCAM web interface. On the left is a dark sidebar with the 'haunter' logo, a clock showing '13:20 05/11/2021', location 'Europe/Brussels (CET, +0100)', and navigation links for 'Live', 'Settings' (highlighted), and 'Monitoring'. At the bottom of the sidebar is a 'Logout' button and version information. The main content area has a top navigation bar with 'Manual Calibration' (labeled '1'), 'Counting Loops', and 'Other'. Below this, the 'Manual Calibration' section contains a 'Camera height (m): 0,0' input field, a 'Save' button, and a 'Show Grid' button. On the right, a video feed of a road is shown (labeled '2'), with a '+ Create calibration line' button overlaid. The video feed shows a road with white dashed lines and speed limit markings (10, 15, 20).

CONFIGURATION

Region of interest – Speed estimation

Settings menu



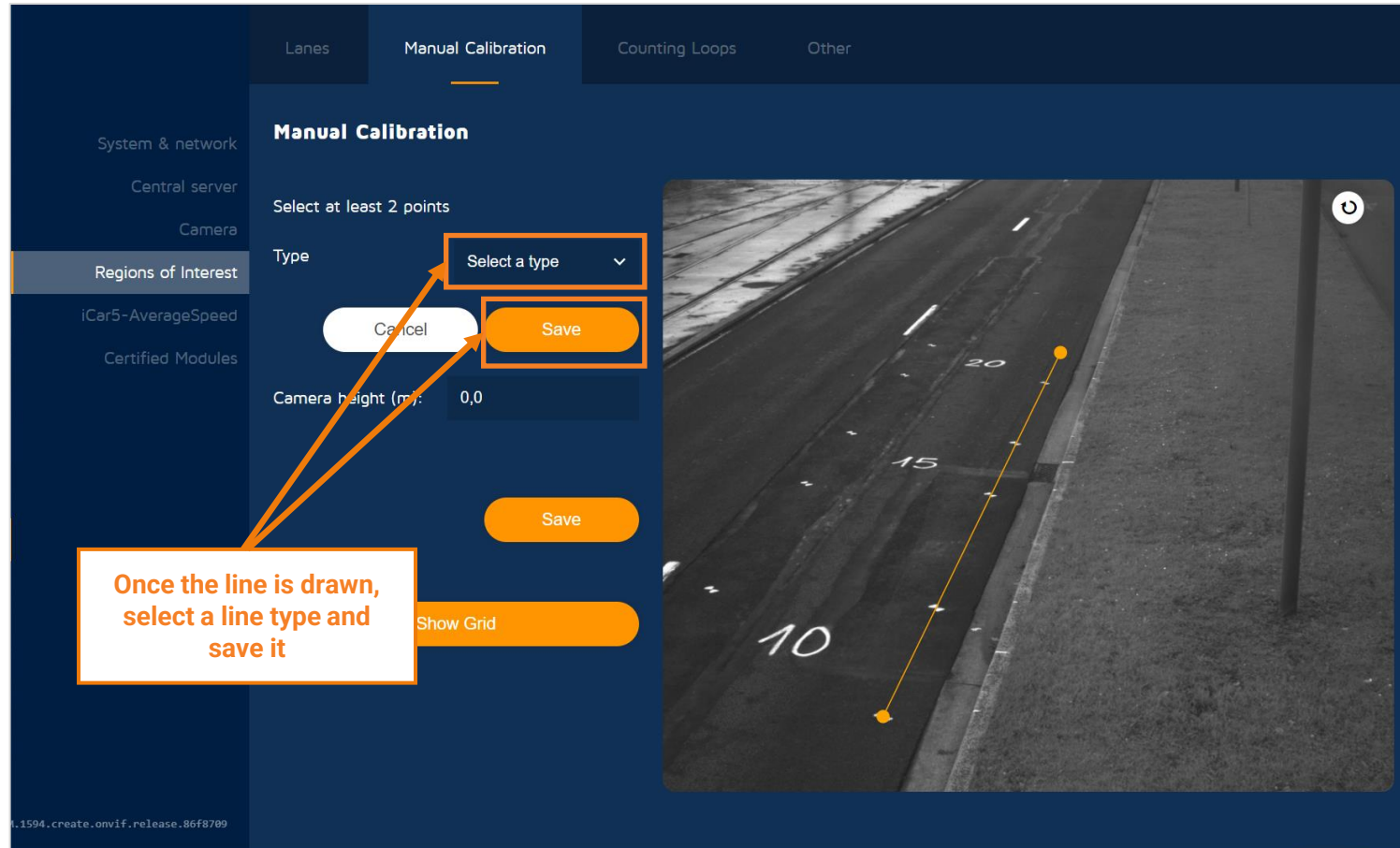
Tip

Use the zoom function for additional precision. When hovering with your mouse over the image to the right, it is possible to zoom in and out by scrolling up (zoom in) or down (zoom out).

CONFIGURATION

Region of interest – Speed estimation

Settings menu



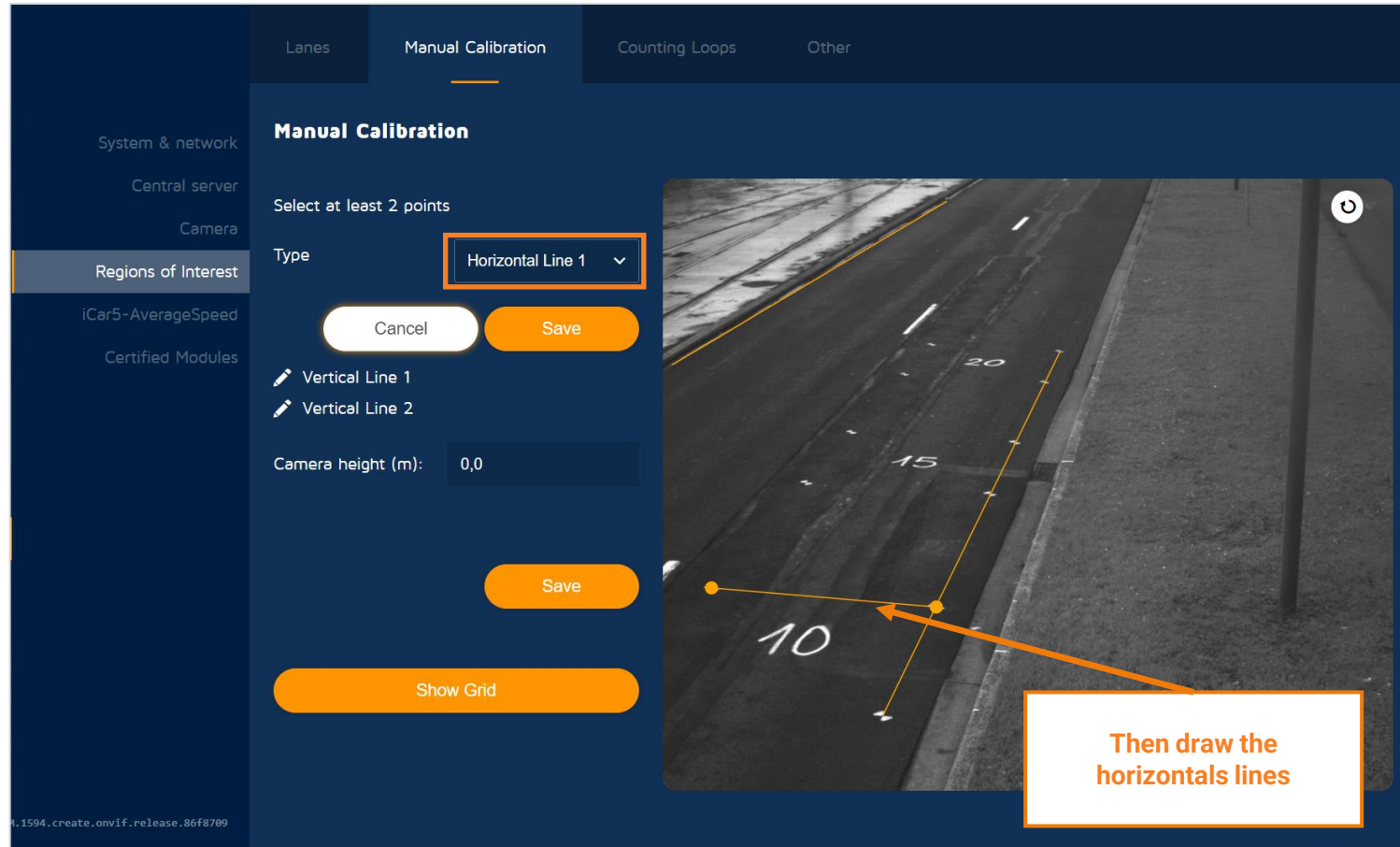
For a good calibration

- Two *vertical* and two *horizontal* lines must be created
- Vertical lines should be parallel to the road and road markings
- Horizontal lines are perpendicular to the vertical lines

CONFIGURATION

Region of interest – Speed estimation

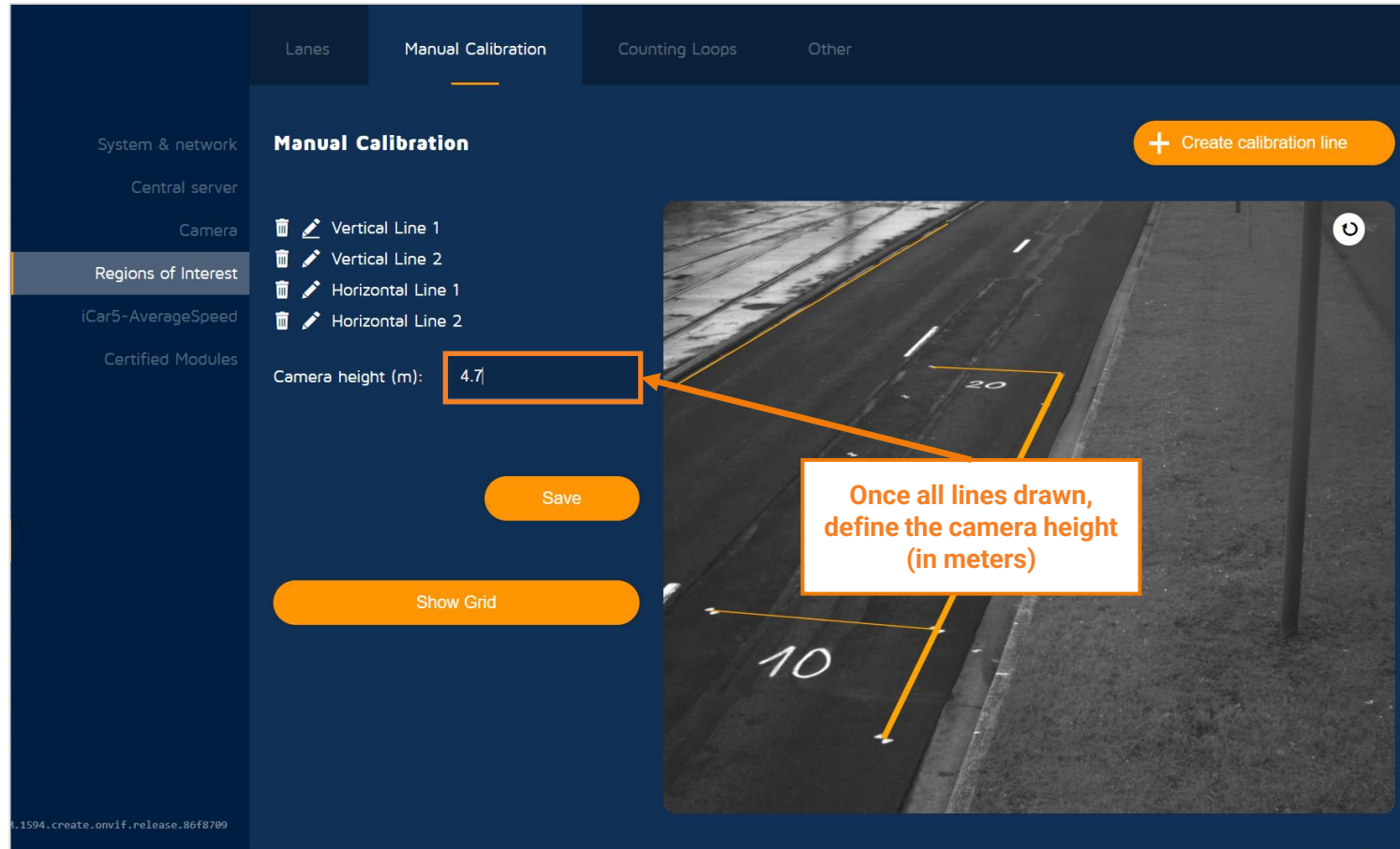
Settings menu



CONFIGURATION

Region of interest – Speed estimation

Settings menu



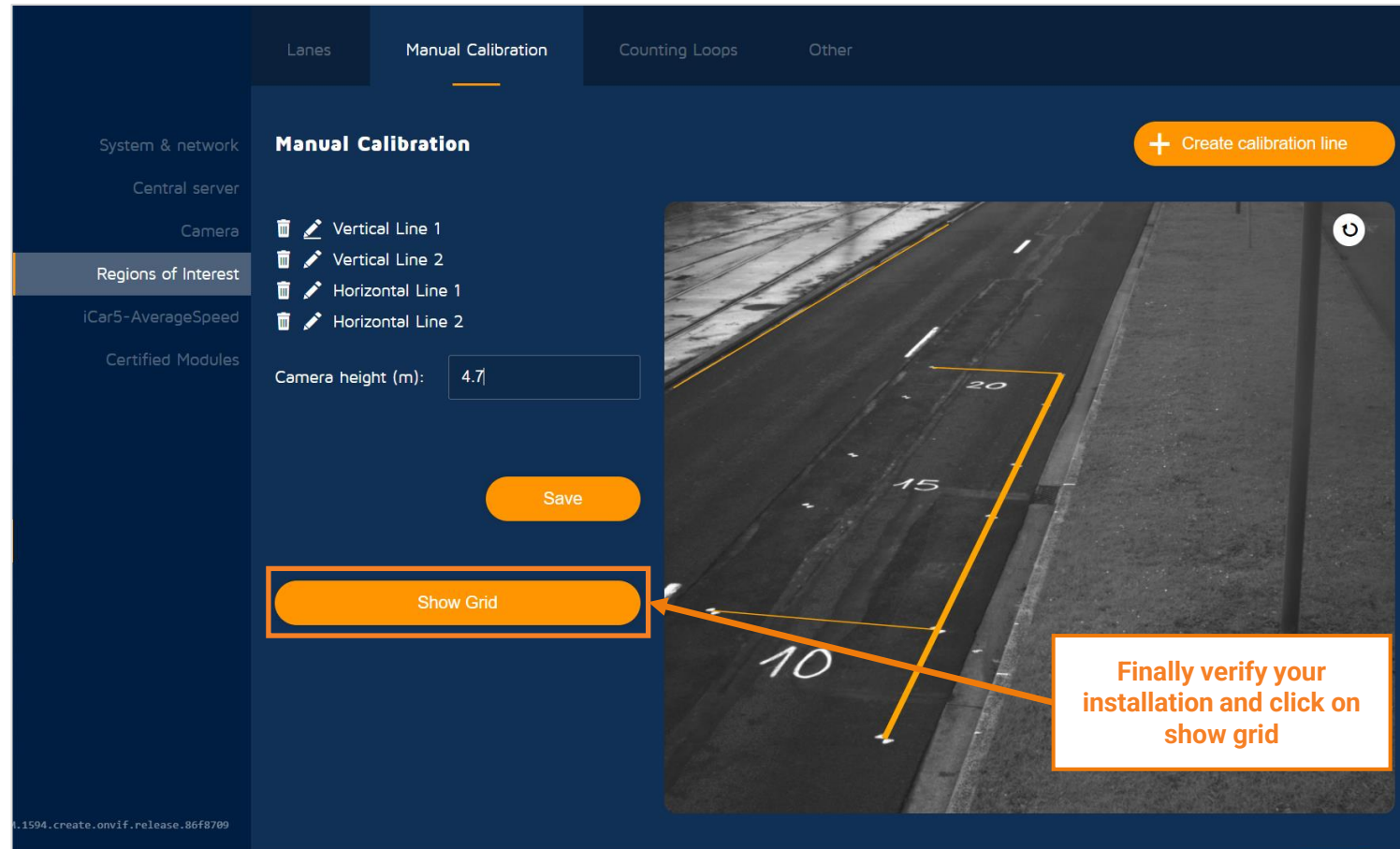
CONFIGURATION

Region of interest – Speed estimation

Settings menu

Note

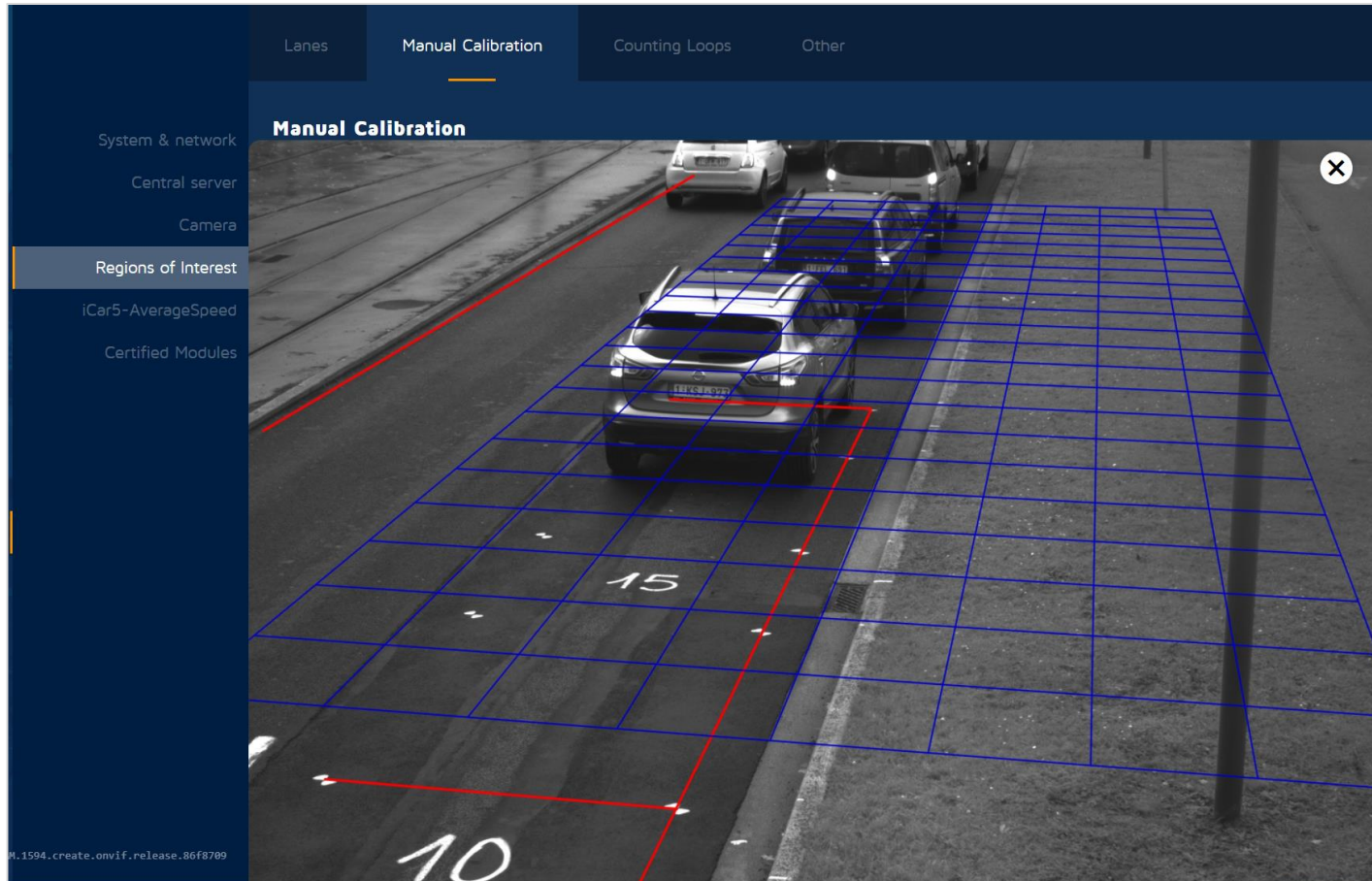
Functionnality available since
V1.8.0 of the camera



CONFIGURATION

Region of interest – Speed estimation

Settings menu



Note

Every grid cell corresponds to a 1 x 1 meter square on the road

CONFIGURATION

Region of interest – Speed estimation

Settings menu

The screenshot displays the Macq Mobility QCAM interface. On the left is a dark blue sidebar with the 'QCAM' logo, a 'haunter' tag, and navigation links for 'Live', 'Settings', and 'Monitoring'. The main area is titled 'Detection details' and features a 'Back to live' link and a 'Download' button. A central video feed shows a white car on a road with a '10' speed limit marking. To the right of the video, a list of vehicle attributes is shown: Plate (1YQS403), Country (BE), Type (CAR), Make (BMW), Model (3), Color (GRAY), and Speed (km/h) (48). The 'Speed (km/h)' value is highlighted with a green box, and a green arrow points from a text box to it. The 'Detections' panel on the far right lists several vehicles with their plates and detection times. A green text box at the bottom right contains the instruction: 'The camera will now estimate the speed of each car'.

QCAM
haunter

14:22 05/11/2021
Europe/Brussels (CET, +0100)

Live
Settings
Monitoring

Logout

macq-cam5: 1.7.2-0.dev.20211019.09.34.12.CA

Back to live
Download

Detection details

Plate
1YQS403

Country
BE

Type
CAR

Make
BMW

Model
3

Color
GRAY

Speed (km/h)
48

Direction
Going away

Lane
Lane 1

Regulation
Exposure: 1500 µs
Gain: 80 cb
Power: 70 %

Time
14:22:32 05/11/2021 CET

Detections

Search x Q

- + 8 seconds
1YQS403
- + 15 seconds
CDAY503
- + 1 minutes
1UKX087
- + 1 minutes
RB167G
- + 1 minutes
2BDP726
- + 1 minutes
2BES169
- + 1 minutes
TJ157B
- + 1 minutes
1YQS666

The camera will now estimate the speed of each car

CONFIGURATION

Region of Interest – counting loop

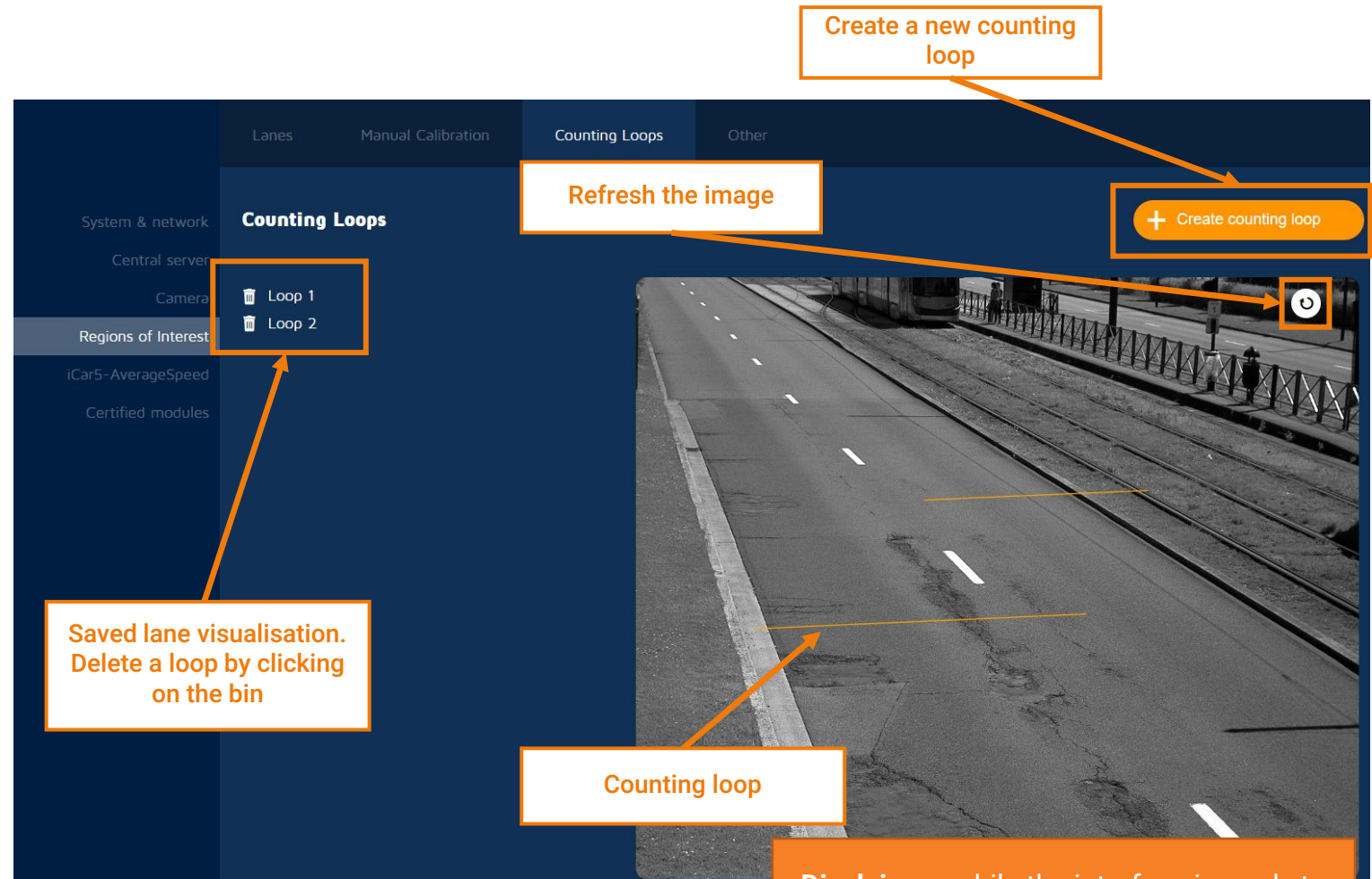
Settings menu

Create a loop

1. Click on the **Create counting loop** button
2. Create the loop directly on the preview image
3. Save you configuration

What are counting loops?

- Counting loops are lines drawn on the screen
- The purpose of counting loops is to count the number of vehicles that cross the line



CONFIGURATION

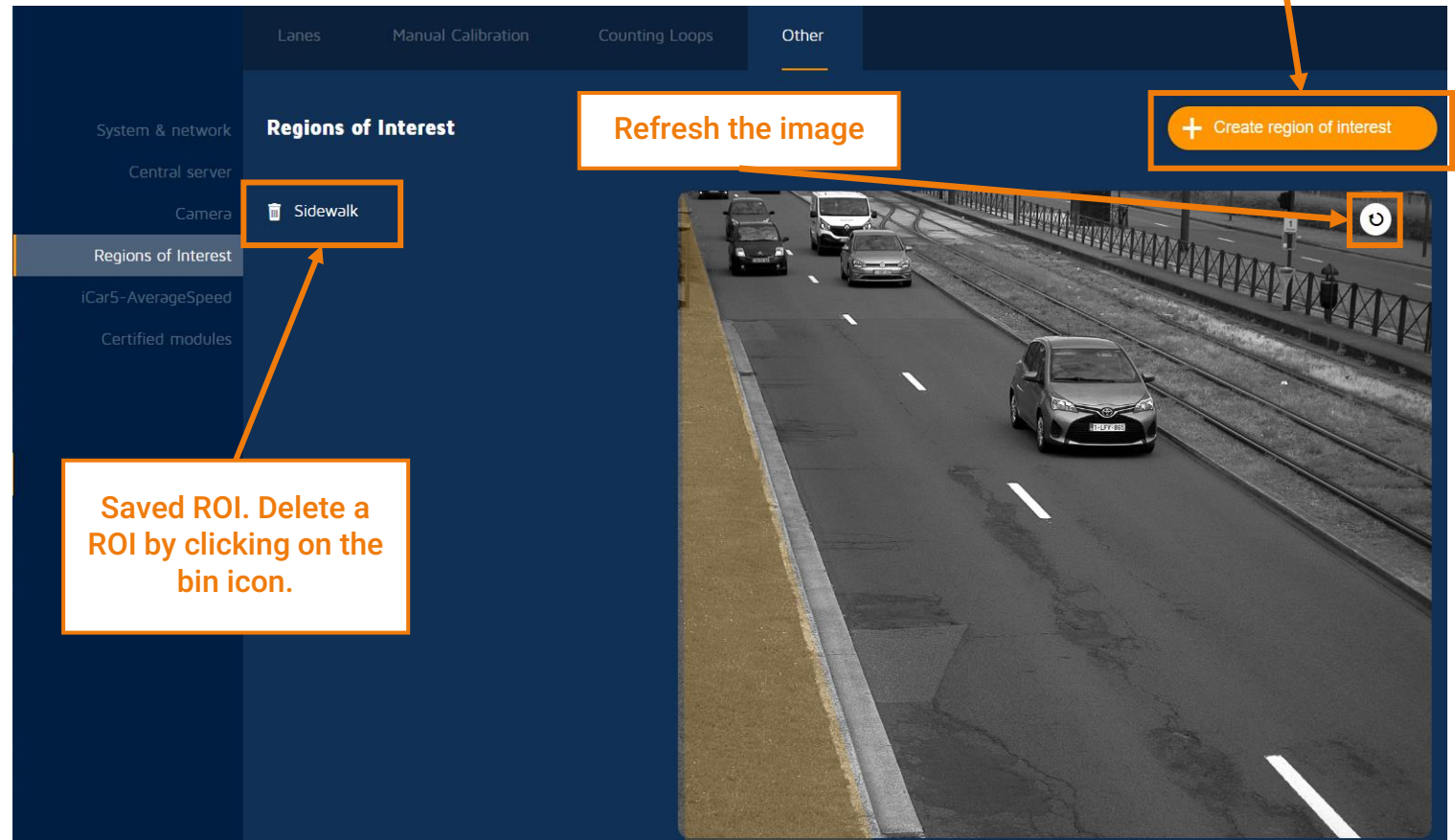
Region of interest - other

Create other type of regions

1. Click on the **Create region of interest** button
2. Shape the region directly on the preview image
3. Save your configuration

The ROI module allows you to create different types of region of interest, such as:

- Sidewalk
- Intersection
- Bicycle lane
- Safety lane
- Traffic light



Configuration

1. System & network
2. M³ server connection
3. Camera settings
4. Region of interest
5. **Icar5 Average speed**

CONFIGURATION

Average speed certification module

Settings menu

iCar5-AverageSpeed

This module is used for the certified average speed application (i.e. speed control on a trajectory).

Every certified application has certified modules, listed in the section « Certified modules »

Disclaimer:

More information on the certified average speed application and its configuration can be found in the appropriate documentation.

Contact your Macq representative.

The screenshot displays the configuration interface for the iCar5-AverageSpeed module. On the left, a sidebar lists navigation options: System & network, Central server, Camera, Regions of Interest, iCar5-AverageSpeed (highlighted), and Certified modules. The main content area is titled 'Certification reference' and features a progress bar with five steps: Model approval (active), Reference point, Region of interest, Reference image, and Download. Below the progress bar, the 'Model approval' section is visible, followed by a 'References' section with the instruction 'Choose the value as specified in the model approval certificate'. A dropdown menu is set to 'iCar5-AverageSpeed'. At the bottom right, there is a 'Next' button with a right arrow.

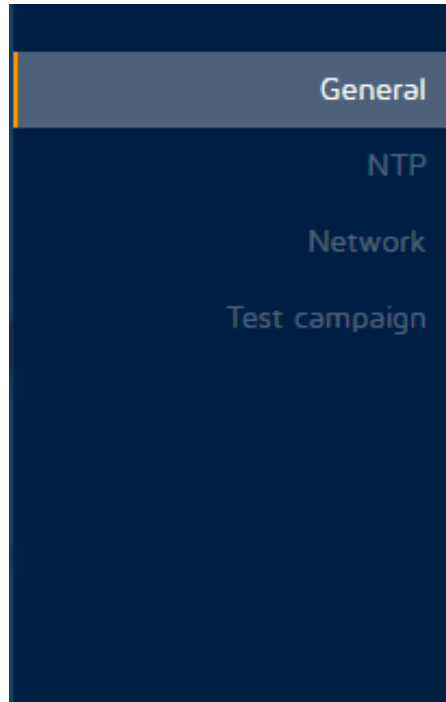


Monitoring

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Monitoring Overview

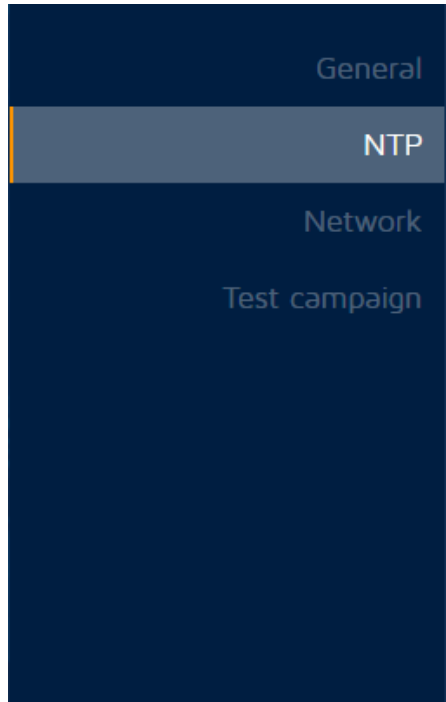
Monitoring menu



<i>Sub menu</i>	<i>Content</i>
General monitoring → general information on the system, hardware and software packages	System <ul style="list-style-type: none">• CPU usage• Disk usage• Memory usage• GPS information Hardware <ul style="list-style-type: none">• Illuminator• FPGA• Sensors• Power consumption• Operating temperatures• External Memory Controller (EMC) information• GPU information• TX2 module information Software packages <ul style="list-style-type: none">• Processes uptime• Installed packages & version Reboot button

Monitoring Overview

Monitoring menu



<i>Sub menu</i>	<i>Content</i>
NTP → information on the NTP synchronisation	<ul style="list-style-type: none">• NTP server address• delay• offset• jitter
Network → ip addresses configured on the camera (output of the ifconfig command)	<ul style="list-style-type: none">• eth0 : ethernet physical interface• lo : loopback interface, always 127.0.0.1• wlan0 : Wi-Fi interface
Test campaign → useful when you want to record a video to perform a test campaign on the camera	

Monitoring

Test campaign page

Monitoring
menu

QCAM

sales2

15:35 11/05/2021

Europe/Brussels (CEST, +0200)

Live

Settings

Monitoring

General

NTP

Network

Test campaign

Test campaigns

[+ Schedule a new test campaign](#)

ReleaseTest-9AM [Remove](#)

Duration (seconds) 300

Status completed

Start time (local) 26/04/2021 09:30:20

Size on disk 706.753 Mb

Video [See the video](#)

Detections [See detections](#)

ReleaseTest-6AM [Remove](#)

Duration (seconds) 300

Status completed

Start time (local) 27/04/2021 06:01:10

Size on disk 620.17 Mb

Video [See the video](#)

Detections [See detections](#)

[Logout](#)

<https://10.2.40.66/api/monitoring/general>

Schedule a new
campaign

List of past and
scheduled campaigns

Monitoring

Creating a campaign

Monitoring
menu

Create test campaign

1. Provide a name for the campaign
2. Provide a duration (in seconds)
3. Put a start time
4. Click the **Save** button

The screenshot shows a dark-themed interface for creating a test campaign. On the left is a sidebar with four menu items: 'General', 'NTP', 'Network', and 'Test campaign'. The 'Test campaign' item is highlighted with a grey background and a small orange bar on its left. The main area is titled 'Test campaign' and contains three input fields: 'Name:' with a text box containing 'Name', 'Duration (seconds):' with a text box containing 'Duration (seconds)' and up/down arrow icons, and 'Start time (local):' with a text box containing '11/05/2021 15:40:50'. At the bottom are two buttons: a white 'Cancel' button with a left arrow and an orange 'Save' button.

Monitoring

Viewing test campaigns

Monitoring
menu

The screenshot displays the QCAM monitoring interface. On the left is a sidebar with a 'Monitoring' menu item highlighted. The main area shows a list of test campaigns. The first campaign, 'ReleaseTest-9AM', is selected and its details are shown in a table. The table includes fields for Duration (seconds), Status, Start time (local), Size on disk, Video, and Detections. The status is 'completed'. Below the table are links to 'See the video' and 'See detections'. A 'Remove' button is also present. The second campaign, 'ReleaseTest-6AM', is also shown with similar details.

ReleaseTest-9AM	
Duration (seconds)	300
Status	completed
Start time (local)	26/04/2021 09:30:20
Size on disk	706.753 Mb
Video	See the video
Detections	See detections

ReleaseTest-6AM	
Duration (seconds)	300
Status	completed
Start time (local)	27/04/2021 06:01:10
Size on disk	620.17 Mb
Video	See the video
Detections	See detections

Campaign name

Remove the test campaign and
associated data
! Its your responsibility to clean up
the campaign data

Status
(initializing/recording/completed)

Watch recording of test
campaign

View the detections

Monitoring

Test campaign results

Monitoring menu

Campaign name

Export detections (JSON format)

Export detections

Export video

ANPR detection (clickable)

ANPR reading confidence

Vehicle type

Detections of the campaign "Test-7aM"

Time	Date	Time	Date	Time	Date
07:13:51	02/05/2021 CEST	07:13:52	02/05/2021 CEST	07:13:54	02/05/2021 CEST
	1VE5817		1XDR034		1AQ010
07:15:28	02/05/2021 CEST	07:17:30	02/05/2021 CEST	07:18:13	02/05/2021 CEST
	1HET173		1DVF906		1KDZ166
07:20:27	02/05/2021 CEST	07:20:36	02/05/2021 CEST	07:22:05	02/05/2021 CEST
	1TUV849		TXAF869		1ULU390
07:22:10	02/05/2021 CEST	07:22:14	02/05/2021 CEST		

An aerial night view of a city, likely Dubai, featuring several prominent skyscrapers and a complex network of roads. The image is overlaid with a large, semi-transparent geometric shape composed of two overlapping polygons: a blue one on top and an orange one on the bottom. The text "THANK YOU" is centered within the orange polygon.

THANK YOU