



I-SAFE STM – USER'S GUIDE

I-SAFE STM: speed display

User's guide vers. 2.9.2

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2 INTRODUCTION

2.1 ABOUT THIS DOCUMENT

This document aims for helping you to the installation and the safe usage of the I-SAFE. It is crucial to read it carefully before using any device. This guide includes important instructions that will assist you in avoiding dangers and extending the lifetime of your equipment and of its accessories.

Respect to the letter the instructions of this guide. In doing so, you will avoid personal risks and dangers for a third party. You will also prevent the device from damaging.

Please contact your supplier if you note anything unclear and still have unanswered question.

2.2 IDENTIFICATION OF THE DEVICE

A label indicating the serial number is placed in the service box of the I-SAFE (see Figure 1, p. 9, mark 9). Please do not remove the label. The serial number on the label will be requested in the event of an intervention of the after-sale service or support. Please refer to this number while contacting the after-sale service.

2.3 SAFETY GUIDELINES

- Before you install and first operate, make sure that you looked at the instructions in this guide. The guide should always be available.
- Make sure that no liquid gets into the device.
- If you notice any degradation (damaged or bare cable, damaged connector...), switch the device off and contact your supplier.
- Every device dysfunction that sets a risk for a user or a third party should immediately be resolved. Make sure that the labels including safety guidelines are intact and readable.
- Warranty does not cover damages caused by wrong usage. The producer will never be responsible for damages caused by wrong usage.
- The device cannot be used as a security component, as decreed by the European directive 98/37/EC ("Machinery Directive").
- The user should make sure not to choose an operational mode that will cause material damages or injuries to a third party. He should also make sure that measures and security systems are in place and work.
- No mechanic or electric changes can be applied without the agreement of the producer. Use only original accessories and spare parts. If you don't, you will be subject to the loss of the warranty rights.
- During the installation, be careful while using a ladder to fix the support on the post or the board on the support. Check the soil stability before using any tool helping to reach the desired height.

2.4 WARNING

This speed display contains electronic elements requiring caution during transportation and installation.

Look after the following advices during utilization and storage:

- Do not put any sticker on the front side of the device. It could disturb the working of the radar.
- To maintain the watertight integrity of the unit, please Close the battery slot with the delivered screws;
- Avoid shocks when transporting and handling;
- Never use cables, power supply, battery feeder or accessories other than those originally supplied with the display;
- Do not attempt to open the display: the warranty does not cover the units opened by the user or by a third party;
- When storing, protect the display with a protection cover and do not store anything on it;
- In order to preserve the battery, do not store the display below -10°C . Should the temperature decrease under this limit, please keep the battery feeder connected and under permanent tension.
- To protect the lifetime of your batteries, do not let them 60 days without charging, even slightly. During non-using periods, let the battery charger connected. **Do not store the display with unloaded battery.**



2.5 WARRANTY

The warranty (two (2) years as from the delivery date) covers the fabrication defaults and defective components, within the limits of a normal use of the display. The battery is covered by a 6 months warranty. It does not cover scratches and other damages of the window or of the box, due to normal wear of the display. In order to secure your right to warranty, please follow carefully the instructions of this user's guide.

2.6 PACKAGING

The radar packaging has been designed and developed specifically for the I-SAFE in order to give it the best possible protection during transportation.

Please retain the packaging box for any return to the manufacturer. The warranty is only applicable to displays sent in their original box.

A replacement box can be obtained from the manufacturer for a price of 30 EUR, excluding shipping charges.

2.7 CONCEPT

The display we propose is precisely designed for urban zones, approaches to schools, puffins, etc., where excessive speed is a real risk for the users. Its light and totally autonomous design make the I-SAFE the perfect tool for road safety campaigns.

2.8 FEATURES

The display measures the speed and shows it to the vehicles that go towards it. A short message or a pictogram can be linked to the display of the speed and appears in the bottom part of the system. The software delivered with the display allows you to analyze measured data.

2.9 TECHNOLOGY

The speed measurements are conducted with the help of a Doppler radar which is the same technology as the one used for repressive radars.

Remark concerning use restriction: this device can only be exploited as part of road safety.

2.10 DECOMMISSIONING

We encourage customers to send back decommissioned equipment to the manufacturer for recycling. To differentiate between equipment to be recycled and equipment to be repaired, please inform your reseller or the manufacturer about the decommissioned equipment.

Icoms Detections will take care of the recycling for a sustainable end-of-life of the product.

3 INSTALLATION AND MOUNTING

3.1 MATERIAL



Figure 1: I-SAFE 1 – front

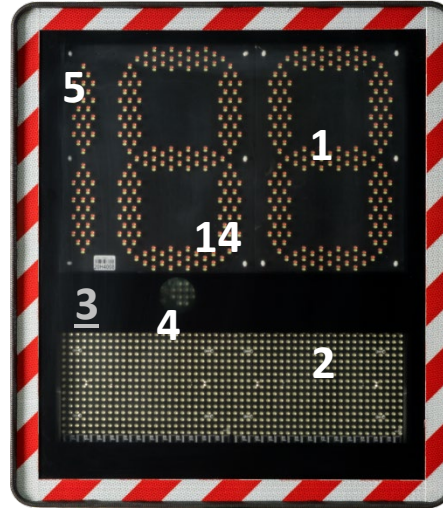


Figure 2: I-SAFE 2 - front

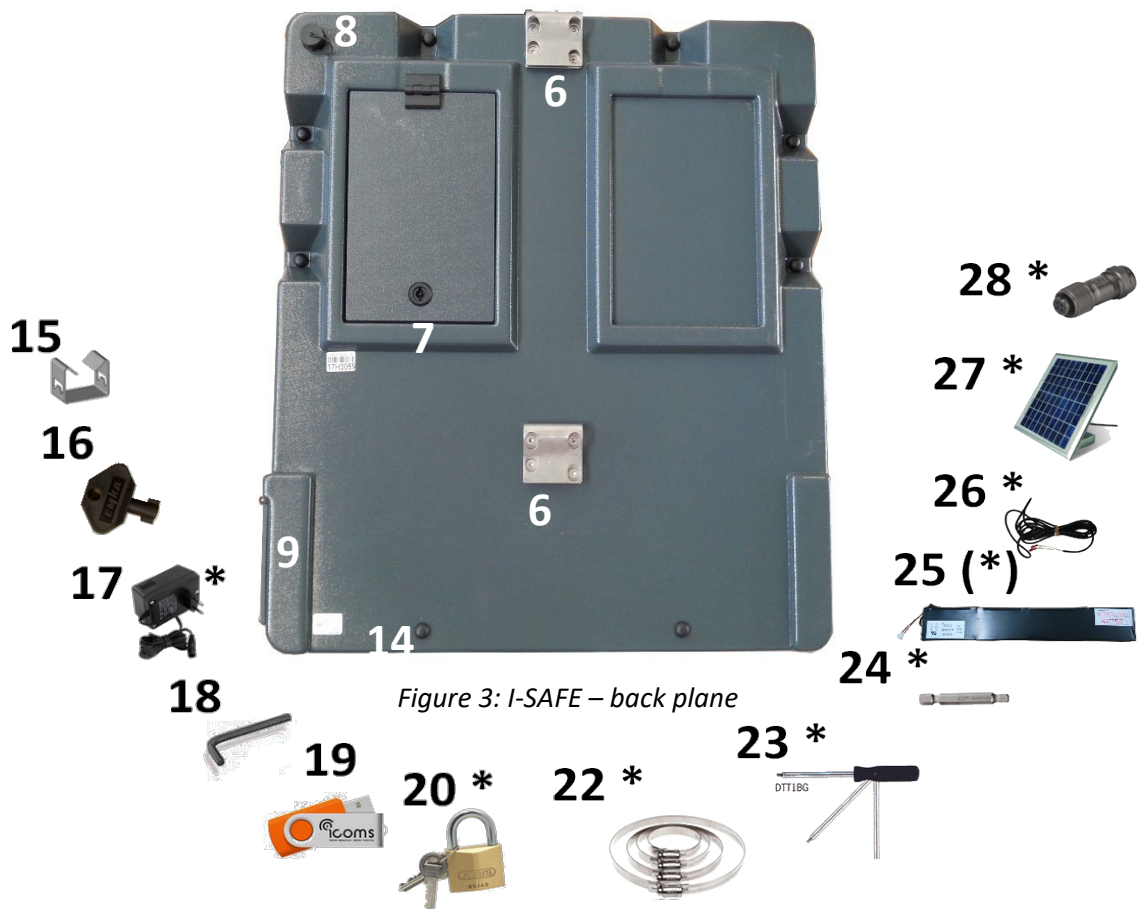


Figure 3: I-SAFE – back plane

Figure 4: I-SAFE – accessories

* optional equipment



Figure 5: solar regulator and configuration board

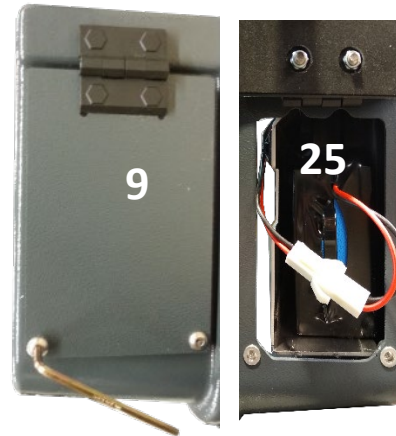


Figure 6: battery access

Ref.	Description	Ref.	Description
1	Main display (figures/pictograms)	20*	Padlock ¹
2	Text matrix (I-SAFE 2)	22*	Adjustable Tamtorque collars
3	Radar (please do not obstruct)	23*	Tamtorque screwdriver
4	Flash	24*	Tamtorque bit
5	Antireflective Lexan front face	25(*)	(Additional*) battery
6	Mounting hooks	26*	Public lighting/Main power supply (110V – 230V)
7	Access to service box and options	27*	Solar panel with connector
8	Male connector	28*	Connector for outside power supply
9	Battery access	Service box	
14	Serial number	10	Solar regulator
15	Mounting bracket	11	USB plug
16	Access key for service and option box	12	Settings encoder
17	Battery charger	13	Slot for GPRS or Bluetooth option
18	Key for battery slot access	21	Fast fuse 6.3 A
19	USB stick (software, drivers, and parameters)		

¹ See APPENDIX 6: Using the padlock

3.2 INSTALLATION PLACE SELECTION

3.2.1 Detection range

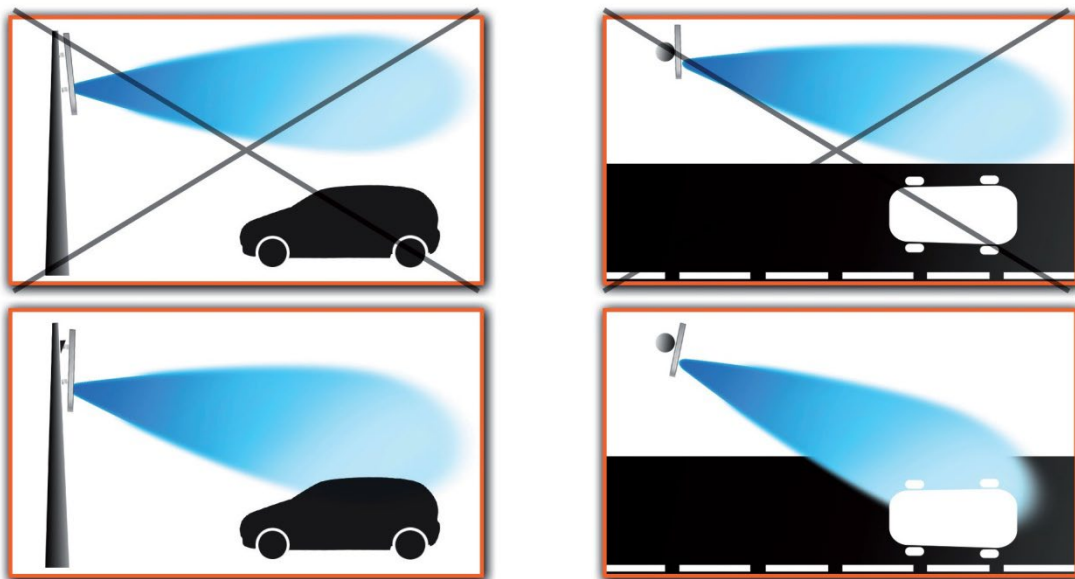
The radar's detection range depends largely on the shape of the objects and on the interfering reflections in the environment. In general, the larger the reflecting area, the higher the detection range. The more objects in the measurement lobe, the lower the detection range. This is also the case for tree branches and bad weather conditions (heavy rain).

The average range, measured on a straight and flat road is 80 m for little cars, 100 m for standards vehicles and more for large vehicles and lorries. The best range is reached with an installation at 1,50 m to 2,50 m height (lower edge of the display panel).

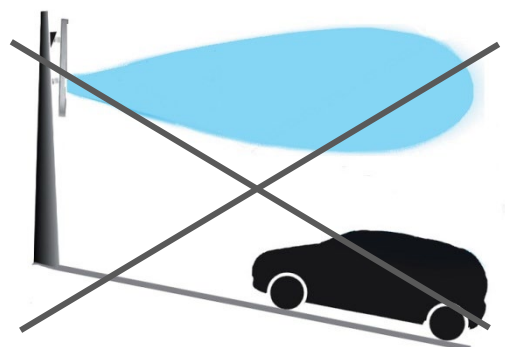
3.2.2 Installation and measuring angle

The best measurement angle is along the lane axis, which would mean installing the display in the middle of the lane. Since this is obviously not feasible, install the display on the pavement between 1.5 m and 2.50 m height.

The mounting system at the backside of the display allows it to be mounted on existing lighting or signaling poles, with standard collars. If the range is not sufficient, you have to orientate the display so that the detection area of the radar points to the vehicles driving towards it. The angle with the lane must be as small as possible.



The indications are given for a flat road and a vertical pole. If the angle between the road and the installation pole is not 90°, please compensate the slope or the pole tilt.

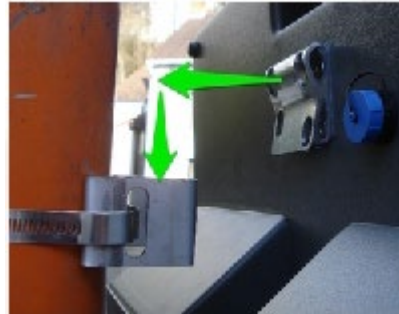


3.3 ON FIELD INSTALLATION

1. Place the upper clamp:



2. Hang the unit on the upper clamp with the upper hook:



3. Secure the installation by mounting the lower clamp:



4. Slope/tilted pole: compensate the slope or the tilt.

5. Power the system:

- Battery
- Solar panel
- Public lighting
- 230 V network

3.4 POWER SUPPLY

Your reseller offers several power kits.

3.4.1 Mobile kit

Composition:

- A 12 V 24 AH battery
- A 3-steps network charger (Figure 1, marks 25 and 17): when charging from the grid, a red/orange indicator lamp is lit on the external charger. The battery is fully charged when the green lamp is lit.

After placing the battery in the slot, connect the plug of the battery into the socket, and close the slot with the screws to ensure the water tightness.

3.4.2 Solar power kit

The kit is composed by a 12 V 24 AH battery and a solar panel. The solar regulator is mounted inside the unit.

3.4.2.1 Mounting and installation

Place the solar panel on a mast, according to the manufacturer's instructions. Turn it to the south, avoiding shadow. For the mounting of the Icoms' solar panel, see further in this document, p. 51.

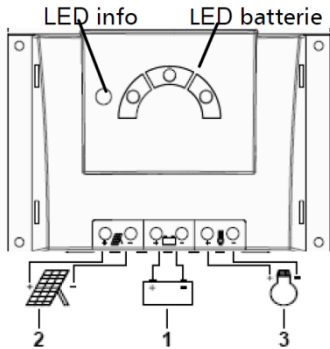
1. Insert the battery in the slot, as for the mobile kit, and switch it on.
2. Connect the solar panel above the service box (Figure 3, p. 9, mark nr 8).

Please first switch the battery on, before connecting the solar panel.

If you prefer using your own solar panel, the female connector is available as an option (mark 23).

3.4.2.2 Solar regulator

The solar regulator is mounted in the service box. Different LEDs indicate the state of the material:



LED	State	Meaning
LED info	Switched on green	Normal operation
	Flashing slowly red*	System fault: <ul style="list-style-type: none"> - Too high charging current - Overload/short circuit - Overheated <p>Together with red LED: too low battery voltage Together with green LED: too high battery voltage</p>
Battery red LED	Flashing quickly*	Battery empty, low voltage disconnection pre-warning, loads still on.
	Flashing slowly*	Deep discharge protection active (LVD – low voltage detection) – loads disconnected
Battery yellow LED	Switched on	Battery weak – loads are on.
	Flashing slowly yellow*	LVD reconnection setpoint has not yet been reached – loads still disconnected
Battery green LED	Switched on	Battery OK
	Flashing quickly*	Battery fully charged – charge regulation active

* Flashing slowly: 0.4 Hz or four times in 10 second; flashing quickly: 3 Hz ; or three times per one second.

3.4.3 Public lighting kit

Composition:

- A 12 V 24 AH battery
- A 110 V - 220 V power unit

The battery is to be placed in the slot, like for the mobile kit. The connector for the main is above the service box (Figure 3, p. 9, mark nr 8) .

To maintain the watertight integrity of the unit, please place the caps on the settings encoder and on the USB plug. Ensure that you close the battery slot with the delivered screws.

4 SETTINGS

4.1 IN GENERAL

The I-SAFE settings take in account different parameters. The user can define up to 4 speed thresholds, each of these thresholds can be associated with a colour and with 1, 2 or 3 different successive texts or pictograms.

Example: between 10 and 49 km/h, each speed measurement appears in green, with a “Thank you” message, followed by a smiley; between 50 and 75 km/h, the speed appears in red, with the text “too fast!”; above 75 km/h, the speed is no more displayed, but a message with the potential fine appears.

Parameters like an adjustment of the display time or the display flickering can be set with the Icoms software. See further for advanced functions.

4.2 FACTORY SETTING

The I-SAFE is delivered with different default parameter bundles, adapted to the most common speed limitations. An encoder, placed in the service box at the back of the unit (Figure 5, p. 10, mark 12) allows selecting the speed limit adapted to the location.

When powered, the I-SAFE gives the value of the battery load and then « oo ». After 10 sec, it displays « GO »¹ and starts to measure the vehicles going towards it and displays their speed. The associated messages depend on the selected position of the encoder (Figure 5, p. 10, mark 12). If the RS232 or Bluetooth communication has been established, the delay before measuring mode moves to 4 minutes. This delay is extended by the same time at every communication operation.

Choose the encoder position which is in accordance with the maximum allowed speed on the installation place (see APPENDIX 1, p. 42, for details of the correspondence between the parameter selector positions and the default parameters for each country):

Pos. encoder Country	English speaking countries	Spain
1	Zone 30	Zone 20
2	Zone 40	Zone 30
3	Zone 50	Zone 50
4	Zone 70	Zone 80
-	Tailor made zone 1 (zone 50 as factory setting)	Tailor made zone 1 (zone 50 as factory setting)
=	Tailor made zone 2	Tailor made zone 2
≡	Tailor made zone 3	Tailor made zone 3

See section 4.3, p. 16, for the texts/pictograms setting and for the “tailor made” zone”.

¹ If the time slots are switched on, the display is different. See p. 30

4.3 CUSTOMIZE THE SETTINGS

4.3.1 Prerequisite

The I-SAFE communicates with your PC through a USB stick or a Bluetooth® link (option). Before beginning the setting of your speed display, you'll have to install the Icoms Software and, if needed, the Bluetooth driver.

4.3.2 Installing the Icoms Software

See further in this document, APPENDIX 2: IcomSoft I-SAFE SOFTWARE INSTALLATION, p. 47

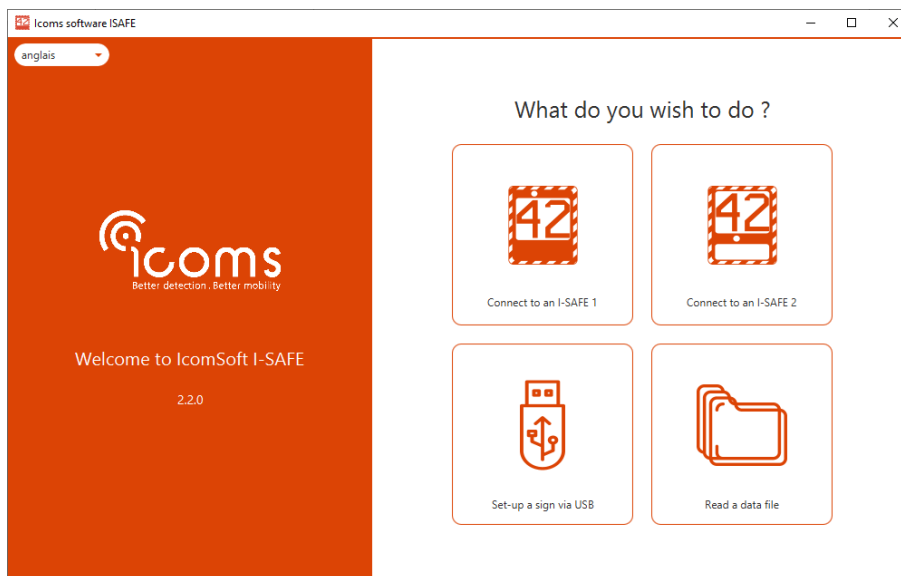
4.3.3 Uploading the new settings

4.3.3.1 USB

The I-SAFE is delivered with an « Icoms » USB stick. You'll find on it the user's guide and the IcomSoft I-SAFE software

Whichever stick you use, it must be formatted in FAT32 and be less than 32 GB¹ in size. Save the configuration files to the root of this USB stick.

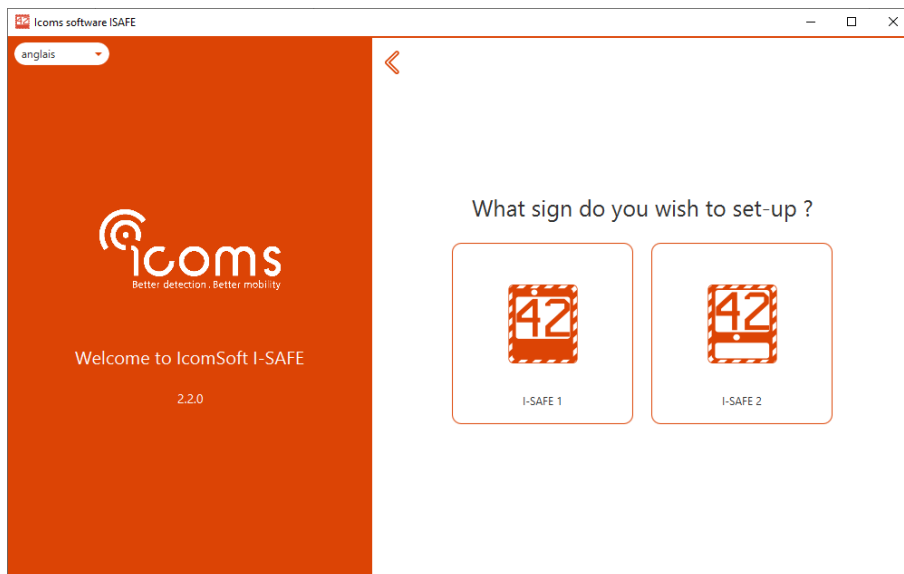
To customize the I-SAFE display settings, create a parameters file with the IcomSoft I-SAFE:



Screenshot 1: assistant, step 1 - connection choice

If you choose to set up the device using a USB stick, select next which type of device you want to set:

¹ Windows does not allow to format in FAT32 some large capacity USB drives (> 32GB). See here for more information on the exFAT format <https://lecrabeinfo.net/formater-une-cle-usb-exfat-en-fat32.html>. To download the "FAT 32 format" software that allows you to format an exFAT key in FAT32, see here: <https://lecrabeinfo.net/telecharger/fat32-format> (download button at the bottom of the page).



Screenshot 2: assistant, step 2 – Product setup choices using a USB key

See further in this document, p. 18 and following, for texts, pictograms and speed thresholds settings.

You can create up to 3 custom zones.

Then transfer the files to the I-SAFE following this procedure:

- The files must be in the root of the USB drive and avoid having other files or directories on the USB drive
- The unit must be powered and in measurement mode.
- Press the settings encoder button for 3 seconds.
- When the settings encoder display shows “8”, release the button.
- The encoder display blinks quickly.
- Then press the button to scroll through the menus (they scroll in a loop).
- When the "P" menu appears on the encoder, wait 3 seconds, until the encoder display shows "u".
- Insert the USB stick into the USB port.
- The I-SAFE reads the data from the USB stick and the dot next to the "u" flashes.
- Do not remove the stick while the dot next to the “u” is flashing.
- When the display shows “o”, the USB stick can be unplugged.
- Press the button again for 3 seconds and release when the display stops flashing.
- Scroll through menus again until the encoder displays:
 - For custom zone 1: -
 - For custom zone 2: =
 - For custom zone 3: ≡
- "-" stays displayed and flashes every 5 seconds (= for custom zone 2 and ≡ for custom zone 3).
- The unit begins then to measure and displays the speed of the approaching vehicles, according to the chosen parameters.

If no speed zone choice is made after 40 seconds, the radar switches to the last zone used.

To maintain the watertight integrity of the unit, ensure that you close the service box door and the battery slot with the delivered tools.

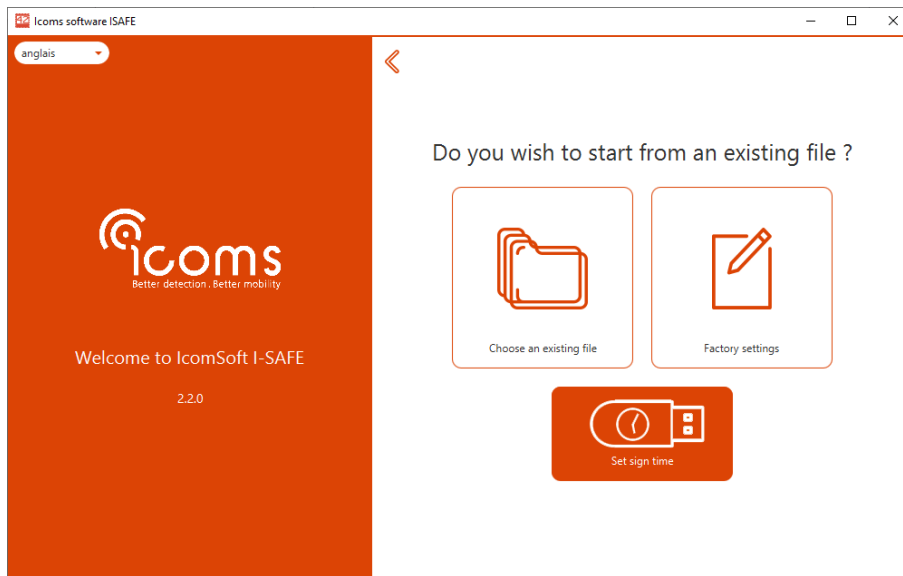
4.3.3.2 Bluetooth

If you select “Bluetooth connection” (if your unit is equipped with a Bluetooth sender), the software will launch the connection process. For more information, see further in this document, APPENDIX 3: p. 48.

The next steps for the setup are almost the same for both connection modes.

4.3.4 Parameter settings

After having chosen which type of speed sign to set up, choose which settings file to edit.

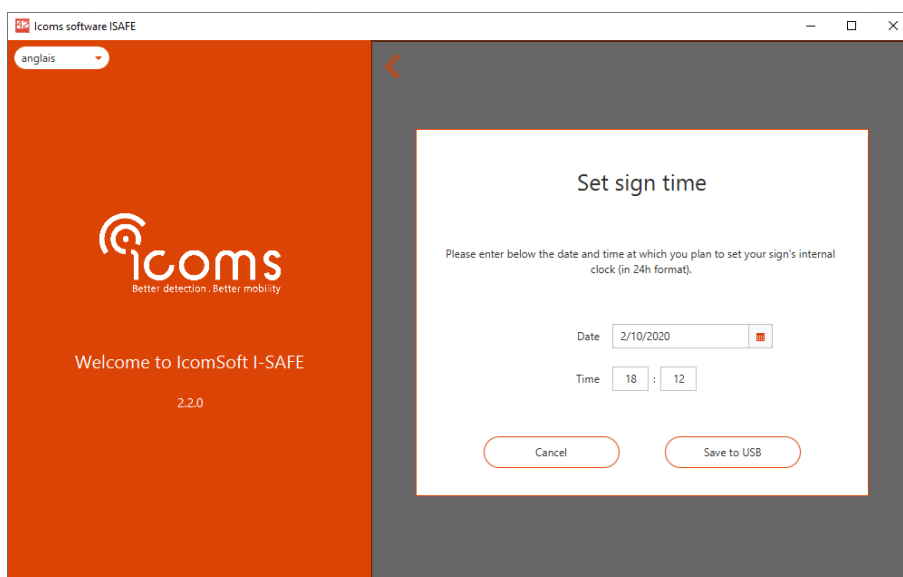


Screenshot 3: configuring the sign using a USB stick, choose the settings file to edit

4.3.4.1 Setting the clock of the speed sign using a USB stick

Setting the clock using a USB stick erases the data from the I-SAFE memory. Please save your data file before setting the clock.

Click on “Set sign time” as shown in Screenshot 3 to change the time of the internal clock of the speed sign. Choose the time at which the USB stick will be inserted in the speed sign to synchronize the time.



Screenshot 4: synchronizing the time using a USB stick

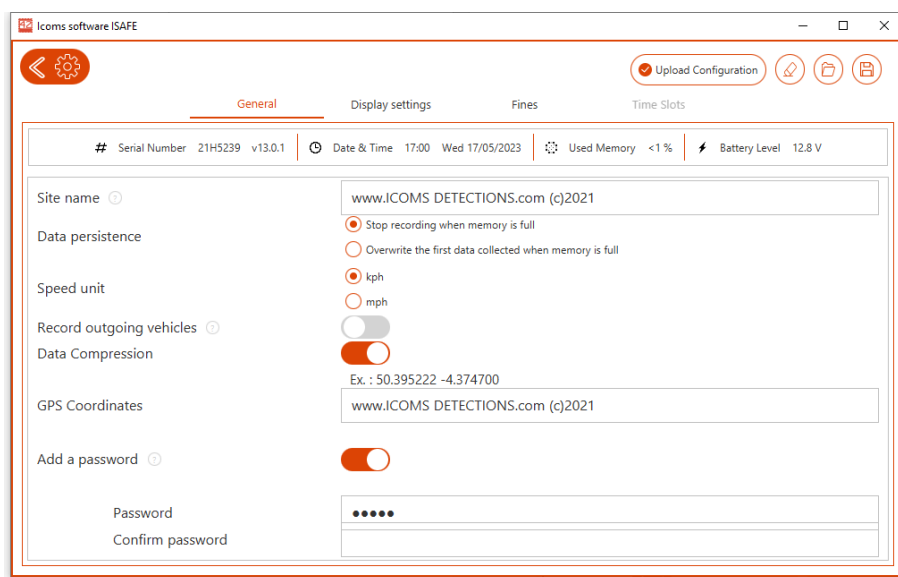
Insert then the USB stick in the I-SAFE USB port. No other handling is required. During the memory cleaning, the I-SAFE displays four vertical strokes and the settings encoder shows « | | ». The I-SAFE toggles then to measure mode, with the new clock setting.

4.3.4.2 Time setting when using a 3G or 4G modem with the I-SAFE sign

When using a 3G or 4G modem with the I-SAFE sign, please note that the modem will set the time of the I-SAFE sign automatically to UTC (Coordinated Universal Time) and synchronize the time regularly. This means that for the time slot settings, as described on p. 27, the reference time zone to be used is UTC.

4.3.4.3 General parameters

When choosing to configure the speed sign either with an existing settings file or by using the factory settings, the software will show Screenshot 5 where to provide the details of the location name, whether to record outgoing vehicles and if the data can be overwritten or not.



Screenshot 5: general parameters

If Bluetooth communication is active :

- The software displays the device's clock, serial number and battery level;
- It offers to secure access to the device with a password. For I-SAFE firmware versions earlier than 13.0.0, the I-SAFE must be restarted to take the password into account.

4.3.4.3.1 Site name

The location name can have a maximum of 32 characters. This information will be sent to the I-SAFE together with the display parameters. It will be saved with the data file.

If the Bluetooth communication is activated, the software displays the clock of the device, its serial number and battery status.

4.3.4.3.2 Data persistence

By default, the I-SAFE records the first 540 000 performed measures. Whenever the memory is full, it goes on with measuring and displaying but does not record anymore.

It is possible to activate an option which allows you to record the last 540 000 data. In this case, when the memory is full, the first data are erased and replaced by the last measurements performed. To activate this option, choose "Overwrite the first data collected when memory is full", next to "Data persistence" (Screenshot 5).

4.3.4.3.3 Record outgoing vehicles

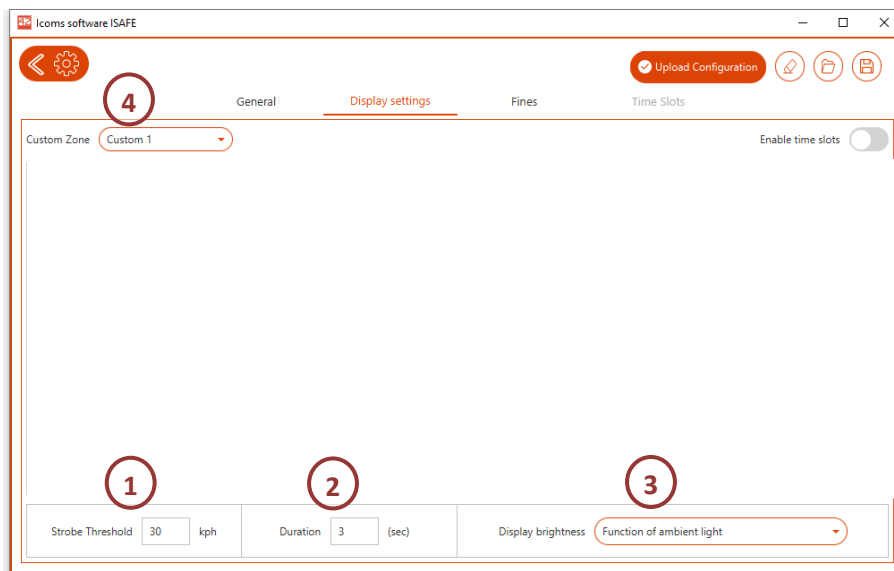
By default, the I-SAFE records only the approaching vehicles. When checked, this option allows the unit to record the receding vehicles as well. Whenever it is checked or not, the I-SAFE displays only the approaching vehicles.

After changing the data storage mode and/or recording in both directions, please erase the device's memory:

- Download and save the data already in the device (see heading 6, p. 32)
- Send your settings to the I-SAFE (see heading 4.4, p. 28)
- Delete the measurement data (see section 4.5, p. 29)

4.3.4.4 Display settings

4.3.4.4.1 Settings common to both models



Screenshot 6: LED settings for the I-SAFE 1

1: strobe threshold

Define the speed from which you want to activate the flash.

To deactivate the flash, adjust its value to 199 km/h or mph.

2: duration

The user can choose, according to the circumstances and application, the time duration during which the speed is displayed. Two display types are available:

- **fixed time display:** the display is maintained from 1 to 20 seconds (user's choice), no matter the speed of the vehicles or the traffic density. The radar does not measure during the display. To activate this display type, select a **value between 1 and 20**.
- **In function of the speed of the vehicle:** the system calculates itself the duration of the display, according to two parameters: the measured speed (the higher the speed, the shorter the duration) and the effective range of the radar (the distance at which it measures the vehicles: even if the standard range is about 100 m, the actual range is 30 m if the system is installed at a distance of 30 m of a corner or any other hindrance). The best distance in most cases is 80 m. The following calculation is made: $t = \text{range} / \text{speed}$. If a vehicle drives at 60 km/h (+/- 15 m/s), the display time for

a panel with an actual range of 80 m will be 5.3 sec. The longer the distance parameter, the longer the display time. This way, it is possible to avoid measuring the same vehicle more than once. If you want to display the vehicle's speed decrease, you'll choose a lower parameter (40 m instead of 80 m for example). The parameter will be adapted to the environment of the system: if a hindrance (corner T crossroad ...) limits the range, the parameter must be adjusted in accordance with the real measurement distance (between 21 and 200 m). Timeouts of min. 1 sec. and max. 13 sec. have been put in the system. To activate this display type, select a **value between 21 and 199** which represents the distance in meters.

The recommended value for a "50 zone" is generally "3" (It means 3 second of display per measured speed)

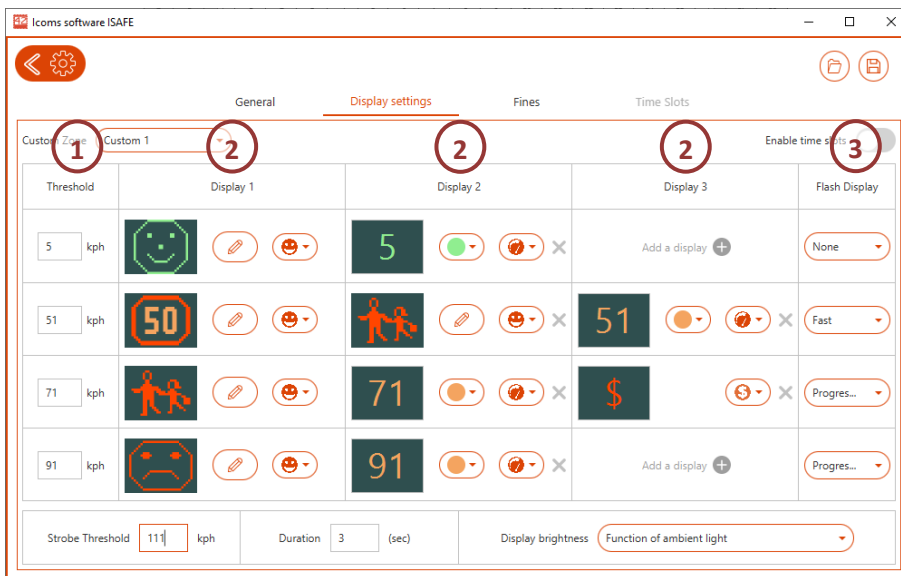
3: display brightness

It is possible to choose the degree of intensity between low intensity and "Function of ambient light". Low intensity uses less power and increases the autonomy of the display.

4: choice of the "custom" zone

The I-SAFE can store up to 3 sets of custom settings, including the 3 settings described above (flash, duration and intensity) as well as colours, texts and pictograms, as described under headings 4.3.4.4.2 and 4.3.4.4.3. Select one of the three areas with this menu and adjust your settings. If you wish to set up a second zone, select it from the drop-down menu and then adjust the settings. Do the same for the third zone. Then save the settings to the USB stick or via Bluetooth (see section 4.4). All three settings will be saved and sent to the display.

4.3.4.4.2 Colours and pictograms – I-SAFE 1



Screenshot 7: LED settings for I-SAFE 1

For each speed threshold (1), it is possible to adjust the following parameters:

- What will be displayed for each sequence (2): speed (in green, yellow, or red), a pictogram or a fine. The pictogram can be selected from the library, it can be edited, and new pictograms can be created as well. Fine amounts can be defined in the "Fines" tab based on speed thresholds.
- Type of blinking (3) (Flash display)

In the example above:

- between 5 and 50 km/h: smiley in green followed by the speed in green for 3 seconds (i.e., 1.5 second for each message) blinking slowly.
- between 51 and 70 km/h: maximum 50 speed sign followed by the sign showing kids going to school followed by the speed in orange for 3 seconds (i.e., 1 second for each message) blinking fast.
- between 71 and 90 km/h: Kids going to school sign followed by the speed in orange and a message showing the fine for 3 seconds (i.e., 1 second for each message) blinking progressively faster.
- from 91 km/h: The display shows a sad face pictogram in red and the speed in orange blinking progressively faster.

The strobe threshold is activated at 111 km/h.

1: Threshold

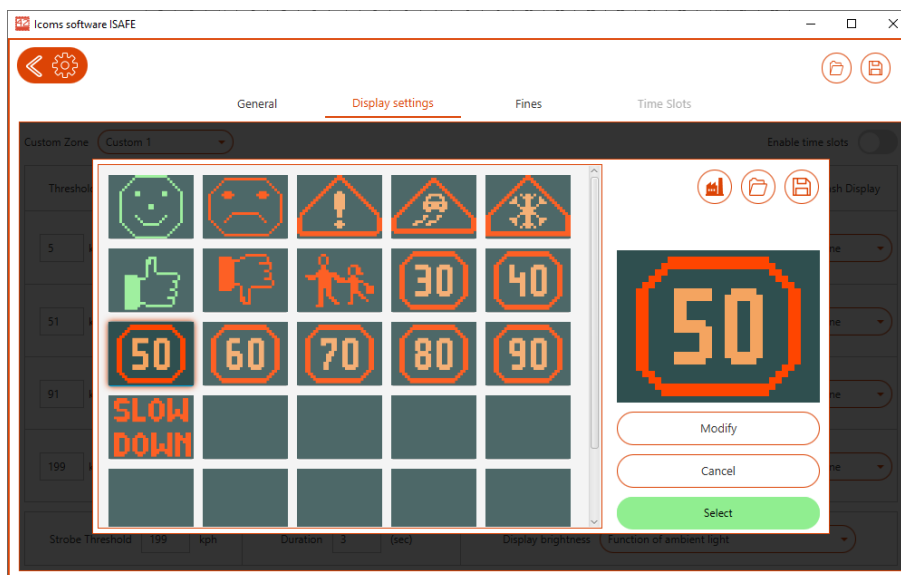
Set the thresholds using the input boxes by keying the value of your choice.

Please ensure the different values are set in increasing order: threshold 1 < threshold 2 < threshold 3 < threshold 4

2: Colour/Pictograms

For each threshold and every sequence, you can choose to display the speed in one of the 3 available colours (green, yellow, red) or to display a sign (pictogram) or the amount of the fine. Scroll through the different possibilities by colored circle.

If you choose to display a pictogram, the preset pictogram shows up on the screen. You can choose another pictogram from the library or create one yourself by clicking on the pictogram or on the pencil, see Screenshot 8.

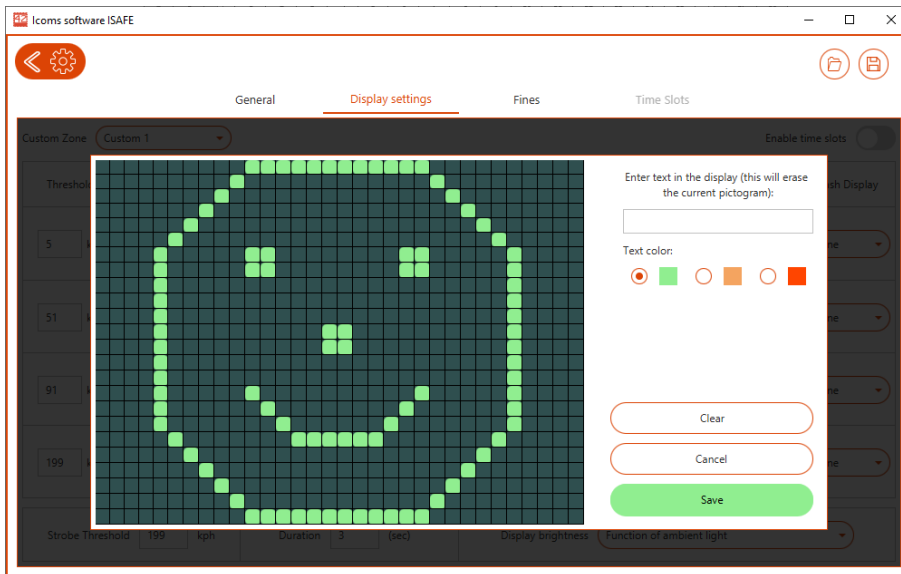


Screenshot 8: pictogram library for the I-SAFE 1

Click on the pictogram of your choice and then on “Select” to insert it in your setting.

Pictogram editor

With the function “Modify” you can edit the pre-recorded signs or create new ones.



Screenshot 9: pictogram editor for the I-SAFE 1

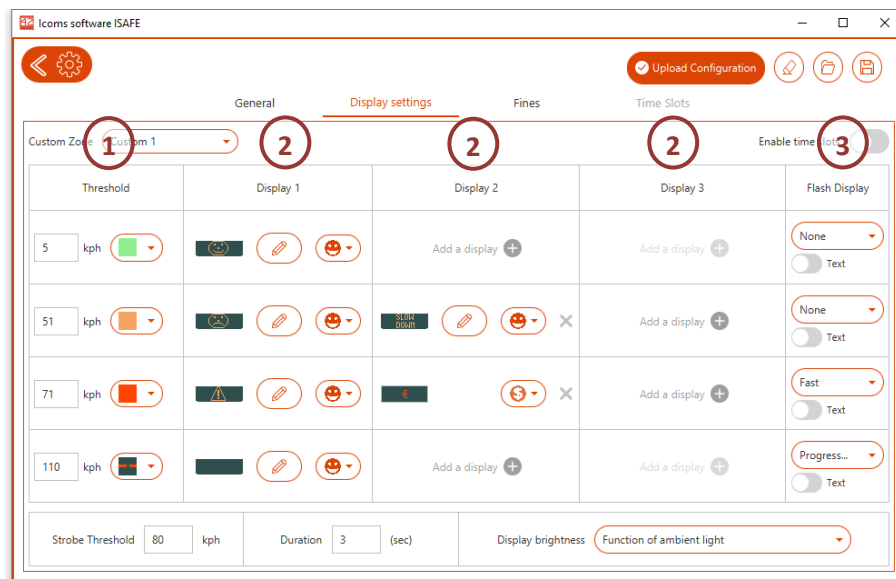
Each square represents a LED pixel; every click on a square will change the colour according to the sequence “nothing-green-orange-red”. Once the pictogram is modified or created, save it by clicking on Save. You are then redirected to the pictogram library (Screenshot 8), where you can confirm your choice, then on the LED setting screen (Screenshot 6).

To write text, use your keyboard to enter the text in the input box. The text will be shown in the editor interface for preview.

3: Flash display

For each threshold, you can activate or deactivate the blinking of the display. In the mode “progressive”, blinking and intensity increase. The use of the blinking allows you to reduce the power consumption of the display.

4.3.4.4.3 Colours and texts - I-SAFE 2



Screenshot 10: LED settings for the I-SAFE 2

For each speed threshold (1), it is possible to adjust the next parameters:

- The colour of the speed display: green, orange, red or the "No Score" threshold (3 different "No Score" displays are available: 2 centered horizontal strokes, 6 horizontal strokes or nothing).
- The text or pictogram linked to the speed range (2). If you don't want to display a text or pictogram for a speed range, click on the cross to delete the text or pictogram. To delete the Display 1, select an empty line in the library. If you want to edit the text, click on the text/pictogram or the pencil.
- Type of blinking (3) of the LEDs (Flash display)

In the example above:

- between 5 and 50 km/h: speed in green during 3 sec., together with a smiley
- between 51 and 70 km/h: speed in yellow during 3 sec., together with a sad pictogram during 1.5 seconds and the text "SLOW DOWN" during 1.5 seconds.
- between 71 and 110 km/h: speed in red during 3 sec., together with a warning pictogram (1.5 seconds) followed by a fine" (1.5 sec.), blinking fast.
- from 111 km/h: no more speed display (only "- -") and no text display either, blinking progressively.

The flash is activated at 80 km/h (strobe threshold).

1: Threshold

Set the thresholds by keying in the value of your choice in the input box.

Please ensure the different values are set in increasing order: threshold 1 < threshold 2 < threshold 3 < threshold 4

Colour

For each threshold and every sequence, you can choose to display the speed in one of the 3 available colours (green, orange, red) or to display the chosen sign for the "maximum speed displayed" (value above which you don't display the speed anymore, to avoid "races" and records). Scroll through the different possibilities by clicking on the coloured rectangle at the right of the threshold.

The values are as follows:

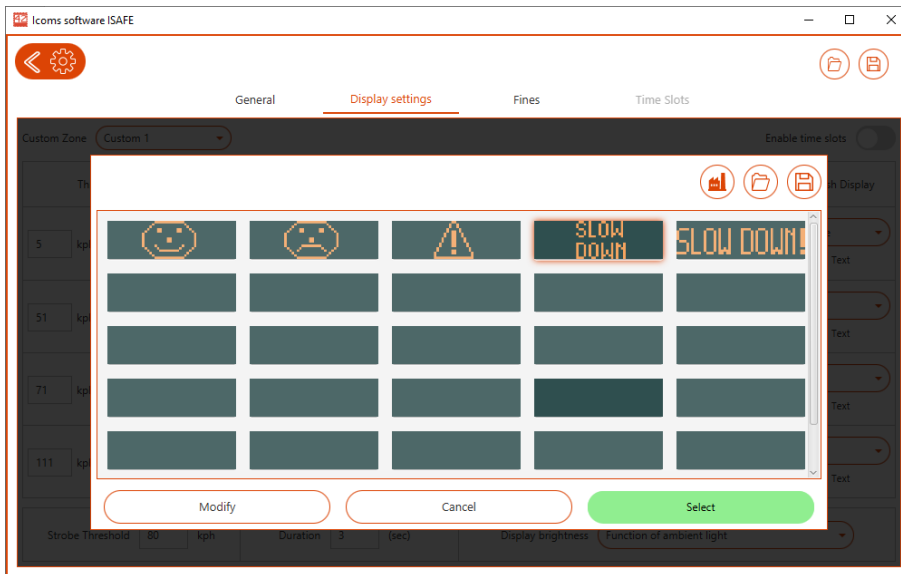
- Green
- Orange
- Red
- Display 2 horizontal dashes on the speed matrix
- Display 2x3 horizontal dashes on the speed matrix
- No display on the speed matrix

2: Texts and pictograms

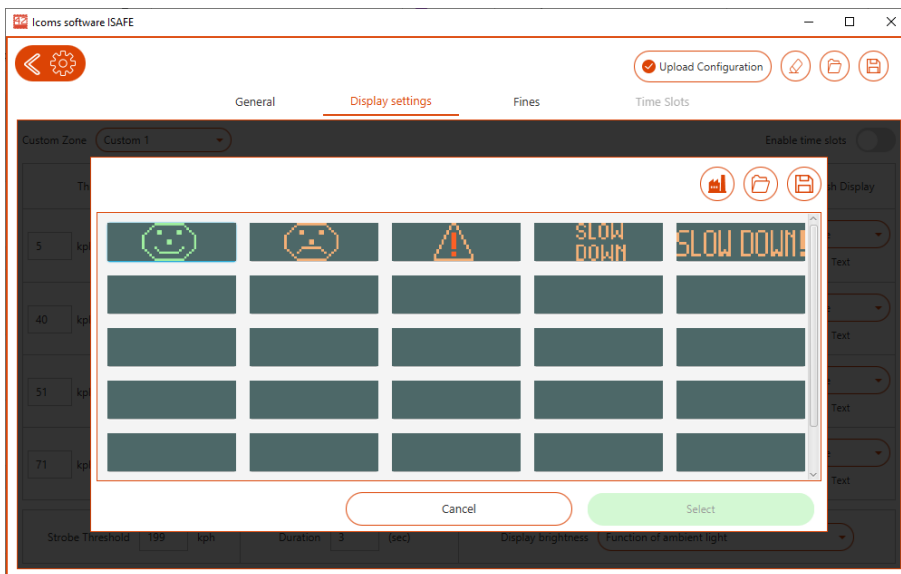
For each threshold, you can choose between text or pictograms to be displayed.

You can use the already pre-recorded text and pictograms from the library or create your own.

To edit the texts or create your own messages, click on the display area, or click on the pencil. The text and pictogram library window will then appear, see Screenshot 11 for the unicolor version and Screenshot 12 for the tricolor version of the I-SAFE 2.



Screenshot 11: text and pictogram library for the unicolor I-SAFE 2

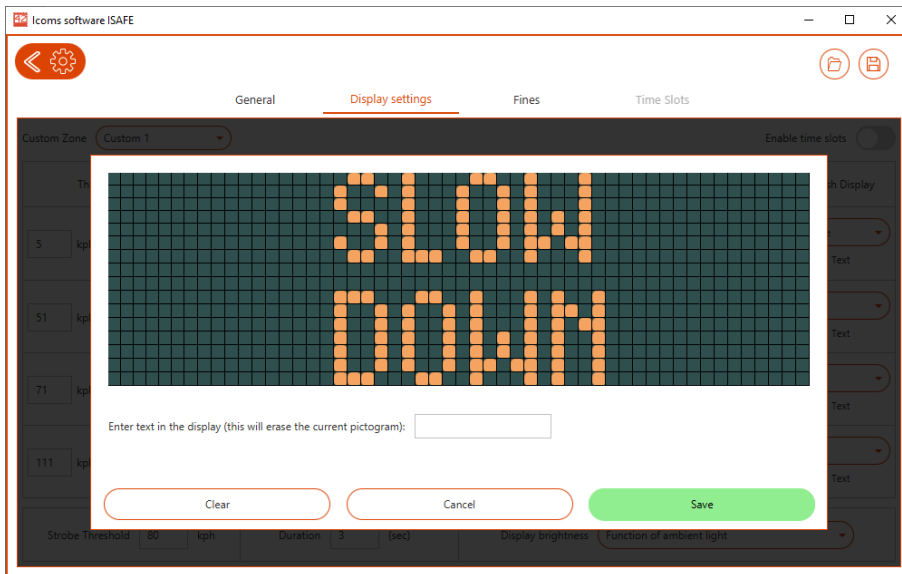


Screenshot 12: sample text and pictogram library for the tricolor I-SAFE 2

To edit an existing text or pictogram, choose the item that suits you and click on “Modify”. The IcomSoft will then show the editor, see Screenshot 13.

- For the unicolor I-SAFE 2, click on a LED to light it up and click again to erase the pixel.
- For the tricolor I-SAFE 2, click on a LED several times to go from green to orange to red to switched off. It is also possible to type text using the input box. **This functionality is an option.**
 - If the software is connected to the I-SAFE via Bluetooth, the software recognizes that it is an I-SAFE 2 with a three-color text matrix and the option is activated automatically.
 - If the configuration is done by USB key, activate the tricolor option manually by pressing CTRL + SHIFT + B when you are on the screen for modifying the pictograms, for example as shown on Screenshot 13.

Click “Save” once ready.



Screenshot 13: text and pictogram editor

To create a new pictogram or text from scratch, click on an empty rectangle as shown in Screenshot 1 and design the text or pictogram to be shown using the editor

3: Flash display

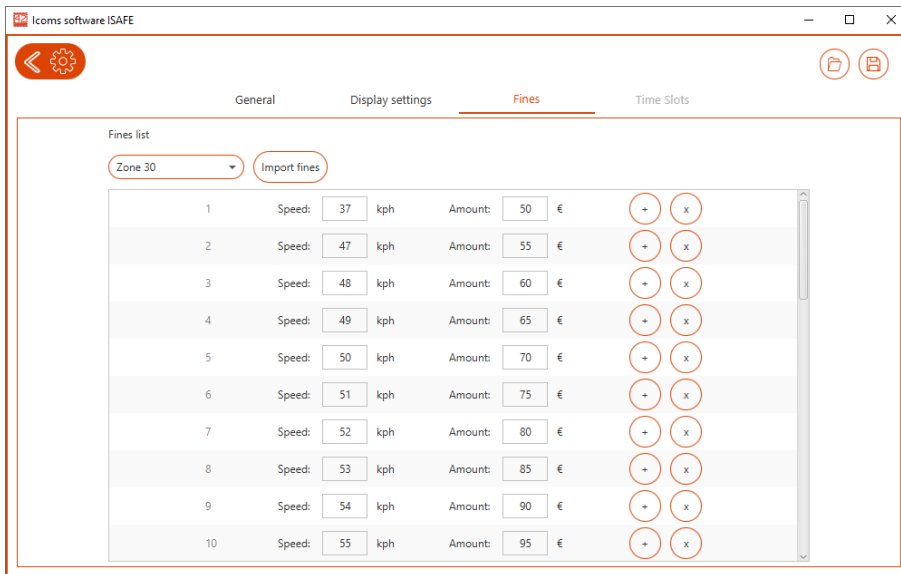
For each threshold, you can activate or deactivate the blinking of the LEDs. In the “progressive” mode, the blinking and LED intensity increase over time. If you want the text or pictogram to blink as well, turn on the "Text" switch. If the "Text" switch " is turned on and the blinking type is "none", only the text or pictogram will blink.

Blinking allows you to reduce the power consumption of the display.

4.3.4.5 Fines

The fines feature is the same for both the I-SAFE 1 and the I-SAFE 2. When instead of showing text or a pictogram the user decides to show a fine, with an example shown in Screenshot 10 where between 71 km/h and 110 km/h the “Fine” message and amount will be shown, the amount of the fine can be defined in the “Fines” tab.

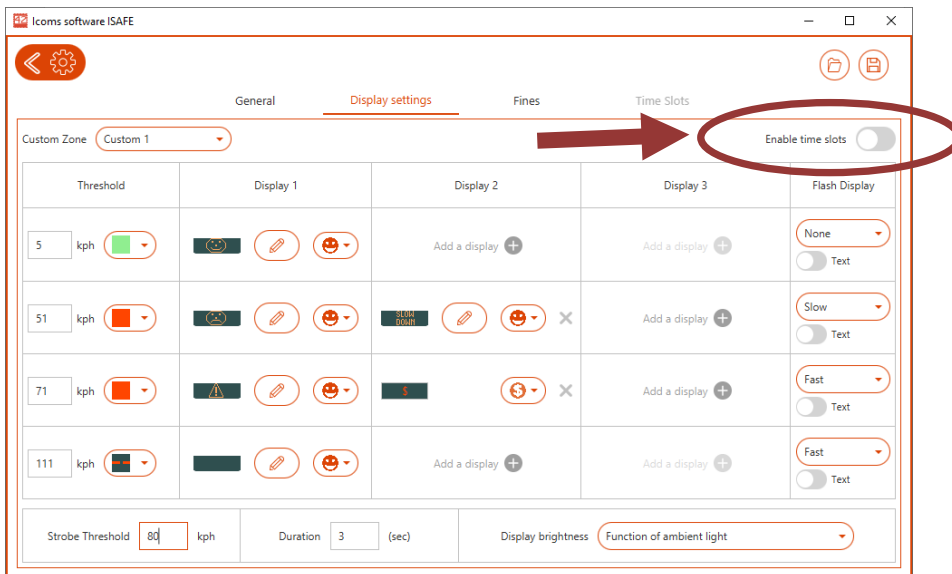
To define the amounts for different thresholds, click on the “Fines list”. An example is shown in Screenshot 14.



Screenshot 14: example of fines in function of the speed threshold

4.3.4.6 Time slots

The time slots feature is the same for both the I-SAFE 1 and the I-SAFE 2. In order to enable the Time Slots feature, toggle the switch with the caption “Enable time slots”, see the arrow showing the switch on Screenshot 15. By toggling this switch, the “Time Slots” tab becomes clickable to access the Time Slots interface shown in Screenshot 16.



Screenshot 15: enabling the time slots

There are four possible time slots for which the time windows can be set by the user. Each slot can have its display setting such as to display different messages in function of the speed at different times of the day. This is useful for example to show the maximum speed of 30 km/h during school hours while showing a maximum speed of 50 km/h during the times of the day when pupils are not attending school.

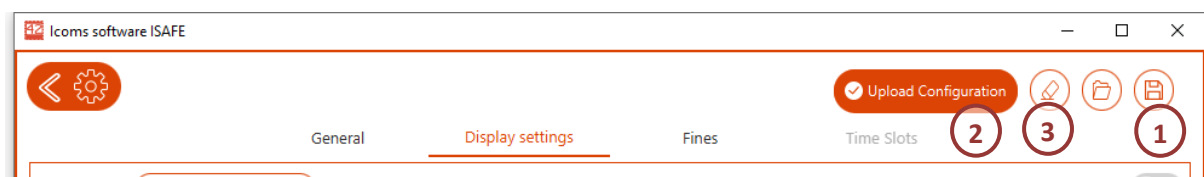


Screenshot 16: time slots interface

TIME SLOTS – IMPORTANT NOTE

- Please note that the time zone to be used when using the I-SAFE with a 3G or 4G modem is UTC by default, see p. 19. If no modem is used, the time zone of the I-SAFE can be set to the current time zone by using the software and a USB stick (see p. 18) or through a Bluetooth communication.
- The times slots work only with the “Custom zone 1”. The I-SAFE settings encoder must be set on “_”.
- When the time slots are activated, when switching to “measure mode”, the ISAFE displays instead of GO:
 - t1 to t4 if the chosen zone is Zone 30 to Zone 90
 - t5 to t7 if the chosen zone is Custom zone 1 to Custom zone 3
 - t0 if the stand-by mode is active.
- A dot is displayed next to the zone indication on the settings selector to indicate that the time slots are active (see p. 42).
- Display « H » on the parameter encoder indicates that the I-SAFE is in stand-by (programmed period of non-operation).

4.4 SENDING THE SETTINGS TO THE I-SAFE



Screenshot 17: saving/sending the settings

4.4.1 USB

Click the disk button (Screenshot 17, mark 1) to save the configuration file to your hard disk or a USB stick. See page above on how to send the file to I-SAFE using a USB stick.

Whichever stick you use, it must be formatted in FAT32 and be less than 32 GB in size. Save the configuration files to the root of this USB stick.

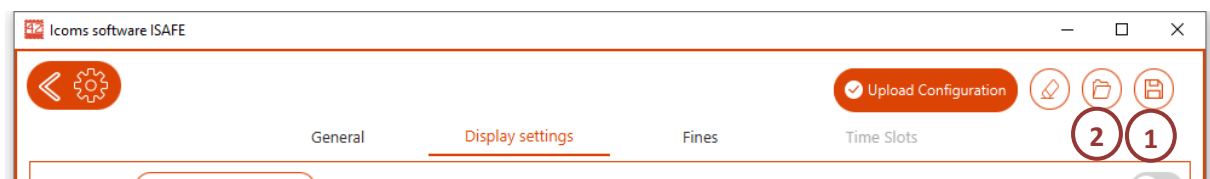
4.4.2 Bluetooth

When connected using Bluetooth, once you are ready with your choice of thresholds, speed display and pictograms, click on "Upload configuration" (Screenshot 17, mark 2).

4.5 ERASING THE MEASUREMENT DATA FROM THE I-SAFE

For Bluetooth versions, the "erase" button will delete the measurement data from the device memory (Screenshot 17, mark 2).

4.6 SAVING – REUSING A CONFIGURATION FILE



Screenshot 18: saving a configuration

Click on the disk button (Screenshot 18, mark 1) to save the configuration file to your hard disk or a USB stick.

To load an existing file from your PC or USB stick and re-use it, click on the folder button (Screenshot 18, mark 2) and choose the "PARAMS.txt" file to load. The software will load and show the settings from the file.

5 HOW TO...

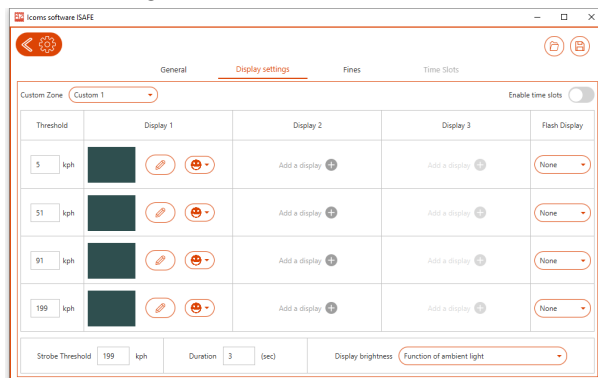
5.1 DISPLAYING DIFFERENT MESSAGES ACCORDING TO THE TIME OF THE DAY

- Use case: "school" 30-km zone during the school time, "residential area" 30-km zone from 6 p.m. and at weekends
- Settings:
 1. Create a custom zone (custom zone 1) with the "school" parameters (see p. 21)
 2. Create a custom zone (custom zone 2) with "residential area" parameters (see p. 21)
 3. Create time slots with differentiated displays for school and non-school periods (see p.27)
 4. Save these settings on the USB stick or send them to I-SAFE via Bluetooth (see p. 28)
- - On the I-SAFE, choose the custom zone 1 with the settings encoder

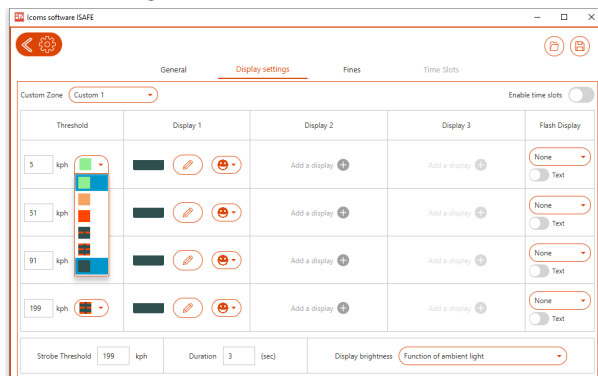
5.2 MEASURING WITHOUT DISPLAYING

- Use case: measure the speed of vehicles without displaying in order not to influence behaviour
- Settings:
 1. Create a custom zone (personal zone 1, 2 or 3 as desired) with "empty" parameters (see p. 25)

1. I-SAFE 1:



2. I-SAFE 2:



2. Save these settings on the USB stick or send them to the I-SAFE via Bluetooth
- - On the I-SAFE, choose the personal area corresponding to the settings with the settings encoder

5.3 INCREASE THE AUTONOMY OF THE DEVICE

- Use case: device in mobile use, installed for a few days near a school, then a few days near a residential area.
- The objective is then to reduce energy consumption, to increase autonomy without solar panel or connection to public lighting or the network.
 1. Use time slots (see p. 27) to put the device on stand-by when the display is not useful (non-school periods near schools, for example)
 2. Limit the use of the strobe light
 3. Limit the use of the orange color, which consumes more energy than red or green
 4. Use display flashing.

6 DOWNLOADING THE MEASUREMENT DATA

6.1 USB

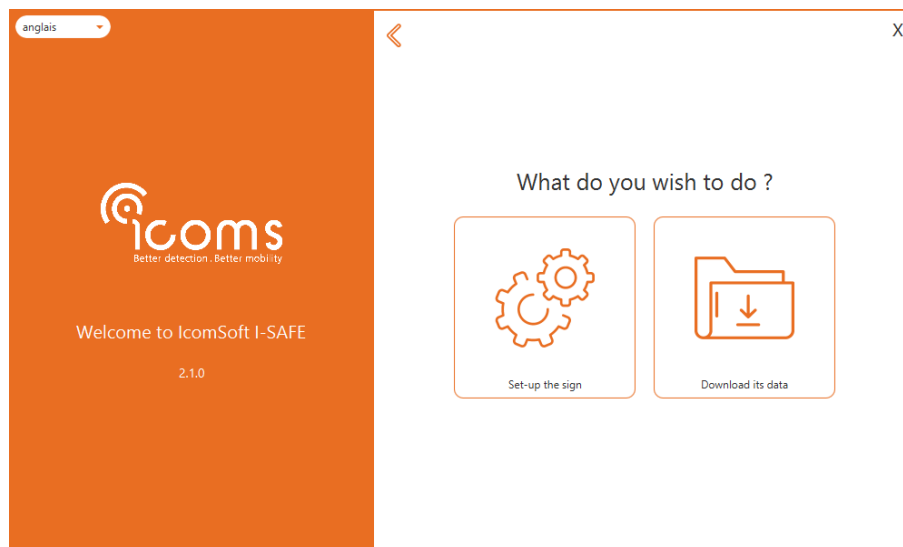
- The I-SAFE must be powered and in “measure” or “demo” mode.
- Press the settings encoder button for 3 seconds.
- When the settings encoder display shows “8”, release the button.
- The encoder display blinks quickly.
- Then press the button to scroll through the menus (they scroll in a loop).
- When the "d" menu appears on the encoder, wait 3 seconds, until the settings encoder display shows "u".
- Insert the USB stick into the USB port.
- The I-SAFE writes the data file on the USB stick and the dot next to the "u" flashes.
- Do not remove the USB stick while the dot flashes.
- When the display shows "o", the USB stick can be unplugged.
- Press the button again for 3 seconds and release when the display stops flashing.
- Scroll through the menus again until the encoder displays the code of the desired display type (-, =, ≡, 1, 2, 3 or 4) .
- This code stays displayed and flashes every 5 seconds.
The unit begins to measure after 15 seconds and displays the speed of the approaching vehicles, according to the chosen parameters.

If no speed zone choice is made after 40 seconds, the radar switches to the last zone used.

6.2 BLUETOOTH

PLEASE UNINSTALL ANY *BLUESOLEIL* DRIVER PREVIOUSLY INSTALLED ON YOUR COMPUTER. IT IS NOT COMPATIBLE WITH THE ICOMSOFT I-SAFE.

As shown in Screenshot 19, click on the “Download its data” button to start the data download from the speed sign. Once the data downloaded, the software will ask whether to save the data locally, click “Ok” and choose the folder where to save the data. When the data is saved, the software will ask whether you want to clear the speed sign’s memory. Click “Ok” to erase the memory.



Screenshot 19: choosing between setting up the sign and downloading the data

For more information about the Bluetooth connection, see further, APPENDIX 3: , p. 48.

6.3 3G OR 4G MODEM

Please refer to APPENDIX 4: 3G modem OPTION, p. 51, and to the modem user's guide for more information.

7 PROCESS THE DATA

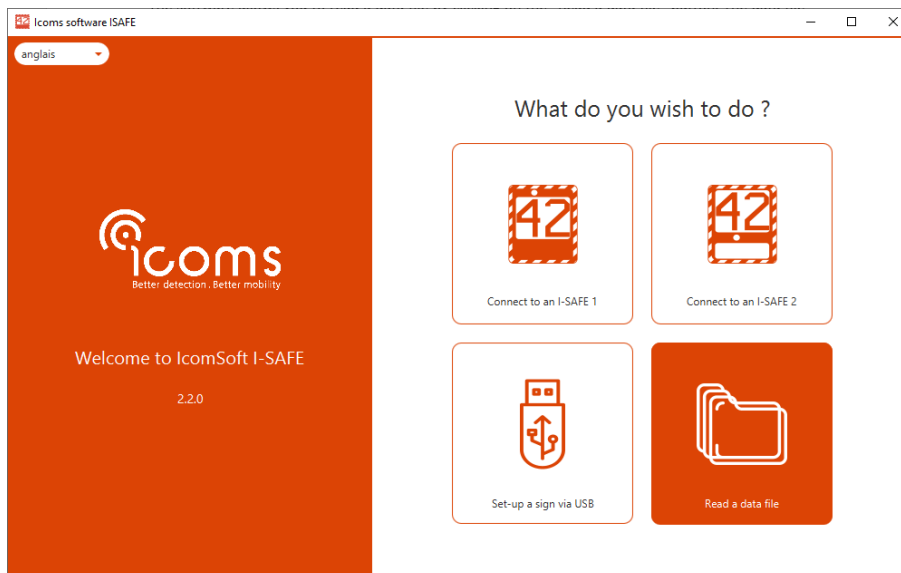
This statistical presentation software of the data coming from the display gives to the user a picture of the traffic structure. Different user-friendly screens allow you to parameter the display and to present the speed distribution, the count per threshold or also the speed itself.

WARNING

The I-SAFE is not an accurate counting device. Following traffic intensity and the chosen value for the duration of the display, vehicles may be measured and recorded several times. In other circumstances, a vehicle driving at short distance of another one will not be detected. The analysis of the recorded information gives a good idea about speed behaviour, and a rough description of the traffic structure during the measuring campaign.

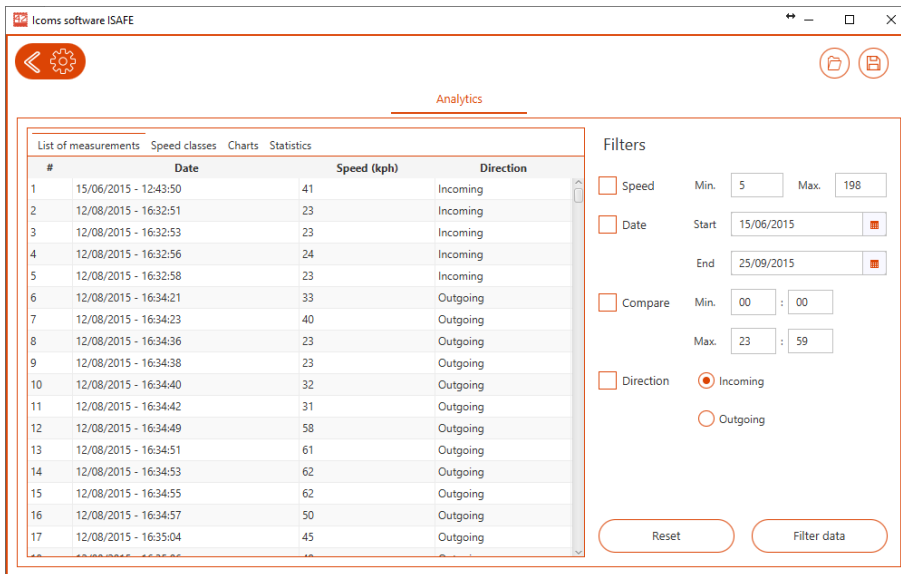
7.1 LOADING THE DATA FROM A USB STICK

The software allows you to read a data file by clicking on the “Read a data file” button. The data file can be a .TXT file or a .ISF file, depending on the type of speed sign you have.



Screenshot 20: reading a data file

The software will show the data in table format as shown in Screenshot 20.



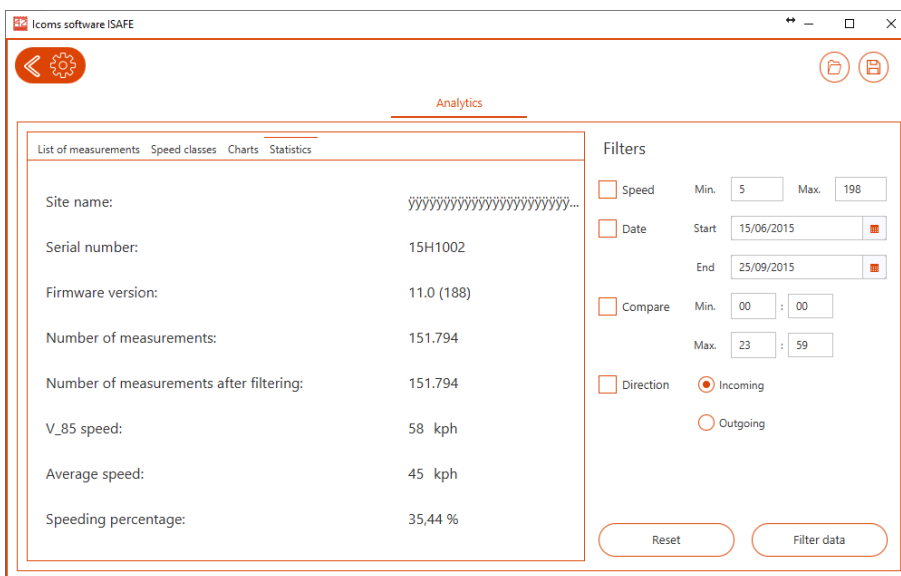
Screenshot 21: data analytics interface

7.2 ANALYSIS CRITERIA – FILTERS

If you are working by period of time and speed class, various analysis criteria need to be defined. Use the “Filter” section to filter out the unwanted data

7.3 STATISTICS

The tab “Statistics” shows a summary of the campaign, with the key figures.



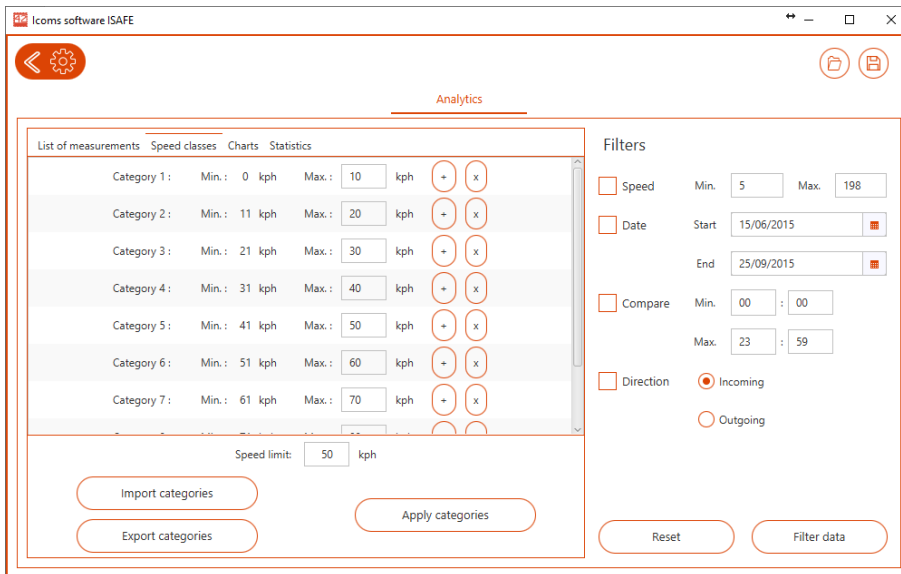
Screenshot 22: statistics pane

7.4 GRAPH TYPES

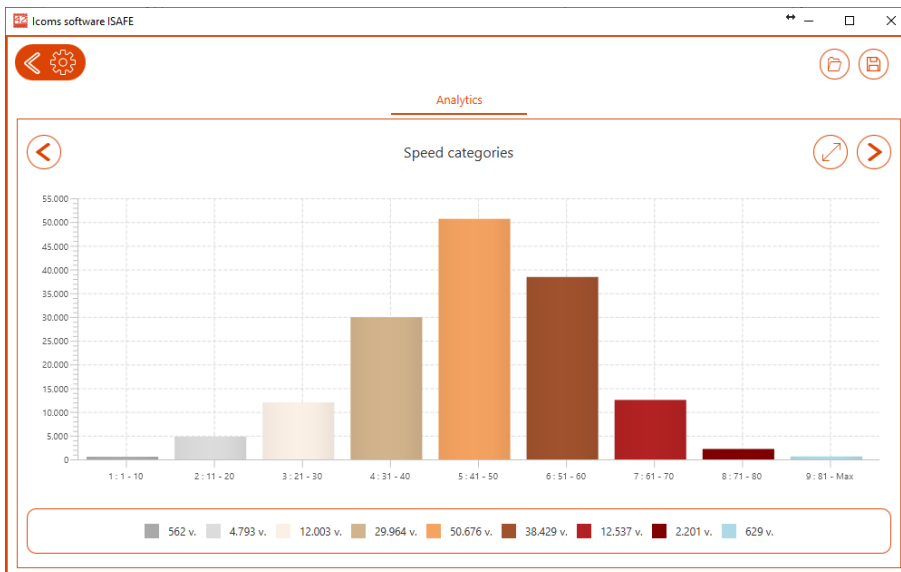
Once the data have been selected and configured, various graphs and tables are available

7.4.1 Speed classes

Clicking on the tab “Speed classes” will allow you to define the speed classes of your choice which will then be shown in the graphs.



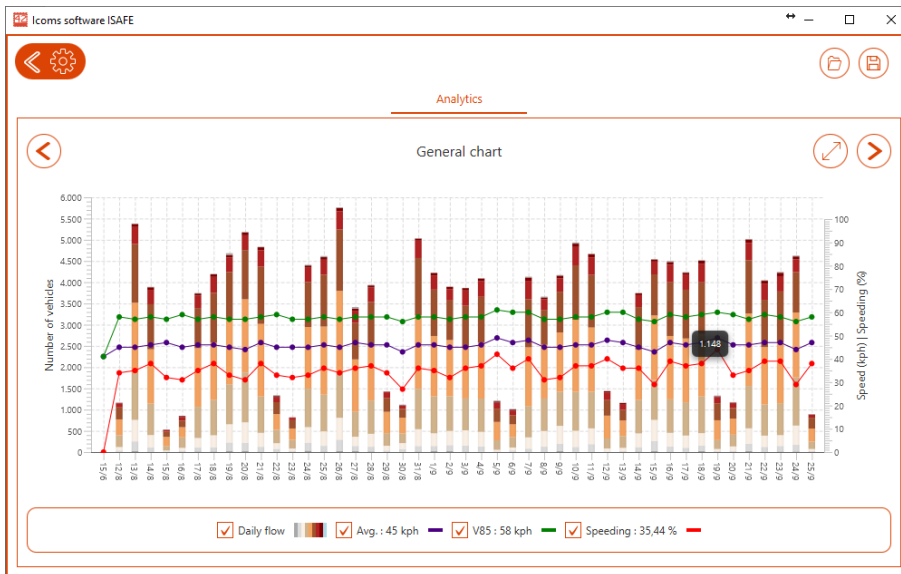
Screenshot 23: defining the speed classes for analysis



Screenshot 24: graphical overview of the measurements divided in speed classes

7.4.2 General chart

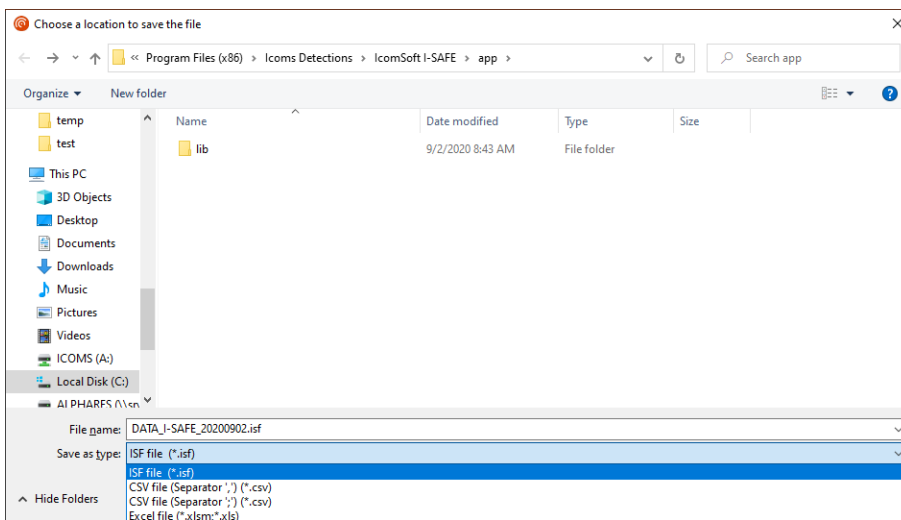
The graph expresses the volume according to time. By checking the boxes located underneath the graph, you can view the change curves for the average speed, the percentile and the percentage excess speed in relation to the pivot value set in the “Speed classes” tab.



Screenshot 25: general chart showing the measured vehicles and statistics

7.5 SAVING AND EXPORTING DATA

To export the data, click on the “floppy disk” icon on the top right corner of the application.



Screenshot 26: choosing the export format

You can save files to the following formats as shown in Screenshot 26:

- .csv: file bounded by a comma
- .xlsm: Microsoft® Excel report format, see next sub-section
- .isf: an internal format allowing you to create a new file with all or part of the data from the initial file.

IMPORTANT NOTE ON CSV EXPORTS

When exporting in CSV files, the software will create one CSV file per campaign. One campaign is defined as the period between two different radar configurations. If more than one campaign is present in the radar memory, more than one CSV file will be created and saved on your PC.

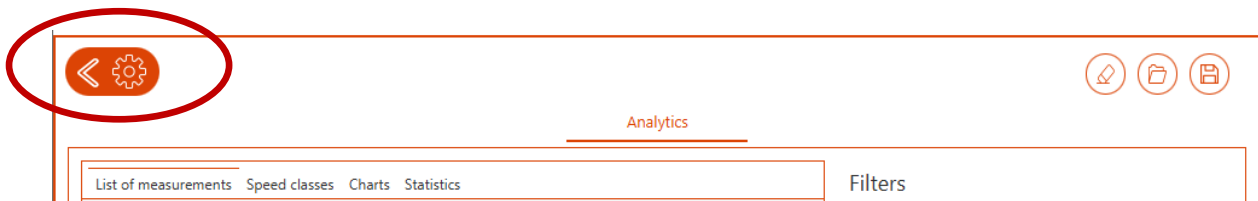
7.5.1 Excel report

The IcomSoft generates Excel reports based on a preloaded template. The default template after having installed the software is the standard template of Icoms Detections. You can change the template and load it into the software to generate reports based on your custom template.

The Excel model contains a small Excel macro to refresh the graphics automatically after creating the tab with the data. The file extension is therefore .xlsm.

7.5.2 How to load a customized report template in the IcomSoft

Click on the settings sign on the top left corner of the IcomSoft application, see Screenshot 27.

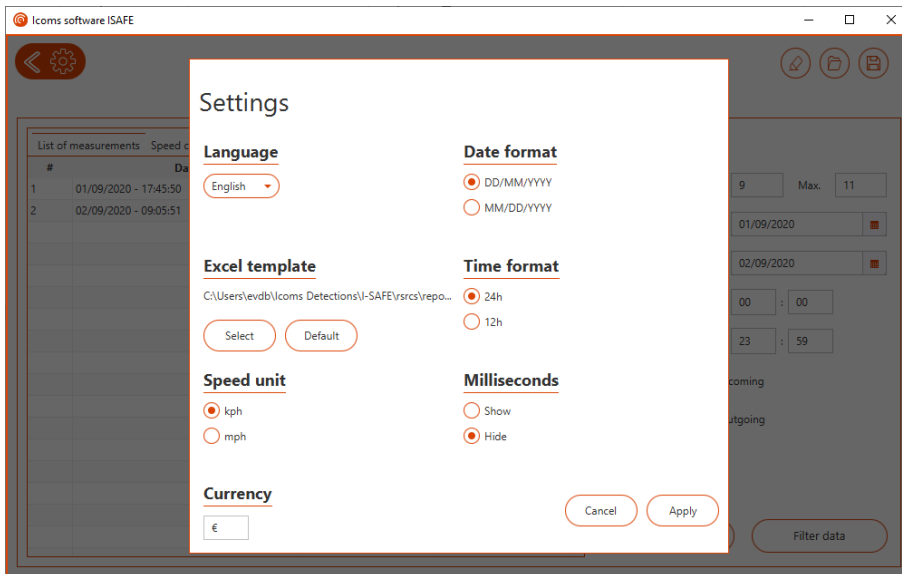


Screenshot 27: opening the settings window

The settings window is shown in Screenshot 28. Click on "Select" under the "Excel template" to select the new template report of your choice. **Please pay attention: the format of the new template must be .xlsm.**


Make sure as well that the tab "data" is present in the new template. The IcomSoft I-SAFE will use this « data » tab to insert data. No customized data, formula or graphic may be included in this tab.

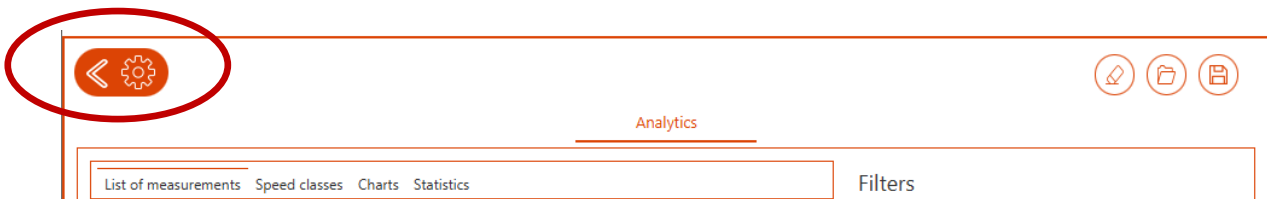
Once the new template loaded in the IcomSoft, the new reports will be generated according to your new template.



Screenshot 28: settings window

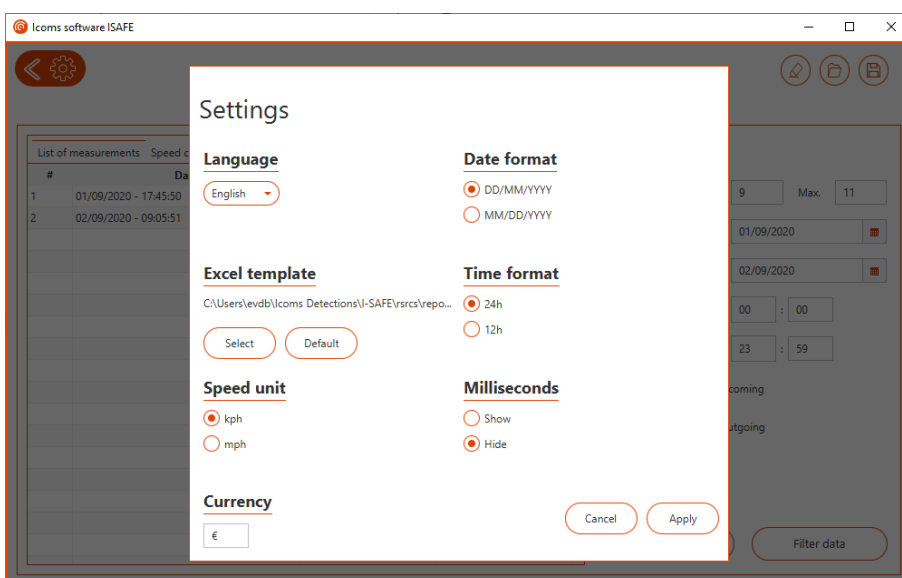
7.6 GENERAL SETTINGS

To access the general software settings, click on , upper left in the main window:



Screenshot 29: opening the settings window

The user can choose the language, units, time format and date format as shown on Screenshot 30.



Screenshot 30: settings window

8 PHYSICAL CHARACTERISTIC

8.1 PHYSICAL DESCRIPTION

8.1.1 Display

- * Display:
 - * I-SAFE 1: Matrix 24 lines 32 columns with red and green LED + white LEDs flash lamp
 - * I-SAFE 2:
 - * Red and green LEDs 7-segments digits + white LEDs flash
 - * Lower display: matrix 16 lines 52 columns amber LEDs
- * Doppler radar
- * ABS plastic case with mounting hooks
- * Built-in solar regulator
- * Front face antireflective lexan, UV treated
- * 2 boxes on the back for USB plug and settings encoder
- * 1 battery slot on the side

8.1.2 Available accessories

- * Battery
- * Solar power
- * External charger (110 V - 220 V or public lighting)
- * Bluetooth communication
- * GPRS communication

8.1.3 Dimensions

- * Width: 665 mm
- * Height: 775 mm
- * Thickness: 140 mm,
- * Mounting hooks spacing: 475 mm
- * Total weight without battery:
 - * I-SAFE 1: 12.4 kg
 - * I-SAFE 2: 11.4 kg
- * Display window dimensions: 384x513 mm

8.2 TECHNICAL FEATURES

8.2.1 Accuracy of measurements

The accuracy of measures in laboratory is more than 98 %-. This accuracy is only reached for the best distance of measurement (60 to 80 m for cars and more for trucks).

8.2.2 Range of speed to be detected

The range of speed to be detected runs from 5 to +/- 250 km/h. It is possible to define a speed area for the display, by fixing minimum and maximum thresholds (see p. 19). Measurements above 5 km/h are memorised, whatever the choice of display.

9 ADDITIONAL INFORMATION

9.1 ISSUE RECORD (USER'S GUIDE)

Version 1.00 – December 6, 2016: 1st version "SL"

- update pictures & accessories
- update power feeding
- mounting process solar panel

Version 1.5 – March 27, 2018:

- legend encoder
- Layout
- New service box
- Bluetooth & GPRS options
- Address
- RS-232 communication
- New mounting bracket for solar panel

Version 1.7 – January 17, 2020:

- 3G modem

Version 2 – January 18, 2020:

- STM version STM, settings encoder

Version 2.4 – May 22, 2022:

- App
- Use cases
- Erasing the memory
- 3 custom zones

Version 2.5 – October 20, 2022:

- Decommissioning the product

Version 2.6 – October 27, 2022:

- Firmware 13.1
- Time slots

Version 2.7 – December 14, 2022: parameters file at the root of the USB stick

Version 2.8 – February 2, 2023: solar panel clamps – factory settings

Version 2.9 – May 22, 2023:

- Default parameters for local zones
- Max. size USB stick
- Password in App & software
- 4G

Version 2.9.2 – August 28, 2023 : default settings, min. speed 15 km/h


9.2 LEGAL DECLARATION



Icoms Detections herewith declares that the I-SAFE complies with the essential requirements and other conditions of directive 2014/53/EC that apply to it.

You can obtain a copy of the "Declaration of Conformity" by sending a request to info@icomsdetections.com.

9.3 CONTACT DETAILS MANUFACTURER

	<p>Icoms Detections S.A. Avenue Albert Einstein 11/B ■ B-1348 Louvain-la-Neuve ■ BELGIUM Tel.: +32 (0) 10 45 41 02 ■ Fax: +32 (0) 10 45 04 61 info@icomsdetections.com ■ www.icomsdetections.com</p>
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10 APPENDIX 1: SETTINGS ENCODER

For more information related to the encoder, see 3.1 Material, p. 9 & 4.2 Factory setting, p. 15.

10.1 GENERAL

When the I-SAFE is powered on, the encoder display shows **o**. It means it is in « configuration » mode and ready to communicate through Bluetooth, if the option is available.

After 15 seconds, the I-SAFE goes to « measure mode », with the parameters of the TAILOR MADE ZONE 1. The encoder displays then – and flashes every 5 seconds.

To choose one of the standard speed limits or another function, press the settings encoder button for 3 seconds. The settings encoder display shows “8”. You can then release the button.

The encoder display blinks again quickly. Then press the button to scroll through the menus (they scroll in a loop). When the desired menu appears on the encoder, wait 3 seconds, the I-SAFE goes then to the chosen function or menu.

For the menu’s « download statistics to USB stick » (**d**) and « upload param tailor made zone to the unit » (**P**), the encoder display shows **u**. It means you can insert the USB stick into the USB port. The I-SAFE reads then the data from the USB stick or writes the measurement data. The dot next to the **u** flashes. **Don’t remove the stick while the dot next to the “u” flashes.**

When the display shows “**o**”, the stick can be unplugged

Press the button again for 3 seconds in order to choose the right function. If no speed zone choice is made after 40 seconds, the radar switches to the last zone used.

10.2 AVAILABLE FUNCTIONS

Pos. encoder / Country	English speaking countries	Spain
1	Zone 30	Zone 20
2	Zone 40	Zone 30
3	Zone 50	Zone 50
4	Zone 70	Zone 80
-	Tailor made zone 1 (zone 50 as factory setting)	Tailor made zone 1 (zone 50 as factory setting)
=	Tailor made zone 2	Tailor made zone 2
≡	Tailor made zone 3	Tailor made zone 3

-, = & ≡ : see 4.3 Customize the settings, p. 16.

- - = TAILOR MADE ZONE 1 (= zone 50 for units with factory setting)
- = = TAILOR MADE ZONE 2
- ≡ = TAILOR MADE ZONE 3
- 1 = ZONE 30
- 2 = ZONE 50
- 3 = ZONE 70
- 4 = ZONE 90
- d = DOWNLOAD STATISTICS TO USB STICK

The I-SAFE must be powered and in “measure” or “demo” mode.

- Press the settings encoder button for 3 seconds.
- When the settings encoder display shows “8”, release the button.
- The encoder display blinks quickly.

- Then press the button to scroll through the menus (they scroll in a loop).
- When the "d" menu appears on the encoder, wait 3 seconds, until the settings encoder display shows "u".
- Insert the USB stick into the USB port.
- The I-SAFE writes the data file on the USB stick and the dot next to the "u" flashes.
- Do not remove the USB stick while the dot flashes.
- When the display shows "o", the USB stick can be unplugged.
- Press the button again for 3 seconds and release when the display stops flashing.
- Scroll through the menus again until the encoder displays the code of the desired display type (-, =, ≡, 1, 2, 3 or 4) .
- This code stays displayed and flashes every 5 seconds.
- The unit begins then to measure and displays the speed of the approaching vehicles, according to the chosen parameters.
- C = ERASE UNIT MEMORY
 - Choose "C"
 - The erasing process starts after 10 sec.
- P = UPLOAD PARAM "TAILOR MADE" ZONE TO THE UNIT
The unit must be powered and in measurement mode.
 - Press the settings encoder button for 3 seconds.
 - When the settings encoder display shows "8", release the button.
 - The encoder display blinks quickly.
 - Then press the button to scroll through the menus (they scroll in a loop).
 - When the "P" menu appears on the encoder, wait 3 seconds, until the encoder display shows "u".
 - Insert the USB stick into the USB port.
 - The I-SAFE reads the data from the USB stick and the dot next to the "u" flashes.
 - Do not remove the stick while the dot next to the "u" is flashing.
 - When the display shows "o", the USB stick can be unplugged.
 - Press the button again for 3 seconds and release when the display stops flashing.
 - Scroll through menus again until the encoder displays "-" .
 - "-" stays displayed and flashes every 5 seconds.
 - The unit begins then to measure and displays the speed of the approaching vehicles, according to the chosen parameters.
- B = Bluetooth module configuration
- F = TEST (LED segments, battery level, etc.)
- A = DEMO/VALIDATION (based on the last selected zone parameters - display by steps of 10 km/h, looped sequence)

If no ZONE is chosen, the display automatically switches to the last used zone after 40 seconds.

When time slots are active (see p. 27):

- A dot is displayed next to the zone indication on the settings selector to indicate that the time slots are active.
- Display « H » on the parameter encoder indicates that the I-SAFE is in stand-by (programmed period of non-operation).

10.3 COUNTRY SPECIFIC DEFAULT SETTINGS

Speed limit regulations vary from country to country. The thresholds for positions 0 to 4 are therefore adapted (see 4.2, p. 15 and above, 10.2, p. 42) for some countries. The other positions are identical to the description above.

10.3.1 Canada

I-SAFE 1							
	Threshold	Sequence 1	Sequ. 2	Sequ. 3	Blinking	Flash	Display duration
Zone 30	from 15 to 30	SPEED green	Green thumb up		No	No	3 s
	31 to 40	SPEED orange	Reminder zone 30		No	No	
	41 to 50	SPEED red	SLOW DOWN		No	Yes	
	> 50	Triangle picto /\			Yes	Yes	
Zone 40	from 15 to 40	SPEED green	Green thumb up		No	No	3 s
	41 to 50	SPEED orange	Reminder zone 40		No	No	
	51 to 60	SPEED red	SLOW DOWN		No	Yes	
	> 60	Triangle picto /\			Yes	Yes	
Zone 50*	From 15 to 50	SPEED green	Green thumb up		No	No	3 s
	51 to 60	SPEED orange	Reminder zone 50		No	No	
	61 to 70	SPEED red	SLOW DOWN		No	Yes	
	> 70	Triangle picto /\			Yes	Yes	
Zone 70	from 15 to 70	SPEED green	Green thumb up		No	No	3 s
	71 to 80	SPEED orange	Reminder zone 70		No	No	
	81 to 90	SPEED red	SLOW DOWN		No	Yes	
	> 90	Triangle picto /\			Yes	Yes	









I-SAFE 2								
	Threshold	Figures	Sequence 1	Sequ. 2	Sequ. 3	Blinking	Flash	Display duration
Zone 30	from 15 to 30	Green				No	No	3 s
	31 to 40	Orange	Slow down			No	No	
	41 to 50	Red	SLOW DOWN !!			No	Yes	
	> 50	--	triangle + DANGER			Yes	Yes	
Zone 40	from 15 to 40	vert				No	No	3 s
	41 to 50	rouge	Slow down			No	No	
	51 to 60	rouge	SLOW DOWN !!			No	Yes	
	> 60	--	triangle DANGER + DANGER			Yes	Yes	
Zone 50*	From 15 to 50	vert				No	No	3 s
	51 to 60	rouge	Slow down			No	No	
	61 to 70	rouge	SLOW DOWN !!			No	Yes	
	> 70	--	triangle + DANGER			Yes	Yes	
Zone 70	from 15 to 70	vert				No	No	3 s
	71 to 80	orange	Slow down			No	No	
	81 to 90	rouge	SLOW DOWN !!			No	Yes	
	> 90	--	triangle + DANGER			Yes	Yes	

10.3.2 Other English-speaking countries

I-SAFE 1							
	Threshold	Sequence 1	Sequ. 2	Sequ. 3	Blinking	Flash	Display duration
Zone 30	from 15** to 30	SPEED green	Green thumb up		No	No	3 s
	31 to 40	SPEED orange	Reminder zone 30		No	No	
	41 to 50	SPEED red	SLOW DOWN		No	Yes	
	> 50	Triangle picto /\			Yes	Yes	
Zone 40	from 15** to 40	SPEED green	Green thumb up		No	No	3 s
	41 à 50	SPEED orange	Reminder zone 40		No	No	
	51 à 60	SPEED red	SLOW DOWN		No	Yes	
	> 60	Triangle picto /\			Yes	Yes	
Zone 50*	From 15** to 50	SPEED green	Green thumb up		No	No	3 s
	51 à 60	SPEED orange	Reminder zone 50		No	No	
	61 to 70	SPEED red	SLOW DOWN		No	Yes	
	> 70	Triangle picto /\			Yes	Yes	
Zone 70	from 15** to 70	SPEED green	Green thumb up		No	No	3 s
	71 to 80	SPEED orange	Reminder zone 70		No	No	
	81 to 90	SPEED red	SLOW DOWN		No	Yes	
	> 90	Triangle picto /\			Yes	Yes	

I-SAFE 2								
	Threshold	Figures	Sequence 1	Sequ. 2	Sequ. 3	Blinking	Flash	Display duration
Zone 30	from 15** to 30	Green	☺			No	No	3 s
	31 to 40	Orange	Slow down			No	No	
	41 to 50	Red	SLOW DOWN !!			No	Yes	
	> 50	--	triangle + DANGER			Yes	Yes	
Zone 40	from 15** to 40	vert	☺			No	No	3 s
	41 to 50	rouge	Slow down			No	No	
	51 to 60	rouge	SLOW DOWN !!			No	Yes	
	> 60	--	triangle DANGER + DANGER			Yes	Yes	
Zone 50*	From 15** to 50	vert	☺			No	No	3 s
	51 to 60	rouge	Slow down			No	No	
	61 to 70	rouge	SLOW DOWN !!			No	Yes	
	> 70	--	triangle + DANGER			Yes	Yes	
Zone 70	from 15** to 70	vert	☺			No	No	3 s
	71 to 80	orange	Slow down			No	No	
	81 to 90	rouge	SLOW DOWN !!			No	Yes	
	> 90	--	triangle + DANGER			Yes	Yes	

10.3.3 Spain

I-SAFE 1							
	Threshold	Sequence 1	Sequ. 2	Sequ. 3	Blinking	Flash	Display duration
Zone 20	from 15 to 20	SPEED green			No	No	4 s
	21 to 25	SPEED orange	Reminder zone 20		No	No	
	26 to 45	SPEED red	Reminder zone 20		Yes	No	
	> 45	Reminder zone 20			Yes	Yes	
Zone 30	from 15 to 30	SPEED green			No	No	4 s
	31 to 35	SPEED orange	Reminder zone 30		No	No	
	36 to 60	SPEED red	Reminder zone 30		Yes	No	
	> 60	Reminder zone 30			Yes	Yes	
Zone 50*	From 15 to 50	SPEED green			No	No	4 s
	51 to 55	SPEED orange	Reminder zone 50		No	No	
	56 to 75	SPEED red	Reminder zone 50		No	Yes	
	> 70	Reminder zone 50			Yes	Yes	
Zone 80	from 15 to 80	SPEED green			No	No	4 s
	81 to 85	SPEED orange	Reminder zone 80		No	No	
	86 to 105	SPEED red	Reminder zone 80		Yes	No	
	> 105	Reminder zone 80			Yes	Yes	

*: default settings for tailor made settings « 1 »

** : 5 km/h for units delivered before August, 28, 2023

11 APPENDIX 2: ICOMSOFT I-SAFE SOFTWARE INSTALLATION

11.1 DOWNLOAD

Scan this QR code



Or surf to <https://www.icomsdetections.com/docs/downloads.html>.

11.2 MINIMAL REQUIRED CONFIGURATIONS

- Operating system (OS): Windows 10 or later
- Configuration:
 - Disk space: 200 MB min.
 - RAM: 512 MB
 - Processor Min 1.5 GHz
 - Bluetooth 2.0 Class 1 (100m)

PLEASE UNINSTALL ANY *BLUESOLEIL* DRIVER PREVIOUSLY INSTALLED ON YOUR COMPUTER. IT IS NOT COMPATIBLE WITH THE ICOMSOFT I-SAFE.

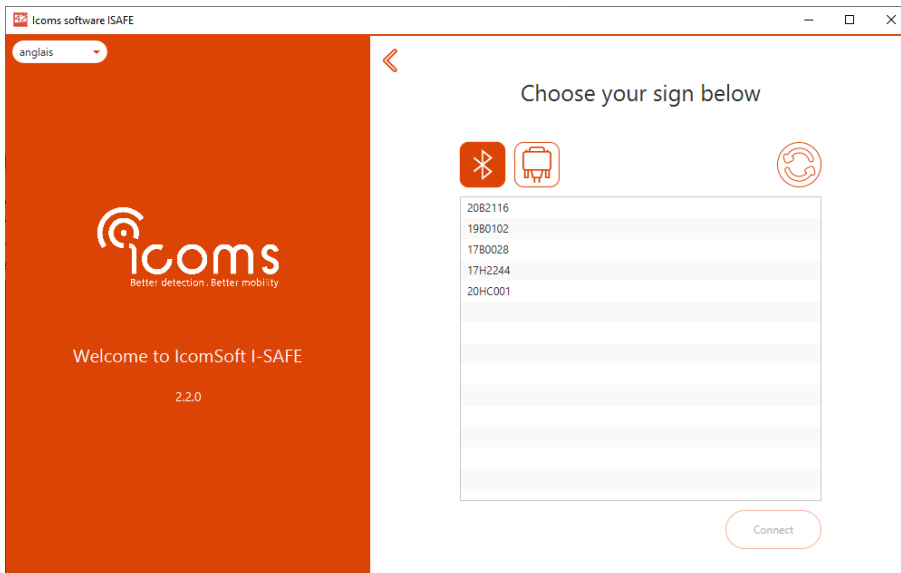
11.3 INSTALLING ICOMS SOFTWARE

1. Download the software or insert the USB stick into the drive. Double-click on the installation executable "IcomSoft-I-SAFE-2.x.y-setup.exe" with "x" and "y" denoting version numbers. On the Icoms USB stick, the exe file is stored in the folder \10_Icoms software\I-SAFE\Windows.
2. Follow the instruction given by Windows. If a password is required, use the password provided by your distributor.
3. Accept the license terms contract.
4. Launch the software by clicking on the desktop icon.

12.2 CONNECTION

Launch the Icoms Software and follow the instructions given by the software: select the type of display to connect to (I-SAFE 1 or I-SAFE 2) and then click on the Bluetooth icon to start scanning the Bluetooth devices in your vicinity, see Screenshot 31.

Once the device chosen, click on “Connect” to connect with the device.



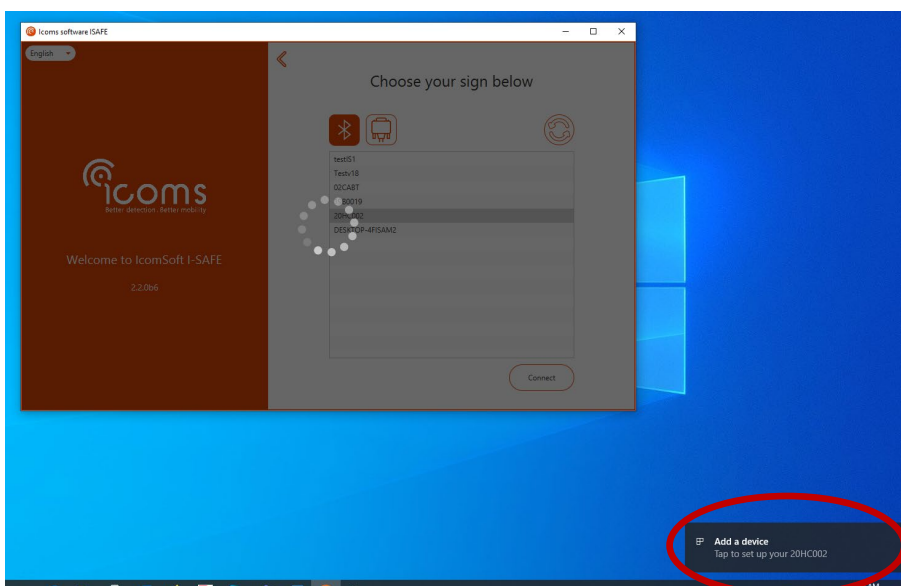
Screenshot 31: select the device from the list to connect to

12.2.1 Bluetooth password

If the device asks for a password, use “icoms” as password.

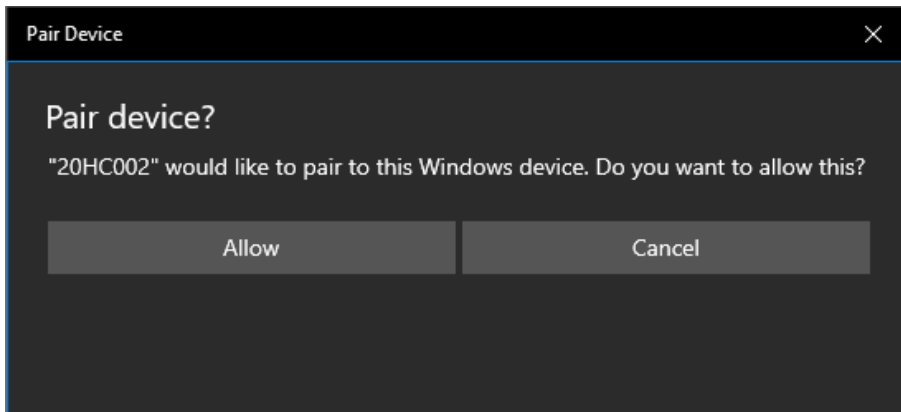
12.2.2 Adding a Bluetooth device to Windows

When connecting to the device, Windows asks to add the device with a pop up being shown on the right hand bottom corner of your screen, see Screenshot 32. Click on the pop up to add the device.



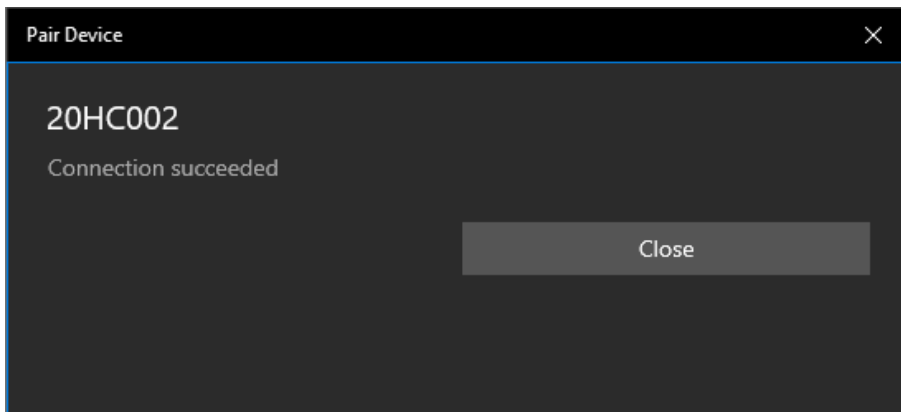
Screenshot 32: adding the Bluetooth device to your Windows PC

Windows asks if you want to pair the device, click “Allow” as shown on Screenshot 33.



Screenshot 33: allow Windows to pair with the device

Once the pairing successful, Windows will show you that the connection succeeded as shown on Screenshot 34.



Screenshot 34: Bluetooth connection success

Please note:

1. The quality of the Bluetooth transmission depends of the choice of component, its characteristics, its version and the brand name (Sitecom, Toshiba, ...).
2. Two important properties to check are:
 - the USB version if an external dongle is being used: minimum 2.0;
 - the operating range is designated by its class:
 - class 1 (more than 20 m)
 - class 2 (less than 20 m).

Even if the manufacturer specifies a greater range, allowance must be made for obstacles (walls, trees, ...) and in particular the surrounding fields (electrostatic, powerful transmitters, GSM, ...).

13 APPENDIX 4: 3G OR 4G MODEM OPTION

An optional 3G communication module is available for the I-SAFE. It is easy to install it in the service box. Please note it is not possible to use simultaneously a GPRS module and a Bluetooth module.

Before installing the optional GPRS module, please ensure the battery is switched off.

13.1 COMPONENTS

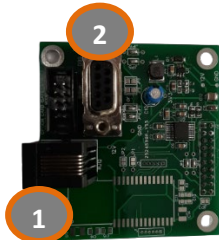


Figure 9:
communication board*



Figure 10: modem 3G
or 4G



Figure 11: power
cable

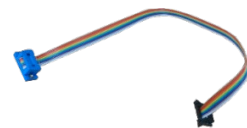


Figure 12:
communication cable

*: on some units, the communication board is not installed in the unit and comes separately with the modem. In this case, place the communication board on the 4 struts (Figure 14, items 2) in the service box and press gently to fix it. Make sure that the rake connector is properly inserted in the corresponding slot (Figure 14, items 3).

13.2 ASSEMBLY AND INSTALLATION

1. Open the door at the back of the I-SAFE to access the boards to connect the modem to, see Figure 13



Figure 13: open rear door of the I-SAFE

2. Connect the power cable and the flat communication cable to the modem and the board as shown in Figure 14, item 2.

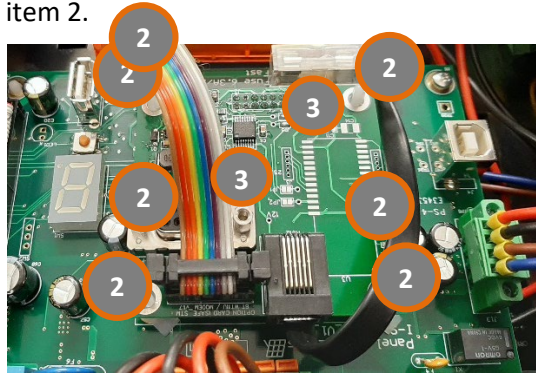


Figure 14: communication board in the I-SAFE service box connected to the modem

3. Slide the modem inside the housing and place it in the holder:



Figure 15: installed modem in the I-SAFE housing

13.3 SETTINGS

Please refer to the manual dedicated to modem settings.

When the I-SAFE is in operation and the modem is not configured or if the SIM card is not present, unplug the power cable from the modem.

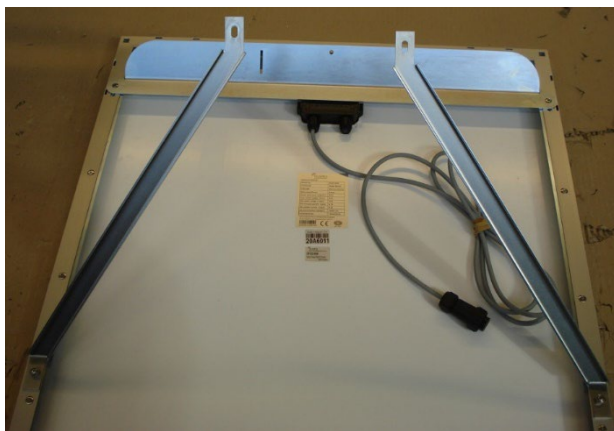
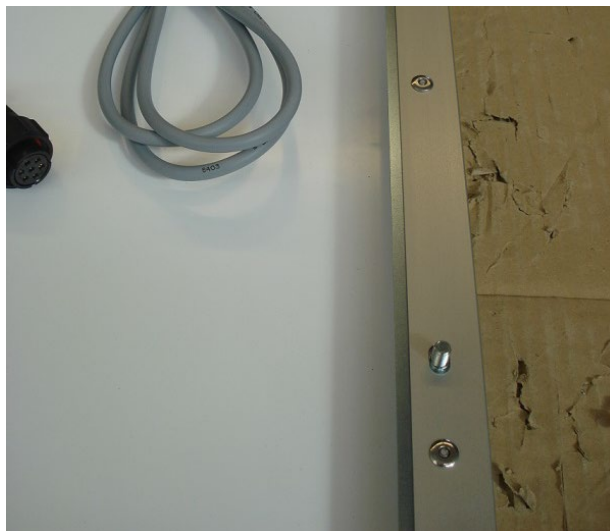
14 APPENDIX 5: SOLAR PANEL INSTALLATION

Please first switch the battery on, before connecting the solar panel.

1. Cut the tie-raps to untie the 2 supporting slats and the accessories:



2. Fasten the 2 supporting slats with the provided mounting angles/nuts



Pay attention: right and left slats are different!

3. Fasten the pole bracket on the pole and hang the upper part of the solar panel on the bracket

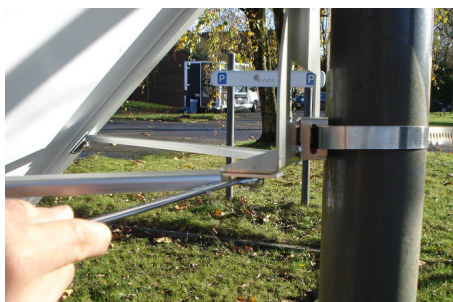


Make sure that the solid part of the clamps and not the grooved part is inserted in the pole bracket:



Recommended setting torque :
10-15 Nm 90-130 lb.in

4. Fasten the slats on the lower part of the pole bracket with the provided nuts



5. Fasten the central screw on the upper part with the nut:



Please first switch the battery on, before connecting the solar panel.

15 APPENDIX 6: USING THE PADLOCK

Use the padlock to secure the I-SAFE by locking the bracket with the fixture on the back of the I-SAFE as shown in Figure 16.



Figure 16: using the padlock to secure the I-SAFE

16 APPENDIX 7: ANDROID APP

16.1 INTRODUCTION

The Android App is designed to setup the I-SAFE and to download the measurements data through a Bluetooth connection.

16.1.1 Downloading the app

Scan this QR code



Or surf to <https://www.icomsdetections.com/docs/downloads.html>.

16.1.2 Hardware requirements

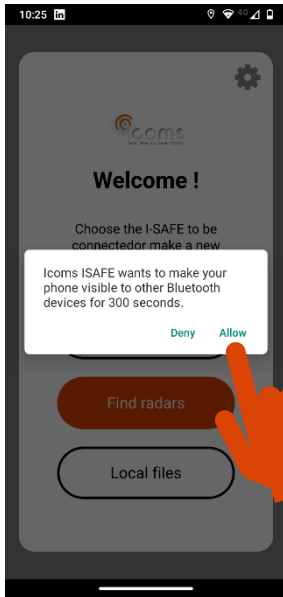
Android smartphone or tablet 7 or higher, with Bluetooth, geolocation enabled.

16.2 INSTALLATION

- Copy the .apk file on your device (email or USB).
- Run the apk file from your device. It cannot be run from a folder like Documents or Downloads, it must be run from root of your device.

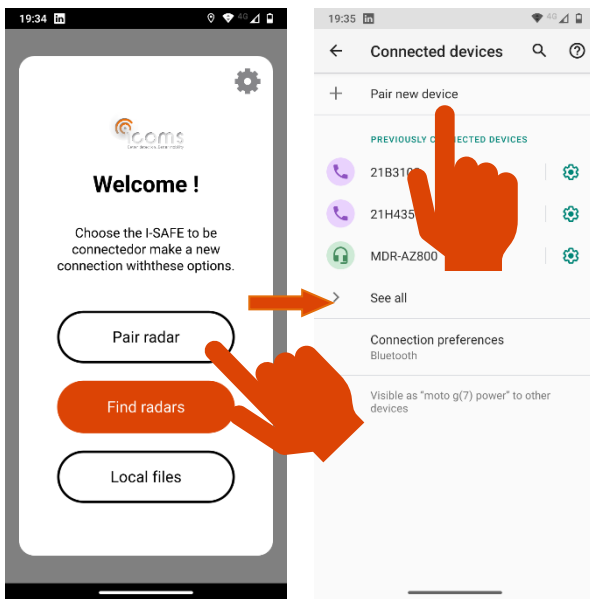
16.3 BLUETOOTH CONNECTION

When launching the app, you'll first be asked to give permission to make your device visible to other Bluetooth devices:



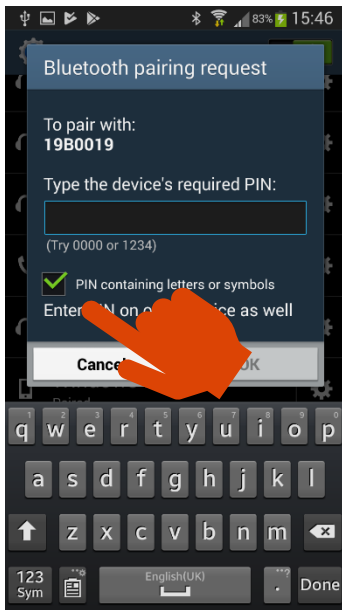
16.3.1 Pairing a new unit

To connect to a new radar, you must first to pair it. This operation must be made only once for each radar:

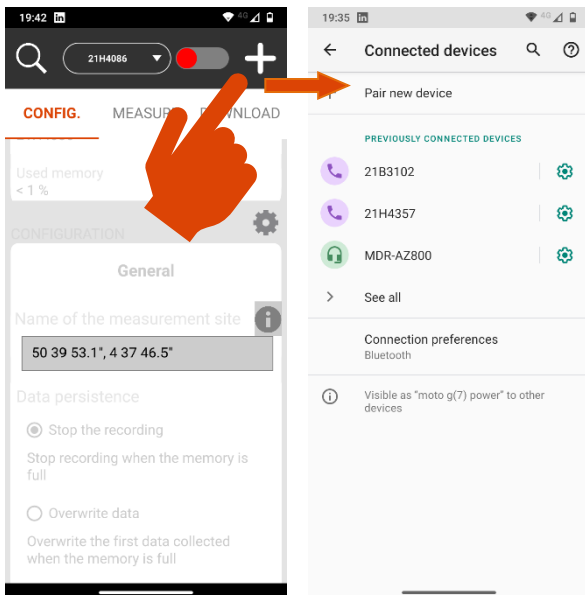


Tap the serial number of the device to start the pairing process.

If you're asked for a pairing code, check the box "PIN containing letters or symbols" to get the complete keyboard. The required PIN is "icomS".

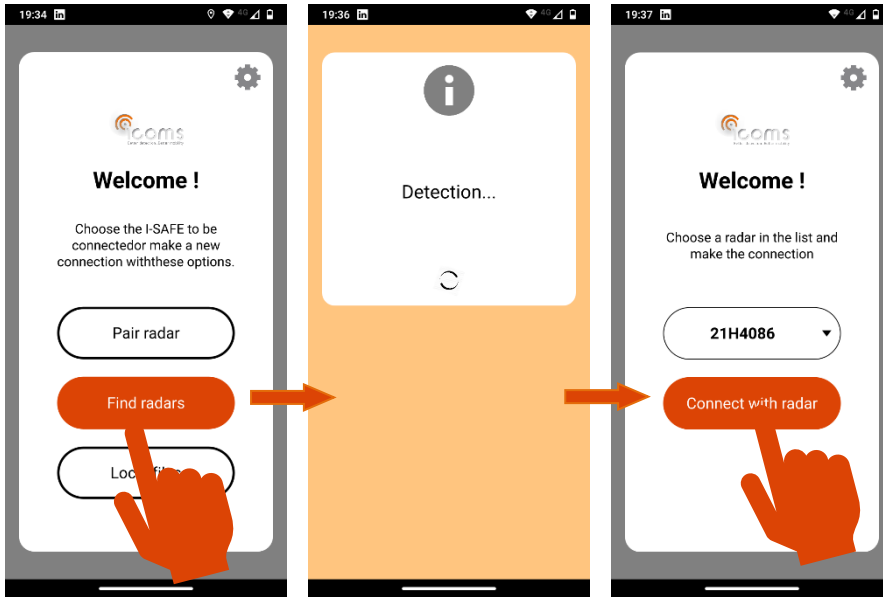



From the main screen, tap the **+** to search for new radars and process as explained above:

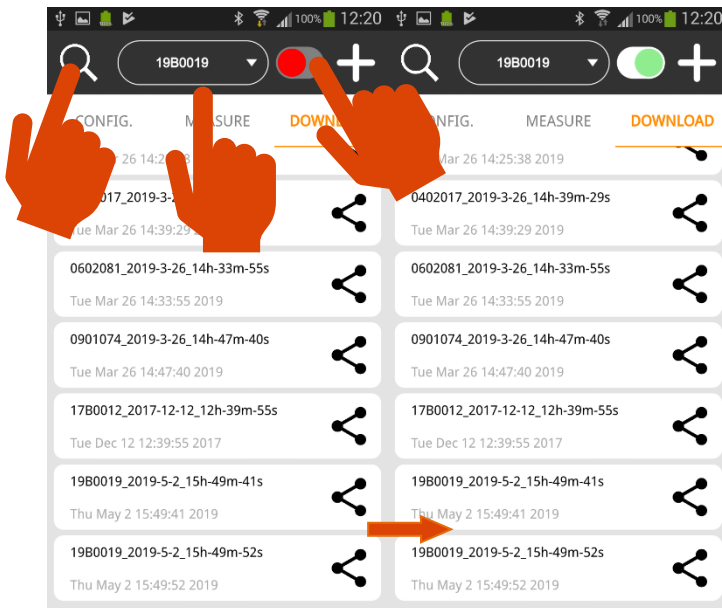


16.3.2 Connecting an already paired radar

Once your I-SAFE is paired, you can connect it with your device:

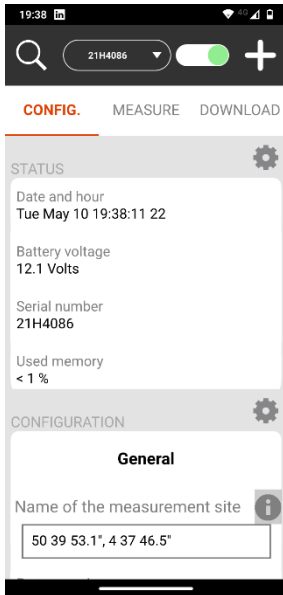


From the main screen, tap the  to search for already paired radars. The available serial numbers in a reachable distance from your device will appear in the box above the screen. Choose the radar in the list and tap then on the red button to connect the radar:



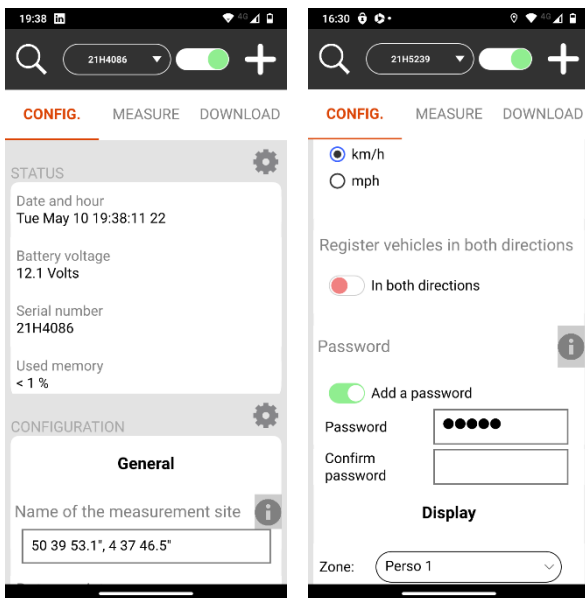
16.4 RADAR CONFIGURATION


In the "CONFIG." menu, you'll get the radar status in the upper part of the screen:



In the lower part of the screen, you'll set the parameters. Refer to the I-SAFE user's guide for more information about the different parameters. Once your setting is done, send it to the radar:

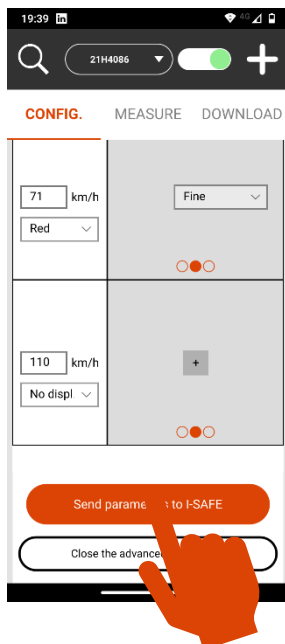
Please note that the pictograms and texts available in the app are those registered in the I-SAFE. If you want a specific text or pictogram, please create it beforehand with the I-SAFE software for Windows and send it to I-SAFE via Bluetooth or a USB stick.



Click on the icon  next to the field "Name of the measurement site" to automatically insert the geographical coordinates of the site where you are located.

The "Add a password" section allows you to secure the connection to I-SAFE.

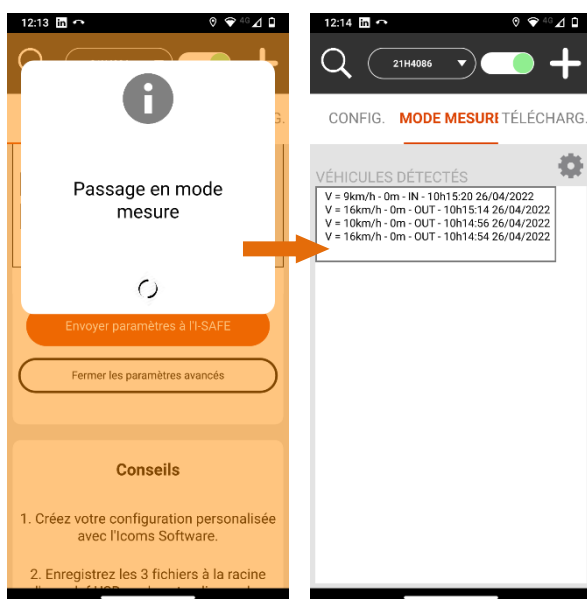
When the parameters are set, send them to the radar:



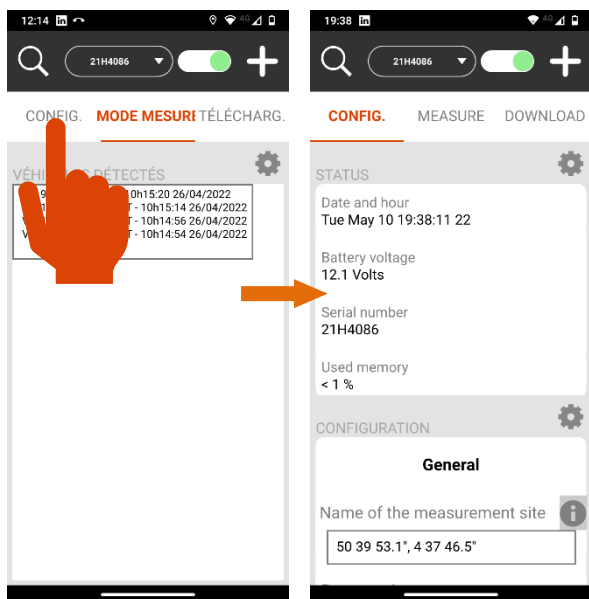
16.5 MEASUREMENT MODE

Sending the settings to the radar will toggle it to “measurement mode”. The measurements appear on the screen in real time.

For each measurement, the I-SAFE sends a speed and the date and time of passage. If the option “record vehicles in both directions” is activated, the “IN” speeds correspond to a movement towards the I-SAFE and the “OUT” speeds to movement receding from the I-SAFE:

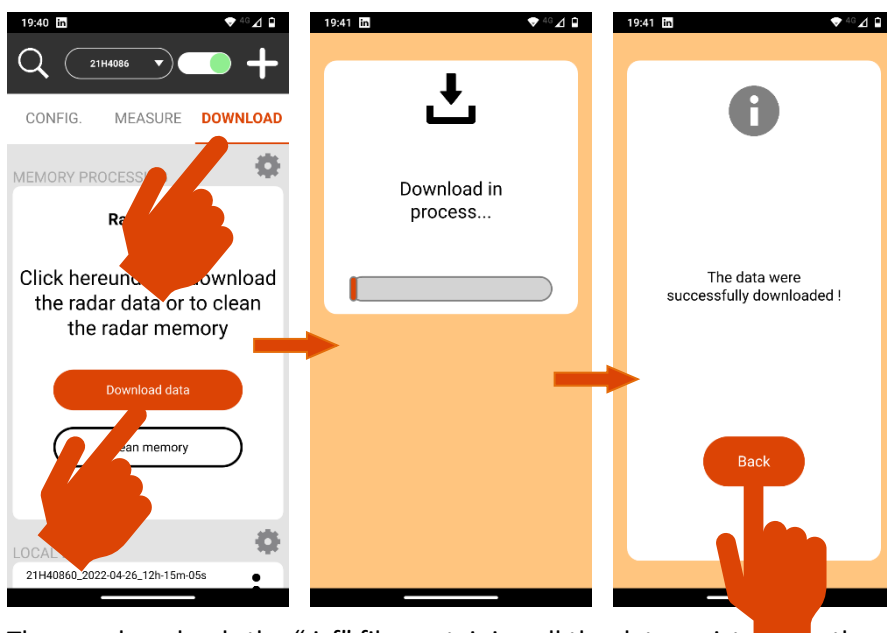


Do you want to change the configuration, tap CONFIG. To come back to the settings:



16.6 DOWNLOAD THE DATA

Connect the I-SAFE as explained earlier in this document. Tap then « Download » on the main screen:

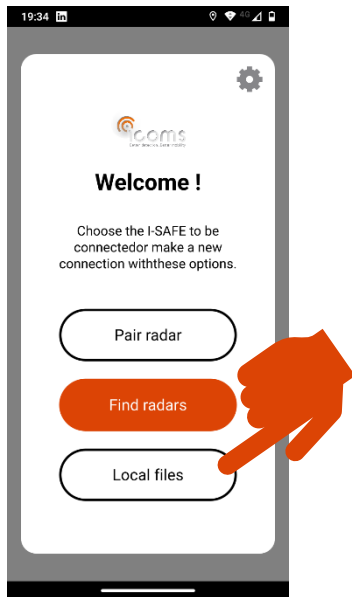



The app downloads the “.isf” file containing all the data registered in the radar memory.

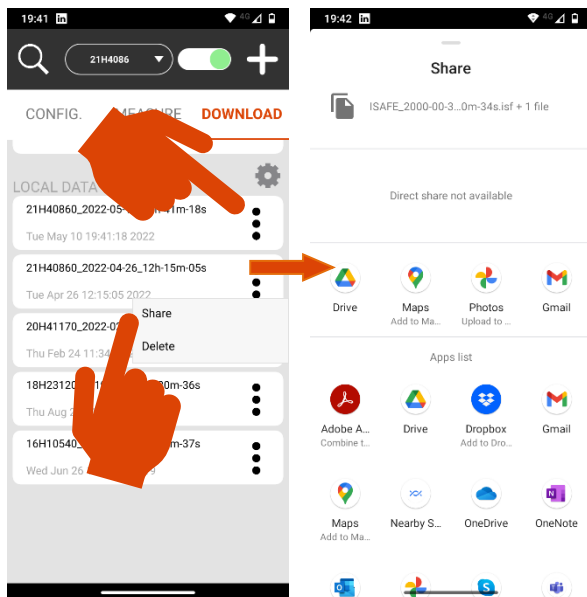
All the files are stored in a folder named according to the I-SAFE serial number and the download date and hour.

16.7 SHARE THE FILES

The different folders are shown in the lower part of the “DOWNLOAD” screen. You can access it directly from the main screen:



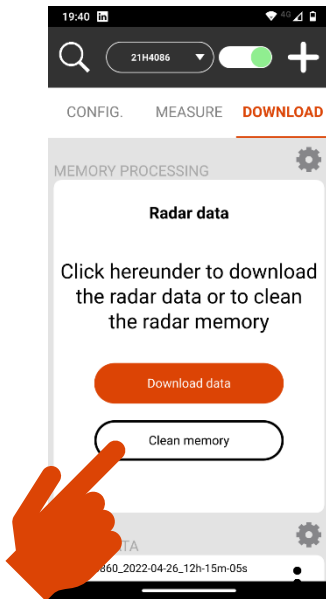
Tap the  icon and choose « share » to send the folder through Bluetooth, email or other sharing tool:



16.8 ERASE THE MEASUREMENTS


16.8.1 Erase the data from the radar

To avoid a too large number of csv files, **we strongly advise to erase the radar memory after you successfully downloaded your measurement campaign.** Downloading the file does not erase it from the memory. You must tap “Clean memory” in the “DOWNLOAD” screen to erase the measurements data from the radar:



16.8.2 Erase the files from the device

The data folders are stored on your device in the folder “Documents”, sub-folder ICOMS_TMSSA_FILES. You access the maps and folders with the app “My files”. The folder “Documents” is a sub-folder of “All files”, not the main “Documents” folder:

Tap  at the right of the folder you want to delete and choose “Delete”:

