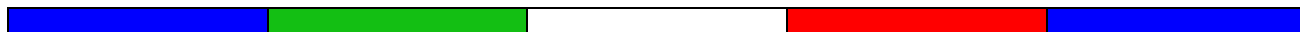




User guide



MAAT 2.0 is the software for Windows 11-10-8-7 and Mac OS X High Sierra and following supplied with Starlane Stealth GPS-4, Corsaro and DaVinci-II laptimers and data acquisition systems to allow configuration, data analysis, storage and printing.



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INTRODUCTION

MAAT is the latest version of the analysis software developed for **Corsaro** and **DaVinci-II** line products as an alternative to the previous DigiRace-MMX package.

MAAT does not allow direct communication with other Starlane products but it is always possible to load the data sessions downloaded with DigiRace-MMX into MAAT.

INSTALLATION

1. Download the software from the TECHNICAL SUPPORT section of Starlane website <http://www.starlane.com>
2. Unzip the downloaded zip file and run the **Setup_Maat.exe** installation file, on Mac OS X run the **Installer_MAAT.PKG** file that will install the software.
3. The installation procedure will start. Proceed according to the installation instructions shown during the process.

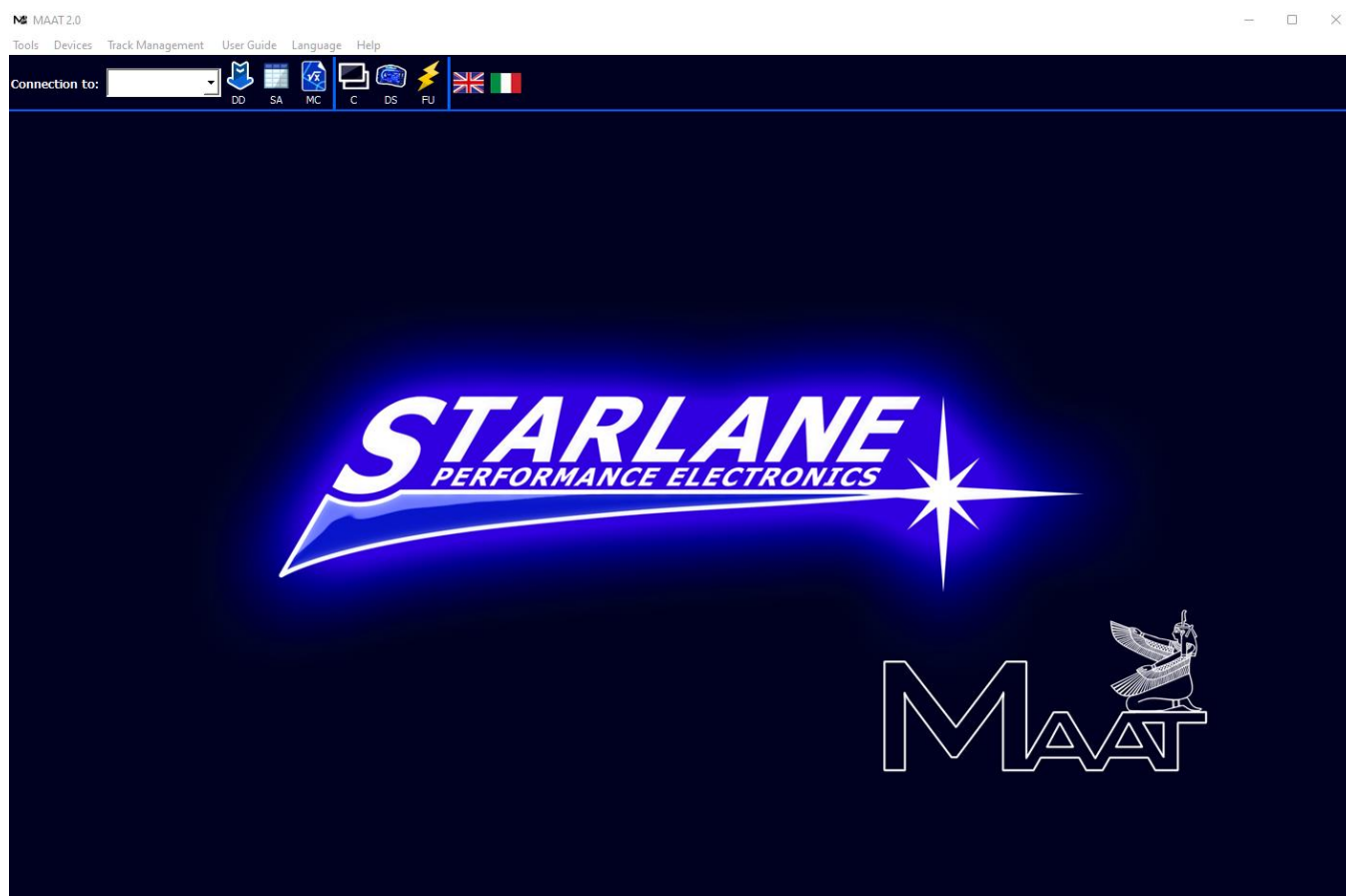
Getting started

After the installation the MAAT icon appears on the desktop.

To start the program, double click on the icon on the desktop, or start it from

Start> Programs> MAAT> MAAT 2.0 while, on Mac OS X, you can find the link in **Applications**.

USER INTERFACE



The MAAT interface consists of the Title Bar and the Menu at the top, followed by the Icon Bar and the Main Panel in the middle.

TITLE BAR

The Title bar shows the version number of MAAT software.







Menu

The Menu consists of the following sections:

TOOLS	Command to choose the instrument to access the analysis.
DEVICES	Setting communication parameters and updating the on-board software of the device (firmware).
TRACK MANAGEMNT	Opening the Track Management window.
USER GUIDE	Allows to access the user manuals and hot keys reference.
LANGUAGE	Choice of MAAT software language
HELP	View user manuals, hot keys and software version information.

Icon Bar

The Icon Bar includes the buttons for the main functions and the connection menu with the list of paired devices:

Connection to:	Allows you to select the device to which you want to connect between those set.
 Data Download	Opens the data download panel.
 Session Archive	Opens the window with the list of downloaded sessions.
 Math Channels	Opens the Math Channels management panel.
 Communication	Shows the list of paired devices and let you pair new ones or remove them.
 DaVinci-II Settings	Opens the panle to manage settings and channels on DaVinci-II dashboards.
 Firmware Update	It allows you to update the selected device to the latest Firmware version downloaded from http://www.starlane.com

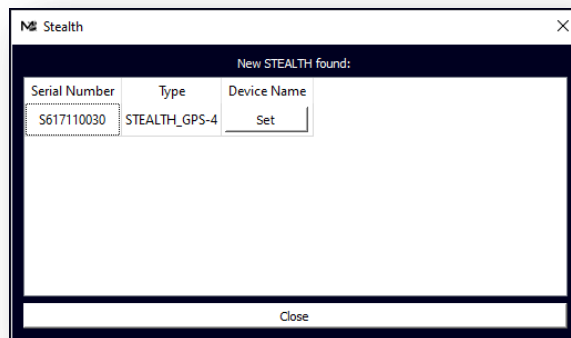
CONNECTION OF STEALTH GPS-4 VIA USB PENDRIVE

The following guidelines also apply to older Stealth GPS-3 and models Stealth GPS-3X.

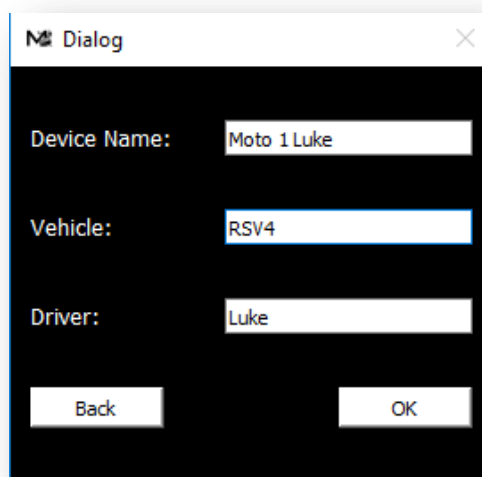
At the first connection it is necessary to configure your Stealth so that, every time the USB Pendrive is connected, MAAT can recognize it and automatically set the name of the driver and device for data download or settings.



First connection of Stealth GPS-4

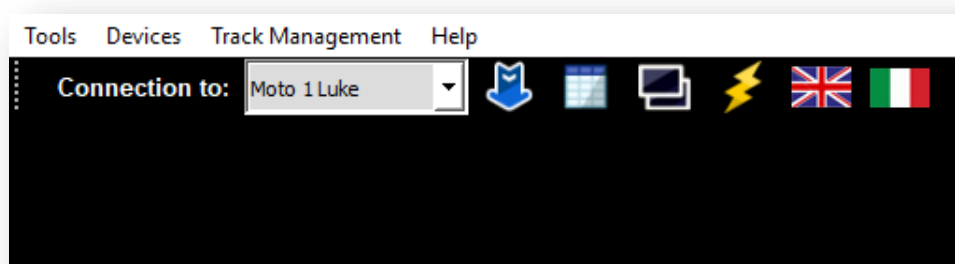
1. Verify MAAT is running.
2. Turn on the Stealth.
3. Insert the USB Pendrive into the socket on the Stealth harness so that Stealth initializes the Pendrive and creates the Starlane folder on it.
4. Once the Pendrive menu appears on the Stealth display, remove the USB Pendrive.
5. Insert the USB Pendrive into one of the USB ports on the PC.
6. After a few seconds the following message will automatically appear:




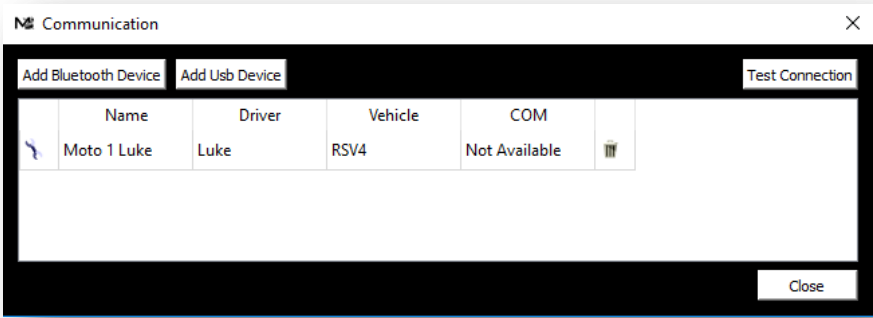
7. Click on the **SET** button, the following panel will open:



8. In the **Device Name** enter a name that will allow you to unequivocally identify the connected DaVinci-II in case you have a team with more drivers and devices (eg Moto 1 Luke).
9. Type the name of the **Vehicle** (Eg RSV4).
10. Type the name of the **Driver** (es. Luke).
11. Confirm by the **OK** button.
12. By this moment the communication with your Stealth has been configured and the device will be identified automatically each time the USB Pendrive is inserted as indicated in the Icon Bar. If you download the sessions from the Stealth to the Pendrive, you can insert it into the PC and, as explained in the next paragraphs, use the  button to download them in MAAT or the  button to update the Stealth Firmware:



13. Clicking on the  icon It will always be possible to see the list of configured devices and modify the configuration or remove them from the list:



Note: connecting via USB Pendrive does not use COM ports so it is correct that the COM port in the panel is shown as **Not Available**.

CONNECTION VIA WIFI OF CORSARO-II AND DAVINCI-II X-SERIES

Connection to PC with WINDOWS or APPLE MAC OS X

To enable WiFi communication between the PC and the Starlane device the computer must be equipped with a WiFi device (standard on some portable PCs or purchased at any electronics, computer store as a USB dongle).

WiFi connectivity is available on the following devices:

- Corsaro produced in 2021 with serial number having the number 3 in the seventh position (e.g. CXXXXX**3**XXXXXXXXXX-XXXX) and firmware version 5.60 or higher.
- All Corsaro-II with firmware version 1.26 or higher.
- All DaVinci-II X-Series with firmware version 2.50 or higher.

Check in the System Info menu of your device that the above features are compatible; in any case, update the firmware to the latest version available on the Technical Support page of the site <https://www.starlane.com/en/technical-support-software-firmware>

If your device does not yet have a firmware with WiFi functionality, you will need to use the Bluetooth connection from a Windows PC, explained below, to update the firmware to the latest version.

NOTE: The configuration procedure for devices equipped with WiFi is the same. For this reason the configuration procedure is shown only for **CORSARO**.

Type of WiFi Connections

It is possible to connect to the Starlane device in two different ways:

1. **AP** (Access Point) mode.
Recommended for those who do not need to connect several Starlane devices at the same time.
2. **WLAN** (Wireless Local Area Network) mode.
Ideal for teams with several Starlane devices used at the same time.

The AP mode is the simplest and most immediate and establishes a point-to-point connection between the PC and the device. In AP mode the PC will not have connection to the Internet through the WiFi network as it will communicate only and exclusively with the Starlane device, which becomes its access point.

In WLAN mode, the Starlane device is configured with the parameters of an existing local network (already equipped with its own access point) and is thus visible to anyone who has access to the resources of this network.

In order to maintain maximum data protection and prevent strangers from connecting to your Starlane device, a personal password can be sent to the device. The device will refuse access to anyone who tries to connect without entering this password.

The configuration of the WLAN network parameters is not carried out directly through the device display but is sent to it via the PC. For this reason it will be necessary to make a first connection in AP mode in order to then be able to send the configuration of your WLAN to the device.

Connection in AP mode

1. Verify WiFi is fully operational on your PC.
2. Turn on Corsaro and place it within 5 meters from the PC.
3. Activate the WiFi connectivity in the Corsaro-II “**Connections**” menu.
4. Check that the AP mode is selected in the Communications menu of Corsaro-II.
5. Open the panel with the list of Windows or Mac WiFi networks and connect to the network that has the name of your Corsaro.

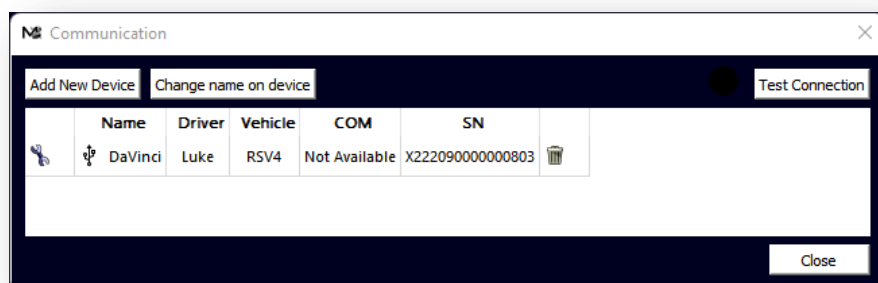
The password for connecting to Corsaro WiFi network in AP mode is: **Starlane**

If the device is not detected, check that it is turned on, that it has WiFi on and in AP mode.

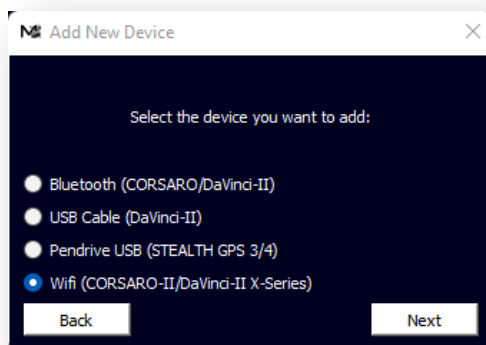
Often Windows may not detect your Corsairo network, in which case it is sufficient to deactivate and reactivate the Windows WiFi.

6. Wait a few seconds until the device is detected and indicated, with its serial number, in the Pairing panel.

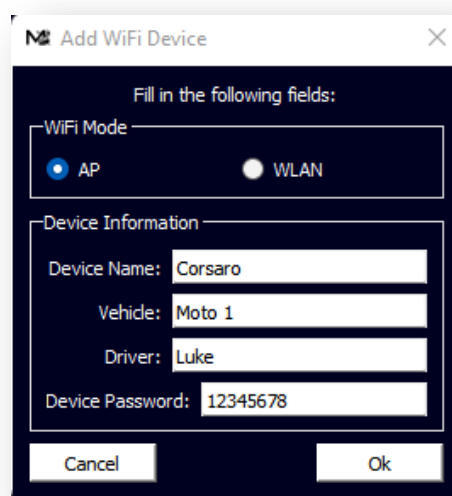
7. Click on the **Communication**  icon in MAAT icon bar.



8. Click on **Add New Device**.



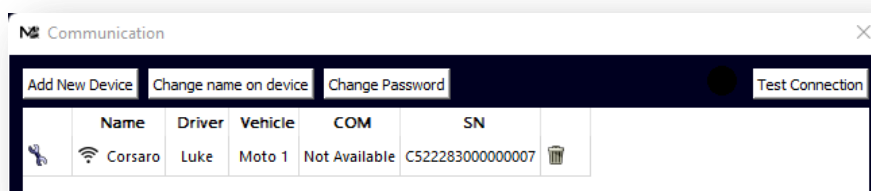
9. Select the type of Wifi connection and press the **Next** button.



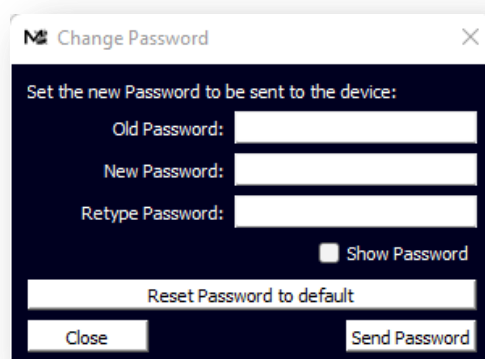
10. Leave **AP** mode selected.
11. In the **Device Name** enter a name that allows you to unequivocally identify the connected device in case you have a team with more drivers and devices.
12. Type the name of the **Vehicle** (eg Moto 1).
13. Type the name of the **Driver** (eg Luke).
14. If you are configuring a Corsaro-II to which a new password has never been sent, leave the default one (12345678) to make the first connection. We will see later how to customize it.
15. Press the **OK** button.

In order to avoid access to data by outsiders, it is recommended to enter your own personal password:

1. Select the row relating to the device whose password you want to change, the **Change Password** button will appear, click on the button:



2. Type the old password (if it has never been changed, the default is: 12345678)



Then type the new password in the next two fields and press the **Send Password** button.

From this moment your Corsaro will not accept connections from devices that do not log in with the new password you have set.

It is possible to reset the password to the default one directly from **Corsaro's Connections> Wifi** menu.

Attention:

every time you want to communicate with Corsaro for data download or other functions, the PC must be connected to Corsaro WiFi network and not to other networks.

Connection in WLAN mode

If you want to connect Corsaro to an existing WLAN that already has its own Access Point, you need to do the following:

1. Configure the connection in AP mode as per the previous paragraph in order to be sure that there is communication between MAAT and Corsaro.
2. Select the WLAN mode from the drop-down menu:

The screenshot shows a 'WiFi Settings' window with a dark blue background. At the top, 'WiFi Mode:' is set to 'WLAN' in a dropdown menu. Below this is a section titled 'Parametri WLAN' containing 'SSID:' and 'WiFi Password:' text boxes, a 'Show Password' checkbox, and two radio buttons for 'Automatic IP' (selected) and 'Manual IP'. A second section titled 'Device Parameter' contains three text boxes: 'Device Name:' with 'Corsaro', 'Vehide:' with 'Moto 1', and 'Driver:' with 'Luke'. At the bottom are 'Back' and 'Send' buttons.

3. In the SSID field, type the name of the existing WiFi network you want to connect to.
4. Enter the password of that WiFi network.
5. If your network is originally configured with automatic IP address assignment (DHCP), leave the **Automatic IP** mode set on the panel.
6. Press the **Send** button to send the settings to Corsaro.
7. Activate the **WLAN Mode** on the Corsaro display in the Connections>Wifi menu.

In case your network has static IPs, select **Manual IP** to set the parameters:

WiFi Settings

WiFi Mode: WLAN

Parametri WLAN

SSID:

WiFi Password:

Show Password

Automatic IP

Manual IP

IP Parameters

IPv4:

Subnet Mask:

Gateway:

DNS 1:

DNS 2:

Device Parameter

Device Name: Corsaro

Vehicle: Moto 1

Driver: Luke

Back

Send


CONNECTION OF CORSARO VIA BLUETOOTH

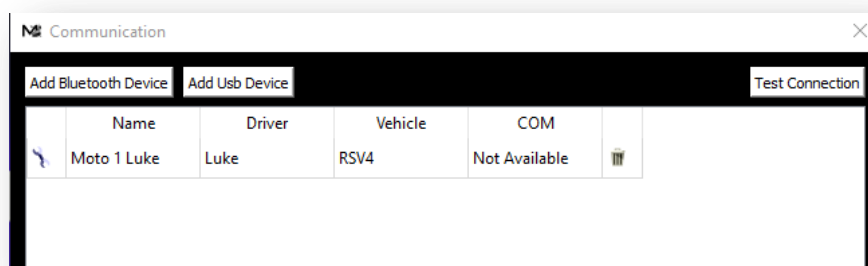
Connection to PC with WINDOWS 8 – 10 or APPLE MAC OS X (see below for Windows 7)

To enable Bluetooth communication between the PC and the Starlane device the computer must be equipped with a Bluetooth device (standard on some portable PCs or purchased at any electronics, computer store as a USB dongle).

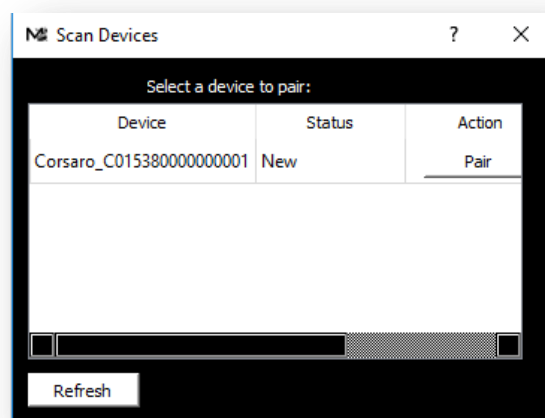
NOTE: The configuration procedure for devices equipped with Bluetooth is the same. For this reason the configuration procedure is shown only for **CORSARO**.

Pairing with PC

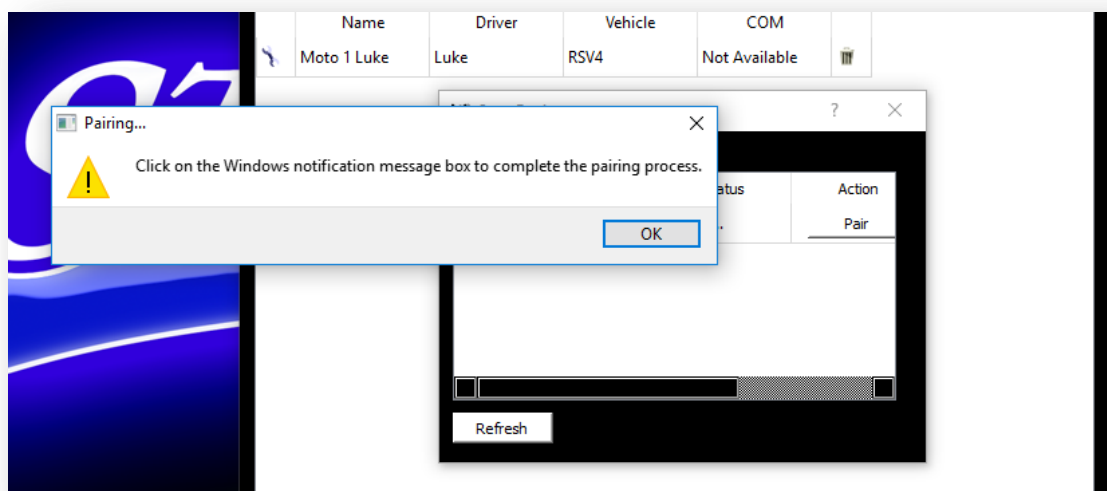
16. Verify Bluetooth is fully operational on your PC.
17. Turn on Starlane device and place it within 2-3 meters from the PC.
18. Click on the **Communication**  icon in MAAT icon bar.



19. Turn on the device to be paired, enter the menu and activate the **Bluetooth Discoverability** in the Bluetooth menu (the device will be detectable from the PC for 1 minute then it will return to be hidden).
20. Click on "Add Bluetooth Device" to activate the search for visible Bluetooth devices.
21. Wait a few seconds until the device is detected and indicated, with its serial number, in the Pairing panel:



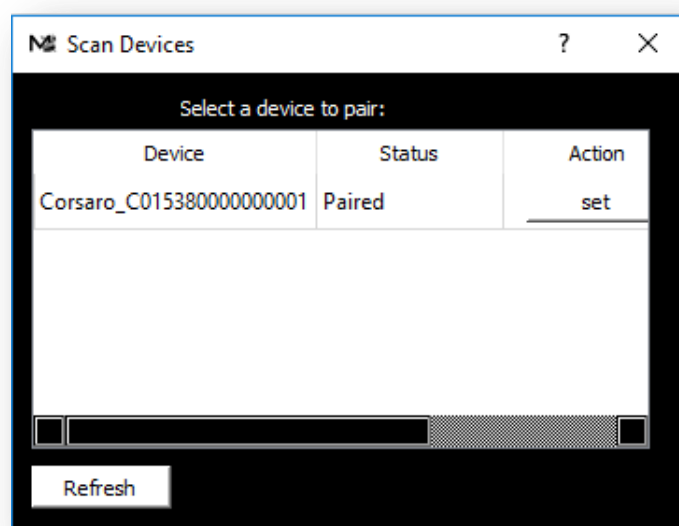
*If the device is not detected press **Refresh**.*



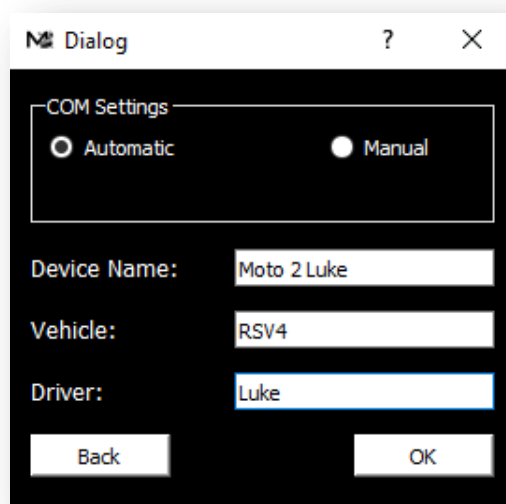
22. Click on the **Pair** button to pair the new device.
23. Check the Windows notification box that appears for a few seconds in the lower right corner of the screen and click it to complete the pairing in Windows.

Attention: generally the pairing takes place without any passkey, but some PC Bluetooth management software still require a passkey to allow the connection to work properly. If a passkey is requested, enter 0000.

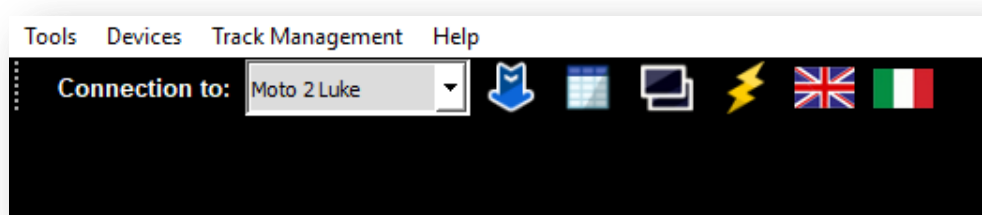
Once paired, the following panel appears showing the status of **Paired**.






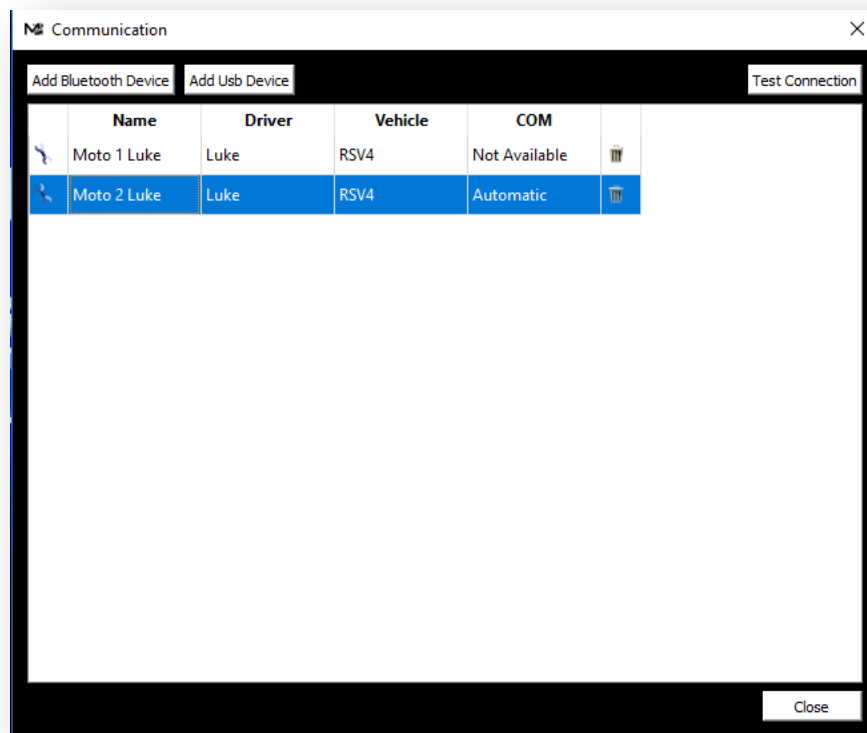
24. Press the **Set** button to complete the connection configuration:



25. In the **Device Name** enter a name that allows you to unequivocally identify the connected device in case you have a team with more drivers and devices (eg Moto 2 Luke).
26. Type the name of the **Vehicle** (eg RSV4).
27. Type the name of the **Driver** (eg Luke).
28. Leave the COM port setting to Automatic.
29. Confirm with the **OK** button.
30. By this moment the communication with your **Device** has been configured and it will be selectable in the **Connection To** drop down menu:



31. Clicking on the  icon It will always be possible to see the list of configured devices and  modify the configuration or  remove them from the list:




32. The **Test Connection** button allows you to check the correct communication with the selected device and to receive its serial number.

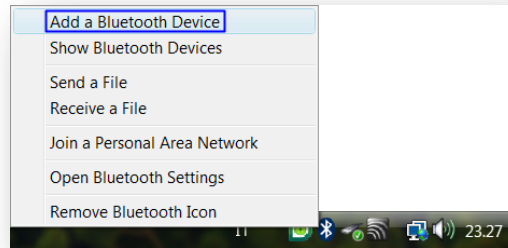
Attention: if, after having carried out the connection test, an error message is received, but you are sure that the device is switched on and in connection range, check if it's necessary to redo the pairing using a passkey as indicated in step 8 above.

Connection to PC with Windows 7

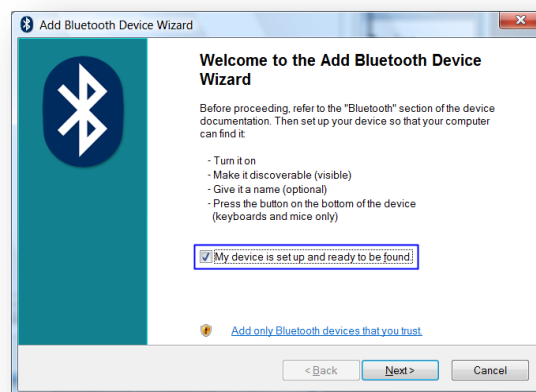
To activate the communication between the PC:

1. Make sure your PC is equipped with Bluetooth functionality or buy a USB-Bluetooth dongle.
2. Power on **CORSARO** and keep it not more than 2 metres from the PC.
3. If your **CORSARO** comes with firmware version higher than 1.82, enter the Bluetooth menu on **CORSARO** and activate the discoverability for 1 minute through the "Discoverability" feature:
Menu: BLUETOOTH > BLUETOOTH DISCOVERABILITY
4. Click on the Bluetooth icon  in the Windows® notification area and select the "**Add a Bluetooth Device**" item to start searching for visible Bluetooth

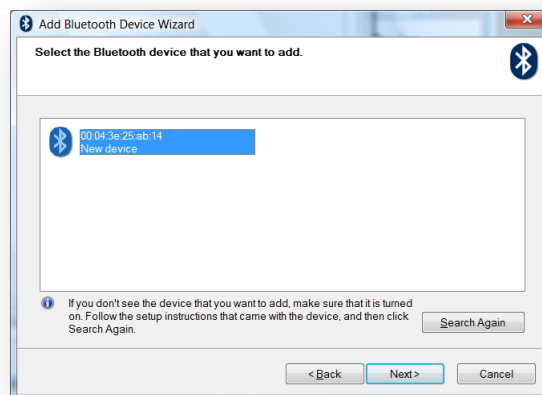
devices.



5. From Add Bluetooth Device Wizard window select the checkbox "**My device is set up and ready to be found**" and click on the "**Next**" button to search for any Bluetooth device in the proximity.



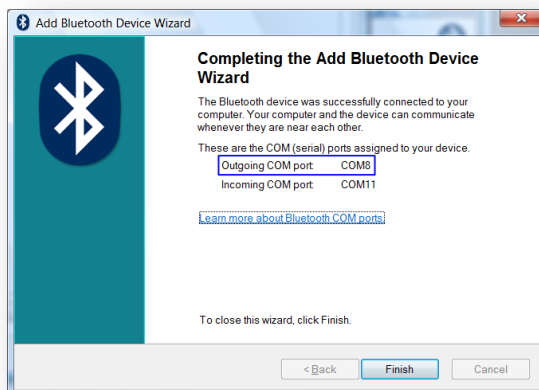
6. A new device will be found. It is specified by an abbreviation corresponding to the unique code (device address, e.g.: 00:04:3E:25:ab:14) of your **CORSARO**. The name **STARLANE_CORSARO** will appear on the display after some seconds.
If no device is found out, try powering off and on **CORSARO** and click on the button "**Search Again**".
7. Select the device and click on the "**Next**" button.



8. In case you PC should require a passkey, digit 0000 as a passkey.
9. If the pairing has been successfully done, the (serial) COM ports in use for the

communication between the PC and the **CORSARO** device appear on the display.

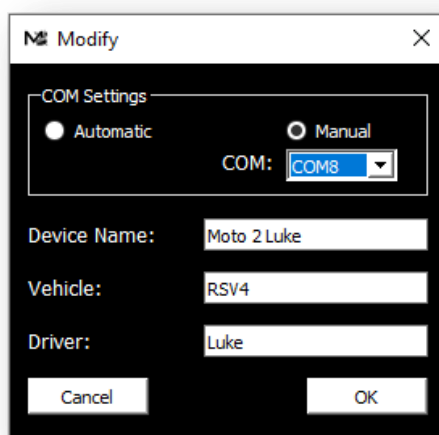
Therefore the port that you'll have to set in the Communication menu of MAAT software is the one named "Outgoing COM port" (COM8 in the example represented by the figure).



Click on the button "**Finish**" to quit the pairing procedure.

If the list of the COM ports assigned to the device is not displayed, you can see it by clicking on the device properties in the Bluetooth panel of your PC.

Carry out now the procedure described in the previous paragraph but without carrying out point 3 and, at point 12, set the outgoing COM port that you have just detected instead of the Automatic one.

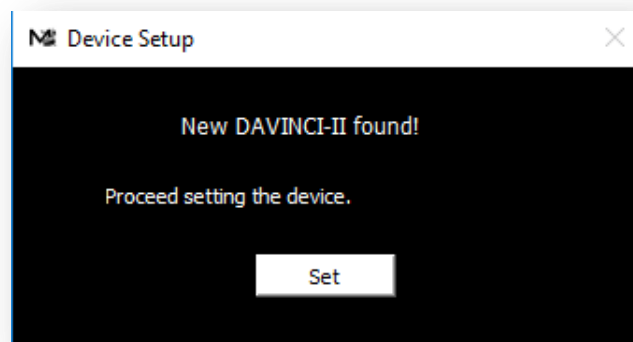


CONNECTION OF DAVINCI-II VIA USB CABLE

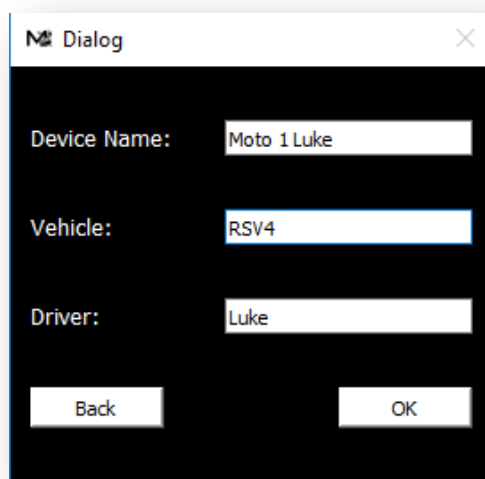
At the first connection it is necessary to configure your DaVinci-II so that, every time the USB cable is connected, MAAT can recognize it and automatically set the name of the driver and device for data download or settings.

First connection

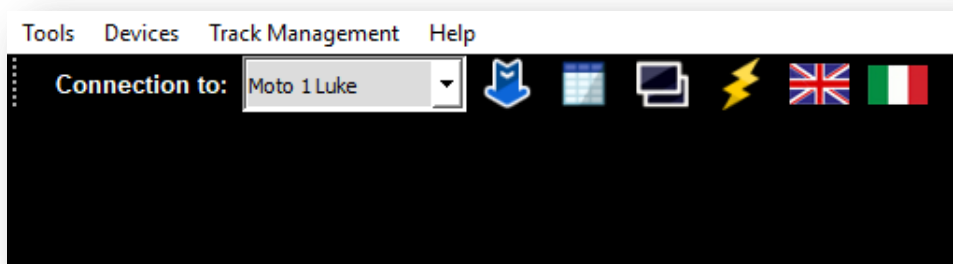
1. Verify MAAT is running.
2. Turn on the DaVinci-II by powering it from the vehicle key.
3. Connect the USB cable of DaVinci-II to the PC.
4. After a few seconds the following message will automatically appear:




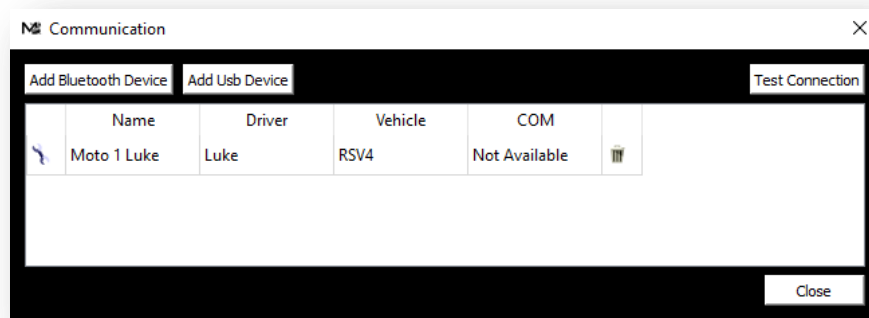
5. In the lower right corner of the screen will appear some Windows notification boxes indicating possible problems with the unit and with the request to correct them, completely ignore these messages and not give any confirmation of correction.
6. Click on the **SET** button, the following panel will open:



7. In the **Device Name** enter a name that will allow you to unequivocally identify the connected DaVinci-II in case you have a team with more drivers and devices (eg Moto 1 Luke).
8. Type the name of the **Vehicle** (Eg RSV4).
9. Type the name of the **Driver** (es. Luke).
10. Confirm by the **OK** button.
11. By this moment the communication with your DaVinci-II has been configured and the device will be identified automatically at each connection of the USB cable as indicated in the Icon Bar:



12. Clicking on the  icon It will always be possible to see the list of configured devices and modify the configuration or remove them from the list:




13. The **Test Connection** button allows you to check the correct communication with the selected device and to receive the serial number.

Note: connecting via USB cable does not use COM ports so it is correct that the COM port in the panel is shown as **Not Available**.

DATA DOWNLOAD

How to download data from STEALTH GPS-4, CORSARO and DAVINCI-II

1. In case of Stealth, insert the USB Pendrive with the downloaded sessions into the PC. If you are connecting DaVinci-II with a USB cable, the device will be recognized and selected automatically. In the case of a Bluetooth connection, select the device in the **Connection To** drop down menu (if previously defined) to which MAAT will connect for all data transmission and reception functions. If you are connecting with a USB cable, the device will be recognized and selected automatically.
2. Click on the  icon to open the **Data Download** panel.




3. Fill in the fields in the **Data Download** panel with all the information in the session:

EVENT	Name of the event (eg: the name of the competition)
SESSION	Name of the specific session (eg: Free, Timed, Morning, Afternoon, etc.)
DRIVER	Driver name (field already compiled obligatory when the device has been set)
VEHICLE	Eg: Moto1, Moto2, HONDA, YAMAHA etc. (field already compiled compulsorily when the device has been set)
CIRCUIT	Name of the circuit selectable from the list or can be entered
RUN	Run number in the same session. It is not mandatory to fill in the field as the value is automatically increased.

NOTE: For the best Bluetooth signal quality, especially during data download, it is recommended to keep the PC within 1 meter from the device.

4. If the list of available sessions on the device is empty, press the **Update Session List** button: in the field above the session list.



5. Select the session, or sessions, that you want to download by referring to the Date and Time values indicated in the name of the sessions.
6. Click on the **Download** button to download the data relating to the selected sessions to a computer. A new line with the references of each of the sessions just downloaded is automatically added to the Sessions Archive .
7. After downloading data, click on the **Close** button to return to the main window.

Only for **STEALTH GPS-3/4**

The data download procedure must be executed with the USB Pendrive inserted into the PC after exporting on it the desired sessions as explained on the Stealth GPS-3/4 operation manual at the "Data download", paragraph in the "EXTERNAL USB MEMORY MANAGEMENT" chapter.

UPDATING FIRMWARE

The software installed inside Starlane devices that manages all functionalities is called Firmware. You can update the firmware when Starlane releases new versions with additional features and / or improvements.

ATTENTION! The firmware update procedure is a delicate operation. It must only be carried out by carefully following all the instructions below. An incorrect execution of the update may require direct intervention at the Starlane technical dept.

Verification of the version of Firmware installed and download of the update

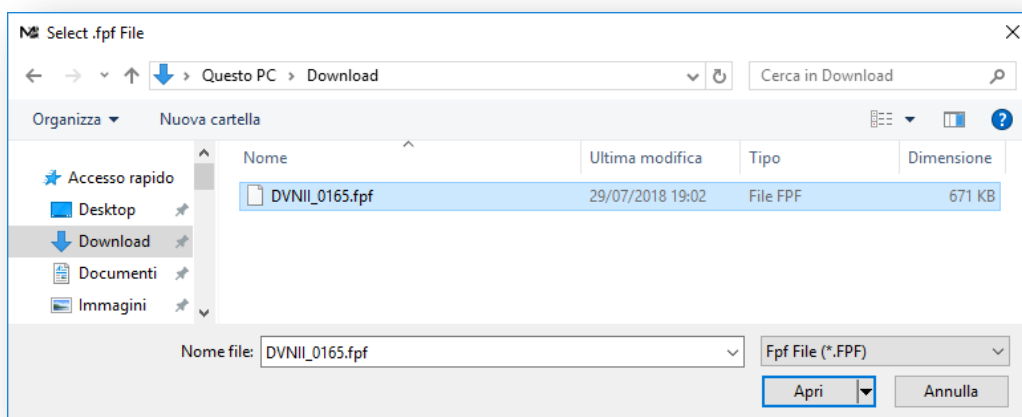
The version of installed Firmware is indicated in the **System Info** menu of your device.

IMPORTANT: Updating the Firmware may result in loss of acquired data and device settings. Download the data and settings before updating the firmware.

1. Check the technical support page of the <http://www.starlane.com> website for the most current versions of Firmware (higher version number) for your device.
2. Download the firmware file from the website and copy it to the Desktop or save it in the PC Download folder.
3. Make sure the vehicle or device battery is fully charged.
4. Turn on the device.
5. Make sure you have selected the correct device in the **Connection To** command:
6. Click on the ⚡ icon or, in the **Devices** menu, select **Update Firmware**.

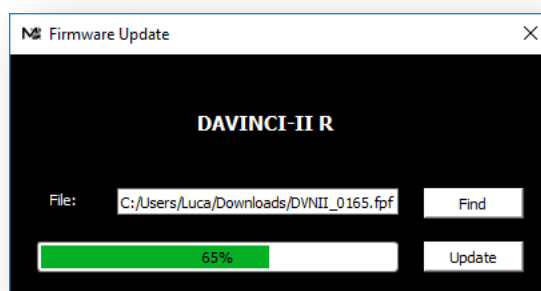


7. Press **Open File** and load the .FPF file (.ZIP file in case of Stealth) of the version you just downloaded



ATTENTION! Do not interrupt the update procedure, which may take several minutes, during which the use of the PC for other applications is not recommended. If you are updating via Bluetooth, in order to improve communication it is advisable to position the device a few tens of centimeters from the computer.

8. Press the **Update** button.



9. At the end of the procedure the device will restart. (in the case of DaVinci-II, disconnect the USB cable when MAAT shows the message of Firmware sent successfully. At the first reboot, the device will perform the procedure of writing the new Firmware and deleting the memory.

ATTENTION! Do not touch the buttons, the power supply or interrupt the procedure in any way as this could cause the device to be totally useless and the need to return to the service center.

At the next restart the initial screen will indicate the new version of Firmware.

Stealth GPS-3/4 firmware update

To update the Stealth firmware, select your device in the **Connection To** menu and follow the same steps as for DaVinci-II but do the same operations with the USB Pendrive inserted in the PC.

Once the firmware has been uploaded on the USB Pendrive by MAAT, extract the USB Pendrive and – when the device is on – insert it into the lap timer USB socket.

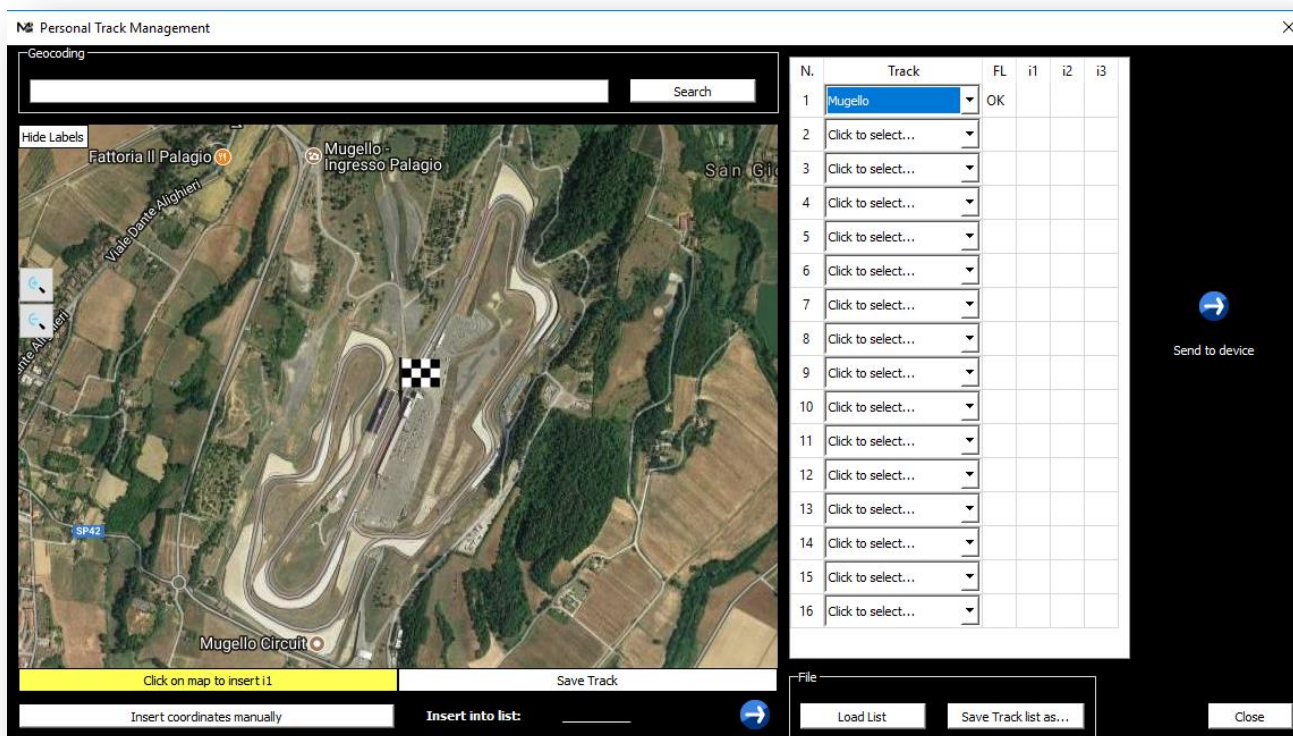
As soon as you insert the stick, the display will show the external memory management menu: select “FIRMWARE UPGRADE” and wait until the firmware copy and upgrade process is completed.

After the upgrade Stealth will reboot and return to the main screen, you can now remove the USB pendrive.

HOW TO SET PERSONAL TRACKS

CREATION AND MANAGEMENT OF THE PERSONAL TRACKS LIST

From the main menu click on **Track Management**.



The **Track Management** panel allows you to perform the following operations:

- Create a personal track by entering the finish line and intermediates interactively on the satellite map and send it to the device so you can choose the circuit directly from the menu on the display.
- Create a custom track by manually entering the desired coordinates, if known, and then insert it in the Track List.
- Download from the device the track list with the lap triggers already learned directly on the track, give the desired name to each of the circuits and send the list to the device.
- Save the list on your computer so you can exchange it with friends and load a previously saved list.

Creating the track list on the device by selecting the stored tracks

MAAT allows you to create a personal track library. This library can be used by the user to create a list to be sent to the device.

1. Select the tracks you want to store in the device.
2. If desired, press the **Save List As ...** button to save the list on your computer. In this way it will be

possible to recall the list on another occasion by pressing the **Load List** button.

3. Turn on the device.
4. Press the **Send to Device** button to send the list to the device.

Entering the coordinates of a new track

With MAAT it is possible to enter the coordinates of a new circuit in two ways: by **satellite mapping** or **manually**.

Enter the coordinates of a track using satellite maps

The procedure for entering the coordinates of a new track using satellite mapping is as follows:

1. Make sure your PC is connected to the internet.
2. Select an empty position in the list and click on the **Set Finish Line and Intermediates** button. The **Satellite View** screen is shown.

Alternatively, if you want to change an existing finish line, select the relevant position in the list and click on the **Set Finish Line and Intermediates** button. This procedure is useful, for example, if you want to set or modify intermediates for a circuit whose goal is already contained in a file. If you are modifying an existing circuit, in the Satellite view screen the finish line and the intermediate ones already set in the file will be shown.




3. To change the finish line or intermediate already present on the map, just click on the finish line (checkered flag) or intermediate (the flag with the word "i1"), hold down the left mouse button and drag the icon within the cartography.

4. Depending on the security settings of the PC, it is possible that after the first change made the following message is shown:




For the correct operation of the program, click **Yes**.

5. If you are creating a new track, or if you are editing a track in which there are no intermediates, you can enter the missing elements (finish line or intermediates) by clicking on the "**Add finish line**" (or "**Add intermediate**" button; the function of the button depends on which of these elements has not yet been inserted in the cartography). Once you have inserted a new element, place the flag on the point of interest.
6. Once the finish line has been positioned (and any intermediates), press the **OK** button. You will be asked to enter a name for the new track. The maximum length of the name is 7 characters; if a longer name is entered the name will be truncated. The finish line and intermediates will be automatically saved to file and will be made available for inclusion in the list. In the case in which in MAAT already exists a file with the same name as the one entered, the file will be overwritten, upon request for confirmation of the operation to the user. In case the user denies this authorization, the finish line will not be saved on file, but it will be possible to insert the finish line in the list.
7. Press the  Insert track button in the list to insert the track in the list. The new track will be inserted in the first free position.

Manually entering the coordinates of a new track

The procedure for manually entering the coordinates of a new track, if they are known to you, is as follows:

1. Click on the **Insert Coordinates manually** button. The *Manual Coordinate Entry* screen opens.

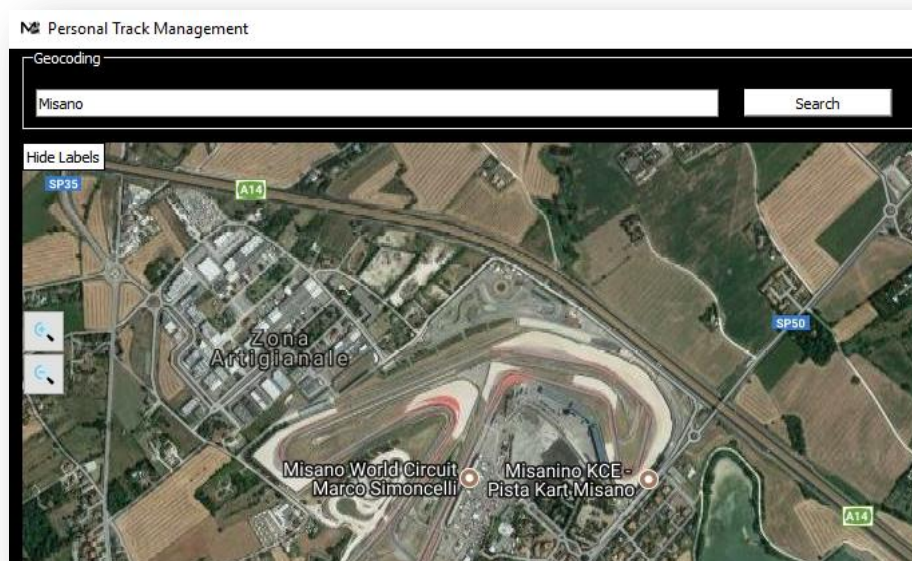
2. Enter the name of the new track in the **Track Name** field. Do not use more than 7 characters for the track name.
3. Enter the desired Latitude and Longitude coordinates for the finish line and the intermediates and select the reference quadrant between NE, SE, NW, SW. The coordinates must be entered in the format ddd ° mm'ss.dd " (degrees, minutes, seconds, decimal).
4. Press the **Save Track to File** button to create the new circuit file which will then be available in the circuit archive.
5. The new track created is now available for inclusion in the list; pressing the  **Insert into List** button the new track will be inserted in the first available position of the list


Searching for a track using a location service

When you want to insert the coordinates of a track using satellite maps and you do not have a track file to start from, it can sometimes be tedious to find the correct position of the circuit on satellite maps. To facilitate this search it is possible to use the **Track Searching** service (geocoding). This service allows to enter the name of a known place and to go back to its geographical position through automatic search.



The correct use of **Track Searching** is the following:

1. Type the name of the track to be searched or its address in the Track Search field.




2. Press the **Search** button. The results are shown in the list below the search field.
3. If the desired track has been found, click the **Set Finish Line and Intermediates** button to set the desired finish line and desired intermediates correctly. Once set finish line and intermediates, press **Ok** and then press  **Insert track in the list** to insert the circuit in the list.

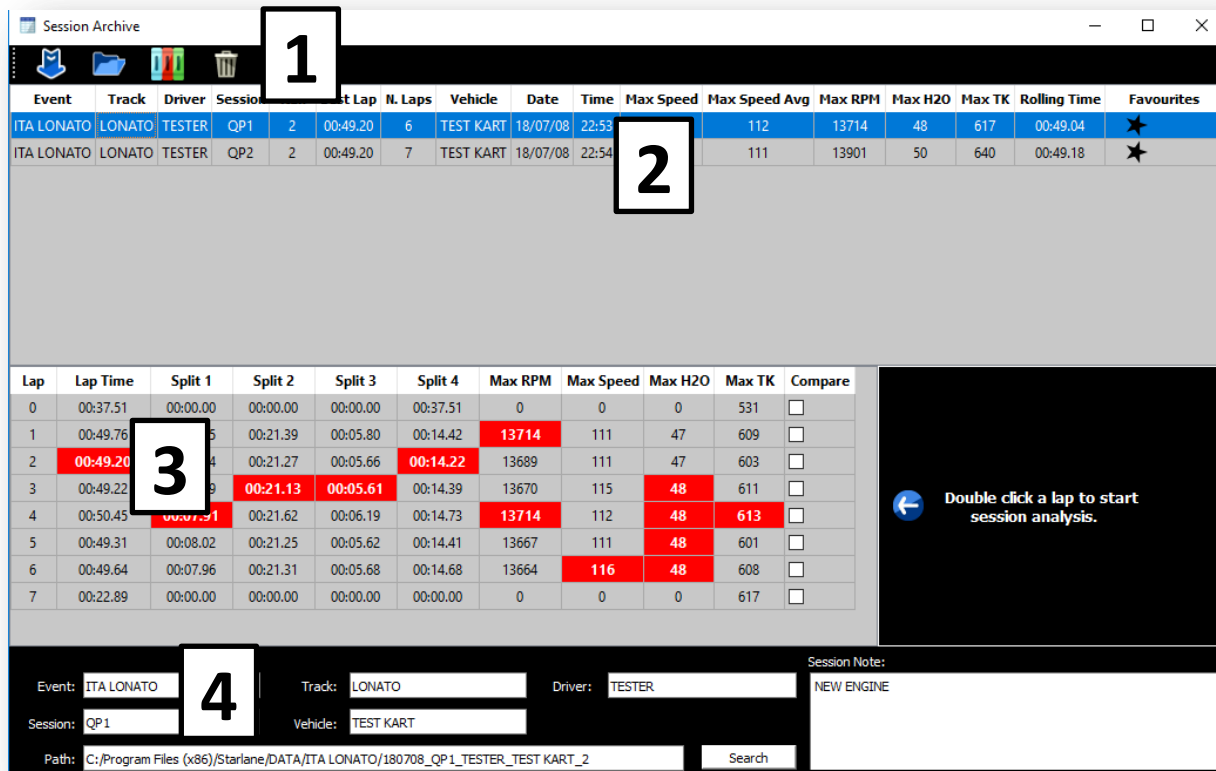
Importing the list of tracks set manually on the device to a computer

1. Press the **Download Track List** button. The list will highlight for which tracks the finish line coordinates (FL) or intermediates coordinates (i1-i2-i3) have been inserted in the device.
2. To assign the desired name to each of the tracks, select it (eg Track01), the panel on the left will show the exact coordinates stored, then enter the desired name (maximum 7 characters) and press the **Insert into List**  button. Press **Save Tarck** if you want to keep it and make it available in the track archive.
3. To insert in the list a track already created and available in the Tracks Archive, simply click on the TRACK cell of the desired row to select the name of the track to be inserted.
4. Once the list has been created, it is possible to save it to a file by clicking the **Save List As ...** button and recall a list previously saved with the **Load List** button.
5. Press the **Send to Device**  button to send the new list to the device. From the LOAD TRACK COORDINATES menu of the device it will be possible to choose the desired track.

NOTE: *The functions of the trackmanagement allow you to also create various versions of intermediates for the same track, it will be enough then save the various versions with different names (eg Monza1-Monza2-Monza3-Monza4 etc.) in order to choose the desired one on the device .*

SESSION ARCHIVE

Clicking on the  icon opens the Session Archive.



The screenshot shows the Session Archive window with the following sections:

- 1**: Icons bar at the top left.
- 2**: Session list table at the top.
- 3**: Lap details table at the bottom left.
- 4**: Session details form at the bottom right.

Event	Track	Driver	Session	Lap	N. Laps	Vehicle	Date	Time	Max Speed	Max Speed Avg	Max RPM	Max H2O	Max TK	Rolling Time	Favourites
ITA LONATO	LONATO	TESTER	QP1	2	00:49.20	6	TEST KART	18/07/08	22:53	112	13714	48	617	00:49.04	★
ITA LONATO	LONATO	TESTER	QP2	2	00:49.20	7	TEST KART	18/07/08	22:54	111	13901	50	640	00:49.18	★






Lap	Lap Time	Split 1	Split 2	Split 3	Split 4	Max RPM	Max Speed	Max H2O	Max TK	Compare
0	00:37.51	00:00.00	00:00.00	00:00.00	00:37.51	0	0	0	531	<input type="checkbox"/>
1	00:49.76	00:00.00	00:21.39	00:05.80	00:14.42	13714	111	47	609	<input type="checkbox"/>
2	00:49.20	00:00.00	00:21.27	00:05.66	00:14.22	13689	111	47	603	<input type="checkbox"/>
3	00:49.22	00:00.00	00:21.13	00:05.61	00:14.39	13670	115	48	611	<input type="checkbox"/>
4	00:50.45	00:00.00	00:21.62	00:06.19	00:14.73	13714	112	48	613	<input type="checkbox"/>
5	00:49.31	00:08.02	00:21.25	00:05.62	00:14.41	13667	111	48	601	<input type="checkbox"/>
6	00:49.64	00:07.96	00:21.31	00:05.68	00:14.68	13664	116	48	608	<input type="checkbox"/>
7	00:22.89	00:00.00	00:00.00	00:00.00	00:00.00	0	0	0	617	<input type="checkbox"/>

Double click a lap to start session analysis.

Event: ITA LONATO Track: LONATO Driver: TESTER Session Note: NEW ENGINE
 Session: QP1 Vehicle: TEST KART
 Path: C:/Program Files (x86)/Starlane/DATA/ITA LONATO/180708_QP1_TESTER_TEST KART_2 Search

The Session Archive screen is made up of 4 sections:

1. ICONS BAR: Riporta le seguenti icone:


	Opens the data download panel.
Data Download	
	Allows you to import a session.
Import Session	See below under paragraph: <i>How to import a session downloaded on another computer.</i>
	Opens the laps comparative analysis mode.
Lap Comparison	
	To delete the selected session(s). To select more than one session use the Shift or Control key simultaneously with the left mouse button.
Delete Session	
	Exports the selected session or sessions to be then imported in another PC or sent via email to Starlen support in case of need.
Export SCS	

2. SESSION LIST: each time the data is downloaded, a new session entry is created, on each line all the

summary values of the session are indicated. It is possible to click on **Favorites** to mark a session as preferred and then to recognize it later to re-analyze it.

By clicking on the header of each column you can sort the sessions in ascending or descending order by the value of the column itself.

By clicking with the right mouse button in the cells of the session list it is possible to filter the list for the value of the cell on which it was clicked.


3. **CHRONOLOGY of SELECTED SESSION:** selecting a row in the Sessions List the Chronology represents the list of the laps covered and the relative reference values. The best values acquired are highlighted in red. By clicking on Compare, you can directly select the laps to be loaded in comparative mode .
4. **SESSION DETAILS MODIFICATION PANEL:** represents the fields that can be used to modify the references of the selected session.

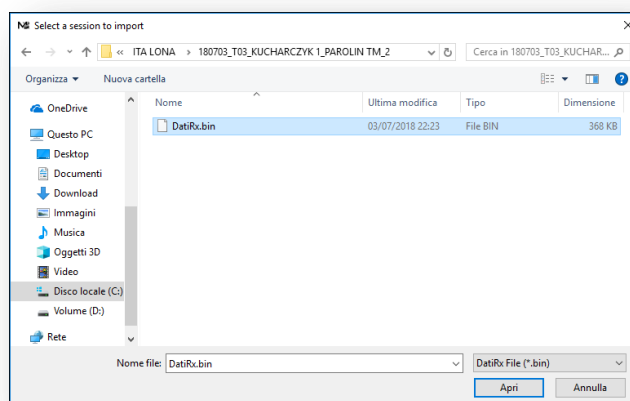
Double clicking on a lap of the session chronology opens the Data Analysis window with the selected lap.

How to import a session downloaded on another computer

MAAT saves sessions downloaded from devices into the **Data** folder of the MAAT installation folder (eg **C: \ Program Files (x86) \ Starlane \ MAAT \ Data**). For each session a subfolder is created in the **Data** folder.

To import a session from another computer:

1. Copy the desired session folder from the **Data** folder of the other computer (eg **C: \ Program Files (x86) \ Starlane \ MAAT \ Data**) to a USB pendrive.
2. Click on the **"Import Sessions"**  icon.
3. Browse the computer resources, select into the pendrive the **DatiRx.bin** file of the session to be imported and click on the **Open** button.



4. The imported session will be added to the session list.

You can likewise copy sessions downloaded with DigiraceMMX located in the **C: \ DigiraceMMX \ Data** folder of the PC on which DigiraceMMX is installed.

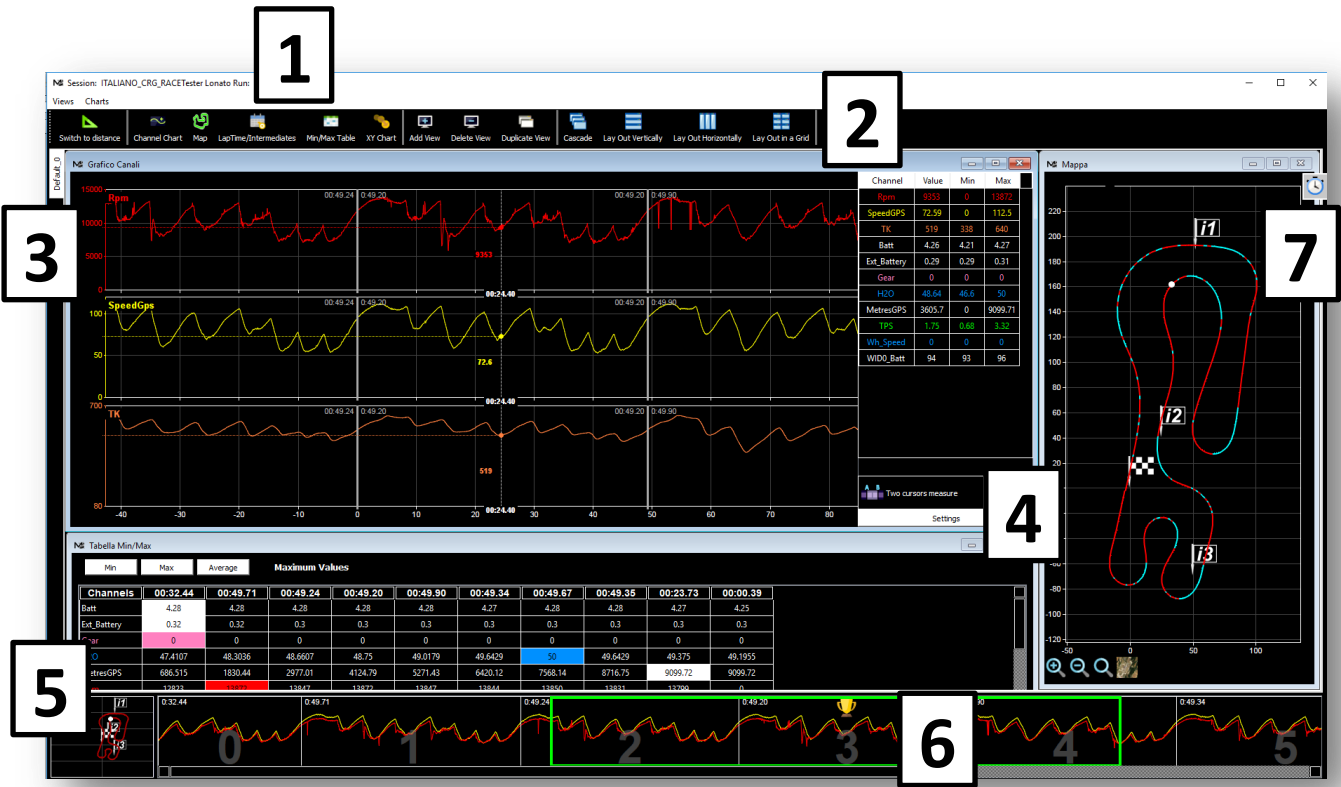
INTRODUCTION TO DATA ANALYSIS

The Views

MAAT user interface allows the simultaneous management of various groups of graphs that can be created as desired and are included in "Container Windows" called Views.

It is therefore possible to populate the main view with the desired charts, for example those set to analyze the Engine parameters, and create a second view with the charts for the frame, etc.

By clicking on the vertical TABs on the left side of the screen, you can quickly switch between Views.

























The analysis screen of a session consists of 7 parts:

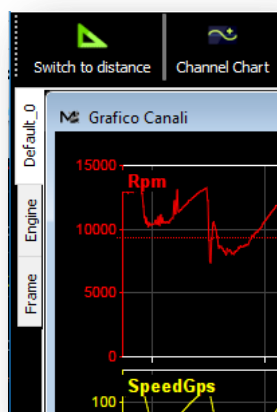
1	Identifier of the open session.
2	Icons Bar.
3	View selection Tab.
4	Area of the View Populated with custom charts.
5	Permanent track map.
6	Lap slider.
7	Sensitive edge for opening Session Chronology.


ICON BAR

In the Icon Bar you can find the following icons that refer to the menu commands:

	Opens the Session Archive.
	It allows to vary the measurement base between distance and time. Clicking on the set square will move you to distance basis while clicking on the hourglass  will return to the time base.
	Creates a new chart based on time\distance.
	Creates a new window with the circuit map.
	Creates a window with the session timetable.
	Creates a window with the table of minimum, maximum and average values of the session.
	Creates a window with an XY chart.
	Opens the G Force indicator.
	Creates a window with the channels histograms.
	Creates a window with the laptimes histograms.
	Opens the math channels management panel.
	Refreshes the session math channels after a possible modifications.
	Saves the user interface environment and the views after possible modifications.
	Adds a new View.
	Removes the selected View.
	Duplicates the selected View.
	Restores the default views.
	Tiles View windows in cascade.
	Tiles View windows vertically.
	Tiles View windows horizontally.
	Tiles View windows in a grid.


Views TAB

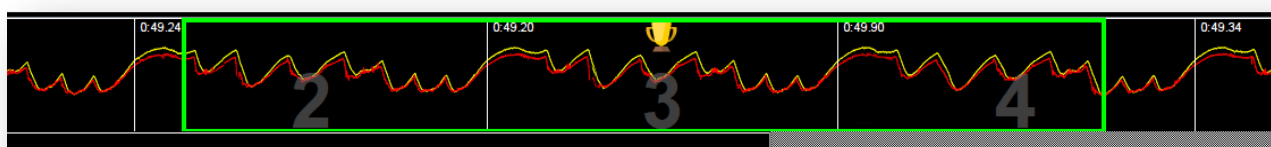


After creating various views with the command , the vertical Tabs of the Views allow you to switch quickly from one view to the next: for example Default, Engine, Frame, etc.

Lap Slider

The Lap Slider is a horizontal bar at the base of the screen that allows you to:

- Quickly display any stops or anomalies through RPM and GPS Speed charts.
- Identify the various laps using the lap number shown in gray.
- Quickly identify the best lap of the session using the  symbol.
- Verify through the green frame what is the session portion that is represented in the chart based on Time/Distance.






Clicking on one lap in the Lap Slider will automatically frame all the lap in the Time/Distance base graph.



*It is possible to vary the Zoom with the **Up** and **Down Arrow** keys on the keyboard and move the framed area with the **Right Arrow** and **Left Arrow** keys.*


Session Chronology



Moving the mouse pointer to the right of the screen on the  icon, opens the panel with the session chronology:

 Session: ITA LONATO_T04_180708 FERRARI PAO 2 Run:2
 Ideal Time: 00:49.12 Rolling Time: 00:49.18  Open Laps Comparison

Lap	LapTime	Split 1	Split 2	Split 3	Split 4	Max Rpm	Max Speed	MaxH2O	MaxTK	Compare
0	00:32.44	00:00.00	00:00.00	00:00.00	00:32.44	0	0	0	566	<input type="checkbox"/>
1	00:49.71	00:07.98	00:21.46	00:05.79	00:14.48	13901	111	48	629	<input type="checkbox"/>
2	00:49.24	00:08.00	00:21.34	00:05.65	00:14.25	13847	111	48	628	<input type="checkbox"/>
3	00:49.20	00:08.01	00:21.31	00:05.61	00:14.26	13895	111	49	638	<input type="checkbox"/>
4	00:49.90	00:08.00	00:21.76	00:05.65	00:14.50	13898	111	49	640	<input type="checkbox"/>
5	00:49.34	00:07.98	00:21.34	00:05.61	00:14.41	13879	111	49	634	<input type="checkbox"/>
6	00:49.67	00:08.19	00:21.51	00:05.61	00:14.37	13850	112	50	622	<input type="checkbox"/>
7	00:49.35	00:08.07	00:21.38	00:05.58	00:14.32	13831	111	49	634	<input type="checkbox"/>
8	00:23.73	00:00.00	00:00.00	00:00.00	00:00.00	0	0	0	637	<input type="checkbox"/>

The session chronology includes:

- 1- The session name.
- 2- The ideal time calculated as the sum of the best intermediates of the session.
- 3- The Rolling Time calculated on the basis of the best sequence of consecutive intermediates regardless of the finish line.
- 4- The table with the lap times, the split times and some maximum reference values of each lap highlighted in red.
- 5- The box to enter one of the laps quickly in comparison and the button to launch the Lap Comparison mode .

By clicking on the pin  icon it is possible to lock the chronology open and then unlock it by clicking on the  icon.

It is also possible to insert a Chronology window into the View by clicking on the icon .

M Temp/Intertempi

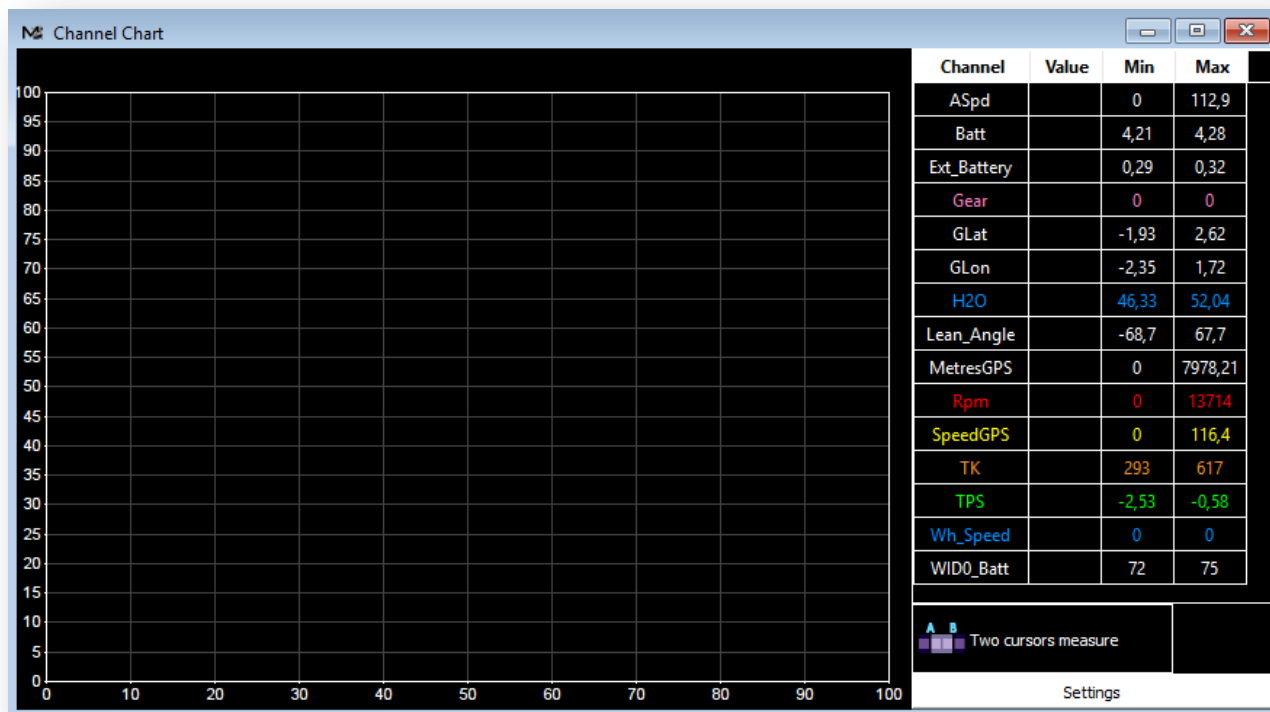
Lap	LapTime	Split 1	Split 2	Split 3	Split 4	Max RPM	Max Speed	Max H2O	Max TK	Compare
0	00:37.51	00:00.00	00:00.00	00:00.00	00:37.51	0	0	0	531	<input type="checkbox"/>
1	00:49.76	00:08.15	00:21.39	00:05.80	00:14.42	13714	111	47	609	<input type="checkbox"/>
2	00:49.20	00:08.04	00:21.27	00:05.66	00:14.22	13689	111	47	603	<input type="checkbox"/>
3	00:49.22	00:08.09	00:21.13	00:05.61	00:14.39	13670	115	48	611	<input type="checkbox"/>
4	00:50.45	00:07.91	00:21.62	00:06.19	00:14.73	13714	112	48	613	<input type="checkbox"/>
5	00:49.31	00:08.02	00:21.25	00:05.62	00:14.41	13667	111	48	601	<input type="checkbox"/>
6	00:49.64	00:07.96	00:21.31	00:05.68	00:14.68	13664	116	48	608	<input type="checkbox"/>
7	00:22.89	00:00.00	00:00.00	00:00.00	00:00.00	0	0	0	617	<input type="checkbox"/>

The chronology window, unlike the sliding one, does not show the summary data of the session.

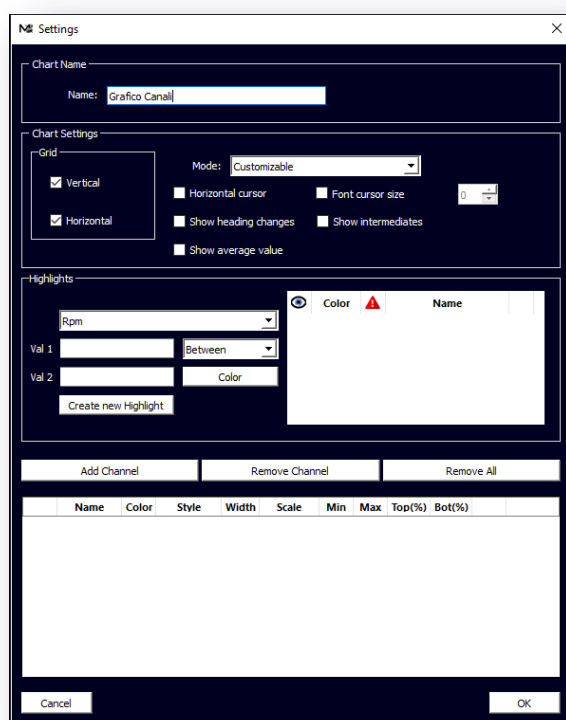
Time\Distance based Chart

Click on the  icon to create a new chart based on Time\Distance.

This will open a screen without graphics but with the list of channels available for the session loaded



Click on the **Settings** button under the channels name column, the following panel will open:



The screenshot shows the 'Settings' dialog box. It has several sections: 'Chart Name' with a text field 'Name: Grafico Canal'; 'Chart Settings' with a 'Grid' section containing checkboxes for 'Vertical' and 'Horizontal', a 'Mode' dropdown set to 'Customizable', and checkboxes for 'Horizontal cursor', 'Font cursor size', 'Show heading changes', 'Show intermediates', and 'Show average value'; 'Highlights' with a dropdown for 'Rpm', two value fields 'Val 1' and 'Val 2', a 'Between' dropdown, and a 'Color' dropdown; and a table at the bottom with columns: Name, Color, Style, Width, Scale, Min, Max, Top(%), Bot(%). The table is currently empty. There are 'Add Channel', 'Remove Channel', and 'Remove All' buttons above the table. At the bottom are 'Cancel' and 'OK' buttons.

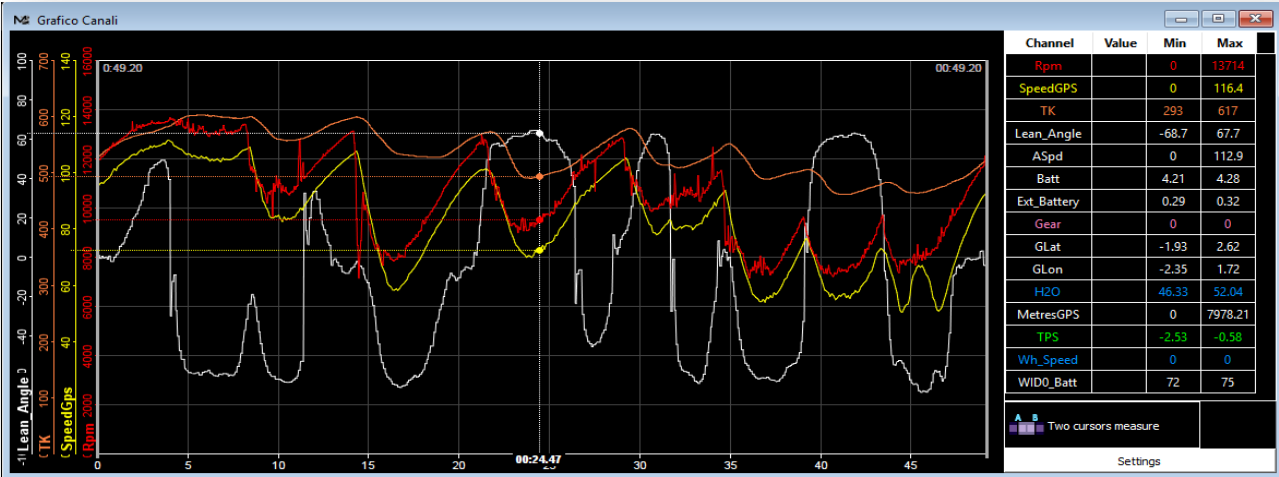
In the **Name** field, type the name you want to assign to the new chart.

In the **Chart Settings** tab you can choose the type of representation between **Overlay**, **Parallel** and **Customizable** (see below).

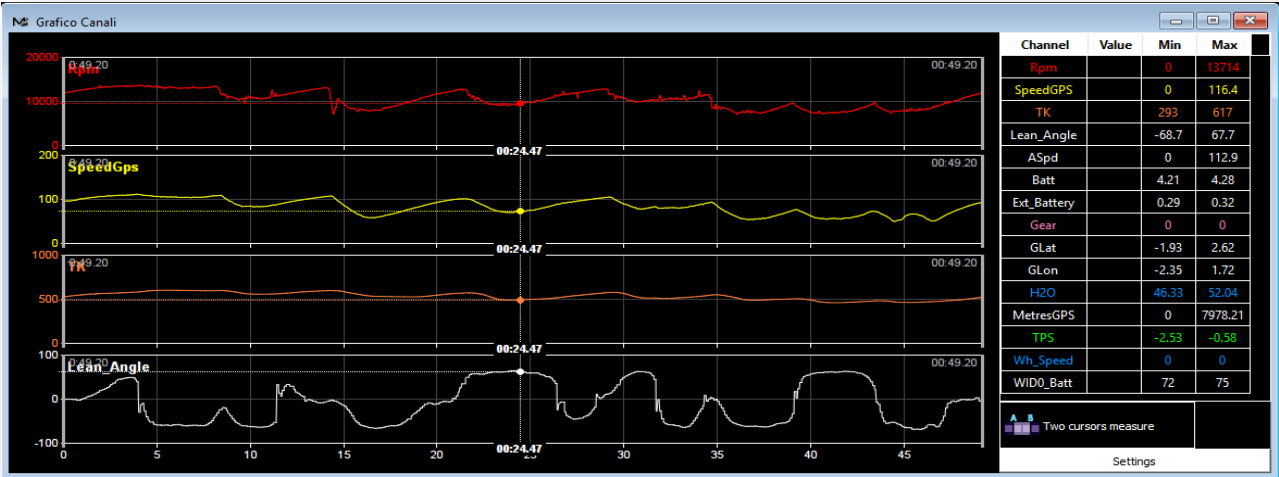
Using the **Grid** setting, you can activate the **Horizontal** and **Vertical** lines of the chart's background grid.

It is also possible to activate the **Horizontal Cursor**, define the **size of the text** at the cursor, the column of **Average** values, the **Intermediate Dividers** and the strip above the graph that indicates the **right and left corners and straights**.

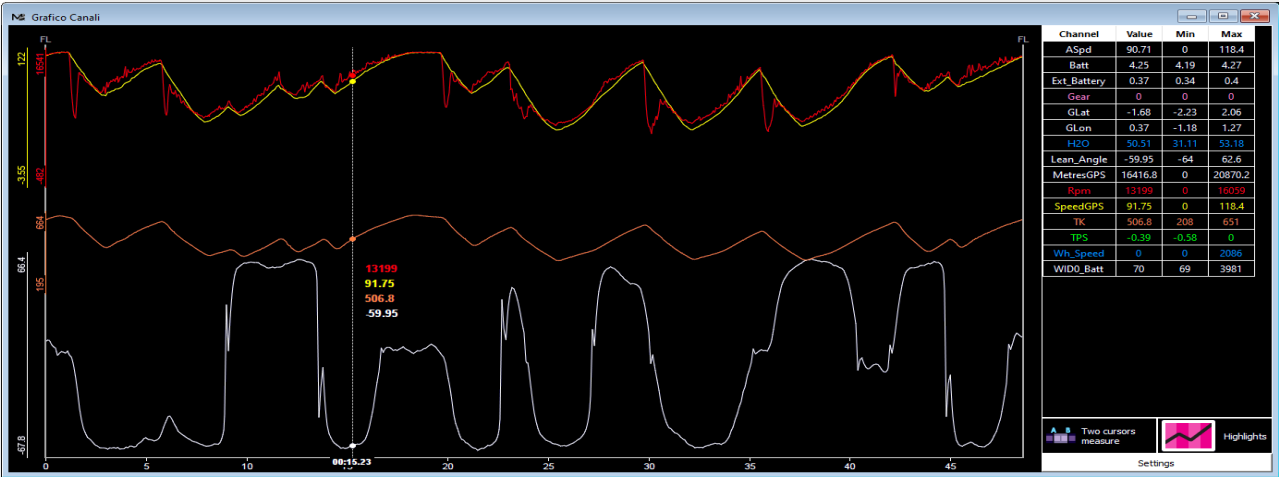
Overlay Mode



Parallel Mode



Customizable Mode



Click on the **Add Channel** button to insert a channel in the chart, the panel will open in which to select the channel you want to add and press **Next**:

Rpm

Color:

Style: Continuous

Width: 1

Visible ☒

Scale

☒ AutoScale

Min: 0,0 Top (%): 100

Max: 0,0 Bot (%): 66

☐ Zero line

Filter level: 0

Gain: 1,00

Offset: 0,00

Finish

Click on **Modify** to set the color of the graph.

Select the line **Style** from Continuous, Dot Line, Dash Line.

Select the **Width** of the line in pixels.

Select the **Visibility** flag of the graph. (Also double clicking on the name of the channel in the chart window activates and deactivates the visualization of the channel graph).

Set the **Autoscale** flag of the Y axis or deselect it and enter a **Minimum** and **Maximum** value for the scale.

For the **Customizable Mode** it is possible to define the position in the window and the height of the graph relative to it. To set these parameters, simply enter the % of length on the ordinate axis which will represent the upper (Top %) and lower (Bot %) limits of the graph of the selected channel.

For channels that have both positive and negative values, it may be useful to activate the **Zero Line** that identifies this value.

Increase the **Filter** if you want to smooth the graph curve when it is too rough.

If a channel has not been correctly calibrated on the acquisition device, it is possible to recalibrate the graphs using the **Gain** (which multiplies the value) and the **Offset** (which translates the value).

Click on **Finish** to end the setting.

Settings

Chart Name

Name:

Chart Settings

☒ Vertical

☒ Horizontal

Mode:

Customizable

☐ Horizontal cursor

☐ Font cursor size

0

☐ Show heading changes

☐ Show intermediates

☐ Show average value

Highlights

Rpm

Val 1

Val 2

Between

Color

Create new Highlight

Color

Name

Add Channel



Remove Channel

Remove All

	Name	Color	Style	Width	Scale	Min	Max	Top(%)	Bot(%)	
<div></div>	Rpm		Continuous	1	Automatic	0	0	100	66	<div></div>
<div></div>	SpeedGPS		Continuous	1	Automatic	0	0	100	66	<div></div>
<div></div>	TK		Continuous	1	Automatic	0	0	60	30	<div></div>
<div></div>	Lean_Angle		Continuous	1	Automatic	0	0	40	0	<div></div>

Cancel

OK

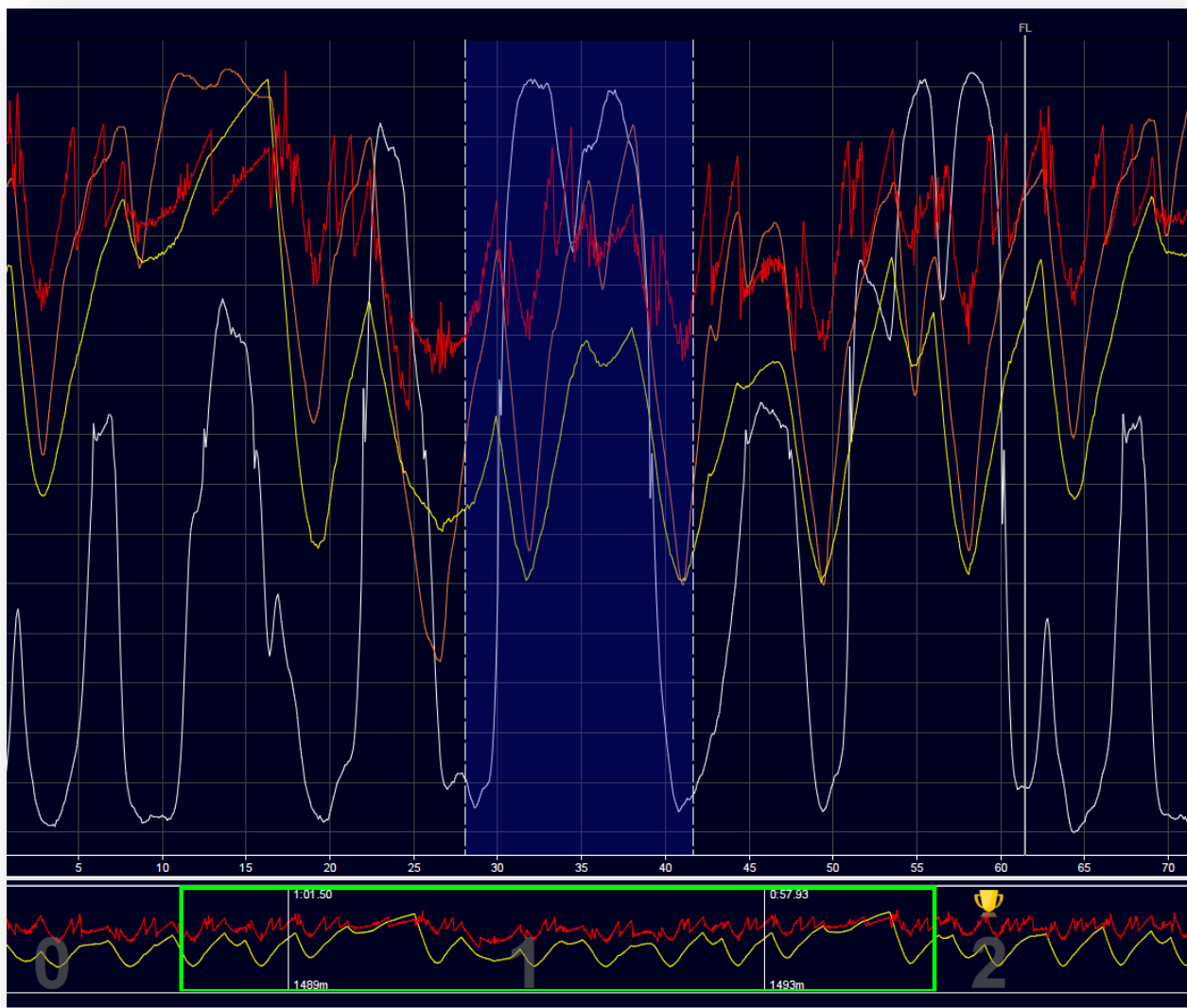
Once inserted, the desired channels will be listed in the lower part of the panel and, using the  and  buttons, it will be possible to sort them in the sequence that you want to display in the chart table.

45

How to ZOOM in the chart

You can change the Zoom with the **UP** and **DOWN** Arrow keys on the keyboard and move the area framed with the **Right Arrow** and **Left Arrow** keys.

It is also available in the rectangular ZOOM function:



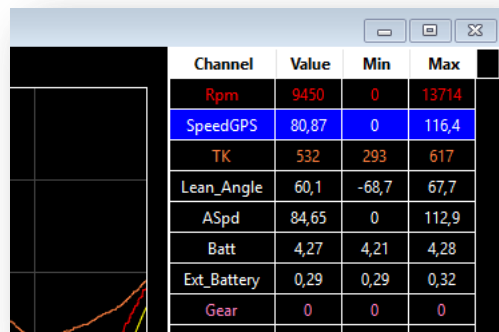
Press and release the **R** key and drag the mouse towards the **RIGHT**, keeping the left mouse button pressed, to select the interval to be analyzed.

The corresponding graph area will be highlighted in blue, release the mouse button to see the selected portion at full window.


Repeat the same operation but dragging the mouse towards the **LEFT** to ZOOM out.

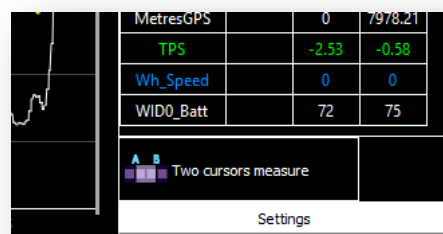
How to perform a thorough analysis of a channel in the area between two cursors

1. Select the channel to be analyzed in the table to the right of the chart.



Channel	Value	Min	Max
Rpm	9450	0	13714
SpeedGPS	80,87	0	116,4
TK	532	293	617
Lean_Angle	60,1	-68,7	67,7
ASpd	84,65	0	112,9
Batt	4,27	4,21	4,28
Ext_Battery	0,29	0,29	0,32
Gear	0	0	0

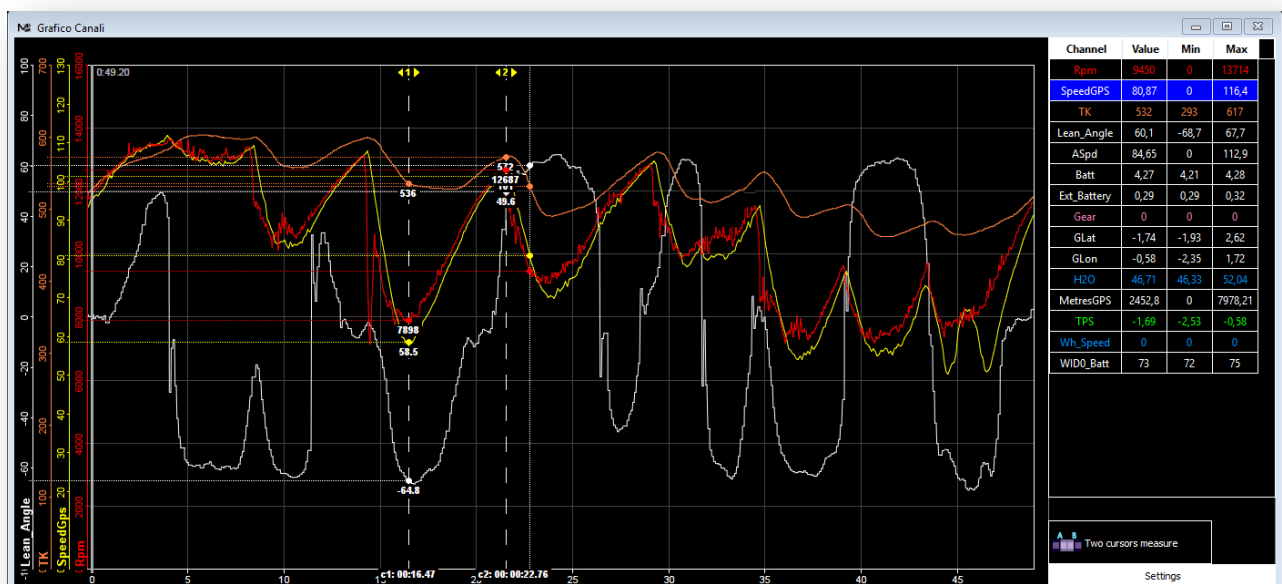
2. Click on the "Two Cursors Measure"  button below the table.



Channel	Value	Min	Max
MetresGPS	0	7978,21	
TPS	-2,53	-0,58	
Wh_Speed	0	0	
WID0_Batt	72	75	

Two cursors measure

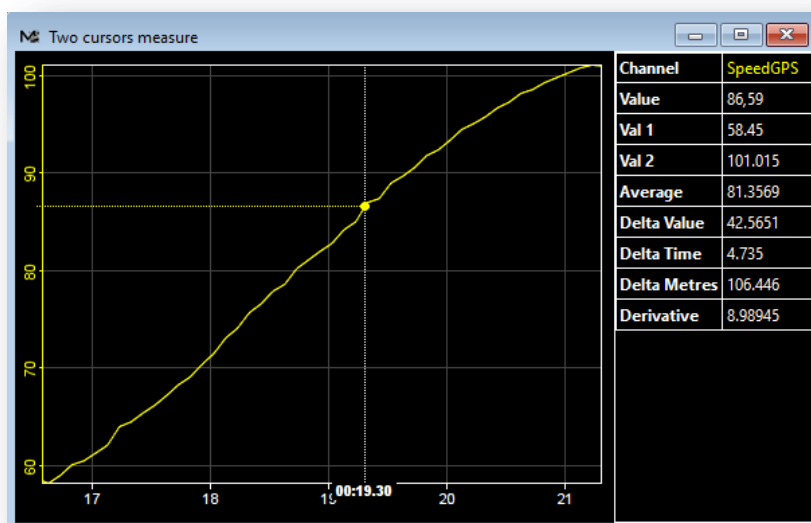
Settings



3. With the LEFT key of the mouse click on the FIRST point of the graph area for which you want the detail.

4. With the LEFT key of the mouse click on the SECOND point of the graphic area of which you want the detail.

A window will open indicating the reference values between the two positioned cursors.



You can drag the yellow arrows to interactively modify the portion of the graph in question.


5. By selecting other channels in the list and clicking again on  it is possible to open other measurement windows for the interval between the two cursors.
6. To finish close the **Two Cursors Measure** windows.

Table of Minimum, Average and Maximum

Clicking on the **MIN/MAX Table** button  shows the **Minimum, Average and Maximum Table**.



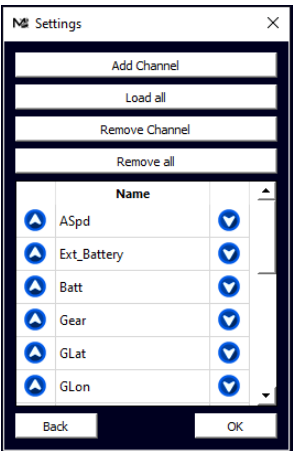
Channels	00:49.08		01:24.00		00:49.96		00:49.09		00:48.82		00:48.81	
	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
ASpd	39	105	14	113,3	49,4	117,8	49,7	118,4	49,7	118,2	50	118
Ext_Battery	0,36	0,4	0,36	0,39	0,36	0,4	0,36	0,39	0,36	0,39	0,36	0,4
Batt	4,24	4,28	4,22	4,28	4,23	4,28	4,24	4,28	4,23	4,28	4,23	4,28
Gear	0	0	0	0	0	0	0	0	0	0	0	0
GLat	-1,66721	1,57971	-1,74571	1,77167	-2,01755	1,98912	-2,0389	2,01404	-2,06807	1,96184	-2,11272	2,01127
GLon	-0,982458	1,27421	-0,959339	0,951783	-1,13513	0,932527	-1,12708	0,893442	-1,07693	0,987792	-1,10449	0,893441
H2O	31,1185	42,4107	42,4107	52,1591	51,25	52,3864	52,1591	53,1818	48,3036	53,1818	46,25	48,3036
Lean_Angle	-57,9	55,8	-58,7	58,7	-61,3	60,9	-62,2	61,4	-63	61,1	-63,1	61,4
MetresGPS	0	963,368	963,368	2124,05	2124,05	3281,68	3281,68	4442,94	4442,94	5603,35	5603,35	6764,74
Rpm	5528	14749	1967	15544	4895	16008	4661	16038	4673	16029	4986	16051
SpeedGPS	38	107,8	14	114,5	47,6	118,2	48,3	118,3	48,4	118,4	48,5	118,3
TK	208	532	239	589	358	644	373	648	365	648	375	649
TPS	-0,585938	-0,292969	-0,585938	-0,195313	-0,585938	0	-0,585938	-0,195313	-0,488281	-0,195313	-0,488281	-0,195313
Wh_Speed	0	0	0	0	0	2086	0	0	0	0	0	0
WID0_Batt	70	3981	69	3981	69	3981	70	3981	70	3981	70	3981

This table is a useful tool for identifying any peaks of sensor values or operating anomalies of the vehicle immediately after the data download.

Each column represents the maximum, average or minimum values (viewable by clicking the respective button) reached by the various sensors in the lap whose time is indicated in the column header.

MAAT highlights the peak value reached during the session with the color assigned to the sensor.

Note: By double clicking on one of the cells, MAAT will position the main cursor in that point of the other graphs to identify the position of interest.



Settings

Add Channel

Load all

Remove Channel


Remove all

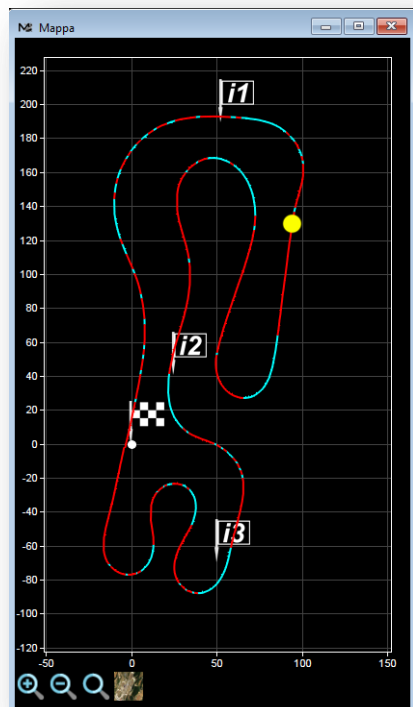
Name
ASpd
Ext_Battery
Batt
Gear
GLat
GLon

Back OK

By clicking on the **Settings** button you can add or remove channels from the table or order them as you wish.

Track Map

Clicking on the  icon you insert the Track Map window:



The map shows the trajectories of the selected lap indicating the acceleration points in red and the deceleration points in blue.

The yellow marker indicates the exact position on the track corresponding to the point of the graph being analyzed.

The flags indicate the finish line and the intermediates that have been set.

At the bottom of the window are the icons:



Zoom In = Enlarges the map.



Zoom Out = Reduces the map.



Zoom Reset = Returns the map to its original size.



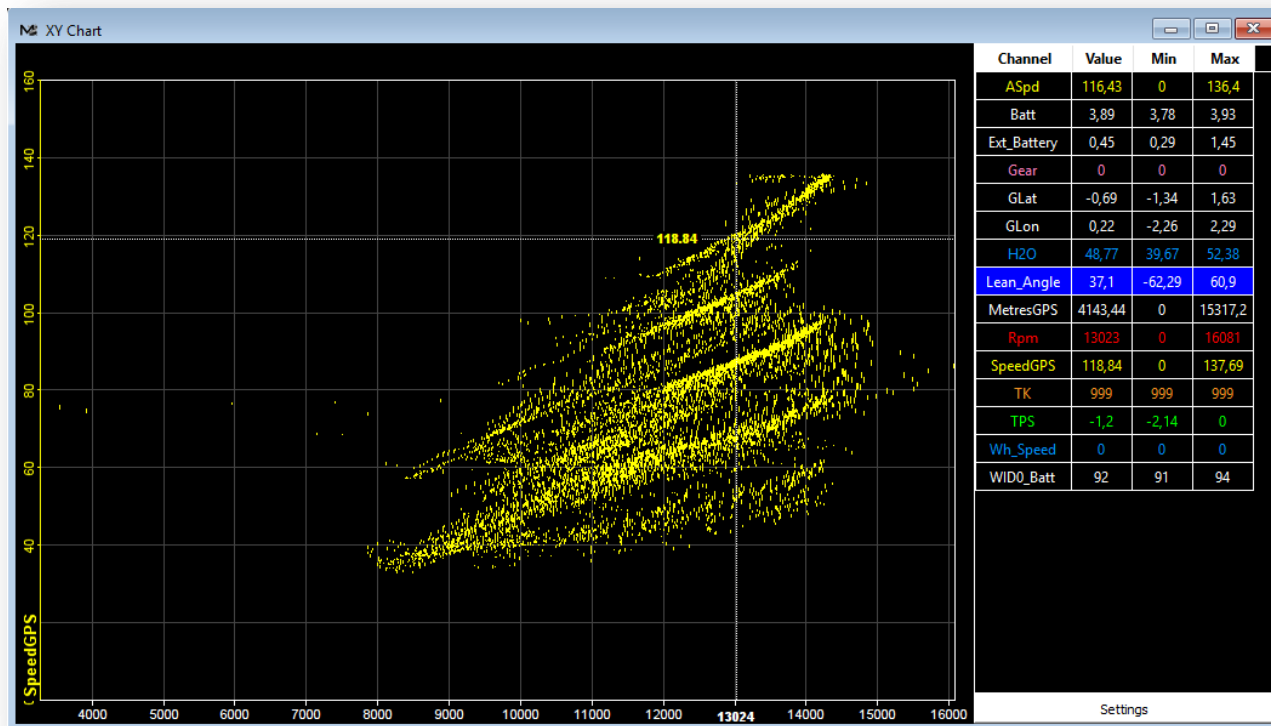
Vista Satellitare = If the PC is connected to the internet it displays the trajectories overlayed on the satellite map.




Mappa = Returns to the map without satellite view.

XY Chart

Unlike charts based on Time\Distance that represent the values of channels on the Y axis sorted by the values of Time or Distance in X axis, the XY charts allow to assign to the X axis one of the acquired channels to be used as a basis for sorting values in Y axis.



While it is obviously possible to select only one channel for the X axis, it is possible to insert more channels for the Y axis.

Click on the  icon to create a new XY chart.

This will open a screen without graphics but with the list of channels available for the session loaded.



Click on the **Settings** button under the column with the names of the channels, the following panel will open:

In the **Name** field, type the name you want to assign to the new chart.

In the **X Axis Channel** box, you can select the channel to be assigned to the X axis.

Using the **Grid** setting, you can activate the **Horizontal** and **Vertical** lines of the chart's background grid.

Click on the **Add Channel on Y Axis** button to insert a channel in the chart, the panel will open in which you can select the channel you want to add and press **Next**:

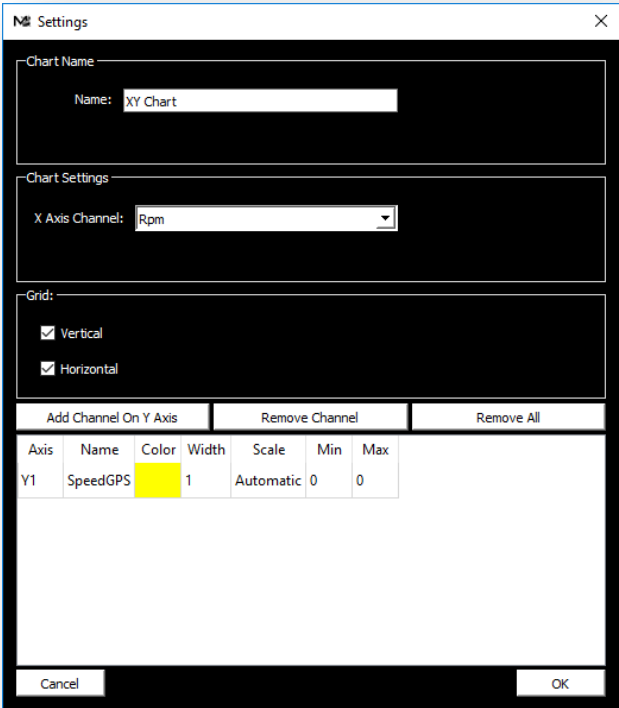
Click on **Modify** to set the color of the graph.

Select the **Width** of the points in pixels.

Select the **Visibility** flag of the graph. (Also double clicking on the name of the channel in the chart window activates and deactivates the visualization of the channel graph).

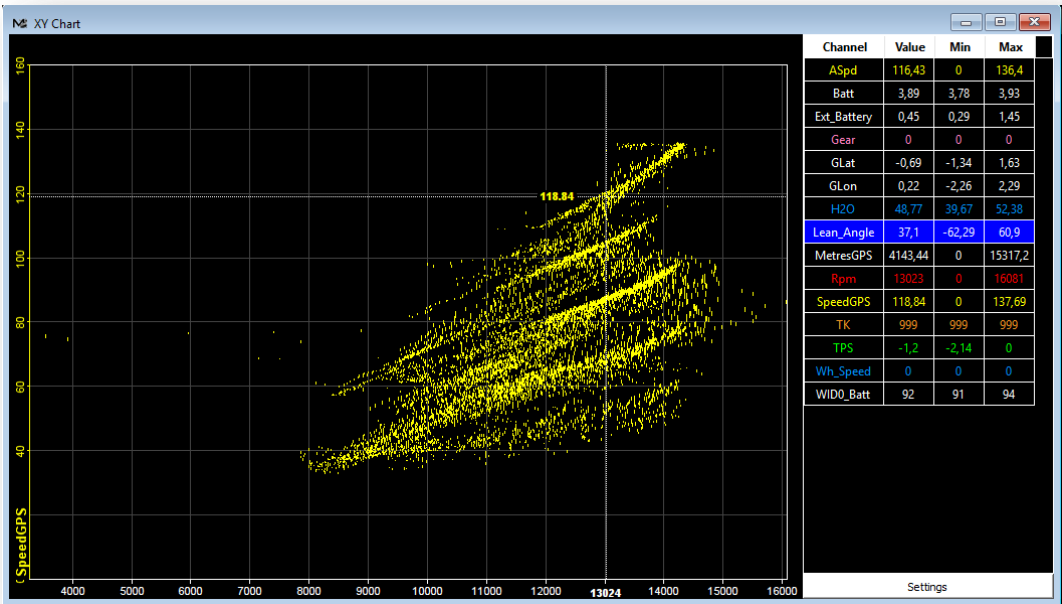
For channels that have both positive and negative values, it may be useful to activate the **Zero Line** that identifies this value.

Click on **Finish** to end the setting.

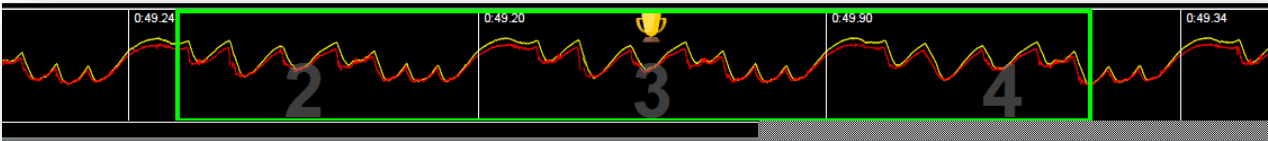


Once inserted, the desired channels will be listed in the lower part of the panel.

Press **OK** to finish.



The XY Chart uses the samples available in the data area selected by the Zoom, enlarging\reducing or moving the selected session area, the displayed points will be increased or reduced.



Laps Comparison


H2O	MaxTK	Compare
	566	<input type="checkbox"/>
3	629	<input type="checkbox"/>
3	628	<input type="checkbox"/>
9	638	<input checked="" type="checkbox"/>
9	640	<input type="checkbox"/>
9	634	<input checked="" type="checkbox"/>
0	622	<input checked="" type="checkbox"/>
9	634	<input type="checkbox"/>


Selecting two or more laps (including different sessions) in the session archive

and clicking on the **Laps Comparison**  icon.

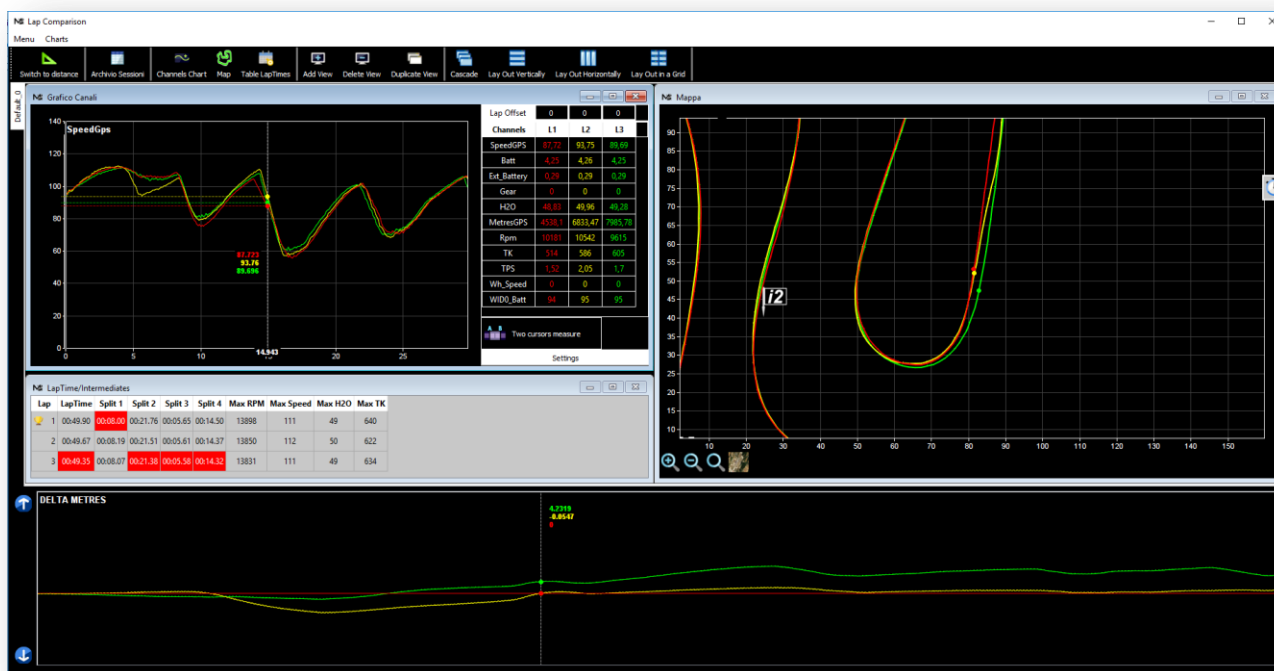
the comparison mode will open.

The comparative can also be accessed by selecting the desired laps in the lateral chronology

Session: ITA LONATO_T04_180708 FERRARI PAO 2 Run:2										
Ideal Time: 00:49.12 Rolling Time: 00:49.18										
Open Laps Comparison 										
Lap	LapTime	Split 1	Split 2	Split 3	Split 4	Max Rpm	Max Speed	MaxH2O	MaxTK	Compare
0	00:32.44	00:00.00	00:00.00	00:00.00	00:32.44	0	0	0	566	<input type="checkbox"/>
1	00:49.71	00:07.98	00:21.46	00:05.79	00:14.48	13901	111	48	629	<input type="checkbox"/>
2	00:49.24	00:08.00	00:21.34	00:05.65	00:14.25	13847	111	48	628	<input type="checkbox"/>
3	00:49.20	00:08.01	00:21.31	00:05.61	00:14.26	13895	111	49	638	<input type="checkbox"/>
4	00:49.90	00:08.00	00:21.76	00:05.65	00:14.50	13898	111	49	640	<input checked="" type="checkbox"/>
5	00:49.34	00:07.98	00:21.34	00:05.61	00:14.41	13879	111	49	634	<input type="checkbox"/>
6	00:49.67	00:08.19	00:21.51	00:05.61	00:14.37	13850	112	50	622	<input checked="" type="checkbox"/>
7	00:49.35	00:08.07	00:21.38	00:05.58	00:14.32	13831	111	49	634	<input checked="" type="checkbox"/>
8	00:23.73	00:00.00	00:00.00	00:00.00	00:00.00	0	0	0	637	<input type="checkbox"/>

and clicking on the Laps Comparison icon .



The **Laps Comparison** is managed in MAAT as a new entity in its own right, with its own customizable Views and its charts:



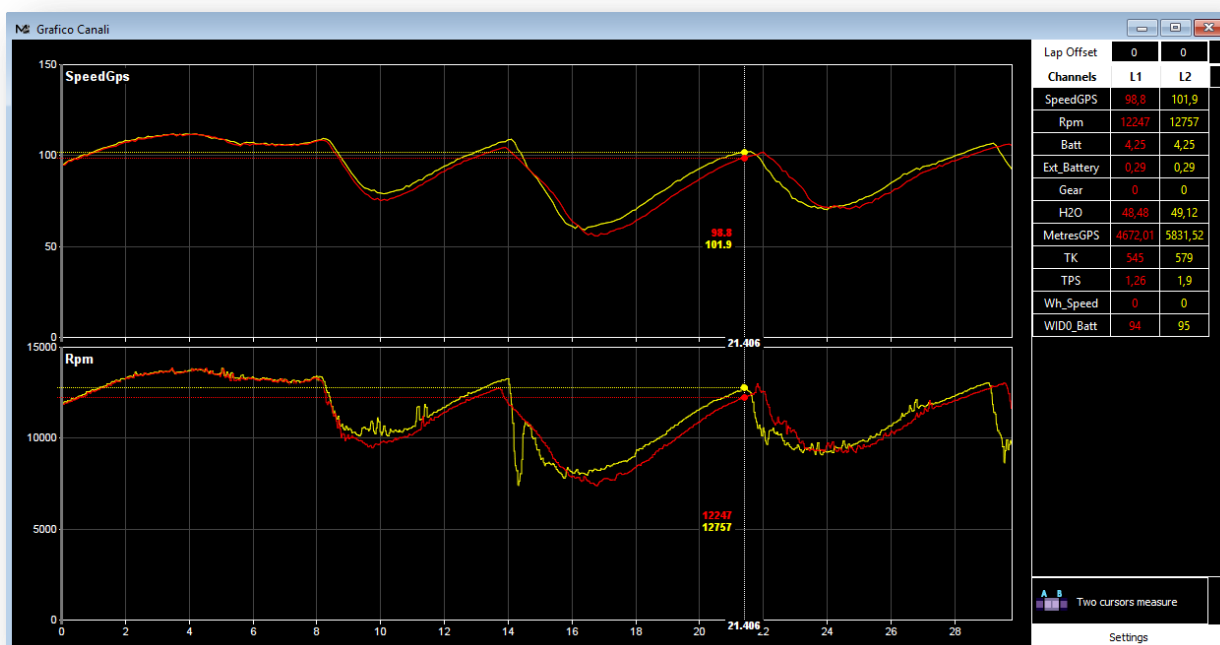
At each lap loaded in comparison, a default color is assigned which represents all the channels and the trajectories related to that lap.

At the bottom of the screen, horizontally, the **Delta** graph is shown showing the progression of time deltas (if you are based on distance) and the distance delta (if you are on time basis).

Depending on the resolution of your monitor, you can change the height of the **Delta** graph by clicking


on the   buttons on the left of the screen.

The graph based on Time\Distance of the comparison, for reasons of readability of all the selected laps, offers the only parallel display.




The Chronology in Comparison


When in Comparison mode, the lateral session chronology shows the name of the sessions loaded in Comparison with relative Ideal Times and Rolling Times.

Add Session	ITA LONATO TESTER TEST KART QP2 RUN: 2	ITA LONATO TESTER TEST KART QP1 RUN: 2
Ideal Time	00:49.12	00:48.87
Rolling Time	00:49.18	00:49.04
Lap	Lap Time	Lap Time
0	00:32.44	00:37.51
1	00:49.71	00:49.76
2	00:49.24	00:49.20
3	 00:49.20	00:49.22
4	00:49.90	00:50.45
5	00:49.34	00:49.31
6	00:49.67	00:49.64
7	00:49.35	00:22.89
8	00:23.73	

Double click on one of the laps in the table to load it in Comparison, another double click on the lap removes it from the Comparison.

By clicking on the **Add Session** button, you can also load laps from other sessions.

Clicking on the  icon deletes a session from the Comparison.

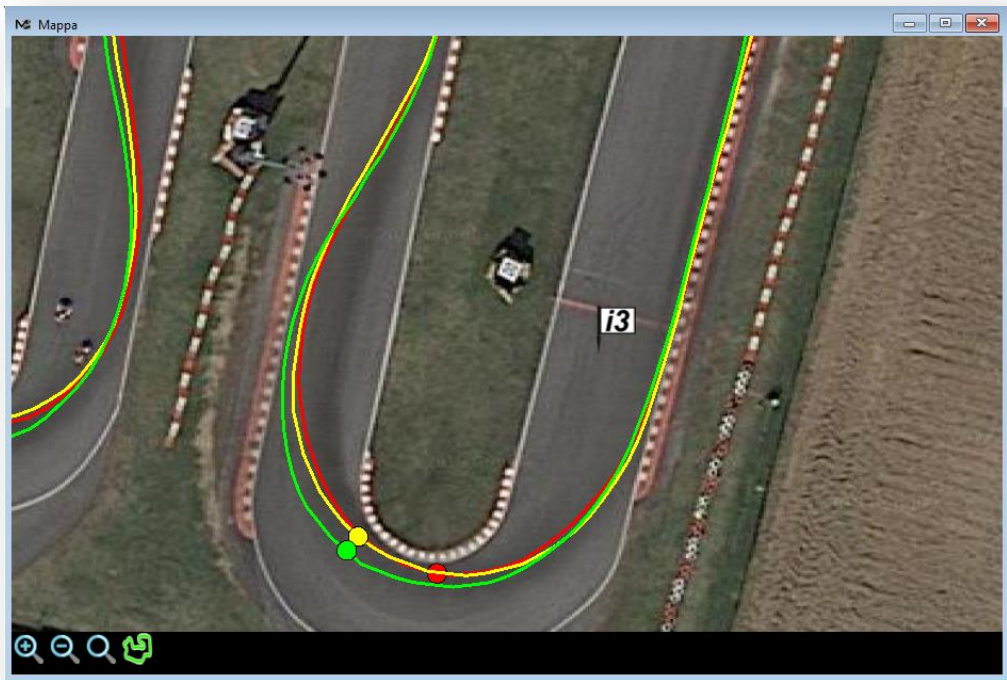
The  icon indicates the lap used as a reference in the Comparison.

It is possible to select a new reference lap simply by double clicking on the desired lap in the pop-up Chronology window.

LapTime/Intermediates									
Lap	LapTime	Split 1	Split 2	Split 3	Split 4	Max RPM	Max Speed	Max H2O	Max TK
1	00:49.20	00:08.04	00:21.27	00:05.66	00:14.22	13689	111	47	603
2	00:49.22	00:08.09	00:21.13	00:05.61	00:14.39	13670	115	48	611
3	00:49.20	00:08.01	00:21.31	00:05.61	00:14.26	13895	111	49	638
4	00:49.90	00:08.00	00:21.76	00:05.65	00:14.50	13898	111	49	640

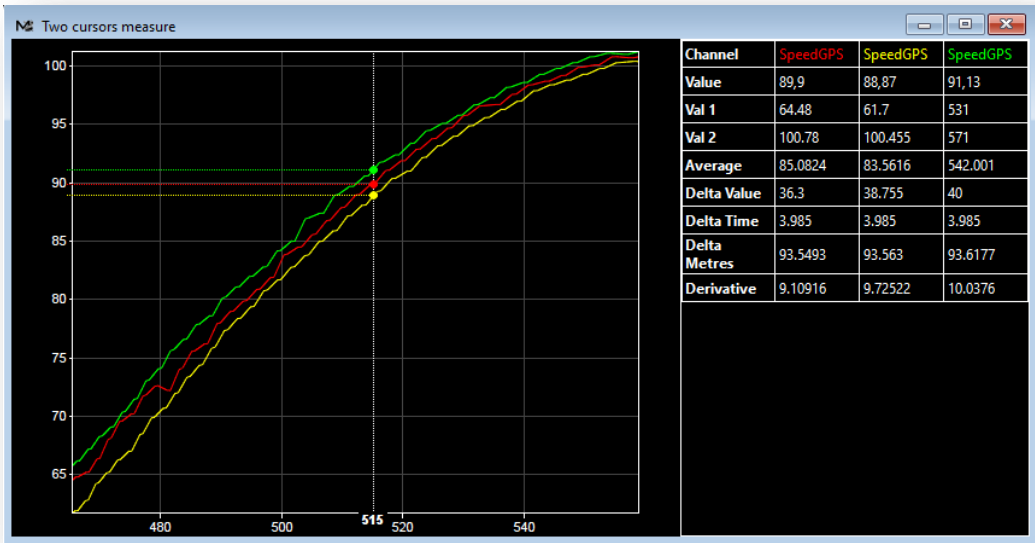
The Track Map in Comparison

In the Comparison, the map gives the possibility to compare the trajectories to evaluate the most profitable ones.



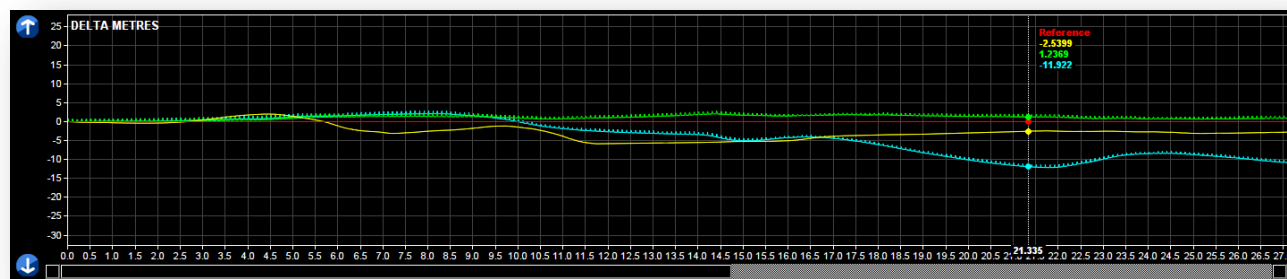
Two Cursors Measure in Comparison



In comparison mode the Two Cursors Measure shows the graphs of the values and the reference values of all the selected laps.



Delta Time and Distance Chart

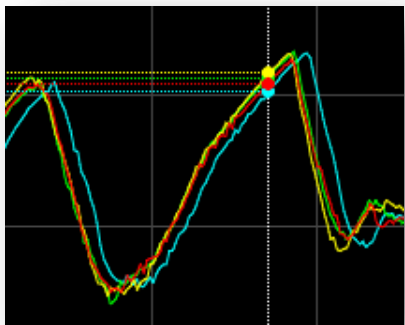
At the bottom of the screen, horizontally, the **Delta** graph is shown showing the progression of time deltas (if you are based on distance) and the distance delta (if you are on time basis) for the laps loaded in Comparison.



Depending on the resolution of your monitor, you can change the height of the **Delta** graph by clicking on the   buttons on the left of the screen.

Offset of the Graphs in Comparison

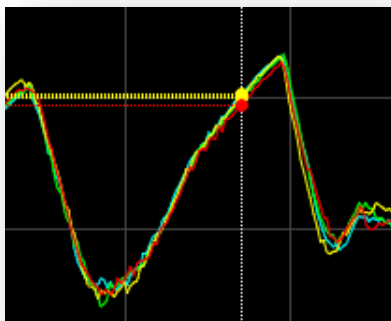
Since, obviously, the time between one lap and the next is not identical, along the progression of the lap one accumulates a displacement between one graph and another in Comparison.



To align the graphs at a given point, click on the Lap Offset box of the desired lap above the channel list or over the lap label L1,L2,L3...

Lap Offset	0.1	0.1	0.1	0
Channels	L1	L2	L3	L4
SpeedGPS	98,87	100,16	99,85	100,45

and press the **L** and **K** keys to move it left and right.



It is also possible to directly enter in the box the value of the displacement that you want to apply, which is automatically managed in time, if you are on time basis, or in distance, if you are based on distance.

Pressing the **Z** key the values are reset and the graph returns to the original alignment.

SETTING DAVINCI-II DASHBOARDS

DaVinci-II dashboards can be configured directly from the display menu but it is also possible to manage their configuration on a PC. This allows you to keep a copy of the settings saved on a file, so that you can reload it and send it again if you wanted to reset the dashboard, or if you want to set up more dashboards in the same way.

Attention: *the PC setup features have been implemented from firmware version 2.90 onwards, so make sure you always have DaVinci-II updated to the latest version available on the <http://www.starlane.com> website to use its features correctly.*



Click on the icon to open the device setup screen.

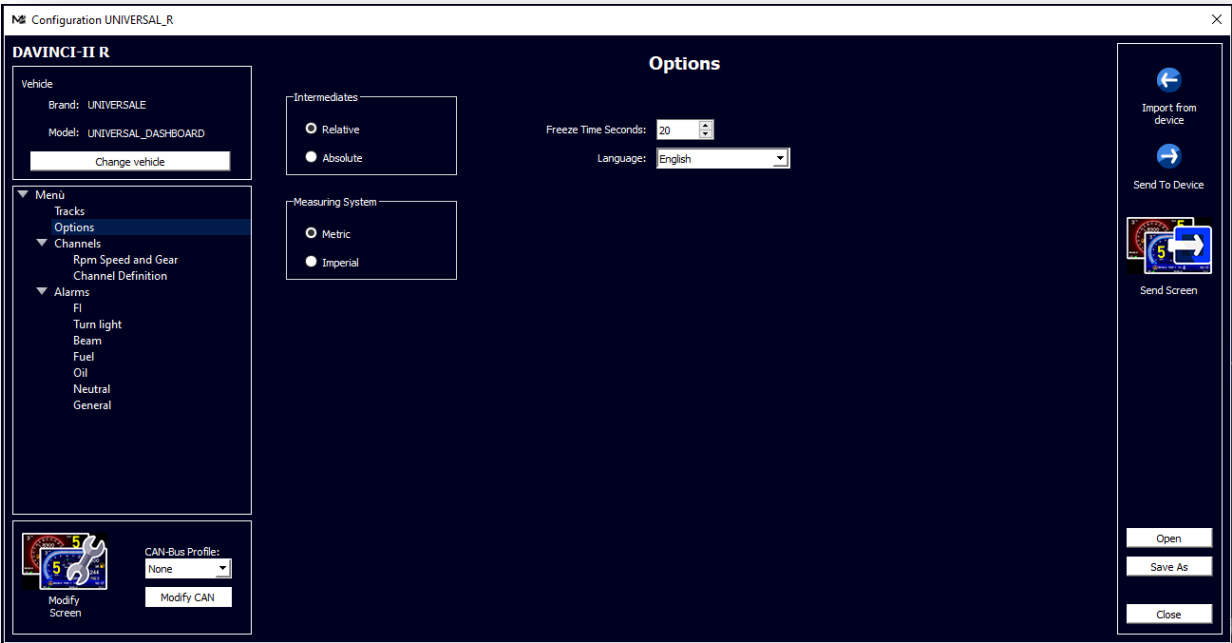
A panel will appear offering two possibilities:

1. Import the configuration directly from your DaVinci-II.
This is the option to follow if you have not yet created and saved your own personal .MOD file in the Model folder.
2. Open a .MOD configuration file that you previously saved on the PC. The default location for these file types is **C:\Program Files (x86)\Starlane\Model** (on Mac OS X it's **Applications\Maat\Model**)

If you are using it for the first time, you will have to:

- A. Make sure that the correct model for your bike has been set in the Options menu of your DaVinci-II (see DaVinci-II manual).
- B. Set the main parameters and alarms as fuel reserve etc. if they are not already functioning correctly from the default setting.
- C. Make sure that your DaVinci-II has been configured in MAAT connection panel, connect it and import the configuration as per previous point 1 .

Once the configuration is loaded the following panel will appear:






On the left side are the following sections:

- 1. Visualization of the DaVinci-II model.
- 2. Display of the brand and model of the vehicle related to the configuration being managed.
NB: If you wish to modify the vehicle you must change the model directly from the Options menu on the dashboard and then import the configuration again.
- 3. Tree with the exact menu items available on the dashboard. By clicking on each item it is possible to change the setting as desired.
- 4. Commands for modifying DaVinci-II screens and setting the possible CAN BUS protocol in the case of customized installations.

In the central part the detail fields of the selected settings are shown.

On the right side the following buttons are available:

 Import from Device	Import the configuration from the DaVinci-II and show it in MAAT.
	Send DaVinci-II the open configuration on MAAT including the screens.

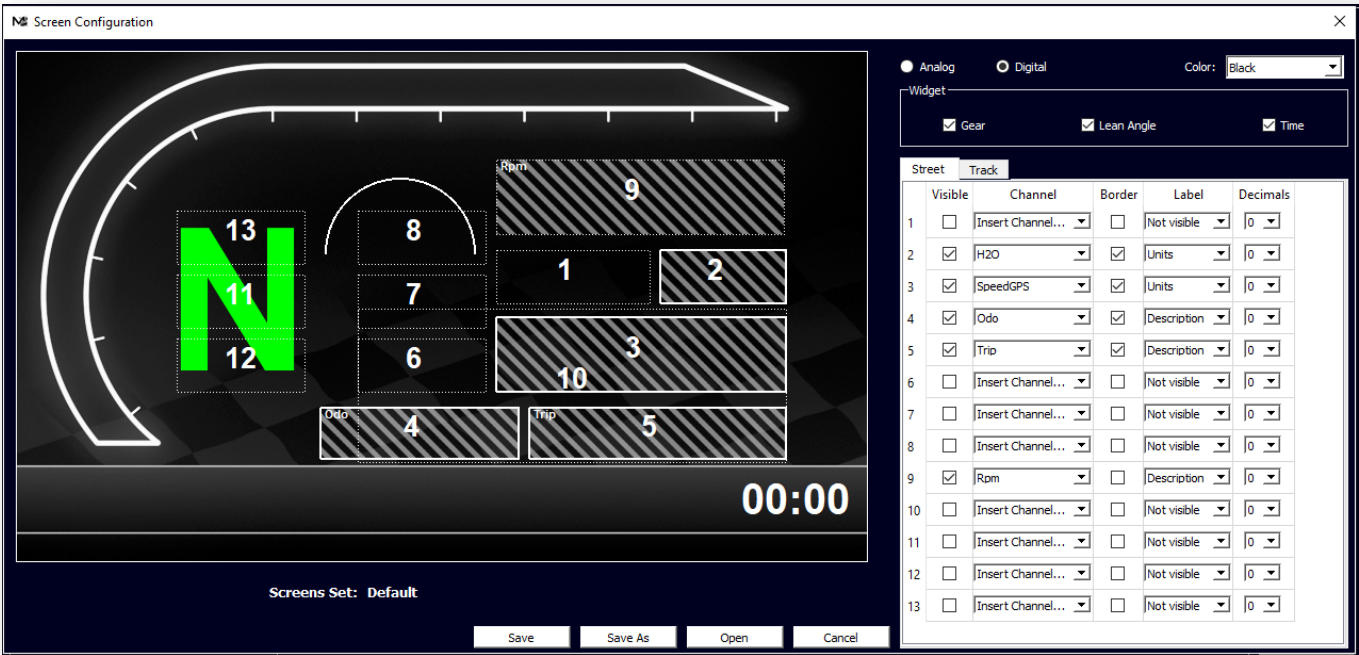
Send to Device	
 Send Screens	Sends DaVinci-II only the screens configured on MAAT without sending the other configuration parameters.
Open	Opens a configuration .MOD file previously saved on a computer. The default path for these file types is C:\Program Files (x86)\Starlane\Model (on Mac OS X it's Applicazioni\Maat\Model)
Save As	Opens a configuration .MOD file previously saved on a computer. The default path for these file types is C:\Program Files (x86)\Starlane\Model (on Mac OS X it's Applicazioni\Maat\Model)
Close	Closes the settings panel.

Setting DaVinci-II screens



Click on the icon at the bottom left of the screen to open the screens setup panel.

The following panel will appear:



The background of the first of the settable screens is shown in the central part.

The screens are always managed in sets of 4 layouts consisting of 2 road screens and 2 track screens. It is therefore possible to compose your own set of 2 road screens + 2 tracks and save it on file or send it directly to DaVinci-II.

The lower part of the panel shows the name of the saved set and the following buttons:

Save	Saves changes to the current set by overwriting the previous file.
Save As	Save the configuration parameters and screens set in MAAT in a .MOD file. The default path for these file types is C:\Program Files (x86)\Starlane\Model\Screens (on Mac OS X it's Applications\Maat\Model\Screens)
Open	Opens a configuration .MOD file previously saved on a computer. The default path for these file types is C:\Program Files (x86)\Starlane\Model\Screens (on Mac OS X it's Applications\Maat\Model\Screens)
Cancel	Closes the screen setup panel without saving the latest changes.

On the right side of the panel are the various screen configuration parameters.

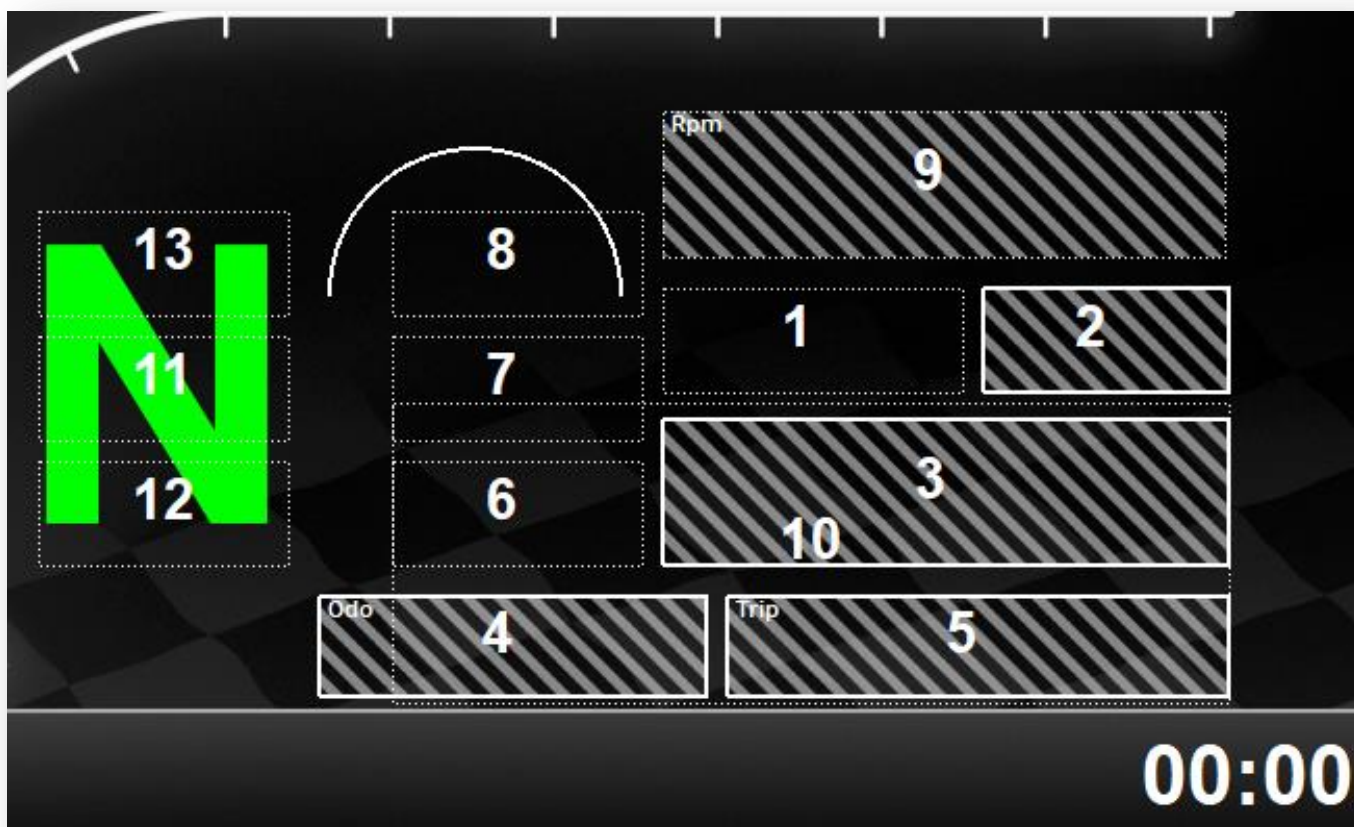
Analog Digital	Selects which type of screen you want to set between the analogue and digital bar version.
Color	Sets the background color of the entire set of screens.
Widget	Displays the predefined widgets for the screen such as: gear indicator, lean angle indicator and time of day.
TAB Street - Track	Allows you to switch from setting the Street screen to Track. We remind you that the Track screen must be set for those who go to the circuit as, as soon as DaVinci-II enters the timing mode, it automatically loads the Track screen. In each of the tables the cells to be represented in the screen and the respective channels can be defined.

	Visible	Channel	Border	Label	Decimals
1	<input type="checkbox"/>	Insert Channel...	<input type="checkbox"/>	Not visible	0
2	<input checked="" type="checkbox"/>	H2O	<input checked="" type="checkbox"/>	Units	0
3	<input checked="" type="checkbox"/>	SpeedGPS	<input checked="" type="checkbox"/>	Units	0
4	<input checked="" type="checkbox"/>	Odo	<input checked="" type="checkbox"/>	Description	0
5	<input checked="" type="checkbox"/>	Trip	<input checked="" type="checkbox"/>	Description	0
6	<input type="checkbox"/>	Insert Channel...	<input type="checkbox"/>	Not visible	0
7	<input type="checkbox"/>	Insert Channel...	<input type="checkbox"/>	Not visible	0
8	<input type="checkbox"/>	Insert Channel...	<input type="checkbox"/>	Not visible	0
9	<input checked="" type="checkbox"/>	Rpm	<input type="checkbox"/>	Description	0
10	<input type="checkbox"/>	Insert Channel...	<input type="checkbox"/>	Not visible	0
11	<input type="checkbox"/>	Insert Channel...	<input type="checkbox"/>	Not visible	0
12	<input type="checkbox"/>	Insert Channel...	<input type="checkbox"/>	Not visible	0
13	<input type="checkbox"/>	Insert Channel...	<input type="checkbox"/>	Not visible	0

On the screen setting tab, each line shows the number corresponding to the respective cell represented by a dotted frame on the screen.

By activating the visibility of a specific cell through the **Visible** box, the respective rectangle will be filled with a striped pattern, in this way it is possible to immediately understand if cells that could overlap each other have been activated.

Once a cell is activated you will have to choose, in the **Channel** drop-down menu, the channel you want to display in that cell.



It is also possible to activate the **Border** function to display a frame around the cell and choose whether to display a **Label** for the cell, for example the unit of measurement or the description with which the channel was set.

For channels that have decimals (eg lambda) it is possible to limit the number of **Decimals** displayed to allow the maximum font size of the value in the cell. In fact, the system always tries to automatically use the largest possible font for a given channel, depending on the cell chosen.

- The letter **N** represents the space occupied by the **Gear** widget.
- The **BOW** shape represents the space occupied by the **Lean Angle** widget
- The **00:00** at the bottom represents the space occupied by the **Time** widget.

Once both the **Road** and **Track** screens have been set, you can save them with the **Save As** button so as to also define the name for the set of screens and send them to DaVinci-II via the **Send Screens**



command found in the setup panel main.

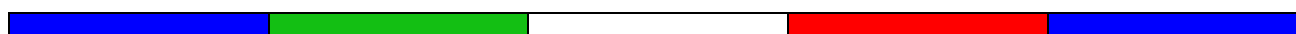
The set of loaded screens will still be sent to DaVinci-II also every time the whole configuration is sent.

MAAT 2.0 HOTKEYS

Key	Description
M	Moves the cursor to the right.
N	Moves the cursor to the left.
F1	Increases the cursor step while moving it with the M and N keys. Each pressure of the key modifies the step until a maximum of 3.
F2	Reduces the cursor step while moving it with the M and N keys. Each pressure of the key modifies the step until a maximum of 3.
ARROW UP	ZOOM IN.
ARROW DOWN	ZOOM OUT.
R + drag mouse to RIGHT	Rectangular ZOOM IN the chart.
R + drag mouse to LEFT	Rectangular ZOOM OUT the chart.
Mouse roller	Track map zoom.
Right mouse button	Drags the map.
K	In the Lap Offset function, moves to the Left the graph of a channel in comparison mode.
L	In the Lap Offset function, moves to the Right the graph of a channel in comparison mode.
Z	Resets the Lap Offset in comparison mode.

Updates to this manual are available at <http://www.starlane.com>

Manual Version: MAAT 2.0.009



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www.starlane.com