MARELLI MOTORSPORT

SRG-141 TCR

GPS and beacon settings

SUMMARY

1. Introduction

Purpose of this document is to explain how to set up the TCR SRG141 ECU to cut the logged data using an external CAN GPS module as a beacon.

2. Requirements

- Sysma version minimum 1.49.06.30
- External GPS module transmitting the altitude and longitude coordinates by CAN to the SRG 141 TCR. Required format: in degrees with 7 decimals.

3. Steps to perform

- Update your project with a .clx map containing the received GPS coordinates by CAN (Latitude and Longitude signals).

  To achieve this step, two solutions:

  - Create two new measurement signals (Latitude and Longitude)
  - import a corresponding .dbc into a .clx
- Add those two signals to your acquisition table .TPX/.TDX
- Set up the acquisition table properties.
- Check your ECU configuration
- Create the GPS POI (used to define the track line cutting your data)

4. Import the CAN GPS coordinates into your project

To use the beacon by GPS, the ECU SRG 141 TCR needs to receive the GPS coordinates (Latitude and Longitude) in degrees with 7 decimals. Eg: Lat 45.0000000° and Long 6.0000000°

You will need to import the received CAN coordinates into your Sysma project using two “CAN signals” contained in a .cxl, two solutions are offered to you:

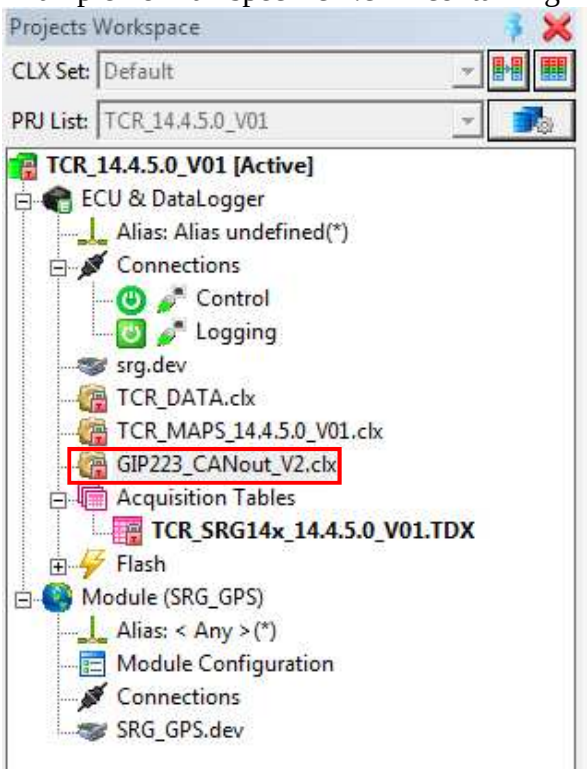
- Create two new CAN signals in an existing .clx
- import a .dbc file into a .clx

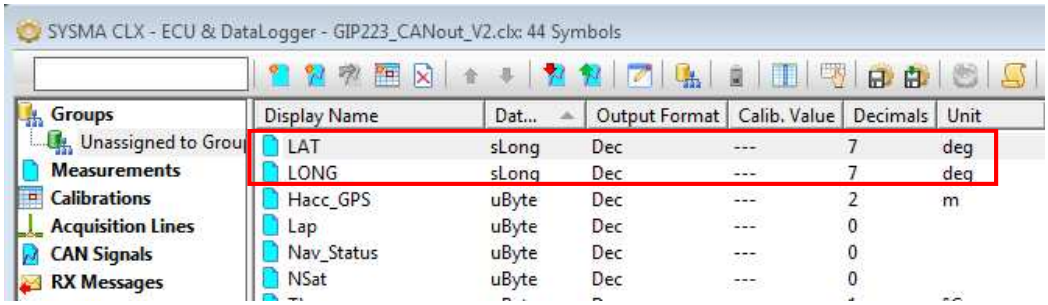
Both of these solutions are described in the Getting Started Sysma document in the part “9. CAN RX – HOW To create a generic measurement to read from CAN and Manual / Import DBC” and in the part “9.1 Manual / Import DBC”

Getting Started
Sysma 2.3 - TRAININ

Using these chapters you will get a .clx in your project containing the GPS coordinates received by CAN.

Example of a specific .clx containing the two CAN signals (Latitude and Longitude):



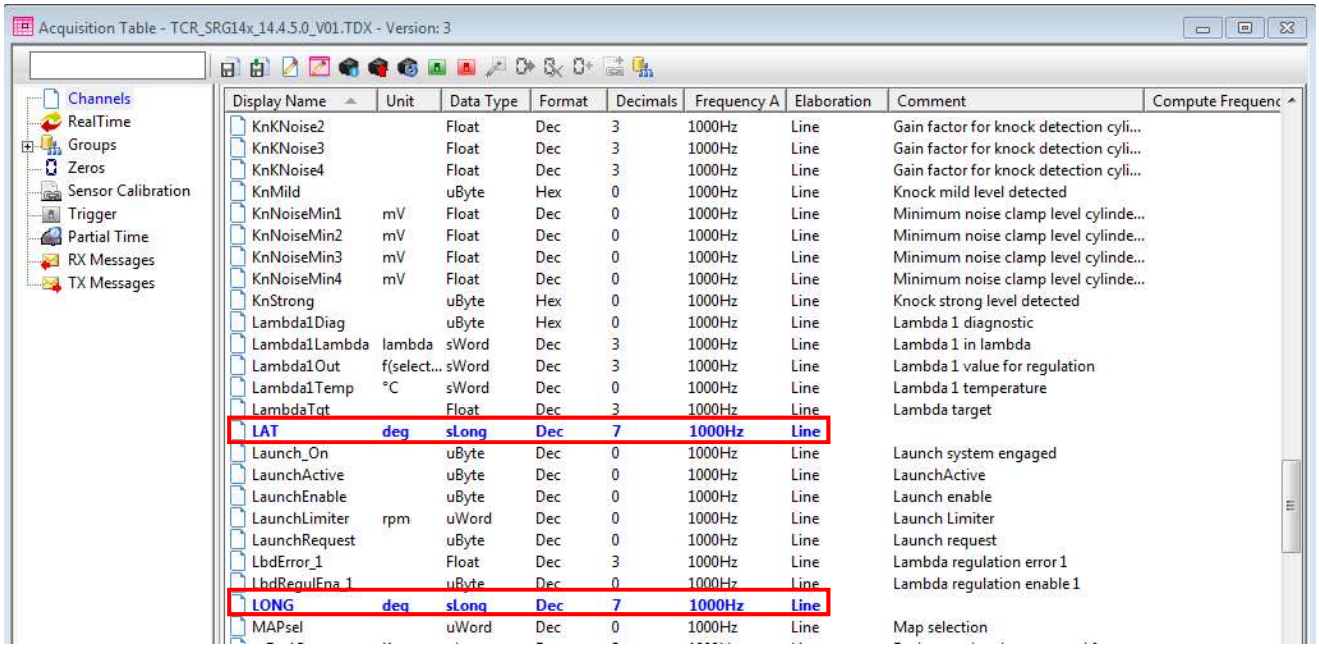


5. Add the CAN GPS coordinates in your table properties

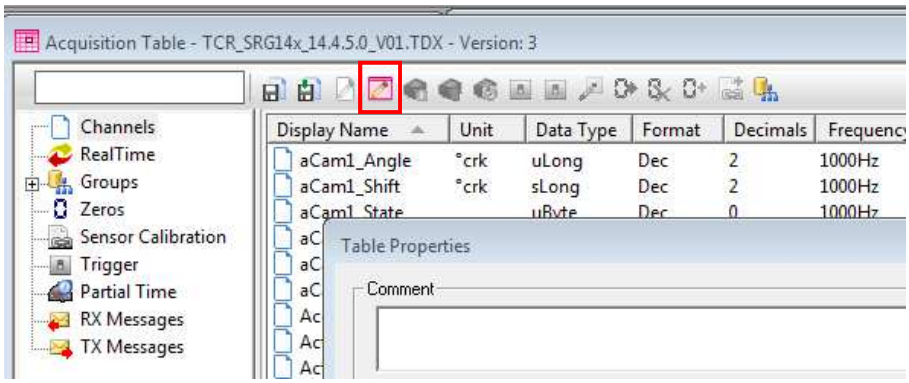
Once you have imported the Latitude and the Longitude signals to your project, as CAN signals in a .clx, you can import them in your acquisition table .TPX or .TDX.

To proceed, open your acquisition table and then add the GPS coordinates signals inside.

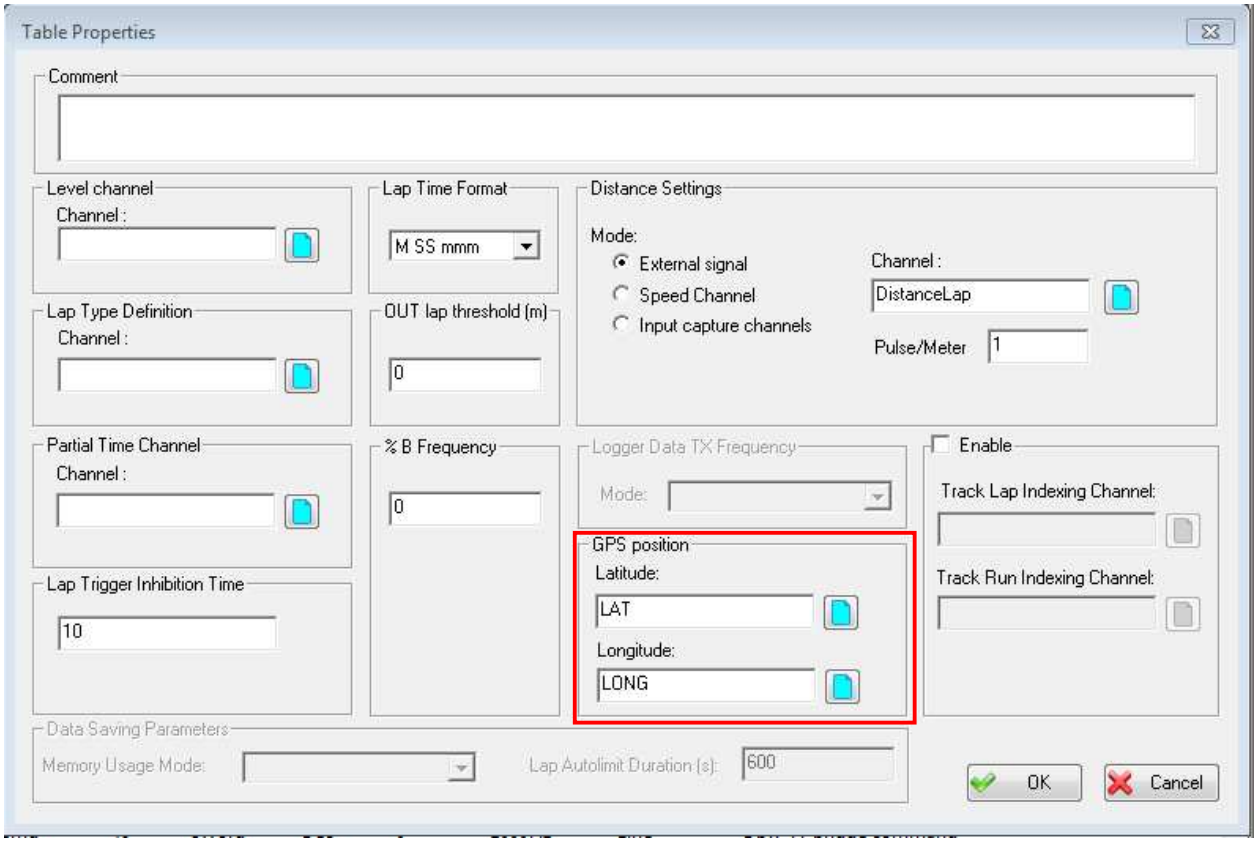
You can drag and drop them from the .clx



Once added, open your table properties, using the specific button -> Logger Table Properties



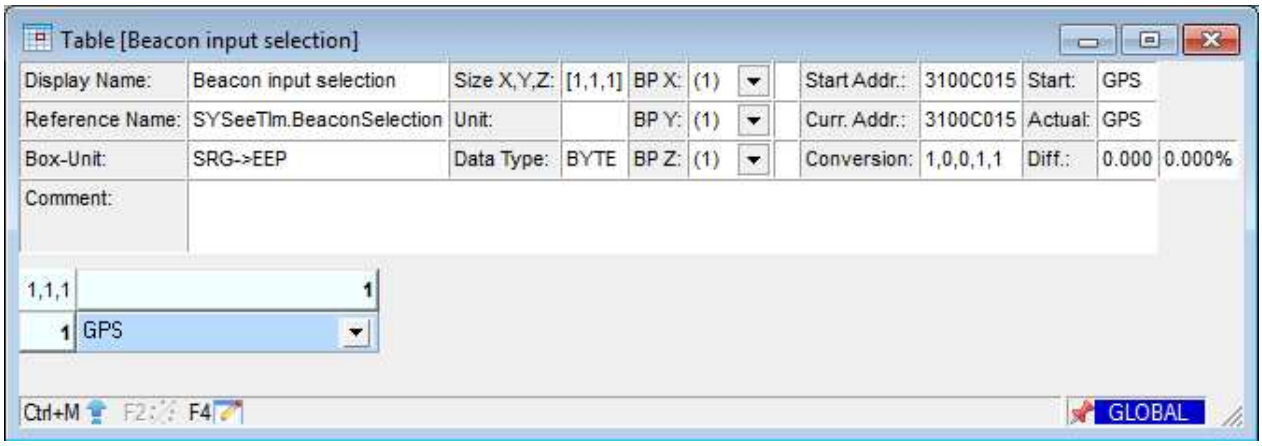
The window below will open, you need to fill the GPS position fields with the Latitude and the Longitude signals.



Once done, you can save the changes done to your acquisition table and send it to your ECU.

6. ECU map setting

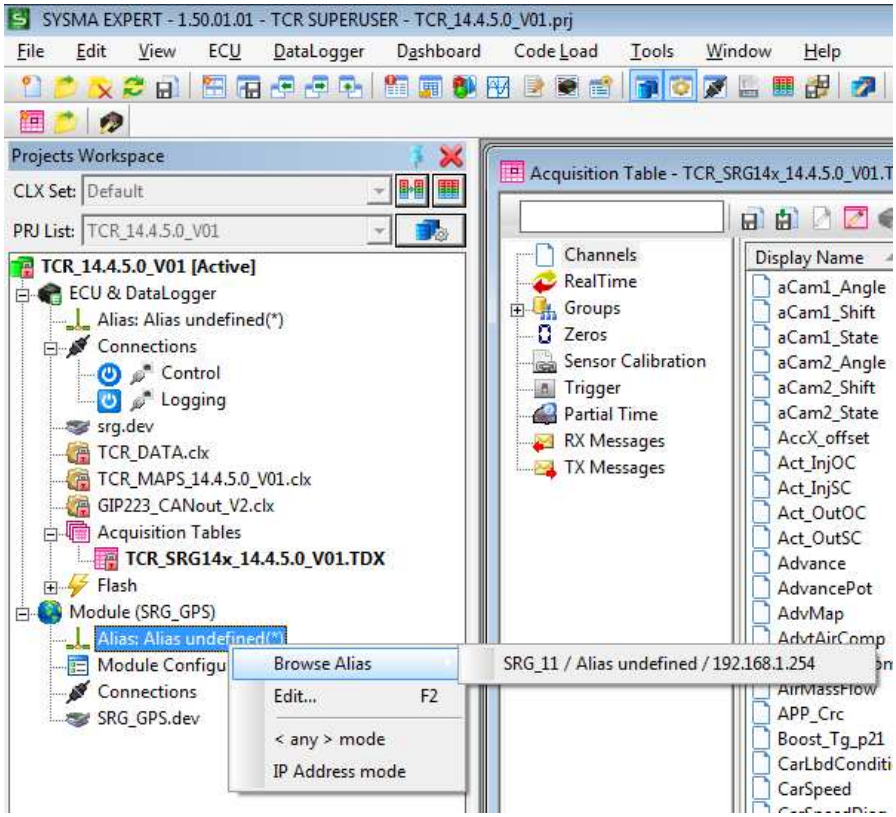
By default in the TCR project, the setting for the beacon is to cut the lap using these GPS coordinates: The calibration “Beacon input selection” has to be set to “GPS” as below:



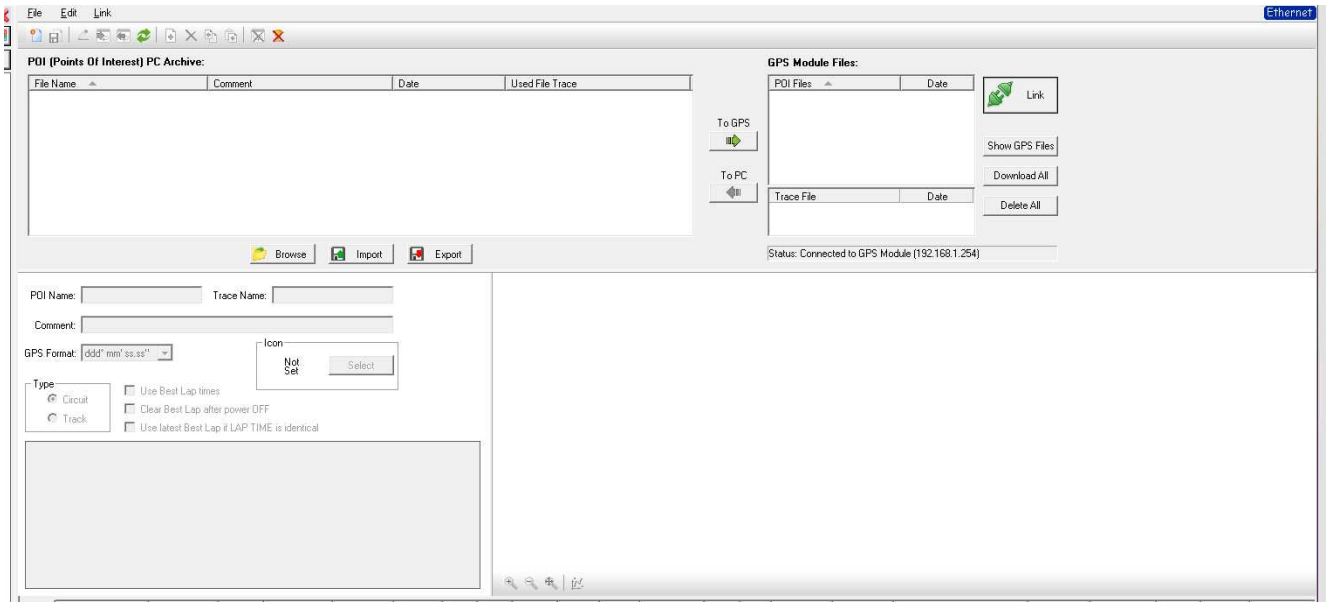
With this calibration set to “GPS”, the logged data will be cut each time the car will cross the virtual track line defined by the GPS POI contrained in your SRG 141 TCR (how to set up the GPS POI is described hereafter).

7. How to set up your GPS POI.

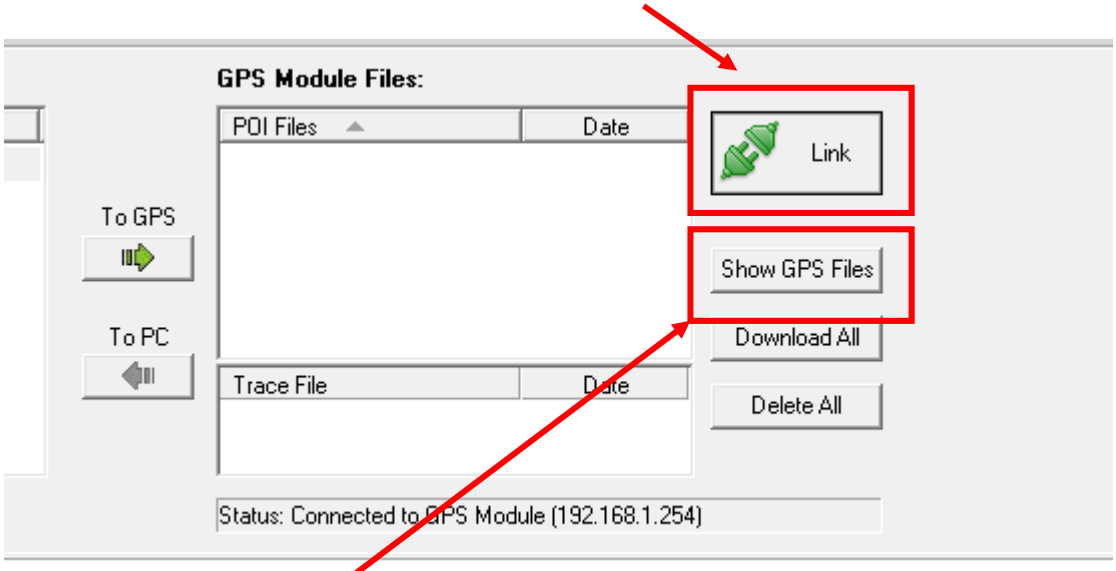
You need to browse your ECU alias in the SRG_GPS module as below:



Then double click on the “Module Configuration” button, the flowing window will open.

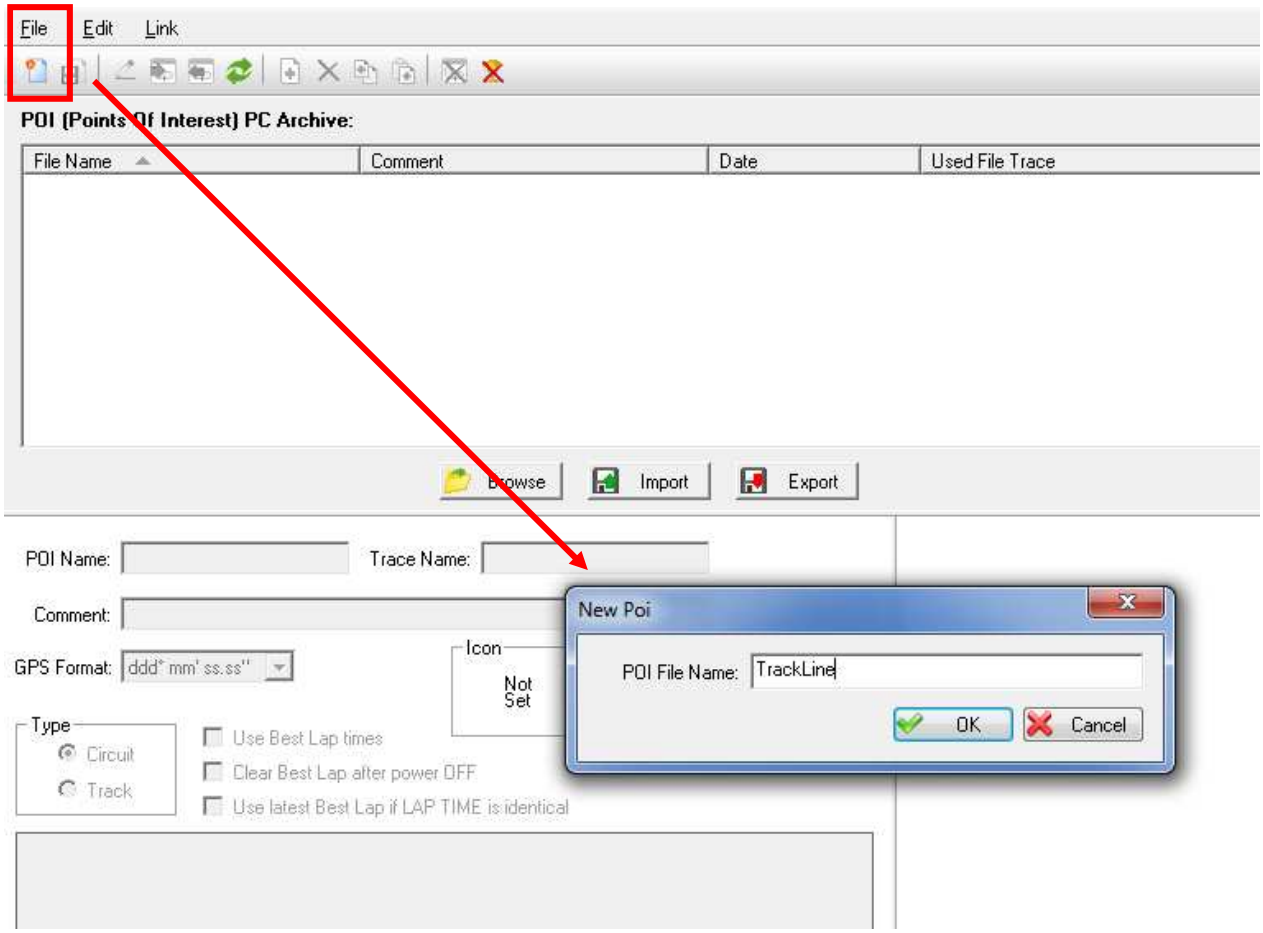


On the right top corner, you can link to your ECU:

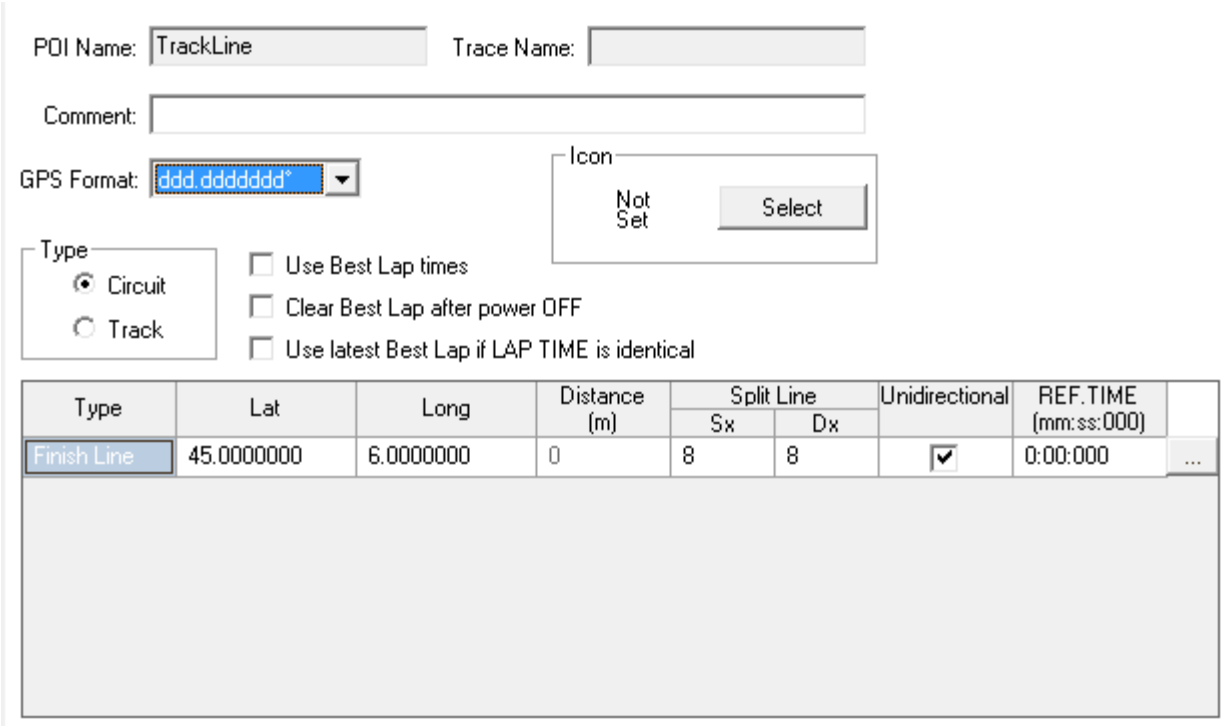


Clicking on “show GPS Files” will display the list of the GPS POIs which are already inside your ECU, be careful to not have two GPS POIs too close to each other.

On the left top corner you can create a new POI (File -> New) and insert its name.



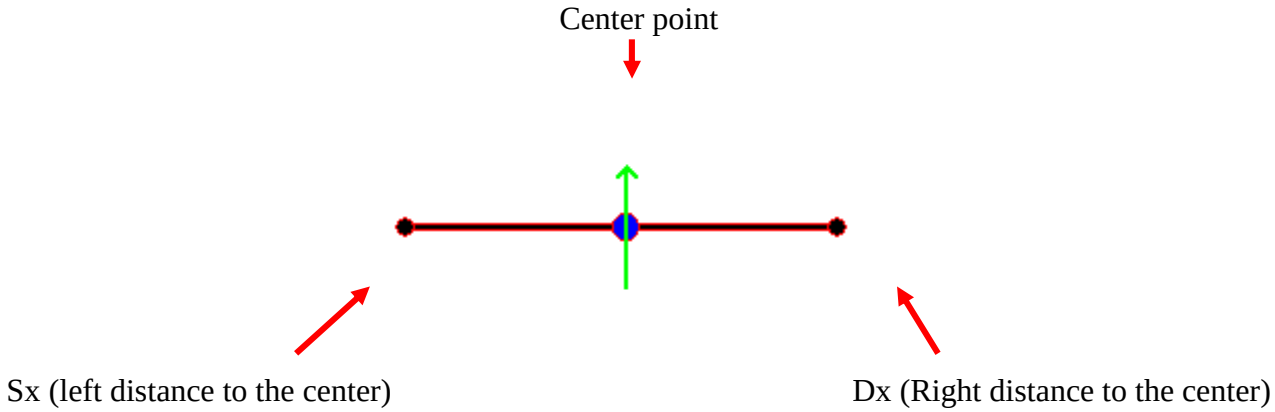
When the POI has been created, you can select it and then modify it.



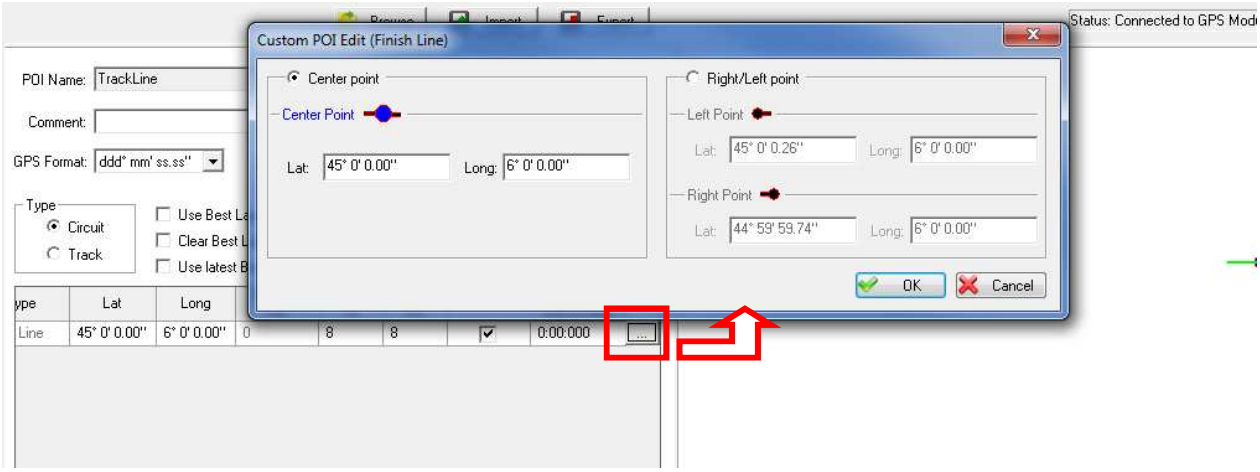
It's suggested to use GPS Format ddd.ddddddd° (just copy and paste the coordinates from Google Earth).

After having selected your desired line GPS coordinates, you can fill directly the centre point and then the Sx and Dx parameters which are the distance in meters from this center point).

Be care to have the GPS POI arrow (in green) in the same direction than the car crossing the line.



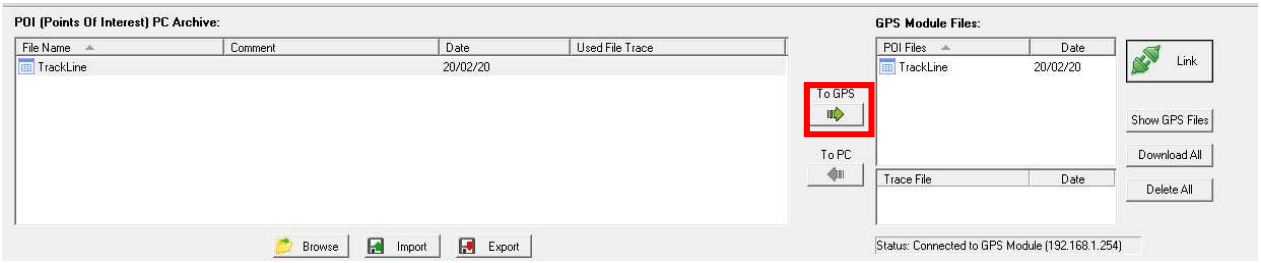
Another option is to click on the "…" button (see image below).



Here, it is possible to change the position of a POI by modifying the coordinates of the central node or also by modifying the positions of the right and left nodes. If the positions of the right and left node are entered, the center node will be automatically calculated.

Once satisfied by your settings, you can save your POI and send it to the ECU.

Select the POIs that you want to have internally to your ECU and then click on the "To GPS" button to trasmit them.



You can also download the internal POIs from your ECU to your laptop using the "To PC" button.

8. Conclusion

After correctly following all these steps, the logged data in your ECU will be automatically split each times the car will cross the virtual line defined by the GPS POI.