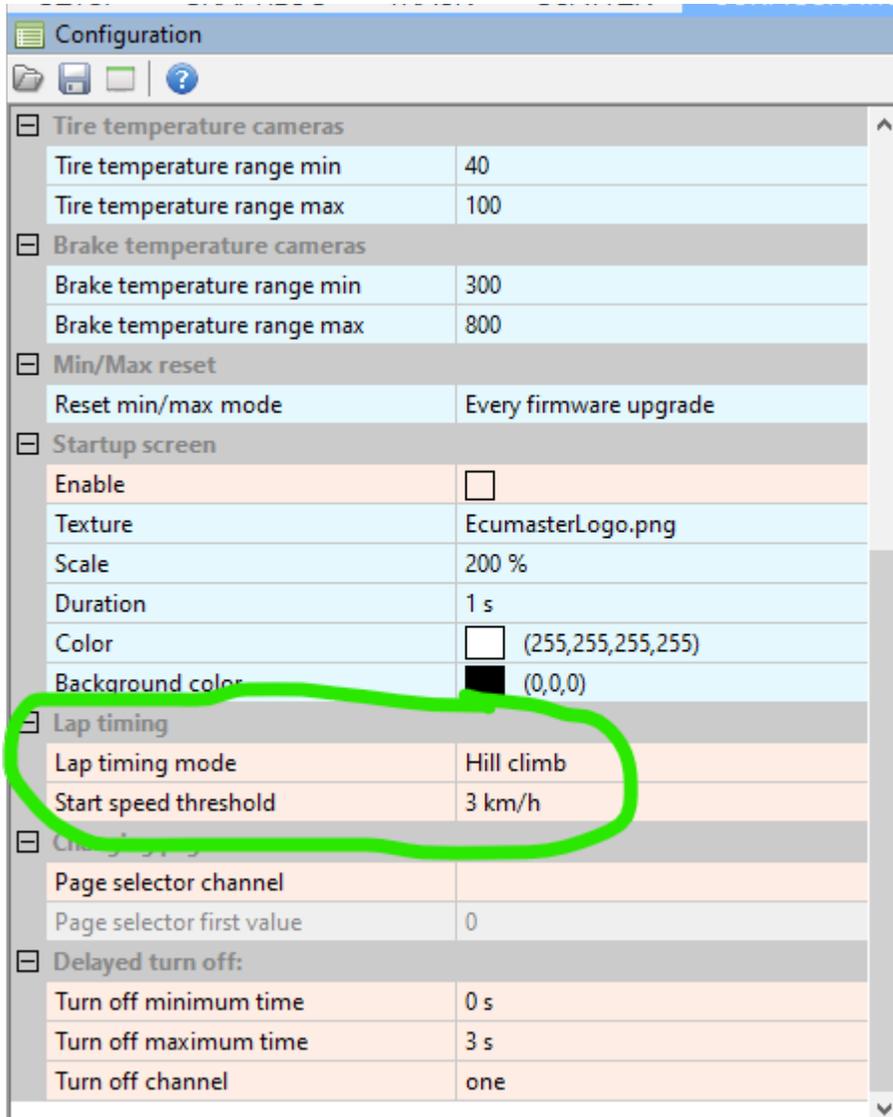**How-to configure the Hill climb in the ADU firmware 94.0 (DRAFT).**
Date: 2023/08/25.

1. Upgrade the firmware of your ADU to version 94.0 or higher.

2. On the CONFIGURATION tab and on the "Configuration" panel, please change the "Lap timing mode" to the "Hill climb".

3. The vehicle speed channel ('ecu.speed') is required.

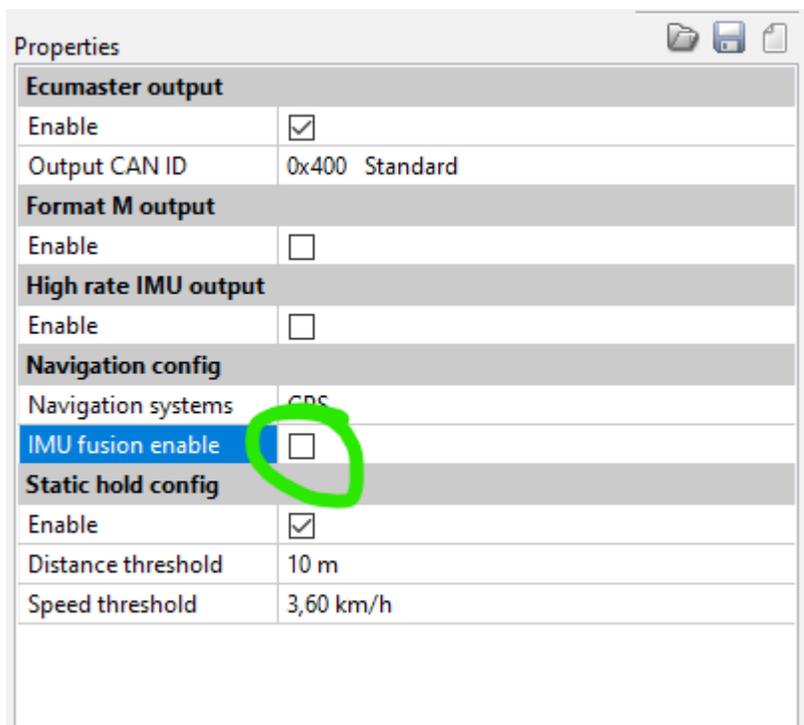**A start of an event is triggered when the vehicle speed ('ecu.speed') exceeds the 'Start speed threshold'.**

We are recommending to use vehicle speed sensor (VSS) for this channel.
You can still use a speed from the GPStoCAN module, but you may need to increase the 'Start speed threshold' (Lap timing section of the Configuration panel)**.**

GPStoCAN V1 users:

If you are using GPStoCAN V1 as a speed source, you can consider to untick the "IMU fusion enable" option in the Light Client app with your GPS connected.
In this way, the GPStoCAN module will use only the GPS signal (and NOT a GPS+IMU). It decrease an update frequency of your GPStoCAN V1 module to 10Hz, but it will help to prevent jitter on the GPS speed when your car is standing at the start line.

4. The Button to define a track is wired to analog input A5 in the default project.

Buttons

Reset session - trigger	Press
Reset distance meter - channel	
Reset distance meter - trigger	Press
Reset distance meter 2 - channel	
Reset distance meter 2 - trigger	Press
Reset track data - channel	
Reset track data - trigger	Press
Reset min/max data - channel	
Reset min/max data - trigger	Press
IMU pitch zeroing - channel	a_zeroImuPitch
IMU pitch zeroing - trigger	Press
Reset virtual fuel tank - channel	
Reset virtual fuel tank - trigger	Press
Button defined track start/finish line se	a_acquireButtonDefinedTrack
Button defined track start/finish line se	Press
Beacon input channel	

5. How to configure the track in ADU memory:
   a) Make sure your GPS is working correctly (has a fix).
   b) You need to stop at the start line and press the Button
   c) Drive to the finish line and press the Button again. And now your track will be defined.

6. How to start the lap timing:
   a) Make sure your GPS is working correctly (has a fix).
   b) You need to stop at the start line (the radius around the start point is 15m).
   c) The timer will start when the speed will be higher than 'Start speed threshold' (default: 3km/h).
   d) Drive to the finish line and when you cross the finish line the timer will stop.

7. There are two diagnostics channel available: enumeration 'adu.track.lapTimingState' and 'adu.track.distanceToStart' in meters.

8. All racing features in the ADU are functional in Hill Climb - predicted time, gain/loss, gain/loss graph, record table, and session times.