BlackBox for iRacing.com – Manual

BlackBox for iRacing is supposed to provide the most neccessary data from iRacing to any Win8.1 or WinRT Device via Network(TCP/IP).

NOTE: It is **NOT COMPATIBLE** with WindowsPhone.
NOTE: IT DOES NOT SUPPORT IMPERIAL UNITS YET

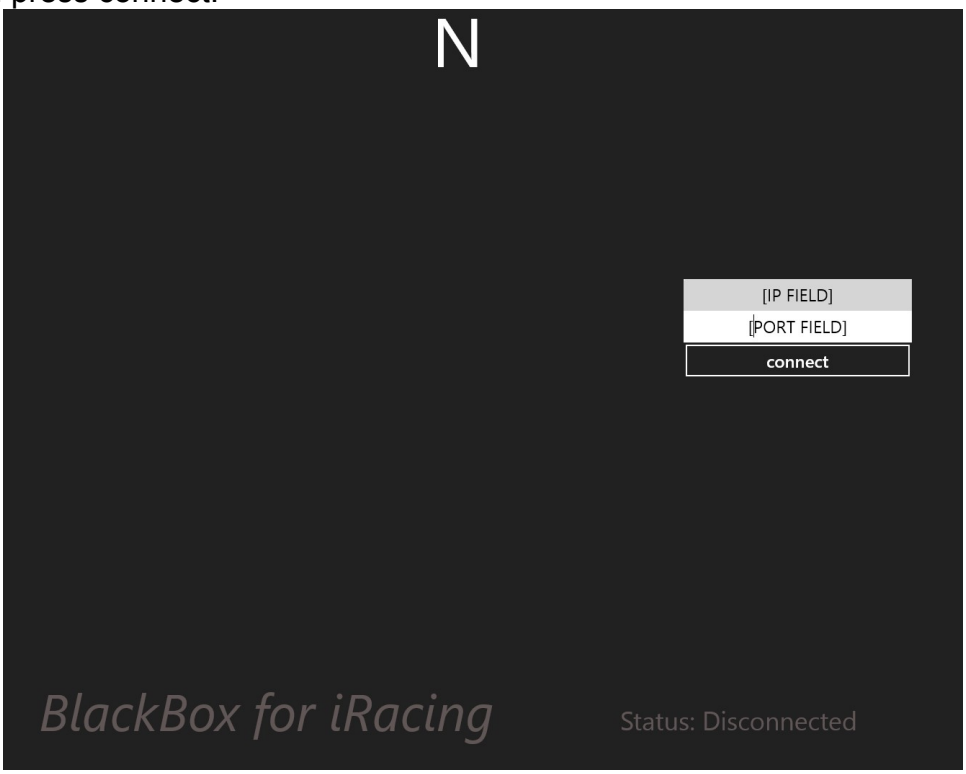
It also requires the BlackBoxForiRacing Server tool to provide the data stream. This tool can be downloaded for free at:

if this link is not working anymore, please see the corresponding Forum Thread for a most recent link.

The Server is obviously supposed to be run on the same PC as iRacing itself.
The order in which you start the Programs does not matter.

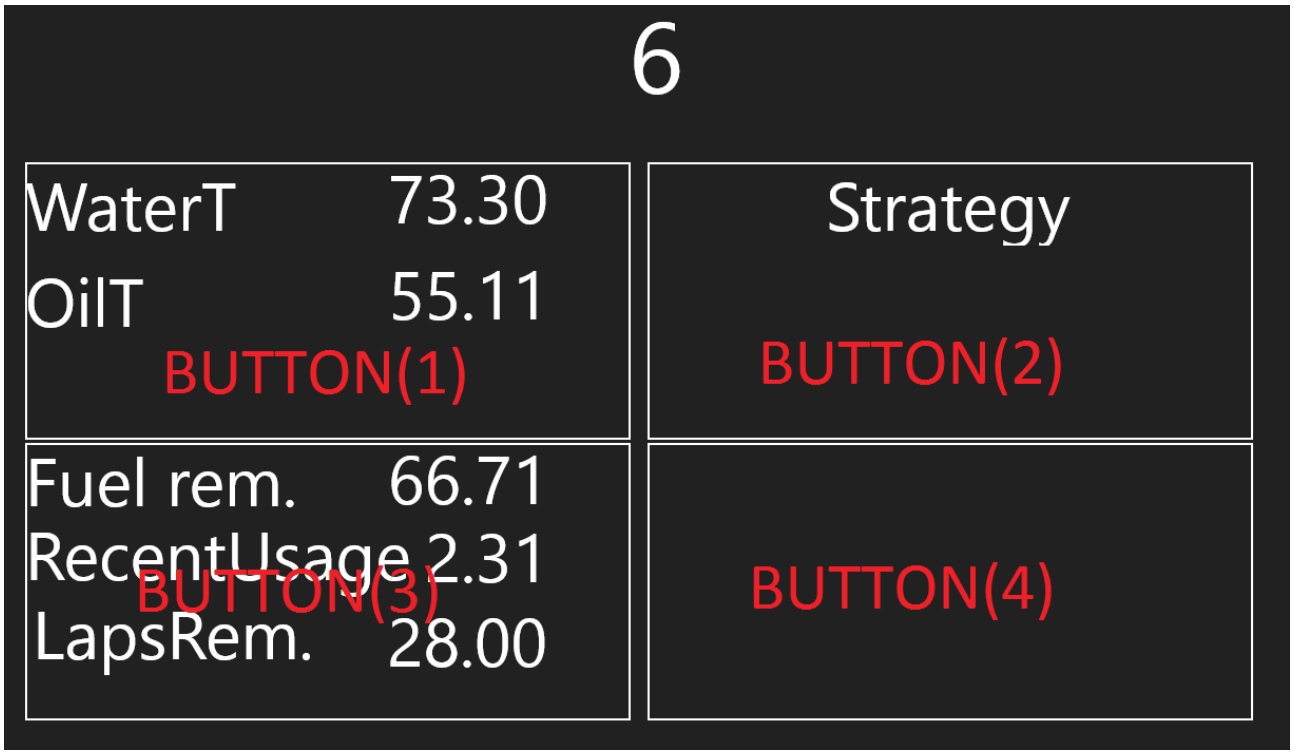
Once the Server is running you are able to connect with the BB-App at anytime.

Simply type the IP address from the PC the BBServer is running on in the Textbox ([IP FIELD] and press connect.



NOTE: The PortNumber should not be changed. Currently the ServerPort is 6667 and Hardcoded. - If this causes issues feel free to contact me. I will glady provide a new compiled Server that uses a Port of your liking.

After Connection your BB-App starts in the „No Strat“ mode and is providing basic Information about WaterTemp, OilTemp, and current FuelLevel
The Layout consists of 4 Buttons from which the Button on the top right (Button(2)) enters the Strategy Menu.



The Strategie Page provides 3 Strats:

NoStrat – No specific Strat. Simply shows the most basic Information about your FuelState. The FuelCalculation is updated once per lap (passing the S/F line). And the LapsRemaining is only showing Full laps.

FuelRun – Best used to reach a Target without any Pitstop.

BackRun – Best used to reach a Target with Pitstops.

(see the demo runs below for a detailed explaination)

NOTE: You can reset the Data your Backrun Strategy is based on by pushing Button(3) shortly followed by Button(4) (within around 2seconds)

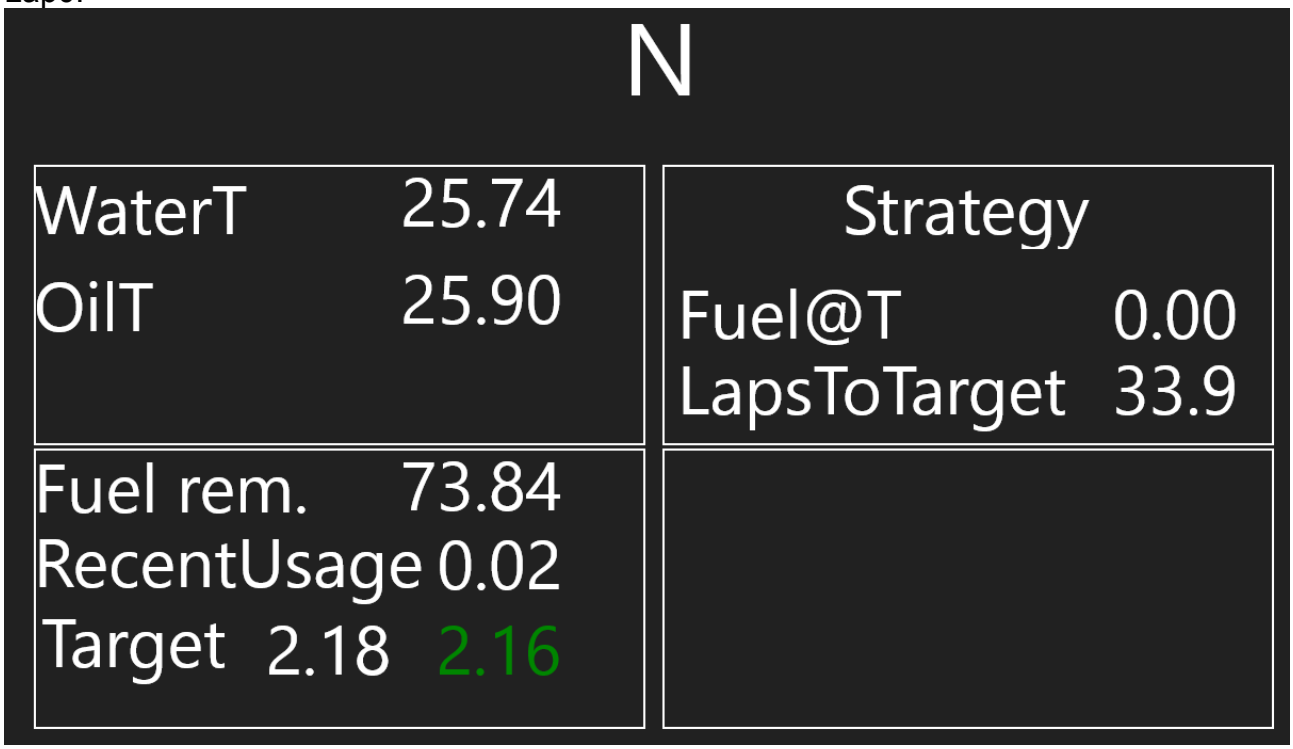
Simply choose the Strategy of your liking – Set the required information for it and Press Activate. You can also switch from a BackRun to FuelRun – in this case the default value for laps to target would be the laps left from your Backrun.

NOTE: THERE IS CURRENTLY NO BACK BUTTON. THIS IS INTENTIONAL
reactivating Strategies does no harm – the only exception would be that the Progress bar in the Backrun would reset.

STRATEGY DEMO RUNS

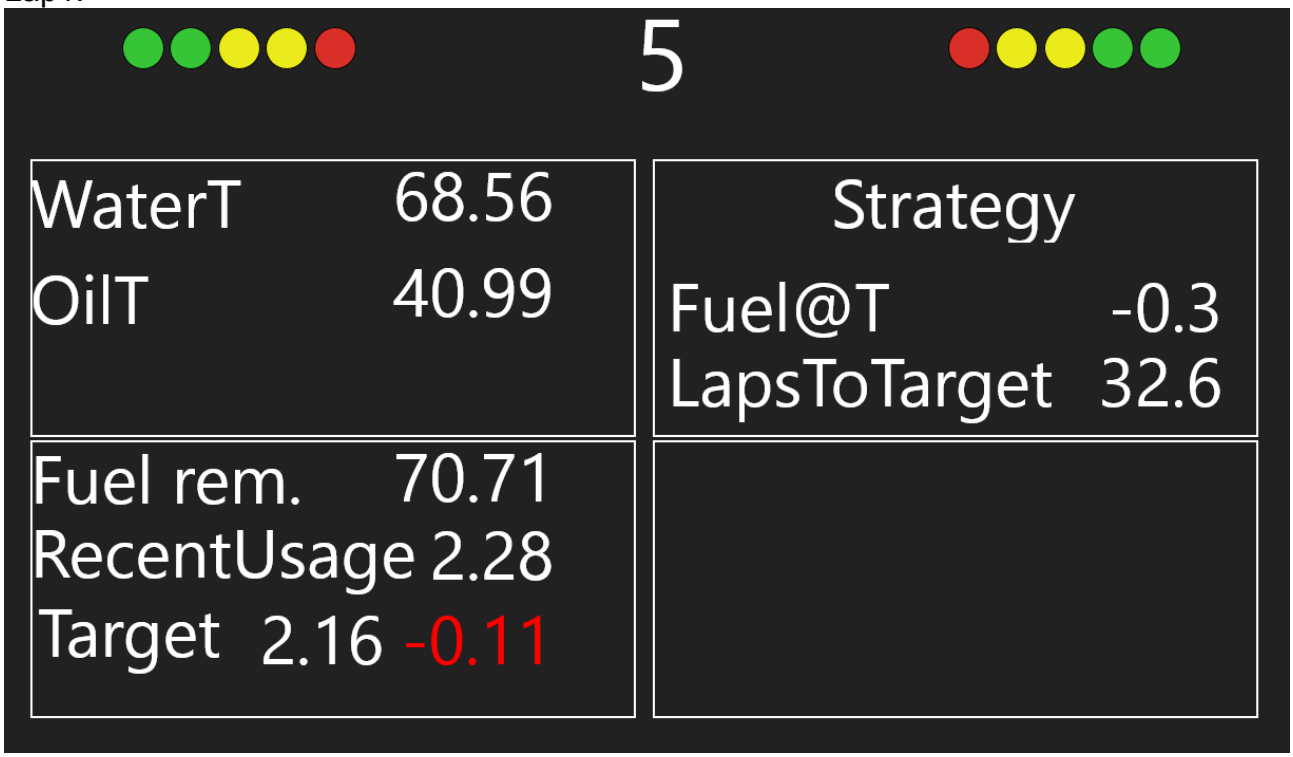
FuelRun – Generally this Strategie is supposed to be used if a Target in X Laps shall be reached without any Pitstop.
To show the Information that can be acquired out of this mode we will drive the DW12 on Indianapolis for a 33Laps demo run.

Lap0:



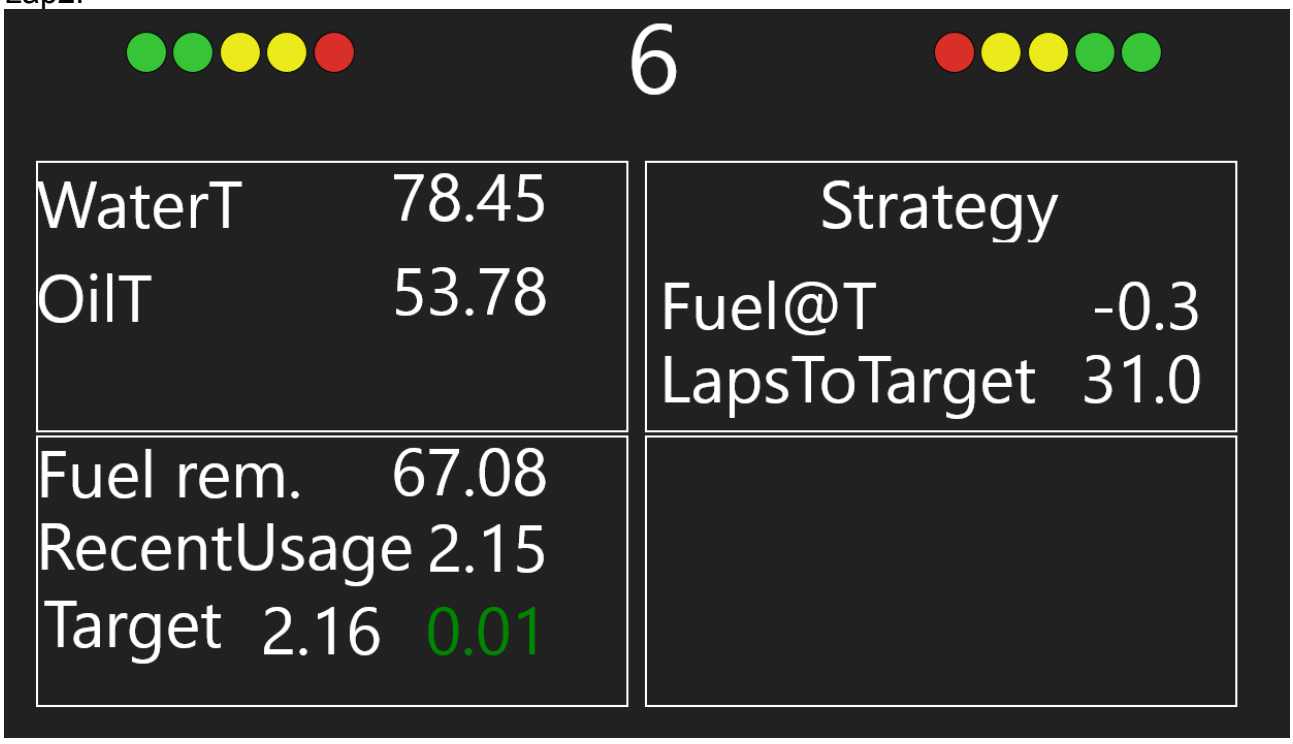
We started from pits: therefore we have 33.9 laps still to drive, Fuel@T and RecentUsage are starting at 0.

Lap1:



We are now in Lap1 of the run. You can instantly see that we are short on fuel.
We would be allowed to use 2.16Liters per Lap but we are currently using 2.28, which results in the Delta of -0.11, also the Fuel@T indicates that we are short on Fuel.
To get the Fuel in the required window of no stop we are now switching the Fuelmap to Map_4.

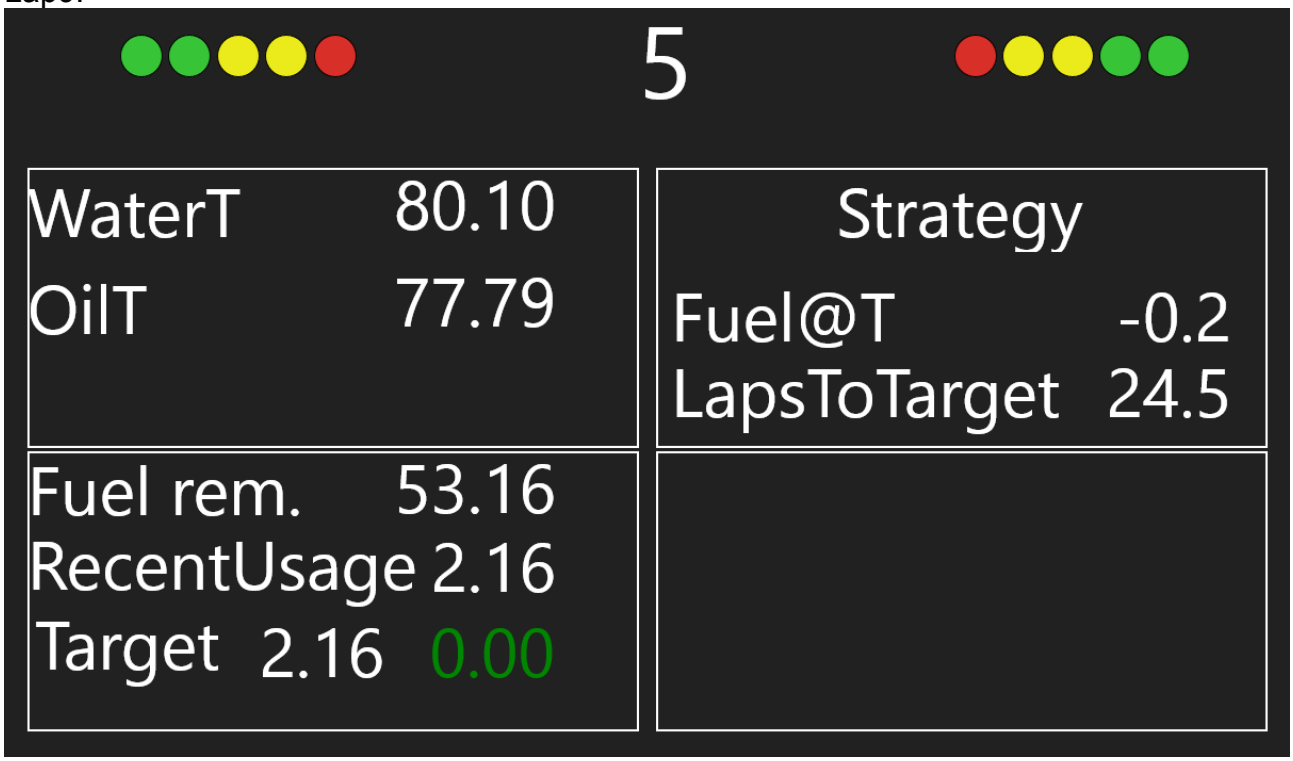
Lap2:



After driving 1,5 Laps in the new Fuelmap the system shows us that we are using less than we would be allowed to use. The Fuel@T still shows -0.3, this is actually not an error.

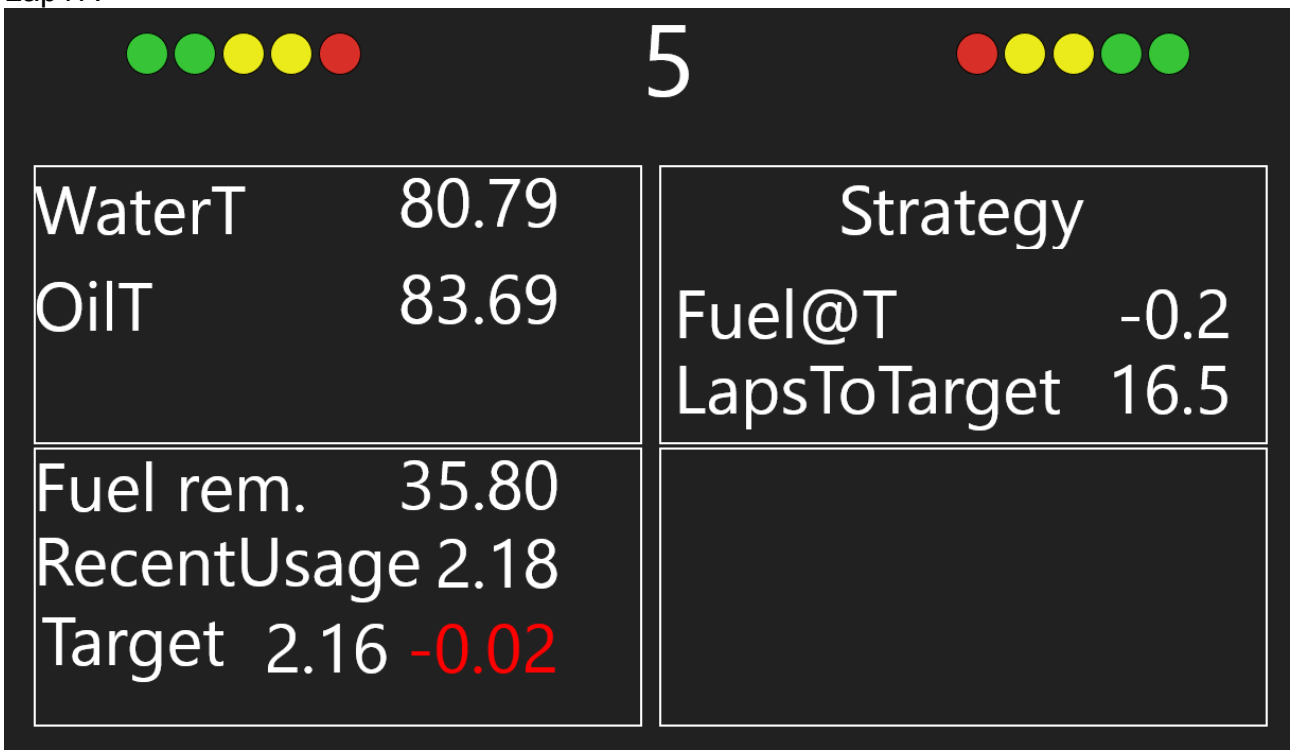
It just means that if we drive at exaclty this usage the Fuel@T would slowly but steadily go up to 0 or above as seen in the next frame.

Lap9:



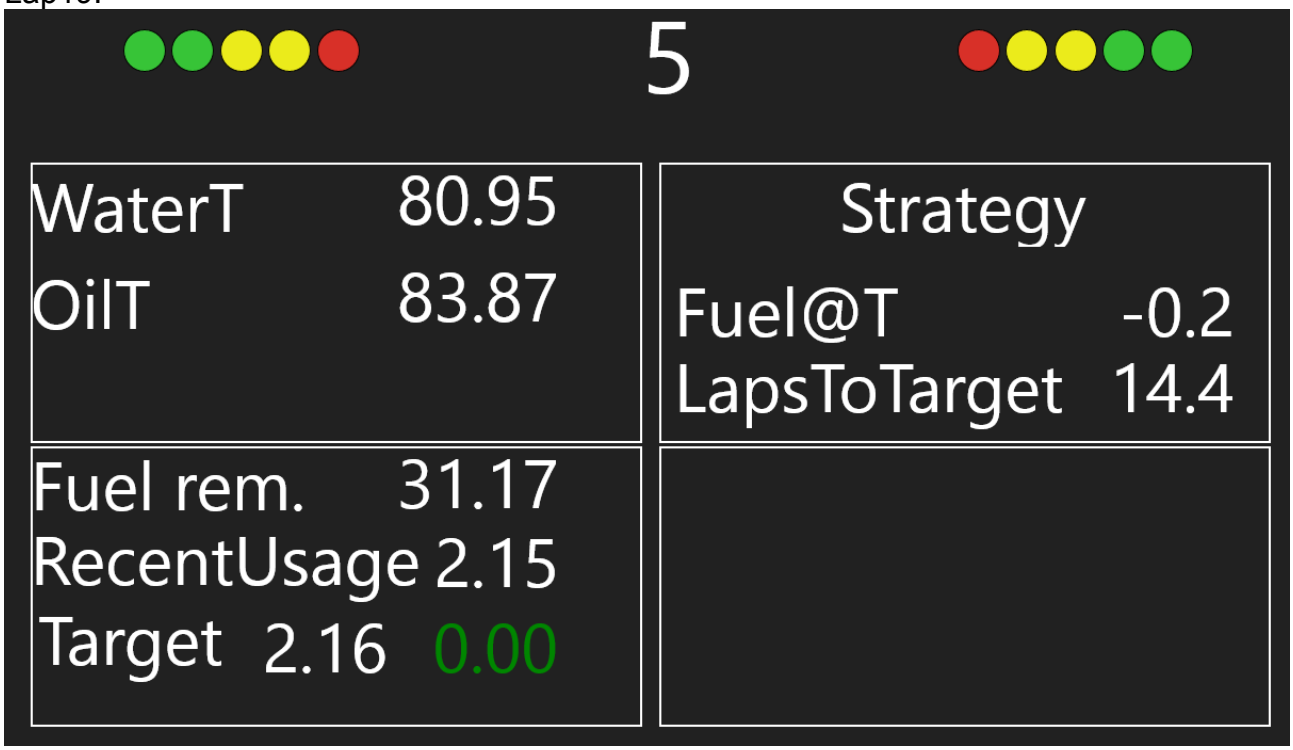
We are still „on target“ with the current consumption. Fuel@T moved up to -0.2.
The Fuel@T is actually supposed to hold you „on track“ in the overall situation.
If you would just have the delta to adjust your fuel, and keep it green, you would obviously run in a situation in which the „allowed“ fuel consumption would grow, up to a point where you cannot use that much fuel anymore.
So if Fuel@T shows a positive number, it would be no problem at all to drive with a negative delta.

Lap17:



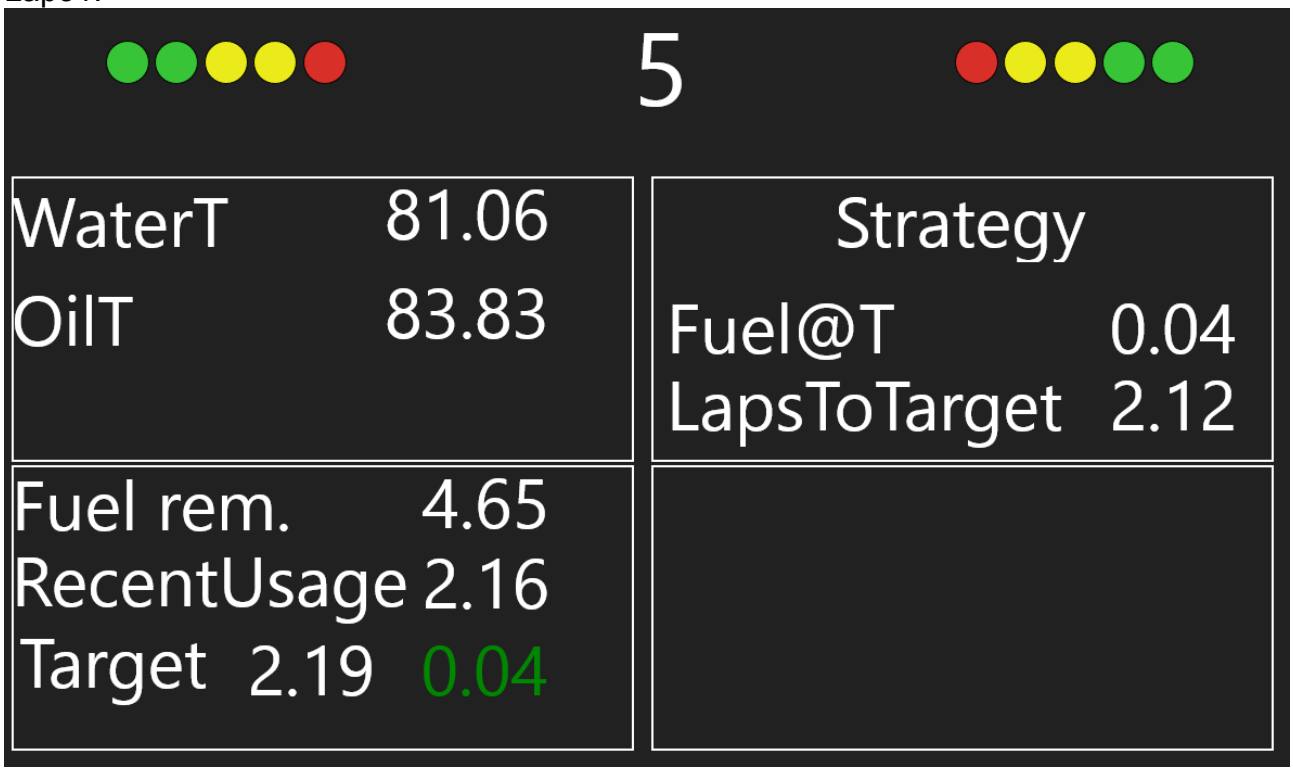
We hit the wall exit turn 4(That's talent!) resulting in no driving issues but a small aero damage which increased your fuel consumption about 1%. the System immediately showed this. As a reaction we needed to adjust to FuelMap5.

Lap19:



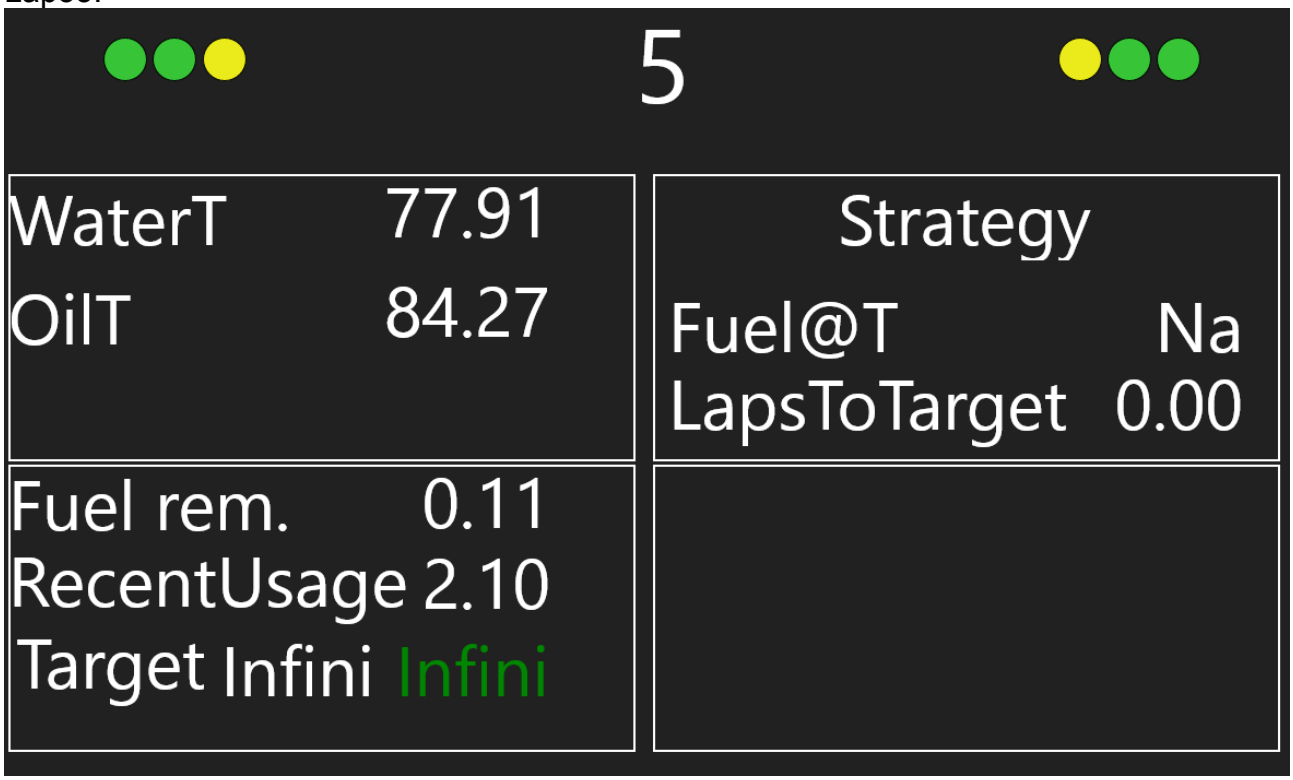
With Fuelmap5 we are on the mark again.

Lap31:



With to Laps to go we see a positive Fuel@T, and therefore also the allowed fuelconsuption has grown to 2.19, we now switch back to Map4 as we should be on the save side for this move.

Lap33:

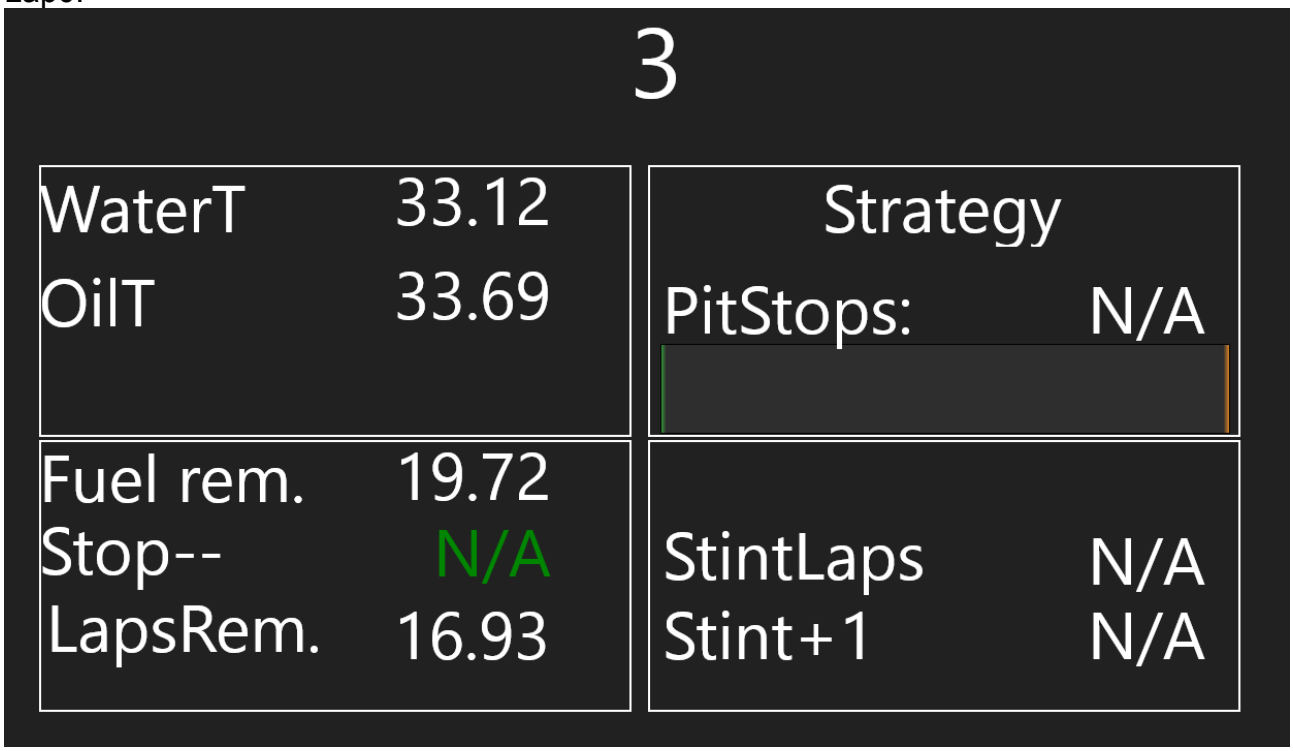


we did it! We passed the S/F line after 33Laps with 0.11 Liters left in the Tank.

So overall we knew since lap2 which fuelmap we needed to drive, and could further react almost instantly on a changing situation like the small aerodamage. The system led us to our Target without any Problems at all.

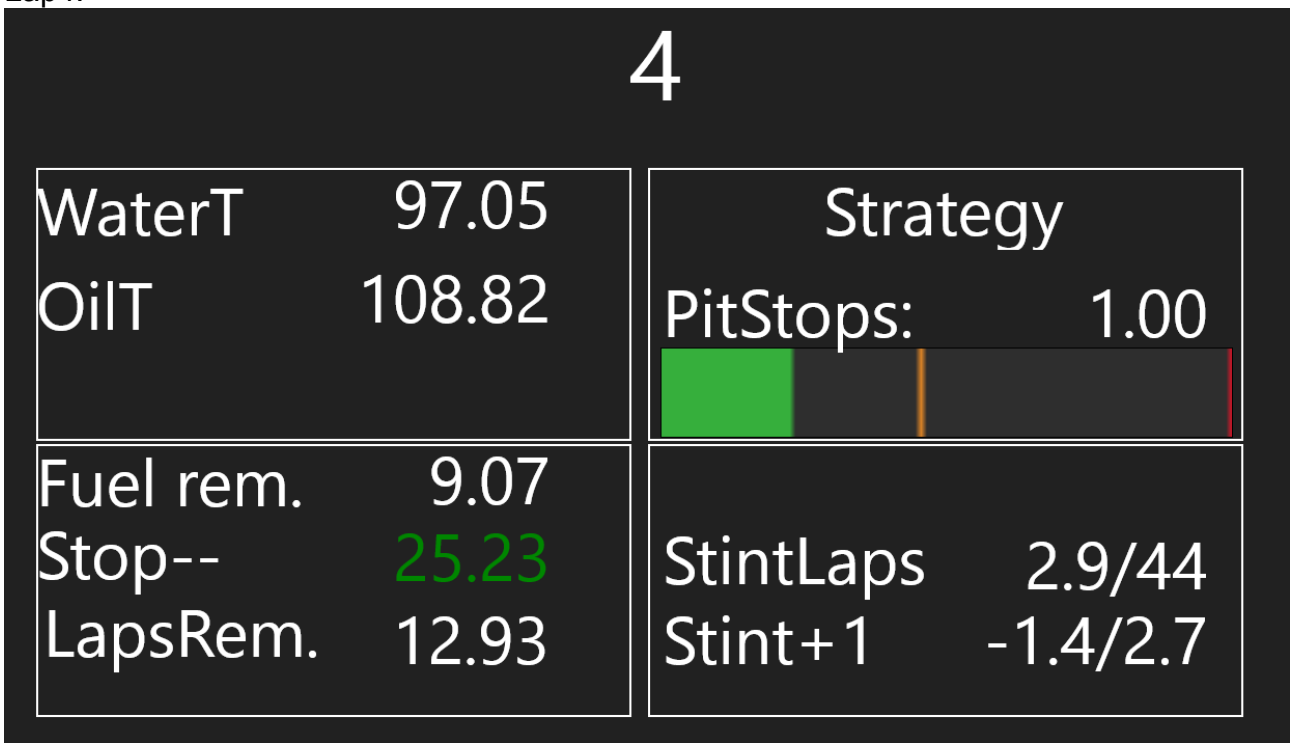
Backward – This Strategie should be used if PitStops are required in a race. It will calculate the amount of Pitstops required and how much fuel is needed to reduce the amount of Pitstops by 1 (Stop-- value). Furthermore it provides Information about your current Stint – and your opportunities within this Stint.
To demonstrate this Strategie wie will run a short 16Laps run in the Z4 on Donington Park. We also inserted 118Liters of TankVolume instead of 115 to show that in most cases it won't make a big difference for short races.

Lap0:



We left Pits, like in the FuelRun, setting the Target to 16 laps results in 16+whatever this lap is left as you should be able to set it in your lead-in lap.
We started with 20Liters of Fuel. All calcualtion values are on N/A now.
This is stating that the system has not enough data yet to base its fuel calculation on.

Lap4:



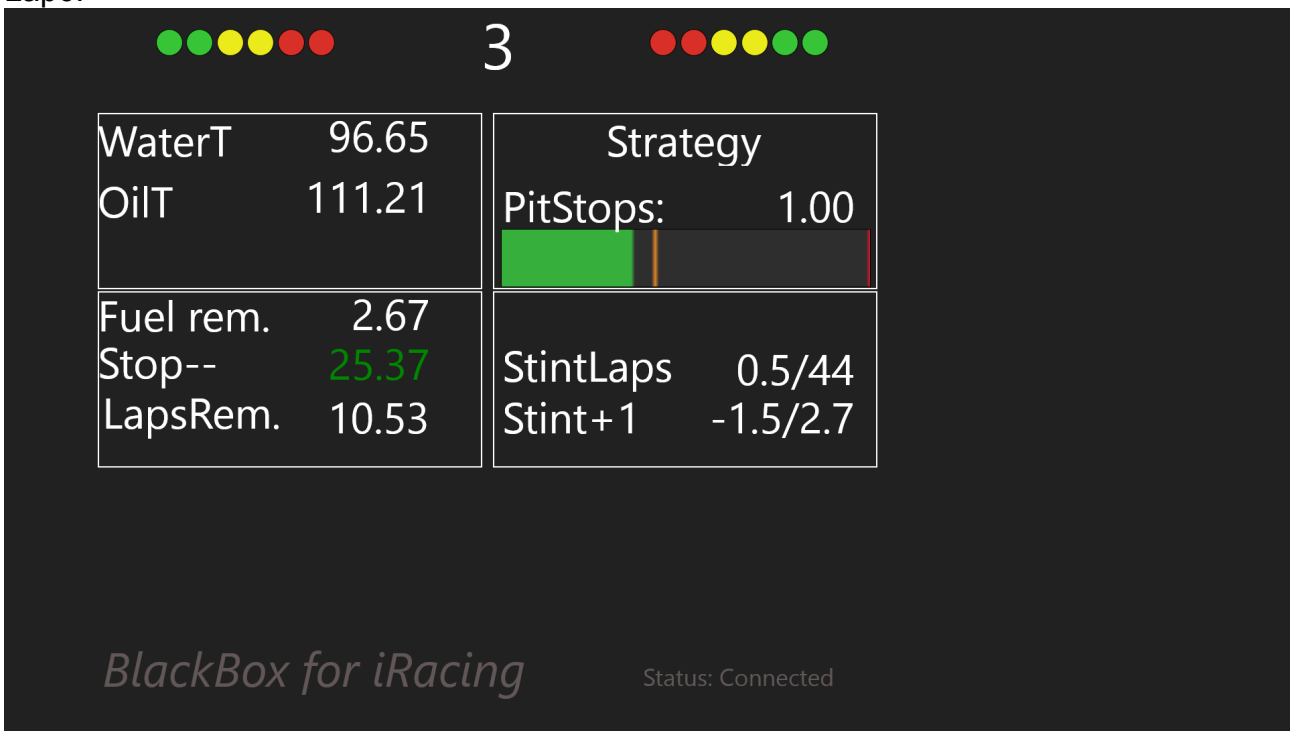
after completing 3laps the system provides us with the first calculations. And with the progressbar.

NOTE: THE PROGRESSBAR SHOULD NEVER BE USED TO MAKE A DESICISION. ITS ONLY PURPOSE IS TO GIVE A ROUGH INDICATION ABOUT WHERE YOU ARE IN YOUR RACE

The orange bar within the Progressbar is how far you can drive with your current fuel. The red bar (at the very end in this case) shows when you are able to make your last pitstop. It shows the point where no further stop would be needed to make it to the finish.

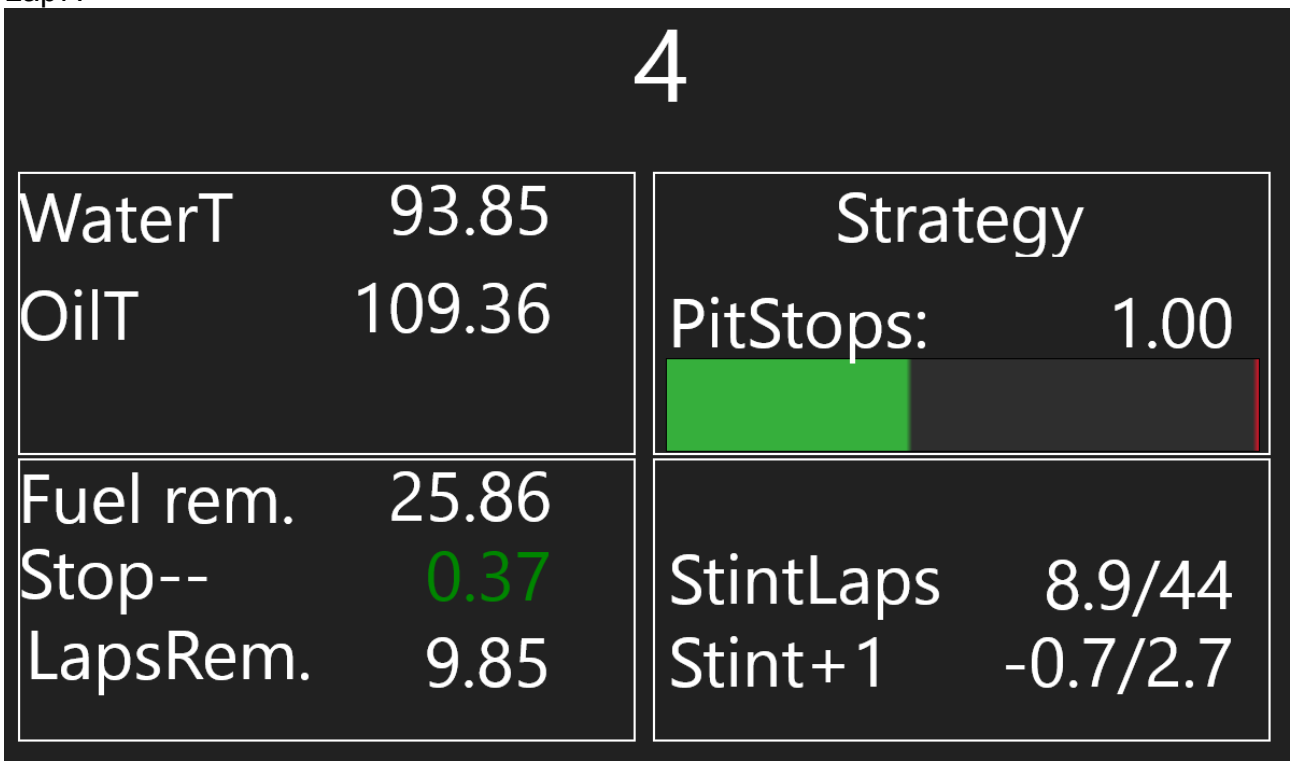
Further the System provides us with the following Data:
PitStops: 1 → this obviously means we need one more stop to make it to the finish.
Stop--: 25,23→ This means we need to add 25,23 Liters of Fuel to need one less stop to the finish. (in your case this also means we would need 25,23liters to make it to the finish as it is the last stop.)
The number is shown in green because we are currently in the window in which we could add this amount at anytime we want (so basically there is enough room in the Tank right now).
StintLaps: 2.9/44 → the 2.9 shows how many Laps we can drive in this stint. So after 2.9 laps is your last chance to pit or we would not be able to drive an additional lap. The 44 shows how many laps we could drive with a full tank.
Stint+1 -1.4/2.7: → The first value (-1.4) shows how much fuel we would need to save to drive one more lap in this stint (in this case: to drive 3.9laps). The 2.7 is your average fuel consumption per lap.
NOTE: if you would save up the 1.4liters to make one lap and it would therefore show sth like (0.2/2.7) your value at StintLaps would NOT change. You would still be able to drive the 3.9 laps in this example if the Stint+1 value would be positive (this might seem strange but it feels way more comfortable for me as there is no choppyness when you are right on the spot to get the extra lap)

Lap6:



This is the lap in which we are going to pit. For demonstration purposes we choose to add 25Liters.

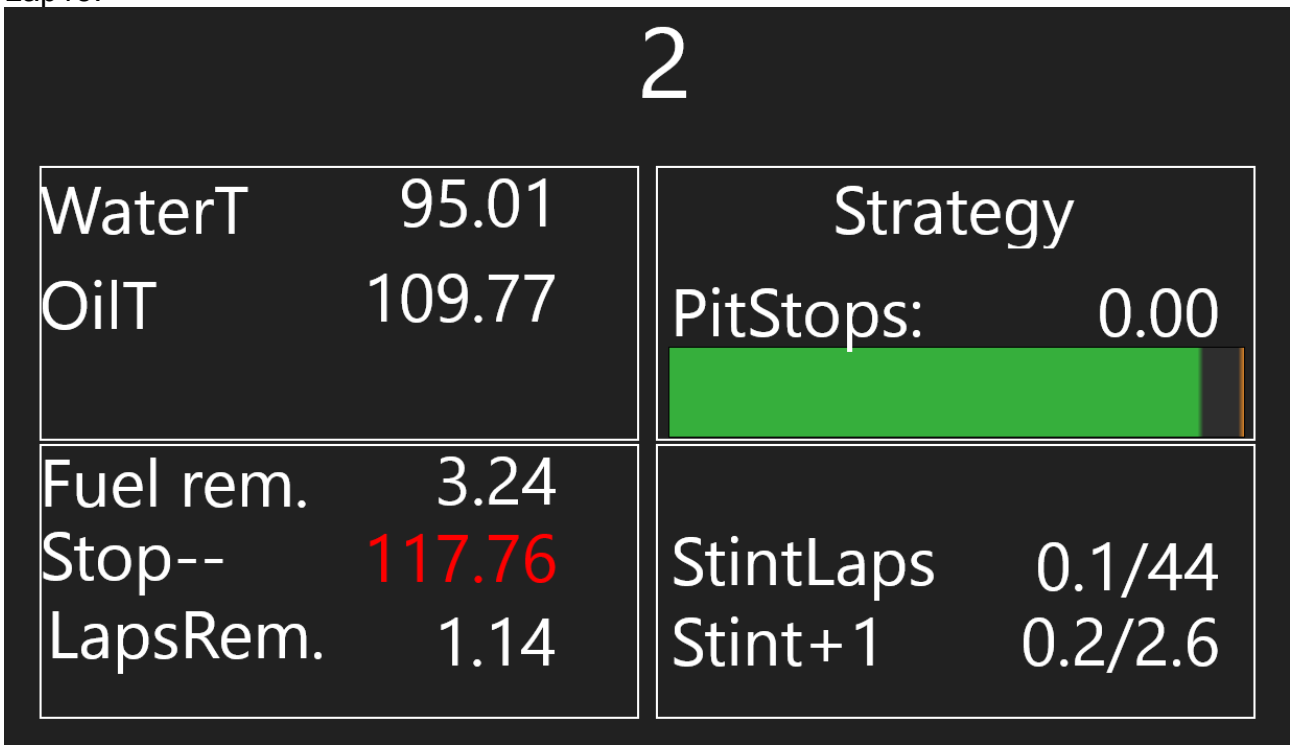
Lap7:



So after pitting the system tells us we are still short on fuel, please note there is a small difference between what stop-- tells us and what Stint+1 tells us. As stop-- is a calculation based on your TankVolume, and this is calculated or user input, but always on straight

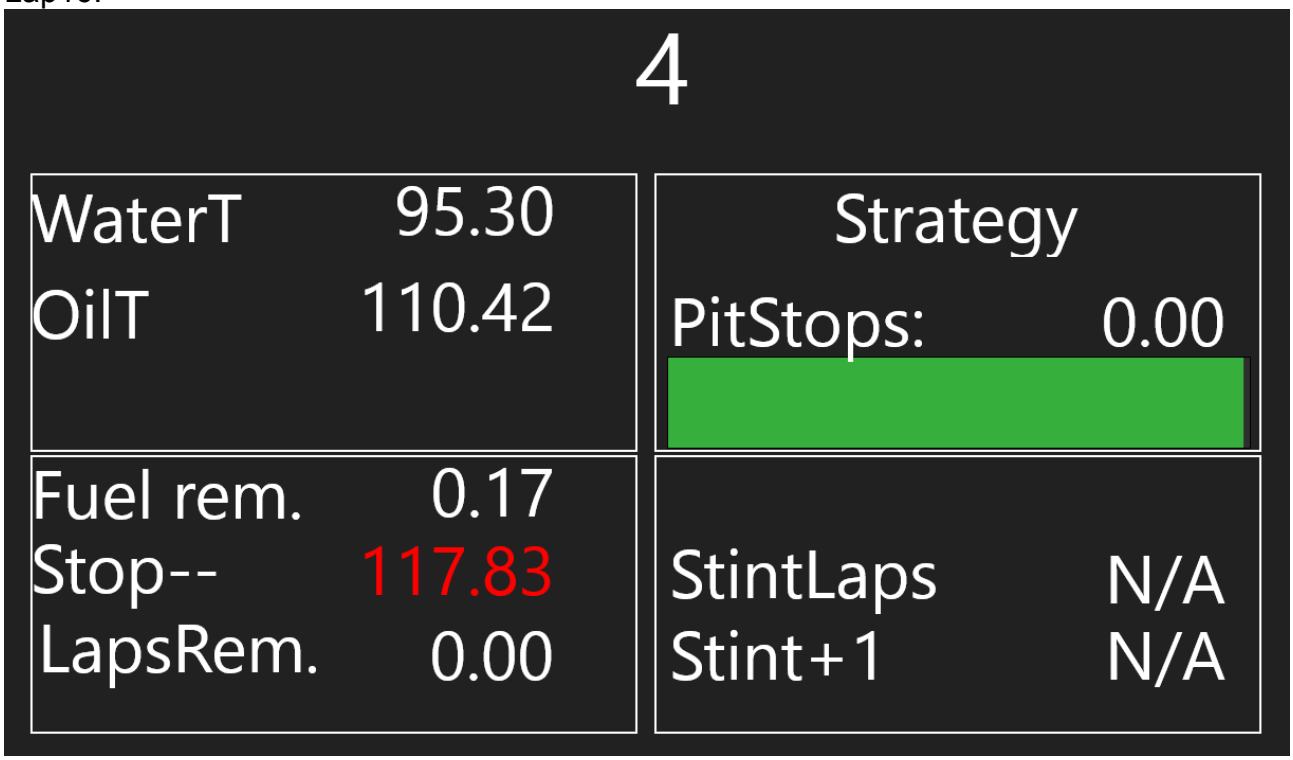
numbers i strongly suggest to give the Stint+1 the higher priority.

Lap15:



With a slight lift before corner entry we saved up enough fuel for the Stint+1 Lap.
As described above, the StintLaps will not jump from 0.1 to 1.1.
You can also see here that Stop-- shows 117.76 Liters. As we have misadjusted our Tankvolume. Of course this would cause trouble if we needed to drive a race with multiple pitstops. But for such short „sprints“ it does not really matter as the calculation is based as little as possible on the Volume. Of course it is still recommended to adjust it right.

Lap16:



as the StintLaps passed 0.0 they switched back to their N/A state.
We passed the S/F Line with 0.17liters left in the Tank.