FEDERATION INTERNATIONALE DE L'AUTOMOBILE

FUEL FLOW METERING

General:

The fuel flow will be measured using, as a prime measurement, a homologated* Fuel Flow Sensors.

A homologated* sensor, to be usable during a race event, must be calibrated by a homologated calibration company.

This calibration must be done for each single fuel and after each modification done on the sensor unless advised otherwise by FIA.

Homologated* Fuel Flow Sensor:

Please refer to FIA Technical List 45.

Homologated calibration Company:

Calibra Technology Ltd

Unit 7, Meridian,

Buckingway Business Park

Swavesey, Cambridge, CB24 4AE

UK

Tel: +44 (0)1954-231917

Email: info@calibratechnology.com

Mounting of the Fuel Flow Sensor:

FIA's requirement is to mount the sensor as defined in the 2018 LMP1 Technical Regulations.

The sensor will automatically adjust its CAN address depending on the resistance of the loom.

FIA's requirement is to allocate the CAN address as such:

Position of Sensor	Resistor	CAN Address
FEED 1	22 kohm	0x190
FEED 2	5.6 kohm	0x194
RETURN	1.8 kohm	0x198

Calibration:

The official fuel supplier of WEC will determine the density curve of each fuel. This density curve will be communicated by FIA to all competitors and to the homologated calibration company.

Each sensor will be calibrated with the fuel it is intended to be used with using the associated density curve.

Once calibrated the sensor will be fitted with an FIA sticker which is the physical proof of its calibration. Without this sticker a sensor won't be usable during a race event.

In addition to this sticker the calibration company will provide FIA with a list of information allowing FIA to trace the fuel, softwares and mappings used for the calibration.

A sensor calibrated with a given fuel won't be usable with another fuel without having been calibrated with this other fuel.

Management of the sensor on events:

At the start of the event the team will have to declare the sensors they intend to use during the event.

No sensor that has not been declared to FIA can run during the event.

The Team must declare to FIA their intention to change a sensor prior to actually changing the sensor.

The Team must communicate to FIA the reference of the sensor that they intend to fit.

FIA could ask the Team to change a sensor if they feel that the sensor is not reading correctly. The Team will have to replace this sensor at the next pit-stop (Or the next time the car stops at the pit during practice or Qualification sessions).

FIA will regularly interrogate the sensor and check that the information given by the sensor are in line with the information given by the calibration company (Softwares versions and mappings).

During or after the event FIA will randomly take some sensors for calibration checks. The sensors will be sent back to the calibration company for a control. The sensor could be unavailable for up to 10 days from the receipt of the fuel in order to conduct this control.

Management of the measurement from the sensor:

FIA mass cumulative channel will be sent on the public CAN line by the FIA datalogger at 100Hz frequency.

The lap consumption will be compared to the limit using the logic described in software chart.

FIA will use conditioned information from the instantaneous mass flows directly given by the sensors to measure the instantaneous mass flow of the engine. This signal conditioning will be done in the FIA data logger and it will be sent on the public CAN line by the FIA datalogger at 50Hz frequency.

The mass flow will be compared to the limit using the logic described in software chart.

* CONDITIONS OF ISSUE OF THE HOMOLOGATION

The grant of a homologation by FIA attests that the homologated flow meter meets the Technical Specifications of the FIA. FIA does not have any control over the manufacturing process of the flow meter. The issue of a homologation by the FIA does not relieve the manufacturer from any obligations which may arise otherwise than under FIA's Technical Specifications, including without limitation obligations regarding product liability and any applicable safety requirements. The manufacturer shall be solely responsible and liable for any claims that may be made by any party against the manufacturer in connection with the flow meter.