FORMULA STUDENT – ADS-DV - SPECIFICATION

This document contains the Vehicle Specification for the Formula Student Autonomous Driving System Dedicated Vehicle FS ADS-DV.

The Vehicle specification is as follows:

**Drive System:**
- Drive motors: Saietta 119R-68 (x2)
- Peak motor torque: 55.7Nm
- Peak motor power @ 48V: 17.0 kW
- Continuous motor torque: 27.2 Nm
- Continuous motor power @ 48V: 8.8 kW
- Maximum motor speed: 4,000 rpm
- Belt drive ratio: 3.5:1
- Peak motor current: 400 A
- Motor controllers: Sevcon Gen4 DC (x2)
- Operating voltage range: 31-90 V
- Peak current rating: 550 A

**Steering System:**
- Steering Motor: Shiftec ZZ011-1
- Steering Controller: Shiftec ZE102-1

**Traction Battery:**
- Cells: CALB CA100AHA
- Cell chemistry: Lithium iron phosphate (LiFePO4)
- Cell capacity rating: 100 Ah
- Pack configuration: 16S1P
- Nominal pack energy capacity: 5.1 kWh
- Nominal pack voltage: 51.2 V
- Operating voltage range: 41.6-58.4 V
- Peak discharge current: 800 A (up to 10 secs)
- Continuous discharge current: 300 A
- BMS: Proprietary Hypermotive BMS
- Charger: TC Charger 3.3 kW (HK-J-H66-40)

The vehicle dimensions can be found here:
Formula Student ADS_DV Dimensions and Locations

The vehicle has the following space available for an AI computer to be installed: TBD

The vehicle is provided with an umbilical connection to the AI computer which includes the CANBus communication which is detailed in the ADS-DV Software Interface Specification and power for the AI computer and AI sensors.

The connector and pin-out information is located in the ADV-DV AI-Interface - Electrical Document