Electronics

Conceptional Hard and Software Architecture

Digital
- Wheel speed
- Brake switch
- Insulation monitoring device
- Menu switches
- Torque Encoding (PWM)
- Steering angle (A/D converted)

Analog
- Cooling temperature
- Engine temperature
- Brake pressure

Planned test stands
- Strain gauges
- Tire temperature
- Spring pitch measurement

6-axis-sensor
Measuring yaw-rates, longitudinal & lateral accelerations

BMS
Voltage, current and Temperatures of the cells

sbRIO9642

Plug & play sensors

High-resolution sensors

CAN-sensors

Real-time-priority

Data-acquisition

Signal-Conditioning

Data processing
- **Information for the driver**
  - Wheel speed
  - Critical temperatures
  - IMD
- **Analysis mode**
  - Waveforms
  - Exact values
- **Data-logging**

Real-time-priority

Motor control
- Desired torque → frequency for the inverter
- Torque vectoring
- Recuperation
- Traction Control

Display-control

LAN-communication

CAN-communication

OLED Display
- Security instructions
- Drive data
- communication

Router

WLAN-Bridge

Windows-Host
Live analysis of the state of the racing car

Inverter
Provides the frequency for the motors

BMS
Cell monitoring

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