

Internship Assignment:

Hardware In the Loop set-up for controller ECU diagnoses

Founded in the Netherlands e-Traction offers superior technology in e-mobility and related services that is based on solid expertise and experience. Since 1981 the key focus has been to commercialize and integrate innovative and state of the art e-mobility solutions.

We developed a unique electric in-wheel powertrain technology which offers the essence of pure direct drive power. With our sustainable technology only a bare minimum of components is required to reach the highest efficiency level. The simplicity of our drivetrain is the ultimate sophistication.



Assignment description

This assignment focusses on testing the controller hardware inside TheDrive. This part of the inverter can be seen as an Electronic control unit (ECU). The controller is responsible for the communication with the vehicle ECU and for the correct control of the high voltage components of the inverter. This separate part of the inverter can be tested individually after it is produced.

During our in-house assembly of TheDrive an End Of Line (EOL) test procedure is performed where TheDrive is validated. To be able to isolate hardware issues in the Printed Circuit Board (PCB) of the controller a small test set-up will be developed. This test set-up will simulate all signals which normally would be coming from the high voltage components in TheDrive. Also, this set-up will be able to read all CAN messages and validate if the controller PCB works as expected. If this is not the case, this test set-up can indicate which part of the controller is not working (e.g. angle sensing, temperature sensing or current sensing).

An out-of-the-box thinking as well as a pro-active approach to problem solving are encouraged.

The assignment consists of

- / Getting experience with Code Composer Studio (CCS) and HALCoGen
- / Reading hardware software interface and component data sheets documentation
- / Learning to work with CAN, PWM and other peripherals

Profile

- / Electrical/Computer Science/Embedded background
- / Embedded hardware and embedded C coding experiences
- / Integrated Development Environment (IDE) preferably CCS

For more information regarding this assignment, contact Willem Roovers, T. +31 (0)55 521 11 11
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