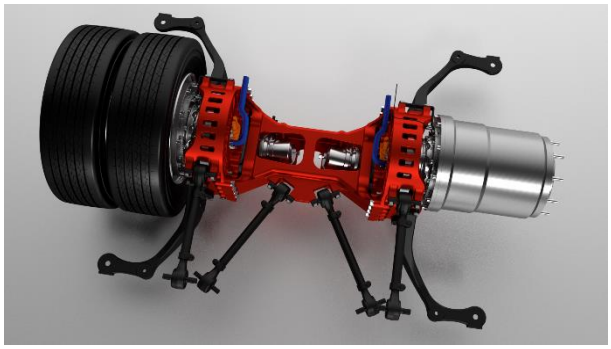
e-Traction, Apeldoorn

Graduation Assignment:

Controller design of a high-power inverter for electrification of commercial vehicles



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

Electric motors for our commercial vehicle drive trains are powered by high power inverters. These are developed in house at e-Traction by an experienced design team. In order to lower the break-even point for electrification we strive for state of the art efficiency and low investments for our customers. A smart design that fulfils requirements without redundant parts is one of the ways how we achieve this. Next to our experience we would like your fresh inputs! In this assignment you can work on initial layout and design of the controller of our inverter.

The controller of the inverter is the Electronical Control Unit (ECU) which consist of a microprocessor which is the central computer unit of the inverter. It also contains the interfaces with the other parts of the inverter including a CAN Bus communication to the outside.

The assignee is expected to follow the processes defined at e-Traction. An out-of-the-box thinking as well as a pro-active approach to problem solving are encouraged.

The assignment consists of

- Learning about inverter technology
- Investigating controller layout options
- Writing requirements and a hardware-software interface
- Designing and detailing the controller hardware for the high power inverter
- Using of tools like FMEA and cost-function analysis

Profile

- Electrical/Computer Science/Embedded background
- Altium designer
- Microsoft Office

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