



CNH Industrial is a global leader in the capital goods sector with established industrial experience, a wide range of products and a worldwide presence.

Each of the CNH Industrial's brands is a major international player in its specific industry: Case IH, New Holland Agriculture and Steyr for tractors and agricultural machinery; Case and New Holland Construction for earth moving equipment; Iveco for commercial vehicles; Iveco Bus and Helieuz Bus for buses and coaches; Iveco Astra for quarry and construction vehicles; Magirus for firefighting vehicles; Iveco Defence Vehicles for defence and civil protection; and FPT Industrial for engines and transmissions.

More information can be found on the corporate website: www.cnhindustrial.com

System Development Engineer

As a member of the System Development Team in the Electrified Powertrain Engineering division of FPT Industrial, you will be part of a highly skilled team driven to design and engineer best-in-class electrical systems and architectures for FPT Industrial electrified powertrain product portfolio. Starting from customer and application requirements, you will support functional and performance analysis and specification definition at system and components level, taking care of effective integration of subsystems into hybrid and full electric powertrains both at test bench and on vehicle. You will work in a collaborative team environment. You will be contributing to the development of advanced concepts as well as their implementation for application to on-road vehicles and non-road applications.

Your tasks

- Working in a multidisciplinary team, develop and deliver best-in-class electric system architectures for FPT Industrial electrified powertrain product portfolio for hybrid, battery and fuel cell electric powertrains
- Perform requirements analysis
- Support energy management simulations and mapreliminary sizing (energy, power, coolant system) of electrified powertrain components like electric motors, inverter, battery, supercap, auxiliaries
- Define functional requirements to be implemented in an electric powertrain control unit
- Verify matching of component technical requirements (State of Requirements) with system requirements and evaluate supplier technical proposals (Analysis and review of technical documentation, design of test plan,)
- Define bill of material for electrified powertrain and verify component compatibility among the system with electrical, mechanical, functional and qualification requirements.
- Identify required hardware/software and communication signal interfaces among the system and with the external components.
- Define, manage and supervise supplier and internal system development and validation activities: drawings and technical documentation release, virtual simulation, design and installation FMEA, test plans (DVP), plan and supervise test series on rig (components), bench and vehicle (total system)
- Support problem solving and troubleshooting activities
- Communicate results and make presentations that describe analysis and solutions
- Collaborate closely with various internal departments / laboratories and universities



Your profile

Basic Qualifications:

- University degree in electrical, electronic or mechatronic engineering, few years of experience in a similar role
- Background on applied mechanics for road vehicles
- Background on electronics: circuit, devices (transistors, operational amplifiers, digital and logic circuits, acquisition systems, sensors)
- Background on physical modelling of electrical and thermal systems for electrified powertrain (electric motors, inverters, batteries, converters)
- Background on control systems
- Understanding of Battery / Hybrid Electric Vehicle Electrical/Electronic architectures and powertrain components
- Proven experience with CAN network interface (message map definition, data acquisition and post-processing, interactive CAN analysis tools)
- Fluent in English (spoken and written), Italian and German skills would be an asset
- Highly motivated self-starter and team-player with very good communication skills,
- Self-motivated with the ability to manage multiple tasks
- Experience on using Matlab/Simulink tools for data analysis and simulation of dynamic system

Preferred Qualifications:

- Strong technical understanding of technology aspects and functional behaviour of components for electrified powertrain: rotating machines, DCDC, ACDC, DCAC converters, battery systems.
- Sound knowledge on electrical engineering: electrical circuit analysis and design, components (insulation, cables, fuses, contactors, relays, sources, power and signal circuit boards, measuring instrumentation)
- Experience with safety critical electronic product development for automotive/commercial vehicle electrified applications
- Experience with FMEA, DVP, ISO 26262, relevant automotive/industrial vehicle standards
- Good technical communication skills.
- 2+ years of experience on using Matlab/Simulink tools for data analysis and simulation of dynamic system
- 2+ years of experience on:
 - Testing of electrical/electronic automotive components at test bench
 - Prototyping of electrical/electronic systems with both off-the-shelf and custom components
 - Electric and or Hybrid vehicle prototyping and testing

Interested?

Please send your application to Human Resources: recruitment.arbon@cnhind.com

FPT Motorenforschung AG, Schlossgasse 2, CH-9320 Arbon, Tel. +41-71-44 77 477
www.fpt-motorenforschung.ch