

Job Title – Principal Simulation Engineer

Date position required:	March 2019
Reports:	None
Salary:	Competitive (Permanent)
Benefits:	Pension, 28 days holiday (+ bank hols), salary sacrifice
Site:	hofer powertrain UK, 2 Titan Business Centre, Spartan Close, Warwick, CV34 6RR
Applications required by:	ASAP
Application format:	CV and covering letter

hofer powertrain – Part of the hofer AG (Group)

hofer, established in the 1980's, is a privately owned, German based, automotive powertrain production design and supply company employing over 850 people within the Group. We work with many of the world's automotive OEMs, Tier 1 suppliers and automotive technology centres and have numerous powertrain components in production; including hofer designed electric motors and hybrid modules through to full dual clutch transmissions.

With numerous offices across Germany, Austria, Italy, America, China and the UK, hofer has a truly global presence allowing comprehensive support for powertrain system design and supply projects across all vehicle sectors.

- System supplier for complete automotive powertrain systems.
- Full electrical and mechanical capability from clean sheet through to quality accredited production.
- Specific sites setup to support a lot of the global OEMs.
- Production supplier for many of the current and future advanced powertrain systems and components.

As part of hofer group's global growth, and the continuing expansion of hofer powertrain UK, a vacancy has arisen for a Principal Simulation Engineer to join the business at the Warwick office.

Reporting to the Chief Engineer of Electrical Systems, hofer powertrain UK seeks a Simulation Engineer with experience of developing and running component and whole vehicle models; particularly for automotive powertrain applications in EV and hybrid vehicles at system power levels from 50kW to >750kW.

The hofer powertrain UK Electrical department is currently involved in the customer-facing delivery of both hybrid and pure electric drivetrain solutions, supported by a team of over 110 e-machine; power electronics; electronic hardware and software specialists based in Würzburg and Lenting, Germany.

The key functions of the role:

Create vehicle, subsystem and component level physical and mathematical models and libraries to produce a full range of configurable subsystems for simulation, with a required level of fidelity versus run time.

Research and apply physical theory, recent research and technical papers to develop detailed models of e-drive and transmission components.

Configure existing and new libraries of models and solvers to create time efficient simulations.

Validation and correlation of models using measured data, benchmark data and publicly accessible data.

Development and maintenance of model data dictionaries for a range of example components to enable simulation of appropriate, representative systems with minimal input data.

Model documentation and GUI / user guide creation.

Deliver, from simulation activity, decomposition of vehicle level requirements into system and component requirements ensuring alignment between internal team(s), suppliers and the customer.

Develop plant models to assist vehicle supervisory, transmission and e-motor / inverter controls testing in MIL, HIL and rig environments.

Lead co-simulation activity between vehicle level and more detailed simulation tools.

Run parameter studies, design of experiment, desktop calibration and optimisations activities to aid design processes.

Support for business development activity through interpretation of customer requirements and evaluation of potential design solutions.

Support FMEA and ISO26262 activity through fault simulation and impact and controllability evaluation.

Qualifications / Education / Experience required:

Degree or equivalent in a relevant Engineering or Science related discipline.

A minimum of 10 years' demonstrable simulation experience in an automotive or similar engineering environment.

Proven experience of developing physical and mathematical, component and vehicle models; developing, maintaining and following modelling style guides; running simulation studies to achieve optimal designs and reporting or presenting results from all of the above.

Verifiable experience of optimising models and selecting appropriate solvers to achieve rapid run times relative to model complexity.

Working understanding of setting up network arrays for distributed parameter studies.

Previous experience of running co-simulation between simulation tools to enable the incorporation of high fidelity models into a wider system models.

Familiarity with HIL and SIL test methods and tools including dSpace environments, and real time or better plant model development.

Confident user of MS Office products and competent user of industry-standard simulation tools.

Experienced user of MATLAB Simulink and Simscape including Simscape coding.

Other beneficial attributes:

Proven experience of working on automotive e-powertrain systems (such as motors; inverters; batteries/energy storage; power electronics) and understanding their interfaces and integration into the vehicle.

Knowledge of transmission system functionality and experience of modelling, design, development and/or testing of these.

Good understanding of automotive HV standards; design methodologies and working practices.

Knowledge of German or other European languages.

Personal attributes:

Excellent attention to detail with good planning skills.

Strong communicator, capable of interacting with cross-functional teams both internally and externally.

Highly self-motivated and independent, with a willingness to seek guidance and involve others whenever required.

Remain focussed under pressure, familiar with working outside their normal comfort zone.

Proven record of successful delivery in a customer-facing environment.