



With 11,500 employees worldwide, AVL is the world's largest independent company for the development, simulation and testing of powertrain systems (hybrid, combustion engine, transmission, electric drive, batteries, fuel cell and control technology) for passenger cars, commercial vehicles, construction, large engines and their integration into the vehicle.

Digitalization, electrification of the powertrain and test systems gives systems with high complexity. For handling of the complexity, we use systems engineering (SE), model-based systems engineering (MBSE) and functional modeling of the systems. The main targets of this master thesis are to create a functional model of an Inverter and to integrate this model into the AVL Systems Engineering development process. In the development process, the functional model shall serve as a central hub for system information and relationships among artifacts. For this thesis you will join an interdisciplinary, flexible and dynamic team of students who collaboratively work on SE and MBSE

We offer a Diploma Thesis:

## **Creation of a functional Inverter system model to support the AVL Model Based Systems Engineering development process (f/m/d)**

### TASKS

- Analysis of the Inverter Systems Engineering development process (as-is situation) with focus on the early phases (system specification) and identification of optimization possibilities (to-be situation)
- Creation of a functional model of an Inverter using the modeling language SysML to address optimization possibilities
- Analysis of the interaction of the functional model with Inverter development requirements and simulation models
- Recommendation for the integration of the functional model into the AVL Systems Engineering Inverter development process in cooperation with development engineers
- Training of engineers on the functional model, documentation and presentation of the results

### FIELDS OF STUDY

- Final year of studies in physics, electrical engineering or in a similar major

### REQUIREMENTS

- You are interested in advanced electric propulsion technologies
- You are interested not only in technological aspects, but also other aspects (business, processes, etc.) required for successful product development and are keen to learn about them

Remuneration: The successful completion of the thesis is remunerated with a one-time fee of EUR 2,600 before tax. According to the Austrian Employment of Foreign Nationals Act it is unfortunately not possible to assign graduate work to third-country citizens (Non-EU citizens) who study at a university abroad.

### CONTACT

DI Dr.techn. Erwin REISINGER  
Chief Engineer Electrification Portfolio, Electrification Portfolio  
Tel.: +43 316 787

E-Mail: [erwin.reisinger@avl.com](mailto:erwin.reisinger@avl.com)

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