



One Goal.  
One Team.

## What is the Low Voltage Battery Management System (LVBMS)?

The low voltage system of our race car accepts variable input voltages of 25-42 V. A 10s lithium-ion battery provides this supply voltage. The battery management system monitors the individual cell voltages, temperatures and battery current and shares the information with the rest of the vehicle via a CAN bus. A protective shutdown is also integrated for fault conditions. As the primary voltage source of the Low Voltage System, the LV battery represents the heart of the vehicle. In order to adapt the energy and power density of the battery specifically to the needs of the vehicle, sizing and cell selection are important steps.

As with almost all boards of the Low Voltage System, we develop hardware and software of the LVBMS independently to achieve the best possible match between the system and our requirements. For this we mainly use Altium Designer and VisualStudio Code. The support of the system includes manufacturing, commissioning and maintenance of hardware and software, as well as the interface work for the packaging of the system.

## What will be your tasks?

- Familiarization with existing hardware projects in Altium Designer
- Familiarization with existing software projects
- Full maintenance of the combined hardware-software project
- Further development of the system
- Collaboration in electrotechnical tasks (e.g. on the batteries, code adaptations, etc.)
- Collaboration on cross-group tasks (e.g. testing, manufacturing)

## What are our requirements for you?

- Motivation and team spirit
- Interest in many electrical engineering topics, especially battery cells and packs
- Craftsmanship
- Participation in weekly appointments
- Knowledge of the subjects "Grundgebiete der Elektrotechnik 2" and "Schaltungstechnik 1" is advantageous
- Experience in circuit board development with Altium, KiCad, Eagle or similar is advantageous
- Programming experience is advantageous



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