

# Press Release



## FEV creates advantages through flexible test interface for battery modules

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Aachen, Germany, April 2021 - FEV Software & Testing Solutions, responsible for the realization of software and test applications within the FEV Group, has developed T-BMS (Testbench Battery Management System), a standardized interface solution for battery module testing on test benches. The special feature of T-BMS is the simple calibration of the system, which enables the test operation of different battery modules. There is no need for time-consuming conversion and adaptation work on the test equipment. This saves costs in the battery development process and shortens time-to-market.

As the demand for battery electric vehicles increases, so do the challenges for efficient battery systems. To support OEMs in this task, FEV has developed the T-BMS test system - a standardized interface in the battery development process between the battery modules to be tested and the test bench.

By integrating BMS customer functions such as SoC (State of Charge) or Power Prediction, it is also possible to test the battery modules under the same boundary conditions, which will later be specified by the battery management system (BMS) in the vehicle. This enables meaningful results to be obtained for the future system and saves valuable development time for the customer.

"FEV has already been developing battery control units for various cell types for many years in accordance with the strict

specifications of the automotive industry, among others," said Dr. Michael Stapelbroek, Vice President Electronics & Electrification at FEV. "With T-BMS, we now provide our customers with a device for their test procedures that can be integrated into existing systems and easily calibrated – without time-consuming conversion measures and with reduced testing effort at module and pack level."

T-BMS is already successfully in use in the development and safeguarding of battery systems at various automakers.

**T-BMS overview:**

- Modular and flexible test system for battery modules
- Monitoring of cell voltage, temperature and current
- Cell balancing and contactor control
- Customer functions for State-of-Charge (SoC) and State-of-Power (SoP) can be implemented and tested on a real battery module
- FEV's Cell Monitoring Unit (CMU) or customer solutions can be used
- All relevant battery module parameter can be calibrated via FEV Calibration Tool
- Creation of test procedure in UI
- Recording and evaluation of measurement data



With T-BMS, there is no need for time-consuming conversion and adaptation work during test operation of different battery modules.

Source: FEV Group

### **About FEV**

FEV is a leading independent international service provider of vehicle and powertrain development for hardware and software. The range of competencies includes the development and testing of innovative solutions up to series production and all related consulting services. The range of services for vehicle development includes the design of body and chassis, including the fine tuning of overall vehicle attributes such as driving behavior and NVH. FEV also develops innovative lighting systems and solutions for automated driving and connectivity. The electrification activities of powertrains cover powerful battery systems, e-machines and inverters. Additionally FEV develops highly efficient gasoline and diesel engines, transmissions, EDUs as well as fuel cell systems and facilitates their integration into vehicles suitable for homologation. Alternative fuels are a further area of development.

The service portfolio is completed by tailor-made test benches and measurement technology, as well as software solutions that allow efficient transfer of the essential development steps of the above-mentioned developments, from the road to the test bench or simulation.

The FEV Group currently employs 6,300 highly qualified specialists in customer-oriented development centers at more than 40 locations on five continents.

### **About FEV STS**

FEV Software and Testing Solutions (STS) is responsible for the realization of software and testing solutions within the FEV Group. STS develops state-of-the-art test benches and measurement technologies as well as software solutions that help transfer essential product development processes from the road to the test bench or to a simulation. FEV STS services are offered worldwide, with local teams available for on-site support.