

## FEV Launches New Solutions for High Voltage Battery Testing

**Aachen, July 2020 – In May 2020 FEV, a globally leading independent international service provider of vehicle and powertrain development for hardware and software, had announced to complete the initial operation of the world’s largest battery development center eDLP by the third quarter of 2020. In addition, FEV STS – the software and testing solutions division at FEV – is launching a new range of innovative applications for battery testing in the field of hybrid and electric vehicles. The FEV automation system MORPHEE® and the information system FEVFLEX™ are available right now and are already operating in various European and Asian battery development centers. This includes the eDLP as the synthesis of STS’ E-mobility competencies.**

Due to the increasing need for high-voltage battery development for electric vehicles, corresponding testing facilities are gaining in importance significantly. Addressing this need, FEV’s software and testing solutions division STS is introducing a new range of high-tech applications for battery testing. Based on FEV’s 15 years of experience in the field of automotive battery testing, the company’s latest automation software MORPHEE® and its FEVFLEX™ information management software feature standardized hardware solutions as well as engineering software customizable to all testing requirements. "Optimal work- and information flow is key in battery testing centers," said Martin Rebbert, group vice president of FEV STS. "Just imagine the huge number of data being processed in a battery development center like FEV’s eDLP which is the largest of its kind globally. A 95

percent operation rate is standard for our test benches, generally. Nevertheless, it is our aim to further improve these figures.”

Just one single information system is managing the entire testing processes from start to finish, which includes the following steps:

- Tagging received and to be tested battery packs, modules or cells with a dedicated bar code
- Assignment of a secure storage
- Equipping the so called UUT (Unit Under Test) with measurement devices in the prep zone
- Mounting on the according test bench

A further important ease of processing is achieved by using just one format for the equipment data and measurement data in the result file. These solutions form the basis for the operating processes in all FEV battery test centers like eDLP in the Leipzig area (Germany) and the company’s facility close to Paris (France).

The 12,000 m<sup>2</sup> eDLP complex not only features facilities for the electrical testing of battery modules and complete high-voltage batteries but also for abuse testing covering short-circuit tests, simulation of internal cell errors as well as acceleration and impact tests simulating a severe accident. The test chamber volume measures approximately 600 m<sup>3</sup>. This volume is distributed over 54 climate chambers with an electrical output of 30,000 kW making the eDLP battery testing center the largest independent facility of its kind in the world.

For the French location FEV decided to pay particular attention to cell tests as the raw material for batteries with a testing capacity of 300 cells on site. Characterization and aging tests performed on selected cells can be extrapolated to the complete battery.

Additionally the company operates battery testing facilities in Aachen and Munich (both Germany) as well as in Coventry (UK) and Beijing (China).

FEV STS' testing solutions have performed multiple validation loops successfully. They have been developed and designed with the aim to shorten development efforts and time for the company's industry partners, the OEMs and suppliers.

### **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 autonomous 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 is growing continuously and currently employs 6,700 highly qualified specialists in customer-oriented development centers at more than 40 locations on five continents.

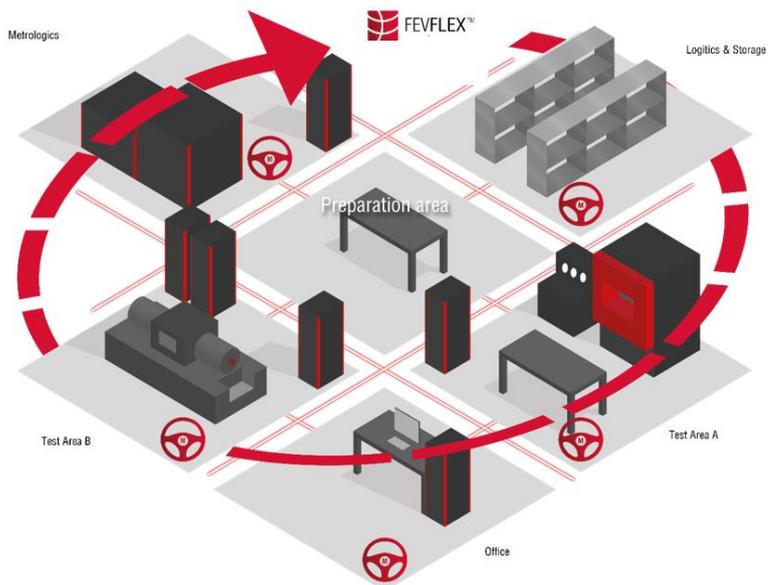
### **About FEV STS**

Within the FEV Group, FEV STS is in charge of the realization of software and testing solutions. It offers state-of-the-art test benches and measurement technology as well as software solutions that allow efficient transfer of essential product development steps from the road to the test bench or a simulation. FEV STS offers its services worldwide with teams supporting clients locally.

## Captures



Battery test cells designed by FEV STS: cell testing case – Source: FEV Group



FEVFLEX™, FEV's information system, manages the flow, processes and data of a testing project. MORPHEE®, the FEV automation system, monitors equipment and test beds of the testing center – Source: FEV Group

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