

Designing energy storage solutions for electric vehicles in the best possible way.

Team Elbflorace was founded in June 2006 and has about 70 active members from all kinds of disciplines at the Dresden University of Technology – including engineers, economists, scientists and IT experts.

During the development of their race car, the students draw upon SimulationX and the expertise of ESI ITI's engineers. Evaluating the impact of individual components with respect to the entire vehicle makes a comprehensive simulation approach inevitable.

SIMULATION X



»With SimulationX, we can quickly determine the precise amount of energy that is needed for a race and also the optimal drive parameterization.«

Patrick Wappler, High-Voltage Energy Storage Development, Season 2013/2014, Elbflorace e. V.



Challenge

Development of a high-voltage energy storage

Besides electric motors, it is the energy storage that makes the difference in the race car's performance on the track. In order to get the full potential on the road, it is vital to find the optimal balance between the accumulator's weight and capacity.

Solution

Capacity optimization through longitudinal dynamics simulation

SimulationX permits a quick and easy creation of a complex vehicle model which can be parameterized with all necessary data. The required amount of energy and the optimal drive parameterization for race conditions can be determined through a virtual test drive.

Benefits

Reduced weight plus increased energy efficiency

Simulation can help reduce unnecessary weight in the vehicle. This makes the race car faster and increases its efficiency. The quick design process also leaves more time for testing, which improves the overall reliability.