

## Preview ATZheavyduty Issue 02.2024

### COVER STORY | SIMULATION

**Thermodynamic simulation of engine braking systems**

In heavy commercial vehicles, the decompression brake is an effective means of fulfilling the requirement for a continuous braking function. Schaeffler's variable valve trains offer new approaches to increase braking performance and enable braking torque modulation.

**Simulation of platooning algorithms**  
Platooning, in which several lorries move automatically one behind the other in a convoy, offers potential for increasing the efficiency of the ever-increasing volume of commercial vehicle traffic. IPG Automotive demonstrates the contribution that simulation can make to the efficient development and validation of platooning algorithms.

Interview with Heinz Müllner, Senior Vice President ETA at MAN Truck & Bus  
ATZheavyduty talks to Heinz Müllner about the role of simulation in the development of automated driving functions, the current state of platooning and the hurdles to be overcome in the automation of inner-city bus transport.

#### Dates

Advertising deadline: 07/30/2024  
Copy deadline: 08/06/2024  
Publication date: 08/30/2024

### DEVELOPMENT

#### ELECTRIC DRIVES

**Electric Axles for Medium-duty Commercial Vehicles**  
BorgWarner has designed, built, and tested several electrified axles for medium-duty commercial applications. The company's experience with the key components that make up the axles – including the motors, inverters, and transmissions – as well as its system-level simulation capabilities regarding batteries, on- and off-board charging systems and thermal management components allowed for an optimization from a total vehicle perspective.

#### BRAKES

**Modular braking system platform for trucks and buses**  
Pneumatic braking systems for commercial vehicles vary greatly around the world: from basic anti-lock braking systems to sophisticated electronic braking systems. ZF's pneumatic braking system platform mBSP covers this variance and at the same time provides an intelligent basis for commercial vehicle trends such as electrification, automation and connectivity.

#### GUEST COMMENTARY

Lars Hentschel, Head of EAE, Volkswagen

### FUEL CELL

**Model-based development using the example of a fuel cell truck**  
The complexity of fuel cell vehicles, especially in the heavy-duty sector, means that decisions have to be made early on in vehicle and powertrain development. AVL shows how the goals of the Fuel Cell Technology Demonstrator Truck were achieved by using simulation during development.

#### BATTERY

**Modular battery exchange station for commercial vehicles**  
The range is crucial for every electric vehicle. For commercial vehicles, it is primarily a cost factor: the less time electrically powered commercial vehicles spend at the charging station, the more time there is for their utilisation. This reduces the costs for the vehicle and personnel. Getec replaces the charging stop completely - with a battery change.

#### Contact



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