

## 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



Rouwen Bastian  
Sales Management  
+49 (0) 611.7878 399  
rouwen.bastian(at)springernature.com