Setting a New Industry Benchmark for Safety and Efficiency: ZF Leverages Complete Truck-Trailer Technologies

- As the CV industry’s supplier with the broadest portfolio, ZF’s intelligent prototypes powerfully harness its latest advanced truck and trailer technologies
- Propelling combined truck-trailer safety and efficiency to the next level, ZF innovation vehicle achieves fuel savings of up to 18 percent
- Advancing safety, ZF has mapped a clear evolutionary path to support future industry demand, from General Safety Regulation compliance and outperformance to providing a stepping-stone towards driverless vehicle operation

Friedrichshafen (Germany). ZF’s Commercial Vehicle Solutions (CVS) division has presented the future of intelligent truck-trailers by unveiling two advanced innovation vehicles. Uniquely able to combine truck and trailer technologies with its unparalleled systems capabilities, ZF is setting new industry benchmarks for combined truck-trailer safety and efficiency. The prototypes also demonstrate ZF’s acceleration of autonomous, electric and digital technologies, offering clear proof-points for ZF’s ‘Next generation Mobility’ strategy.

“Environmentally intelligent and designed to lower the Total Cost of Ownership, ZF’s latest innovation vehicles set a new standard of performance, efficiency and safety that are only possible when leveraging the capabilities of complete truck-trailer combinations,” said Dr. Christian Brenneke, Senior Vice President of Product Engineering with ZF’s Commercial Vehicle Solutions division. “Each prototype powerfully combines ZF’s advanced truck and trailer expertise with our unrivalled systems capabilities. This has enabled us to achieve enhanced levels of safety and efficiency that simply would not be possible without an integrated approach to the complete vehicle.”
“The ease of use of these technologies also supports less experienced drivers at a time when the industry is facing acute shortages,” added Dr. Brenneke.

Towards ‘Zero Accidents’

ZF has equipped its safety innovation truck and semi-trailer with a suite of its combined technologies, drawing on its extensive passenger car capabilities to ensure the technology is economically attractive for commercial vehicles. This includes ZF’s comprehensive Highway Assist solution, which is enabled by OnGuardMAX, ZF’s most advanced Autonomous Emergency Braking System for commercial vehicles. Highway Assist combines Adaptive Cruise Control (ACC) with Continuous Lane Keeping Assist (CLKA) functionality to offer longitudinal and lateral control as a Level 2 automated application. Additionally, it features ZF’s next generation modular and scalable mBSP XBS braking system platform. This platform seamlessly complements ZF’s OnHand Electro-Pneumatic Handbrake (EPH) enabling automatic park brake control and providing enhanced safety and driver comfort. ZF’s Hands-on-Detection Steering Wheel has also been integrated providing outstanding precision sensing capabilities.

The safety innovation vehicle can autonomously initiate an emergency brake to avoid collisions with moving and stationary objects from speeds of up to 80 km/h and can bring the vehicle to a complete stop. Working in conjunction with the braking system, ZF’s unique new Active Seatbelt helps safeguard drivers by ensuring their seatbelts are free of tangles and remain at the correct tension, particularly during emergency maneuvers.

Showcasing how its integrated active braking intervention functions outperform the EU’s GSR mandate, from warning only to active intervention, ZF has also demonstrated its active Moving Off Assistant. Helping avoid collisions with pedestrians or bicyclists near the front of the vehicle during drive-off, it is complemented by two versions of ZF’s Advanced Reversing Assist (ARA) to help reduce accidents during reversing maneuvers. One ARA is fitted in the tractor and another in the
trailer which features TT-Link technology enabling the trailer, for the first time, to be an integral part of sensing/monitoring a vehicle’s surroundings. The trailer reversing camera is expected to become an essential part of future GSR (PoC-status) requirements. Also featured is ZF’s Blind Spot Information System (BSIS), which helps avoid collisions with cyclists riding near the passenger side of the vehicle.

ZF’s innovative proof-of-concept unintended cargo movement detection solution is also featured. ZF’s CargoCam sensor can detect unintended cargo movement and can flag it to a fleet orchestration system via the onboard telematics unit for corrective action to help protect the cargo. The telematics unit can also be connected to the vehicle’s ADAS system. This enables recorded data from emergency braking events to be captured, including images and videos, and communicated to fleet orchestration systems, such as ZF’s new SCALAR platform, for analysis.

**Enhanced Efficiency: Lower TCO and Vehicle Emissions**

With its second innovation vehicle, ZF has combined a truck with its cutting-edge eTrailer and a suite of its latest intelligent, electrified and efficiency technologies, including trailer aerodynamics such as ZF’s OptiFlow TrailerSkirt and OptiFlow Tail. The innovation vehicle shows how ZF’s combined truck and eTrailer technologies address major commercial vehicle industry challenges. Based on the demonstration vehicle, including eTrailer’s recuperation and traction capabilities, significant fuel savings of up to 18% (in VECTO delivery cycle) and annual CO₂ emission reductions of up to 15t per vehicle are possible helping meet industry sustainability objectives.

Additionally, ZF is showcasing its ability to support driver operational effectiveness amidst experienced driver shortages. This includes ZF’s next generation OptiRide Electronically Controlled Air Suspension (ECAS) coupling assist system which assists truck drivers hooking up a semi-trailer more easily.

eTrailer’s advanced traction functionalities, such as Drive-Off Help and Highway Acceleration Support, help boost safety, comfort and support
drivers of all experience levels. Demonstrating eTrailer’s traction support for ramp approaches and docking, the safe, silent and precise reversing of the truck-trailer combination is highlighted in combination with the trailer’s reversing camera. Assisting drivers and improving vehicle uptime by avoiding accidents and repair costs, ZF’s coupling and docking support systems help eliminate the hazards and stress of yard maneuvers.

Demonstrating its ability to help cost-optimizing cargo space, ZF’s CargoCam space monitoring sensor provides constant information about used and available cargo space, its condition, whether it has moved, door status and people access. Information can be displayed via ZF’s trailer telematics devices using its SCALAR platform. CargoCam is an important building block for Trailer Management and Intelligent Cargo Solutions, enabling cargo optimization as well as enhanced logistics efficiency.

**Introducing the Future Today**

From the start to the end of a journey, ZF’s latest innovation vehicles demonstrate the unparalleled safety and efficiency benefits of combining and fully integrating its key truck and trailer technologies.

“What makes ZF’s innovation vehicles particularly exciting is that, far from being a distant pipe dream, their technologies already work and will soon be available on our roads,” pointed out Dr. Brenneke.

**Video Download**

On our website, you can download high-resolution videos of the **Efficiency Innovation Truck** (with eTrailer) and **Safety Innovation Truck**, shot during ZF’s Global Technology Days 2022.
Caption:
ZF has presented two advanced innovation vehicles demonstrating how its integrated, complete vehicle technology approach can achieve levels of safety and efficiency not otherwise possible:

1) ZF’s Safety Innovation Truck combines the Group’s comprehensive latest safety technologies – among others the autonomous emergency braking system OnGuardMAX.

2) ZF’s Efficiency Innovation Vehicle showcases the Group’s cutting-edge efficiency technologies for fuel and CO2 reductions, enhanced uptime, and efficient cargo space utilization. Pictured here is also eTrailer, the electrification solution for heavy-duty trailers, featuring OptiFlow Tail and OptiFlow TrailerSkirt aerodynamic components.

3) ZF’s next generation modular and scalable mBSP XBS braking system platform features on the Safety Innovation Truck.

4) The CargoCam sensor can detect unintended cargo movement and can flag it to a fleet orchestration system via the onboard telematics unit for corrective action to help protect the cargo.

Images: ZF

Press contact:
Frank Discher, Head of News, Content & Media Desk, Commercial Vehicle Solutions
Phone: +49 7541 77-960770, e-mail: frank.discher@zf.com

Florian Laudan, Head of Communications, Commercial Vehicle Solutions
Phone: +49 151 20000276, e-mail: florian.laudan@zf.com

About ZF
ZF is a global technology company supplying systems for passenger cars, commercial vehicles and industrial technology, enabling the next generation of mobility. ZF allows vehicles to see, think and act. In the four technology domains of Vehicle Motion Control, Integrated Safety, Automated Driving, and Electric Mobility, ZF offers comprehensive...
product and software solutions for established vehicle manufacturers and newly emerging transport and mobility service providers. ZF electrifies a wide range of vehicle types. With its products, the company contributes to reducing emissions, protecting the climate and enhancing safe mobility.

With some 157,500 employees worldwide, ZF reported sales of €38.3 billion in fiscal 2021. The company operates 188 production locations in 31 countries.

For further press information and photos, please visit: www.zf.com

About CVS Division
ZF’s Commercial Vehicle Solutions (CVS) division is helping shape the future of commercial transportation ecosystems. Our mission is to be the preferred global technology partner to the commercial vehicle industry. Powerfully combining ZF’s commercial vehicle systems expertise, extensive technology portfolio and global operations, the division serves the full commercial vehicle industry value chain. As the automotive industry progresses towards an increasingly autonomous, connected, and electrified (ACE) future, ZF’s CVS division innovates, integrates and supplies components and advanced control systems that help make commercial vehicles and fleets operate more safely and sustainably. CVS unites ZF’s former Commercial Vehicle Technology and Commercial Vehicle Control Systems divisions, the latter being formed following ZF’s acquisition of WABCO in Spring 2020.