



## **ZF Takes the Fast Lane to Mobilize Commercial Vehicle Intelligence, Further Enabling Clean, Safe and Efficient Transportation**

- **ZF builds on its technology portfolio with recent acquisition of WABCO**
- **Demonstrating world premieres and intelligent solutions to address future transport and mobility challenges.**
- **Reducing CO<sub>2</sub> emissions, ZF's lightweight truck with aerodynamic trailer takes sustainable technology to the next level**
- **Fully-automated tractor-trailer coupling and advanced reversing assist system further enhance vehicle safety and operational efficiency**
- **With increased electric drive range and e-trailer innovations, ZF demonstrates its commitment to enable commercial fleets to become safer and greener.**
- **The extended portfolio expands ZF's capability to serve fleet operations through digitalization and connectivity solutions.**

**Friedrichshafen, Germany. ZF is poised to be the leading technology partner to the commercial vehicle industry with the addition of WABCO's capabilities. The company is playing a pivotal role in the industry's drive towards a more sustainable, connected and safer future. With a clear focus on reducing CO<sub>2</sub> emissions and enhancing safety standards, ZF is also at the forefront of delivering the next level of vehicle automation and digital connectivity. Recent applications and technology advancements were showcased today by the leading commercial vehicle technology systems supplier at a digital press event in the ZF Forum.**

Building on its recent acquisition of WABCO, ZF is accelerating the development of its product and systems portfolio to enable intelligent commercial vehicles. This includes an industry-first autonomous trailer coupling function and energy-saving truck-trailer combination.



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Page 2/5, 2020-10-06

EU requirements for manufacturers to reduce new commercial vehicle CO<sub>2</sub> fleet emissions by 15 percent before 2025, increasing to 30 percent by 2030, makes ZF an invaluable partner to the commercial vehicle industry as demand for electric drive trains in buses and trucks grows exponentially. In addition, the EU requires new driver assistance systems approvals from 2022 and, from 2024, for new registrations to include advanced blind spot warning systems.

With the integration of WABCO's leading advanced driver assistance and fuel-efficiency systems into its existing technology range, ZF is demonstrating the advantages of a complete and unique product portfolio for trucks, buses and trailer OEMS as well as fleets.

"WABCO is a perfect strategic match for ZF and has enabled us to accelerate our global leadership as a future-oriented, full-range technology supplier and systems integrator serving the commercial vehicle industry," said Fredrik Staedtler, head of ZF's Commercial Vehicle Control Systems Division.

"With a clear aim of making mobility and transport cleaner, safer and efficient, we are mobilizing commercial vehicle intelligence to support customers world-wide. Just four months after acquiring WABCO, we have made substantial progress in implementing new development projects bringing together our significant combined system competencies."

"When it comes to transformative solutions for the next generation of commercial vehicles, we are at full speed," added Andreas Moser, Head of ZF's Commercial Vehicle Technology Division. "As a result, we can highlight new innovations such as the fuel-saving truck-trailer prototype, designed for energy-efficient driving. It combines a lightweight design and aerodynamics with optimized chassis space offering major benefits for future electrification strategies."

ZF has also accelerated its successful commercial vehicle electrification program. ZF's AxTrax AVE electric axle has been in daily operation for a



**PRESSE-INFORMATION**  
**PRESS RELEASE**

Page 3/5, 2020-10-06

number of years and, this year, the Group will start volume production of the CeTrax electric central drive. By 2023, a complete modular electric drive kit, with axle and central drives, will be established for buses and trucks of up to 44 tons. As with other ZF electric systems, it will be 'open to technology', meaning it can be combined with a battery or fuel cell, for example.

ZF can now also extend its electrification expertise to trailers with the eTrailer. This semitrailer, with integrated electric motor, can convert the conventional truck it is coupled with into a hybrid vehicle that consumes up to 16 percent less fuel. In addition, with the e-trailer, traction and acceleration improve while noise level and brake wear decrease.

ZF also demonstrated at today's event how taking a future-forward approach to enhance commercial vehicle safety. Featured technology included the industry's first fully automated coupling assistant which enables trucks to find their allocated trailer autonomously and engage automatically. Another innovation, Advanced Reversing Assist, a further enhanced reversing assist function for trucks was also revealed. - Both solutions help to reduce the risk of accidents, offer depots increased operating safety and efficiency while reducing the risk of time delays and repair costs that are typically associated with maneuvering damage.

For automated vehicle operations, advanced vehicle motion control based on WABCO's ADOPT™ (Autonomous Driving Open Technology) software platform increases safety, efficiency and operational productivity. The ADOPT framework applies ZF's expertise in Autonomous Driving and Artificial Intelligence to the commercial vehicle world, helping to simplify and accelerate the development of Automated Driving applications for Virtual Drivers (Autonomous Driving Artificial Intelligence). It is specifically designed to support automated driving modes by providing instant, precise maneuvering and stable vehicle control in response to "real world" automated driving.

ZF is also reinforcing its capabilities in digitalization and vehicle connectivity to better serve the commercial vehicle fleets sector. The



**PRESSE-INFORMATION**  
**PRESS RELEASE**

Page 4/5, 2020-10-06

extended and integrated offering of truck, bus and trailer technologies provides ZF with broad access to a rich reservoir of vehicle systems data, which in turn power its growing portfolio of cloud-based applications and services to further optimize fleet efficiency and safety.

Captions:

- 1) Automated Coupling Assist: Proof-of-Concept for an innovative fully-automated coupling assist system that enables the truck to detect and hook a specific semi-trailer
- 2) ZF is developing its worldwide e-mobility portfolio for commercial vehicles on a larger scale.
- 3) Lightweight truck design, together with aerodynamically designed trailers helps reduce weight and fuel consumption. This combined with installation space optimization helps improve efficiency for all drive types and enables new approaches for electric mobility.
- 4) Safe reversing with trailers: A camera-based assistance system helps direct the vehicle, relieving the driver.
- 5) ADOPT stability control for automated trucks: This ZF solution is designed to help self-driving trucks (level 4) stay on the safest and most efficient trajectory , even in difficult driving conditions such as on slippery roads, e.g. during lane changes.
- 6) Fredrik Staedtler, Head of ZF's Commercial Vehicle Control Systems division: "We have called our mission 'Mobilizing Commercial Vehicle Intelligence'. ZF helps to make mobility and transport cleaner, safer and more profitable."
- 7) Andreas Moser, Head of the Division Commercial Vehicle Technology: "Just four months after ZF's acquisition of WABCO we are demonstrating the first groundbreaking development projects that our combined expertise has made possible."

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**PRESSE-INFORMATION**  
**PRESS RELEASE**

Page 5/5, 2020-10-06

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**ZF Friedrichshafen AG**

ZF is a global technology company and supplies 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 Vehicle Motion Control, Integrated Safety, Automated Driving, and Electric Mobility, ZF offers comprehensive solutions for established vehicle manufacturers and newly emerging transport and mobility service providers. ZF electrifies vehicles in a wide range of categories. With its products, the company contributes to reducing emissions and protecting the climate.

ZF, which acquired WABCO Holdings Inc. on May 29, 2020, now has 160,000 employees worldwide with approximately 260 locations in 41 countries. In 2019, the two then-independent companies achieved sales of €36.5 billion (ZF) and \$3.4 billion (WABCO).

For further press information and photos, please visit: [www.zf.com](http://www.zf.com)