



## ZF Shapes the Future of Transportation at the 2019 North American Commercial Vehicle Show

- ZF's leading technologies address industry's biggest challenges including driver shortage, emissions, efficiency, cost and safety
- Announces electric drive axle, AxTrax, is on the Freightliner Innovation Fleet eCascadia
- Launching new 8-speed automatic transmission, ZF PowerLine, for medium duty vehicles at major OEM in early 2021
- Following planned acquisition of WABCO, positions itself as an integrated systems provider for commercial vehicle technology

LIVONIA, Michigan – The North American commercial vehicle industry is facing serious challenges: job shortages, cost of operations, freight demands and regulations, among others. ZF, a global technology company, offers a diverse set of technologies that will help lead to safer roads and lower emissions, enabling transformative change in the market. ZF will highlight these technologies at the North American Commercial Vehicle (NACV) Show, Oct. 28–31, in Atlanta.

"Our commitment to the commercial vehicle industry is further proven by two points: ZF is investing \$13.9 billion in automated driving and electric mobility only across all industries we serve, over the next five years; and our planned acquisition of WABCO, creating an integrated systems provider for commercial vehicle technology," explained Tomas Bozek, Senior Vice President, Commercial Vehicle Technology, ZF.

### **Powerful, efficient and reliable driveline solutions**

In the area of driveline, ZF offers individual drivetrain solutions to make vehicles of today and tomorrow more capable, efficient and safe. ZF PowerLine is a perfect example of enhanced mobility solutions. The proven 8-speed automatic transmission for passenger cars and light commercial vehicles has an established track record of more than 12 years of success, with more than 15 million units produced. At the end of 2020, ZF will begin production of PowerLine, the company's new 8-



speed fully automatic transmission for medium-duty commercial vehicles, with a major North American OEM launching in early 2021.

“ZF PowerLine is the industry benchmark torque converter automatic transmission, ready to pair with a wide range of vehicle classes, starting at class 3 all the way up to class 7 / baby 8. It supports engine ratings of 1,000 lb-ft and vehicle weights of 57,000 lbs. GCVW and covers the broad medium-duty range with just one product,” explained Christian Feldhaus, Head of Truck & Van Driveline Technology North America, ZF.

With its compact and strong 8-speed gear set, ZF PowerLine provides the best-in-class power-to-weight ratio. Barely perceivable shifts throughout these optimally spread gears enables up to 30% faster acceleration compared to conventional 6-speed transmissions. The transmission features a high torque engine-driven PTO interface on both sides for perfect upfit solution for any truck application, pickup and delivery, snow plow, tow truck, refuse truck, bus, etc. Drivers receive factory equipped features that enhance total cost of ownership (TCO) and safety, like: Neutral at Stop, Parklock at 50,000 lbs, Auto Park, Adaptive Starting Gear, Quick Lock up and others.

The best-in-class 8-speed gear layout combined with cutting edge twin-torsional damper torque converter enables more than 10% fuel efficiency improvement and therefore significant greenhouse gas emissions reduction compared to today’s 6-speed transmissions. “ZF’s PowerLine proves equal, but in most cases, higher efficiency than other transmissions with 9 and 10 speeds. With fewer moving parts and less weight than the competition, ZF PowerLine ensures an extended life and reduced maintenance for best-in-class TCO. PowerLine will set the benchmark standard for torque converter automatic transmissions in the North American commercial vehicle market,” said Feldhaus.

“As we look to the future, we must be able to offer customers zero emissions driving solutions, and PowerLine has an eye toward emissions-free trucks, as it will be hybrid-ready upon production, with a future version compatible with electric drive,” said Feldhaus.



To enable the transition to local zero-emission commercial vehicles and low-emission logistic transport trucks as easy and flexible as possible, ZF is providing commercial vehicle manufacturers with in-house developed and produced eMobility products and system solutions. ZF offers an extensive and diverse electrified drive solutions portfolio for commercial vehicles, from small vans to heavy duty trucks.

“ZF is proud to announce that our electric drive axle, AxTrax, powers the Freightliner Innovation Fleet eCascadia,” explained Feldhaus. “The ZF electric drive axle, AxTrax, offers zero-emission driving with maximized performance and minimal noise emission – ideal for battery electric vehicles, hybrid drives and fuel cell technology. It enables trucks the efficient entrance into zero-emission city zones.”

### **Game-changing technology in AD/ADAS**

Together with its partners, ZF is the global leader in the supply of camera technology and is a top tier supplier of radar technology while supplying advanced components for both the passenger car and truck markets.

“The business case in commercial vehicle for reduction in driver hours of service, fuel cost reduction and safety have strong economic incentives to adopt ADAS/AD technology. Additionally, the regulations placed on the industry will require our customers to utilize certain solutions. ZF has the expertise and solutions to meet all of these needs, and because we can transfer our knowledge and development costs from the high-volume passenger car segment to our CV customers – this is a unique cost-savings and technology benefit,” explained Dan Williams, Director, ADAS & Autonomy, ZF.

Studies show that the average cost of lane departure accidents is roughly \$53,000; and 32% of accidents are unintentional lane departures. “This creates a strong business case for fleets to adopt technologies like OnTraX,” stated Williams. “We’re already seeing it – as next year ZF will launch OnTraX’s lane keep assist with its first major OE.”



OnTraX offers further capabilities with the addition of short-range radar, including lane change and city drive assist. The side-mounted short-range radars see in the blind spot where the driver cannot. When integrated with ReAX the system can be programmed to deliver a haptic warning to the driver if he is approaching an obstacle or vehicle in his blindspot. The system can also be programmed to urge the driver away the obstacle. These developments in ADAS systems further supports ZF in its goal of Zero Accidents making roadways safer for all who travel on them.

ZF is showcasing its latest commercial vehicle technologies at the NACV Show, Oct. 28-31 at the Georgia World Congress Center, Atlanta, Hall B, Floor 1, Booth 4610.

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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. With its comprehensive technology portfolio, the company offers integrated solutions for established vehicle manufacturers, mobility providers and start-up companies in the fields of transportation and mobility. ZF continually enhances its systems in the areas of digital connectivity and automation in order to allow vehicles to see, think and act.

In 2018, ZF achieved sales of €36.9 billion. The company has a global workforce of 149,000 with approximately 230 locations in 40 countries. ZF invests over six percent of its sales in research and development annually.

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