



Innovative, Industry-Spanning, Intelligent: ZF Presents a Broad Spectrum of IoT Applications at CES 2019

- **ZF presents its cross-sector networking expertise at CES 2019**
- **Strategic partnership with Microsoft: Open ZF IoT platform as common basis for smart digital products**
- **Added value for end customers as well as for companies, manufacturers and fleet operators**

Friedrichshafen / Las Vegas. The Internet of Things is increasingly mature and always evolving thanks to machine learning and artificial intelligence. Digital solutions can make life easier for companies and end users alike and user-friendliness is becoming increasingly important as a success factor. ZF relies on networking and comprehensive data analysis to offer smarter and more reliable products and services and is using its open IoT platform to bundle this expertise, taking advantage of the opportunities offered by big data, efficiency and speed to develop next-generation IoT systems. At this year's CES, ZF will be demonstrating the broad range of applications enabled by cloud-based platforms.

"Networking our system solutions has always been a core competence of ZF – be it the use of data transmitted for remote diagnosis or the automation of production processes," says Mamatha Chamarthi, Chief Digital Officer of ZF Friedrichshafen AG. "We want to enhance this and by 2025, all ZF products will be networked." The open ZF IoT platform based on Microsoft Azure provides the opportunity to implement new digital services and make more efficient use of hardware systems through data analysis and smart algorithms. Thanks to its broad portfolio, ZF can also leverage the platform to analyse data trends across industries and use the results to cross-pollinate best practices in a more agile manner. The Group's IoT platform already combines various functions across a wide range of applications and industries in



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order to provide its customers with innovative, safe and intelligent solutions.

Connected solutions for the mobility of tomorrow

Covering the spectrum of vehicle mobility is a unique trait of ZF and the company is making its hardware products smarter and more reliable by connecting them to the cloud and applying artificial intelligence and other analytic approaches. One example are **Off-Highway Data**

Analytics: Construction vehicle transmissions can be monitored via cloud during their complete product life cycle. This helps to reduce downtime because potential problems can be identified and rectified early on. A similar approach is used for **TraXon Predictive**

Maintenance. With this new function, ZF is preparing its successful modular transmission TraXon for the digital future in the commercial vehicle industry. Starting in 2019, vehicle manufacturers and fleet operators can use ZF's IoT platform to proactively plan vehicle maintenance.

With its Openmatics system, ZF has long-standing expertise as a telematics provider. In addition to conventional fleet management, the connectivity platform offers an extensive set of functions for owners of electric vehicles. As such, Dutch manufacturer VDL Bus & Coach relies on Openmatics for smart **E-mobility fleet management** with a full overview of the operational efficiency of both their electric and diesel vehicles. Openmatics now also extends its portfolio to car fleet owners. Based on the ZF IoT platform, **ZF Car Connect** includes a mobile app for drivers with a driver assistance system and a Digital Logbook function along with the web-based portal for the fleet manager.

With the increasing use of automated driving functions, ZF's IoT platform will also be a crucial hub for **over-the-air (OTA) updates**. OTA updates allow for the latest software version to be sent directly from the cloud to the car via data transfer to help ensure that programs are up to date in terms of efficiency, road safety and cybersecurity. To further advance this technology, ZF has joined the eSync Alliance which is working on the rollout of a uniform, manufacturer-independent standard



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for OTA updates. The eSync system ensures secure data exchange between the cloud and electronic terminal units and helps to protect the vehicle's cyber architecture from hacker attacks.

Big data and networking make production processes smart

IoT solutions also offer an enormous potential for more flexible and efficient production logistics. Using the open IoT platform, ZF has developed a host of innovative solutions that bring Industry 4.0 to the shop floor such as **deTAGtive Asset Tracking** in which Bluetooth tags provide a simple and smart means to manage material and goods in production plants and transportation depots throughout the entire supply chain. The interactive intralogistics solution **ZF Call Button** provides an innovative method for ordering production material. With no wires and an almost instant set-up, it flexibly adapts to any production line, manufacturing environment or inventory tracking system without the need for additional equipment. Meanwhile, the **CERA** (Connected End-of-Line Reject Analyzer) functionality offers a valuable Quality management tool. ZF uses CERA in the manufacturing of steering columns: If a product shows defects during the final functional test (end-of-line testing), the system can identify the malfunction with the production data in real time, allowing for the source of the error to be identified quickly and rectified before major expenses are incurred.

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ZF is a global leader in driveline and chassis technology as well as active and passive safety technology. The company has a global workforce of 146,000 with approximately 230 locations in some 40 countries. In 2017, ZF achieved sales of €36.4 billion and as such, is one of the largest automotive suppliers worldwide.

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ZF enables vehicles to see, think and act. The company invests more than six percent of its sales in research and development annually – in particular for the development of efficient and electric drivelines and also in striving for a world without accidents. With its broad portfolio, ZF is advancing mobility and services for passenger cars, commercial vehicles and industrial technology applications.

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