



ZF and Schaeffler Develop Solution for Condition Monitoring in Rail Vehicles

- **Shared expertise enables condition monitoring of the most important components of the driveline**
- **Digitalization solution simplifies maintenance and makes rail vehicles more reliable**
- **ZF and Schaeffler pool their expertise for rail vehicles**

Berlin/Friedrichshafen. ZF is meeting the challenges of digitalization by creating and implementing various ecosystems, leading to shorter periods for market launch of innovative and tailored solutions that meet rapidly changing customer requirements. ZF's latest ecosystem focuses on the rail industry. The aim is to monitor all important components in the driveline with just one system. This enables condition-based maintenance planning to be carried out, ensuring smooth and cost-optimized operation of the entire fleet. ZF will now work with Schaeffler in developing a joint condition monitoring system, a first-time partnership that was agreed at the InnoTrans trade fair in Berlin.

"We are pleased to further expand the long-term cooperation between ZF and Schaeffler with this partnership," explains Dr. Klaus Geißdörfer, Head of the ZF Industrial Technology Division. "Both companies are continuously working on increasing the efficiency and reliability of rail vehicles. The combination of our product portfolio with digital solutions enables us to offer our customers new, innovative solutions."

Thanks to integrated sensors, the condition monitoring system keeps watch over the components in rail vehicles. Various sensors record vibrations, oil quality and temperature trends in ZF rail drives, for example. Schaeffler is expanding the system with wheelset-specific sensors for monitoring the condition of axle bearings.

"Digitalization in industry can only generate added value when cooperation takes place across companies," explains Dr. Stefan Spindler, CEO Industrial at Schaeffler AG. "With this project work, we are extending our long-standing development partnership with ZF in the



PRESSE-INFORMATION
PRESS RELEASE

Page 2/3, September 18, 2018

rail sector to an Industry 4.0 solution that will enable completely new service concepts.”

The new transmission functions and services are based on a digital, cloud-based platform that is open to many users. Using a standardized interface and encrypted data traffic, it securely transfers the collected data to the ZF cloud. Operators can read the analyses and recommendations for action based on this data from the cloud. This enables them to optimally schedule maintenance and respond to a wide variety of situations on a case-by-case and flexible basis, ensuring reliable operation of the entire vehicle.

Caption:

Undersigned new cooperation: Dr. Michael Holzapfel, Senior Vice President Business Unit Rail Europe at Schaeffler’s Industrial Division, Dr. Stefan Spindler, CEO Industrial at Schaeffler AG, Dr. Klaus Geißdörfer, Head of Division Industrial Technology at ZF und Eberhard Wilks, Vice President Industrial Technology Rail Drive Systems at ZF (from left to right).

Image: Schaeffler

Press Contact:

Gernot Hein, Head of Communication & Public Affairs / Press Spokesperson, Industrial Technology Division,
Phone: +49 851 494-2480, e-mail: gernot.hein@zf.com

Svenja Stütz, Head of Marketing and Communications,
Marine & Special Driveline Technology Business Unit,
Phone: +1 734 582-1297, e-mail: svenja.stuetz@zf.com

ZF Friedrichshafen AG

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



PRESSE-INFORMATION
PRESS RELEASE

Page 3/3, September 18, 2018

230 locations in some 40 countries. In 2017, ZF achieved sales of €36.4 billion. ZF is one of the largest automotive suppliers worldwide.

ZF allows 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 in the automobile, truck and industrial technology sectors.

In the Industrial Technology Division, ZF pools its activities for off-road applications. These include the development and production of transmissions and axles for agricultural and construction machinery along with driveline technology for forklift trucks, rail and special vehicles. The division is also responsible for the worldwide business of marine propulsion systems, aviation technology as well as the development and production of gearboxes for wind turbines and industrial applications. Test systems for all kinds of applications in driveline and chassis technology are also included in the division's portfolio.

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