

# PRESS RELEASE

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## Intelligent sensor concepts: for tomorrow's railway industry

**Digitalisation opens up new possibilities to generate a wide range of highly valuable information. Against that backdrop, Frauscher presents its latest products at this year's InnoTrans under the motto: "Discover intelligent sensors: Innovations to simplify railway operations".**

A new intelligent sensor, which combines proven best-in-class technology with digital concepts takes track vacancy detection to the next level. Also, the technology behind the company's DAS-based linear sensing system, Frauscher Tracking Solutions FTS, has been developed further. Thereby, the system now allows for optimised real-time train tracking and supports maintenance strategies with continuous infrastructure monitoring.

### Intelligent sensor for more efficient track vacancy detection

Based on proven knowhow and the concept of the Internet of Things (IoT), Frauscher has created a new wheel sensor. The evaluation of the signal has been integrated directly into the sensor, which now works as an intelligent device on track. By integrating additional sensing modules, it generates even more information than established models, enabling additional and more efficient railway applications to be implemented. The sensor's digital output and the ring architecture – based on a specifically developed bus system – hugely reduce the cabling requirements. With this innovation, Frauscher will again set a new benchmark in track vacancy detection.

### FTS: Continuous train tracking using Distributed Acoustic Sensing

Distributed Acoustic Sensing (DAS) offers a huge potential - requiring nothing more than a single glass-fibre, pulsed by a laser. By evaluating the changes in the reflection of these pulses, the fibre is converted into a sensor that runs along the track. This sensor is capable of detecting sound waves and vibrations. Solutions based on this technology are able to continuously track the position of a train and monitor the condition of complete railway networks.

Intensive research and development activities as well as close collaboration with operators have increased the capabilities of the DAS-based Frauscher Tracking Solutions FTS. In various field installations, a range of applications have been realised. These installations have allowed improvements to be made, enabling Frauscher to optimise DAS for the railway industry.

### Train tracking: Localisation in real time

According to the requirements of train tracking as a main application, the focus was on enhancing the accuracy and reliability of four key data sets: front end of a train, rear end of a train, speed and direction. Continuous calculation of an estimated time of arrival (ETA) at a specific point can optimise applications such as passenger information or platform announcements. Exact train position and train specific speed profiles enable more efficient train movement and traffic management.

Therefore, the measuring method was developed further to optimise the output of the FTS. By increasing the number of interfaces with other sensing systems, additional data can now be evaluated allowing even more valuable information to be generated.

### **Continuous monitoring of assets**

FTS constantly monitors the acoustic signature of the wheel-rail-interaction. Using optimised algorithms, this provides insight into the change of the condition of various assets when trains are passing. Degradations and damages of fixed infrastructure components, such as the rail, fastenings, sleepers or the track bed are monitored. Based on ongoing trend analysis using defined indicators, warning or alarming messages are sent to the infrastructure manager. The operator is then able to identify maintenance tasks at a very early stage. This enables a much more efficient planning, controlling and execution of maintenance activities. Thereby, FTS supports a complete shift from regular and time based maintenance cycles to condition based maintenance.

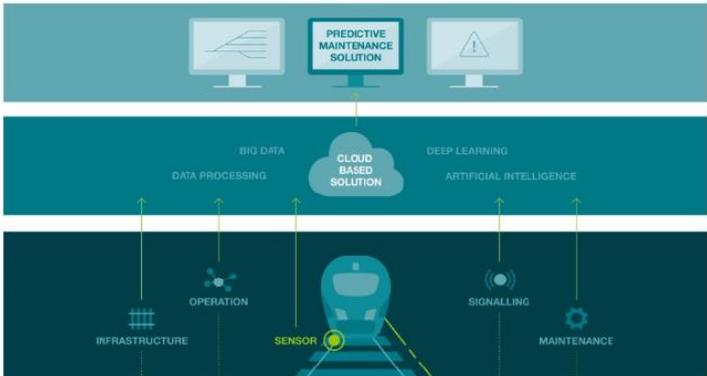
### **Safety and security applications**

Railway operations depend on a high level of safety. To that end, FTS provide a comprehensive solution ranging from worker safety to protection against vandalism. By detecting footsteps of people as well as activities, such as sawing or digging, the system supports security staff in their daily tasks.

### **Explore a new world**

Frauscher Sensor Technology makes it simpler for system integrators and railway operators to obtain the information they need to run, monitor and protect their operational network. Ever since its foundation, the company's philosophy has been to develop market-oriented solutions, using modern technologies to meet the industry's latest requirements. The experts from Frauscher are in close contact with operators and system integrators all over the world. Become a part of the railway industry's future and meet Frauscher at InnoTrans 2018, Hall 25, Stand 232 to discuss the possibilities of how to create intelligent sensing systems for tomorrow's railway industry with their experts on-site.

Images

#	Image	Text
1		<p>Integrated evaluation, additional functionalities: digital output and proven capabilities characterise the new Frauscher wheel sensor</p>
2		<p>The Frauscher Tracking Solutions FTS are collecting real-time data by transforming a fibre optic cable into a linear sensor</p>
3		<p>By continuously monitoring the acoustic signature of the wheel-rail contact, FTS support condition based maintenance strategies.</p>

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## About Frauscher

Track more with less: Frauscher Sensor Technology makes it simpler for system integrators and railway operators to obtain the information they need to run, monitor and protect their operational network. Best-in-class wheel detection systems, axle counters and tracking solutions based on inductive sensor technology and Distributed Acoustic Sensing form an essential component of a wide range of applications.

Frauscher experts are on-site in global markets to ensure comprehensive support during the whole customer life cycle. Additionally customers are able to design, configure, install, adapt and maintain all components and systems by themselves due to individual trainings and support.

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