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# All rails lead to Berlin

## Wayside sensors: Basis for the future

Under the motto "Discover intelligent sensors. Innovations to simplify railway operations", Frauscher Sensor Technology took evidence at this year's InnoTrans: The technology leader proved that wayside sensors will continue to play a central role in the railway industry in the future – if they start harnessing digital ideas. Christian Pucher, CMO Frauscher Sensor Technology, says, "We are essentially pursuing two strategies: On one hand, we are further developing existing products with ideas arising from digitalisation. On the other hand, we are

building on completely new approaches that only became possible with digitalisation. This includes, for example, the use of distributed acoustic sensing in the railway sector. Thereby we are able to solve key challenges faced by railway operators today."

The stream of visitors at InnoTrans showed that this concept is well received. "The demand for precise data is increasing – especially with the rising introduction of digital solutions such as cloud based systems. To this day, wayside sensors are the most reliable source for this. The ideal of many

operators, however, is to reduce the number of components on the track at the same time. At InnoTrans 2018, we were able to present several solutions that meet the requirements of this field of tension," says Pucher, explaining the lively interest.

### Smart device on the track

A highlight that the technology leader came up with in Berlin was the innovative SENSiS system with its new sensor: the SENSiS

Detection Point SDP. The design of the device and the associated rail claw made it a crowd-puller. The properties of the system caused astonished reactions. The sensor not only detects trains reliably, but does even more: The SDP evaluates the wheel sensor signals and digitises them. It also collects a number of other data, such as acceleration and temperature. These are also evaluated in the sensor, processed and made available to a network in the form of useful information.

With this revolutionary sensor concept, all the requirements to modern axle counters are met – and the entire indoor equipment is eliminated as far as possible. The SDP is only connected to a newly developed SENSiS Processing Unit SPU via a specifically developed bus system. The bus enables the establishment of a ring architecture instead of star-shaped cabling – and therefore has massive cost savings. Pucher sums up the launch: "The possibility of sending data from the indoor system to the sensor is also particularly promising for the



future. What we showed at InnoTrans is the prototype, which will now be further developed on the basis of initial installations. All innovations can then simply be distributed to the sensors in the field by means of software updates. In 2019, we will implement the first projects with this system and go through the approval process – there are already very concrete inquiries."

optimised. The ongoing information on train position and speed profiles enables more efficient traffic management. The type, year of construction and origin of the track vehicles detected are irrelevant.

## The track on the screen – in real time

Additionally, the further developed FTS provides railway operators and service companies with an interface that maps the condition of track and infrastructure in real time. Changes in the condition of various components – track, track bed, sleepers, wheels and more – are detected and displayed on a user interface in a clear form for the first time. In addition to the optimised possibilities for train detection, this solution attracted a great deal of interest.

"We already have around 30 FTS installations in use worldwide. Various applications are being



## All trains at a glance

With the further development of Frauscher Tracking Solutions FTS, the company presented more highlights. For improved train tracking, the focus was on accuracy and reliability in the detection of a train's front and rear end, travelling speed and direction. This enables an accurate and continuous calculation of the arrival time at a specific point. Various applications, such as passenger information or platform announcements, can thus be



tested there, including condition monitoring. We see particularly great potential in this field," says Pucher, explaining the latest developments. "Therefore, we have focused heavily on this when optimising the system – and have made exciting progress. We now want to work more closely with operators, system integrators and partners. As announced at InnoTrans, we are already doing this with Vossloh and Siemens Mobility. Their expertise in the maintenance sector and our know-how in the detection of trains and various events along a track will rapidly drive the development of condition-oriented maintenance strategies further."

## Standing out from the crowd

Frauscher caused a sensation at the InnoTrans 2018. Not an easy exercise with more than 3000 exhibitors. "With our axle counters and wheel sensors, we are the global market leader. In order to secure this position, we want to continue to offer the best solution for all scenarios in the future. Availability, functionality, quality, service and economy are always in focus. In addition, new requirements are constantly being added, such as increased network capability and options for flexible adaptation by means of software updates or the integration of additional sensors. It is clear to us

that we – as well as the whole industry – have to maximise the use we make of digitalisation. At InnoTrans 2018, we demonstrated how we approach this: we combine proven features and sound know-how with new possibilities. And after the numerous discussions that I had – also at the great Frauscher booth party on Tuesday, by the way – I am sure: we are on the right track", he sums up the week in Berlin.

Impressions from the stand, reviews and details on Frauscher's highlights at InnoTrans 2018 can be found under **[innotrans.frauscher.com](http://innotrans.frauscher.com)** or **[blog.frauscher.com](http://blog.frauscher.com)**