

## MORE THAN RAIL INNOTRANS 2018 - HALL 23, BOOTH 207



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### Fair coordination: Fraunhofer Transport Alliance

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### Fraunhofer Institute for Open Communication Systems FOKUS

**Safety and security of railway software**  
Safety – protection against accidents – is a central and established goal in the development and operation of railway systems. However, the security aspect – i.e. protection against attacks from the outside – is becoming increasingly important due to the growing interconnectivity of IT systems. Fraunhofer FOKUS supports the design, development and quality assurance of railway software and thus ensures both safety and security.

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### Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM

#### Training & Certification DIN 6701 and DIN 2304

Fraunhofer IFAM offers internationally recognized certifying training courses in adhesive bonding technology and fiber composite technology. In cooperation with TBBCert as independent certification body the Fraunhofer IFAM offers the following services: Certification according to the use of adhesive bonding in rail industry (DIN 6701) as well as in industry and craft (DIN 2304).

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## Fraunhofer Institute for Physical Measurement Techniques IPM

### Framework for Automated 3D-Data Interpretation

Today, infrastructure is surveyed using cameras or laser scanners. The acquired data is generally evaluated manually. Fraunhofer IPM has developed a »Deep Learning Framework« which automates this process. The trained system is delivered as an executable program for Windows or Linux. Interfaces are adapted according to customers' requirements.

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## Fraunhofer Institute for Nondestructive Testing IZFP

### Checking out residual stresses on freight car wheels

Fraunhofer IZFP engineers will present the optimized generation of an ultrasonic inspection system at this year's InnoTrans: Damage to freight car wheels can be detected early and wheel breakage in critical situations can be prevented. By optimizing the hardware, Fraunhofer IZFP experts have succeeded in adapting the so-called UER inspection systems even better to the specific needs of the maintenance and manufacturer facilities for wheels. The test personnel now can run the inspection software directly on the manipulator via touch screen, combining easy operation with

the inspection velocity and accuracy of the known systems. All new systems, as well as all systems already delivered, are integrated into Fraunhofer IZFP's remote maintenance network.

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## Fraunhofer Institute for Structural Durability and System Reliability LBF

### Fail-safe and reliable

Development and implementation of solutions for simulation and testing of materials, components, modules and systems. Cross-sector competencies in numerical system simulation and fatigue life estimation, characterization of material and components, aging and structural durability of elastomer materials and components. These and other competences of the Fraunhofer LBF went into the development of an automated PeopleMover, for which a complete strength verification concept has been elaborated, implemented and processed at the institute. Learn more about our methods and research topics on the InnoTrans!

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