

PRESS RELEASE

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Saarbrücken, September 10, 2024 ||

Page 1 | 2

Fraunhofer IZFP at InnoTrans 2024: "PASAWIS" – system for complete manual inspection of railway wheelsets

Material inspection of wheelsets for rail cars is an integral part of safe rail transportation. In smaller workshops, this inspection is usually carried out manually. Due to the fleeting nature of the data, it has not been possible to store and thus trace the inspection results. The PASAWIS inspection system now represents the next generation of wheelset inspection. How this works, experts from Fraunhofer IZFP will be demonstrating by means of a wheel rim inspection from 24 to 27 September 2024 at the 14th InnoTrans in Berlin (Messe Berlin, ExpoCenter City, Hall 23, Stand 240).

PASAWIS (Phased Array Semi-Automated Wheelset Inspection System) uses three hand-held scanners to perform a complete wheelset inspection on the shaft, rim and tread based on defined inspection programs. The mobile system can be used in production, can be operated by one person and consists of an ultrasonic unit (phased array) with customized software. The system meets the requirements of VPI European Rail Service GmbH (VERS) in accordance with VPI-EMG 09 for the maintenance of freight cars by means of nondestructive testing.

Complete inspection data storage enables long-term traceability

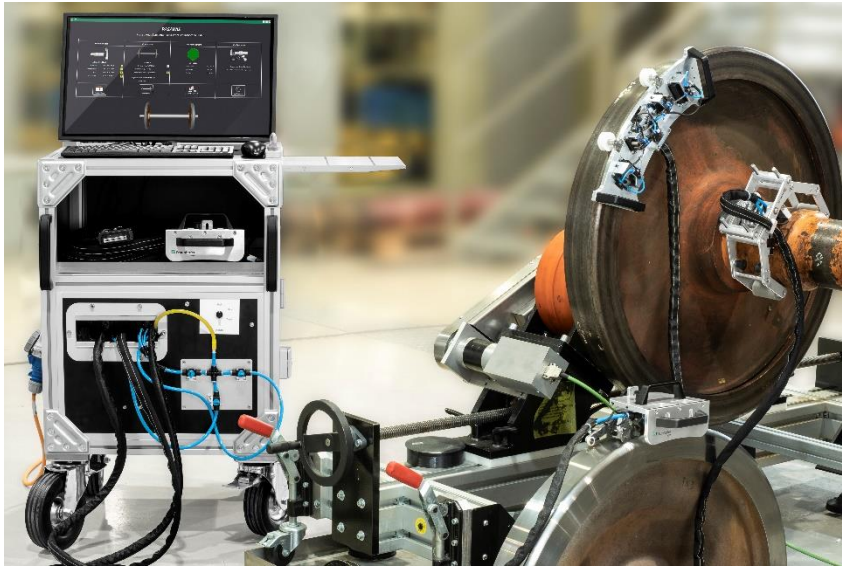
For the first time, PASAWIS enables the complete storage of inspection data sampled by manual inspection, thus ensuring long-term traceability. The locally stored data can be transferred to central storage locations via multiple interfaces. A direct upload to cloud-based document management systems is also possible. Inspection parameters such as inspector, inspection date, signal amplification or inspection areas are documented in DICONDE format (Digital Imaging and Communication for Nondestructive Evaluation) in accordance with ASTM E2633 14 US. This open standard with attached PACS (Picture Archiving and Communication System) meets the highest requirements and enables images and digital data from industrial materials inspection to be displayed, transmitted and stored.

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PASAWIS and its three hand-held scanners for shaft, rim and tread inspection; © EVIDENT/Roland Sander

PRESS RELEASE

Saarbrücken, September 10, 2024 ||
Page 2 | 2

Individual inspection reports, safe digital signature

The results of an inspection are automatically saved in individualized inspection reports as a PDF file and contain the graphical results associated with the individual wheelset, such as A-scan, sector image and C-scan and metadata such as calibration date, device serial number, name of the inspector or workshop. Only minimal manual input is required to generate the report. The inspection report is provided with a secure, digital signature, thereby guaranteeing a significantly increased level of security.

PASAWIS is a joint development of Fraunhofer IZFP and Evident GmbH in cooperation with Railmaint GmbH.