(idw)

Press release

Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren IZFP

Oliver Sandmeyer

09/10/2024 http://idw-online.de/en/news839427



Research results, Transfer of Science or Research Economics / business administration, Electrical engineering, Materials sciences, Mechanical engineering, Traffic / transport transregional, national

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 og 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.

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.

More on Fraunhofer IZFP:

Fraunhofer IZFP is an internationally renowned research and development institute for applied, industry-oriented research with headquarters in Saarbrücken. The institute's activities focus on the development of intelligent sensor and data systems for safety, sustainability and efficiency. The results of its R&D; work are used in business and industry. The scientific-technological solutions support science and industry and at the same time contribute to shaping our society and our future. In addition to customized sensor systems, sensor data management, data analysis and data value creation with AI and machine learning techniques, the R&D; portfolio also includes extensive consulting activities in the

(idw)

idw - Informationsdienst Wissenschaft Nachrichten, Termine, Experten

field of standardization, among others. The understanding of technical testing and sensor physics is also complemented by technologies and concepts from AI research. Fraunhofer IZFP currently employs about 130 people as permanent staff.

contact for scientific information: Dipl.-Ing. (FH) Stefan Caspary

URL for press release: https://www.izfp.fraunhofer.de/en/Presse/Pressemitteilungen/InnoTrans2024.html

Attachment Press Release PDF http://idw-online.de/en/attachment103574



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