Press release **September 1, 2023**

Technology to reduce train noise: Acoustic Camera and vibration analysis software WaveCam from gfai tech at the Railway Forum 2023

Rail traffic noise is a major problem for many residents. gfai tech has developed technologies to make rail traffic noise visible and thus enable suitable countermeasures to be taken quickly and precisely to reduce noise. Our experts will present the Acoustic Camera and the WaveCam software at the Railway Forum.

Whether wheels, engine or air flowing at high speed through a small opening: components of trains cause various types of noise. gfai tech's advanced Acoustic Camera and WaveCam vibration analysis tool make it possible to analyze trains and rail systems in a new way, optically and acoustically.

If the exact origin of the noise is unknown, the Acoustic Camera can precisely identify it with just one measurement. The key to analyzing a passing train lies in the pass-by algorithm provided by the associated NoiseImage software. Together with the acoustic recordings of the microphone array, the pass-by module enables a frequency-dependent representation of all sound sources in just one image. The resulting panoramic acoustic image, regardless of whether freight or passenger cars are involved, shows the various sound sources color-coded. This acoustic mapping provides valuable insights into the noise analysis of individual train sections or the entire train. Engineers, transport planners and policy makers can use this as a basis for identifying noise sources and developing effective strategies to make the world a little quieter.

The software WaveCam, detects vibrations through video recordings of the rail and the train and makes them visible to the human eye. The vibrations are amplified based on video data recorded with simple cell phone cameras or high-speed cameras.

Rail transport plays a crucial role in sustainable mobility in Germany and Europe. But shifting traffic to rail requires well-coordinated connections, shortened travel times and increased capacity on rail lines. However, the focus is often on rail noise pollution, which can be analyzed optically-acoustically using innovative technologies such as Acoustic Camera and WaveCam.

Visitors to the leading railroad industry congress in Europe will have the opportunity to meet gfai tech experts at booth P07 and experience a live demonstration of the Acoustic Camera and WaveCam. Visitors are also cordially invited to attend the lecture "Visualization of Noise and Vibration in Passing Trains" on the opening

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day starting at 1:30 pm. Our expert Thomas Reck will present this on the Exhibition Stage. The two-day event will take place on September 6 and 7 at the ECC Berlin.

About gfai tech

gfai tech GmbH is a German company specializing in innovative sound and vibration measurement and analysis solutions. We offer advanced Acoustic Cameras, comprehensive analysis software, and cutting-edge structural dynamics solutions. Our expertise spans various industries, helping customers achieve noise reduction, false detection, sound design improvement, and precise vibration monitoring. As a subsidiary of GFaI e.V., we provide unique hardware, software, and customized customer solutions backed by global support

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High resolution images can be provided upon request.