



QAIros – AI-Powered Testing System

Quality Assurance Using AI and Acoustic Fingerprint Technology



QAIros testing system for brake discs

BENEFITS

- Use of acoustic resonance method (ART)
- 100% testing
- Non-destructive testing (NDT)
- Whole part testing
- Cycle times < 1 s
- Simple set-up and automation
- High reliability with AI approach
- No expert knowledge required

FIELDS OF APPLICATIONS

- Automotive industry
- Household technology
- Industrial technology
- Mechanical engineering

WHAT WE OFFER

- Preliminary study
- Mobile testing system for development or integration in the production
- Configuration and setup of the system
- Individual customised extension

The detection of defects on a test object is one of the main reasons for the importance of process-integrated quality assurance (QA) in the manufacturing. Zero Defects concept (ZD) in the production is often required in critical industries (e.g. automotive or medical technology). Our quality testing system QAIros offers you an automated classification of test objects with the highest reliability. QAIros covers various fields of use and supports testing at different process steps

Our innovative quality assurance system uses the principle of the acoustic fingerprint. It records the response of the test object with conventional measuring microphones and uses it to train an AI model. This model can identify the highly complex correlations between test objects with and without damage and, based on this, make a reliable classification for new components. Compared to the classical approach QAIros does not require expert knowledge. It makes the quality testing easy to adapt and more reliable for different parts.

Options

- Integration into the existing test systems
- Fully automatic, reproducible and highly precise excitation with WaveHit^{MAX}

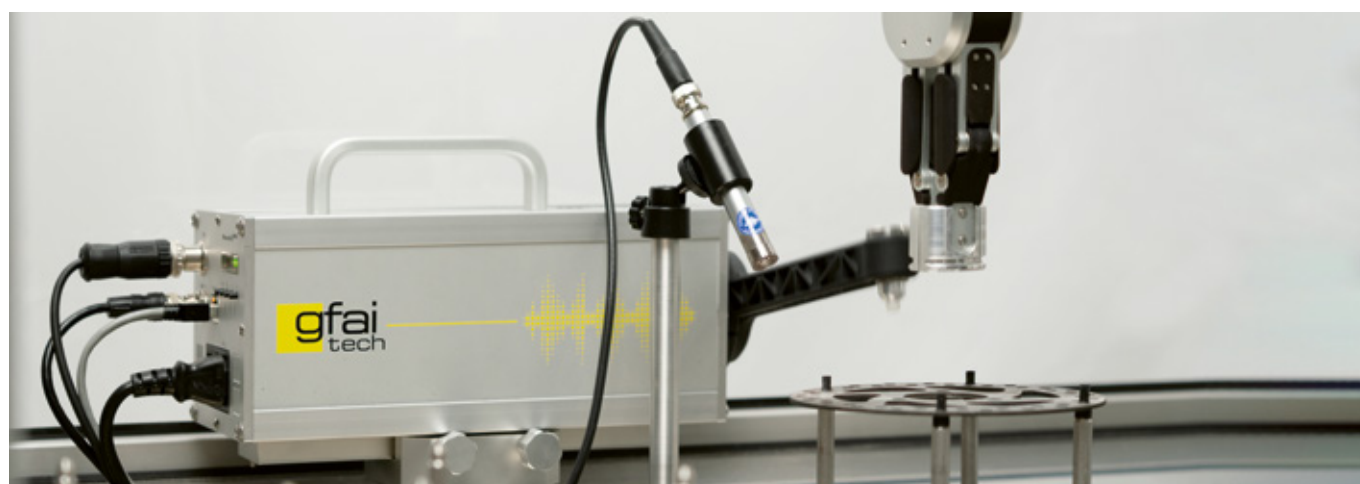


Example of the QAIros software modules



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SOFTWARE DETAILS	
Training mode	Learning of new parts; adjustments to drifts in the production
Operating mode	Reliable classification for your production or testing environment
Cycle times	< 1 s
Project manager	Overview of different parts and batches
Classification model	Reliable and adaptive with the AI approach
Statistics	Well organized overview over last classifications
Data management	Export and synchronization of classification data in the production database
HARDWARE DETAILS	
Excitation	WaveHit ^{MAX} or other comparable excitation
Microphone	Standard ICP broadband free field microphone (e.g. PCB 378C01)
Data recorder	2-Channel ICP data recorder, USB compatible
Mobile	Mobile solutions for development
Stationary	Integration into automatic testing systems
OPTIONS	
Impulse hammer WaveHit^{MAX}	Fully automatic, reproducible and highly precise excitation 20 – 2000 N External control using JSON commands and integrated HTTP server
Integration	Integration of the software in existing testing system
Customized extensions	Database, part tracking, extended data analysis



Example of the QAIros hardware modules

