



Source is a digital, AI-supported acoustic testing software for use in quality assurance (Photo: Porsche AG)

PRESS RELEASE

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Hannover Messe 2023: MHP to present the digital SaaS product Source

AI-supported acoustic testing in production and development

- Digital SaaS (Software-as-a-Service) product Source is part of MHP's new business area 'Industrial Cloud Solutions'
- Digital product supplier: Source is one of the first products from the ICS portfolio
- AI-supported noise recognition for use in quality assurance or component qualification
- Source enables efficiency potentials and cost effects to be achieved, reducing project costs by up to ten per cent
- Profitable: Faster fault detection on test benches in production and development
- Successful: already in use at Porsche's Weissach development centre and Leipzig plant
- Hannover Messe: Source and ICS strategy to be presented for the first time

Ludwigsburg / Hannover – Management and IT consultancy MHP will be presenting its new business area Industrial Cloud Solutions (ICS) for the first time at the Hannover Messe from 17 to 21 April 2023. This will also include its first product Source - an AI-supported acoustic testing software. The ICS strategy at Porsche AG's largest subsidiary (81.8%) mainly involves supplying solutions for the digitalisation of development, production and logistics. The goal is to support companies in creating the production of the future by cross-linking production networks via cloud architectures, thus enabling these networks to operate autonomously to the greatest possible extent.

As Michael Appel, partner at MHP, explains, "We are offering ICS services and digital products because this new business field fits perfectly into our MHP strategy. It also ties in seamlessly with Porsche AG's digital strategy. Industrial Cloud Solutions are part of the large software-based future market in which MHP wants to participate. Source is the first software-as-a-service product to open the way for this participation."

Quality testing on a new level

The solution developed by MHP and Porsche Digital is an AI-supported acoustic testing

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software that will be used on test benches in production and development. The process involves the parts or components to be tested being made to vibrate and generate a characteristic noise pattern. If this deviates from the AI's reference pattern, the system detects a defect and draws attention to it. This way, defects can be detected faster and more reliably than with the usual random checks:

Summarizing, Appel goes on to say: "In car manufacturing, for example, production parts are often checked for quality offline. This costs time and ultimately money. Sounce significantly speeds up the processes for defect detection on the end-of-line (EoL) test stand. With a noise detection accuracy of over 96 percent, ten percent can be saved compared to a conventional test process. This is also directly reflected in the costs, which can be reduced by up to ten percent depending on the project."

What's behind the process is a minimally invasive sensor system on the end-of-line test stand, which generates raw data and the AI can actually be trained on this basis. As a result, quality criteria can be defined. The trained algorithm is uploaded to the cloud and made available there.

Non-destructive material testing using vibration measurement

Sounce is designed as a usage-based model that builds on a software-as-a-service solution. A modular cloud infrastructure enables the system to be deployed very flexible in various application scenarios with usage-based billing options. Three scenarios are particularly predestined for this:

- Testing of a wide variety of workpieces or components for their functionality, which makes it possible to detect anomalies in moving components.
- Non-destructive material testing by means of vibration measurement is also possible.
- Another application for Sounce is acoustic evaluation, a process in which noise is detected by the AI algorithm.

Porsche uses Sounce in assembly

The successful deployment of Sounce at Porsche in Weissach and Leipzig shows that it works in practice: the solution has been used in assembly at these two sites for over two years. During the testing of chassis components, noise anomalies help to detect faults automatically and in real time. In addition, a visual representation of the noises helps in making evaluations and comparisons. This allows Porsche employees in quality testing to track and document the accuracy of noise detection and optimise the algorithm over time.

Simon Weiß, product manager at MHP continues: "Acoustic evaluation for detecting noise automatically on end-of-line test benches is just one scenario. For example, the digital assistant can also be used to test various workpieces or components for functionality. Another possibility is non-destructive material testing using vibration measurement."

Premiere: MHP to present Sounce at the Hannover Messe

Porsche subsidiary MHP will be presenting its new business area ICS and the first product, Sounce, at the Hannover Messe #HM23 for the very first time. Around 4,000 companies from the mechanical engineering, electrical and digital industries, as well as from the energy sector, will be using the world's leading trade fair for industry (from 17th. to 21st. April in Hanover) to showcase their technologies and solutions for a networked and climate-neutral industry. The management and IT consultancy MHP is an AWS Platinum Partner and will be represented in Hall 15, Stand D74.

MHP's new business area - Industrial Cloud Solutions – is based primarily on the comprehensive experience gained from years of IT and management consulting in the automotive and manufacturing sectors. MHP uses the technology and process know-how gained from this experience to offer cloud-based software solutions for engineering, production and supply-chain digitalisation.

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