

Press release

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GREATEST INTEREST IN THE SMALLEST DETAILS

At the Control trade fair, AIT presented *ici:microscopy*, its 3D microscopy process for inline inspection of the finest structures, and met with lively interest.

The period from 09 to 12 May was all about quality assurance. At the Control trade fair in Stuttgart, the international trade fair for quality assurance, 589 exhibitors from 32 countries presented the latest technologies in image processing, sensor technology and measuring and testing technology. The AIT Austrian Institute of Technology, represented by the Center for Vision, Automation & Control, was there in keeping with tradition.

Embedded in the special show "Touchless Metrology" of the Fraunhofer business unit Vision, the experts of the AIT research group High-Performance Vision Systems (HVS) presented their innovative and future-oriented 3D measuring technology for quality inspection in manufacturing processes. The inline 3D microscopy process *ici:microscopy* is suitable for inspecting the finest details at high inspection speeds. In keeping with the spirit of the special show, the experts explained the underlying technology as well as the special features, advantages and limitations of the new measurement option to the entrepreneurs, the trade public and the visitors. With this high-performance testing technology and their professional competence, they generated a lot of interest among the customers.

Quality controls production

"For us, the fair is an important anchor point. As a scientific organisation that conducts research close to industry, it is crucial to understand what the market needs. Here we can exchange ideas with international users, manufacturers, customers and partners and evaluate opportunities for cooperation. In addition, we are now going one step further in our strategic orientation, namely from quality inspection to controlling the production process in order to ensure quality and thus save resources. We want to take a pioneering role here as well" says Markus Clabian, who heads the AIT research group HVS. "The fact that the AIT stands for innovation and is a reliable partner is reflected in the annually increasing visitor frequency. We already had more customer contacts on the second day of the fair than last year. Many companies and experts come to us specifically to keep up to date with our latest technologies. For us, it is a very successful and successful trade fair appearance," adds Petra Thanner. She is an expert in the field of high-performance image processing and is responsible for business development.

Smallest defects with 40 million 3D pixels per second

The innovation *ici:microscopy* presented by the AIT experts is an inline 3D microscopy method based on the Inline Computational Imaging (ICI) algorithms developed at AIT. The microscope is suitable for fast inspection tasks with extremely high resolutions (up to 700 nm). It uses the natural transport movement of the object

for simultaneous 2D and 3D surface detection under different viewing and illumination directions and in this way mimics human inspection such as tilting the object and changing the viewing perspective. The finest changes in the surface are thus detected and evaluated with intelligent algorithms. "In recent years, new inline techniques for microscopic 3D imaging have attracted interest from both academia and industry. Despite numerous developments in this field, there are still only a few inline-capable solutions that meet the manufacturing industry's requirements for accuracy and process reliability, while also being suitable for use with flexible batch sizes and high production speeds. With *ici:microscopy*, we are closing this gap," Lukas Traxler explains the motivation behind the development.

International industry get-together

This year's 35th edition of the Control trade fair attracted a total of 21,310 visitors. With the special show "Touchless Metrology", the Fraunhofer Vision Business Unit would like to contribute to broadening the acceptance of contactless metrology.

About the AIT Center for Vision, Automation & Control

The AIT Austrian Institute of Technology, Austria's largest non-university research institution. At European level, it plays a key role as the research and technology institution that deals with the central infrastructure issues of the future.

The Center for Vision, Automation & Control (VAC) is one of a total of 7 research units at AIT. It is dedicated to industrial automation and digitalisation and uses the opportunities they offer to initiate and drive innovations for industry. The centre conducts research in the areas of image processing, automation and control, as well as the use of artificial intelligence methods. The centre covers the entire automation chain, starting with the acquisition of information by intelligent sensor systems and ending with the KI-based decision-making of autonomous systems. The research work at the centre results in innovations to increase the flexibility, adaptivity and resilience of companies while simultaneously improving energy and resource efficiency and minimising production costs.

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