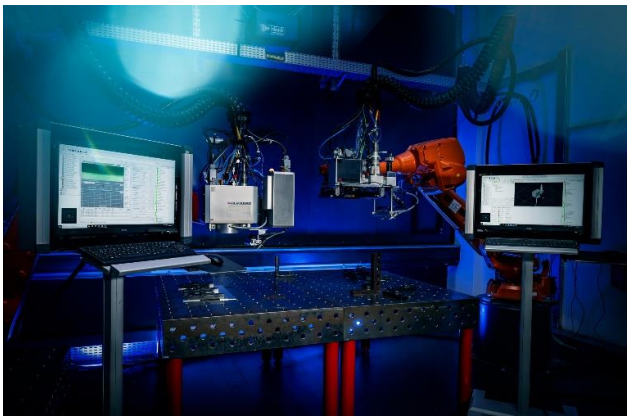
PRESS RELEASE

Vision-on-the-fly and a new OCT Generation Optimize the Laser Welding Process

New products from the laser welding expert at the international laser trade fair in Munich

Garching, Germany, June 23, 2025 – Blackbird Robotersysteme GmbH, the leading provider of system solutions for remote laser welding, is presenting several new products at the Laser World of Photonics trade fair in Munich, particularly in the field of process sensors. The new 'Vision-on-the-fly' solution allows adjustments of welding parameters during the welding process, thus enabling optimal control and monitoring of machine and welding parameters in real time. The new OCT generation for process monitoring in pre-, in-, and post-process areas will be shown as a premiere. Two OCT solution variants, measuring methods based on optical coherence tomography (OCT), are especially suitable for demanding applications, such as electromobility or challenging welding geometries.



Numerous industrial applications require application-specific laser welding components and scalable system configurations. Furthermore, mass production, such as battery manufacturing, requires the highest cycle times while maintaining demanding quality standards. Blackbird's new parameterizable Vision-on-the-fly interface is used to fine-tune welding parameters during ongoing processing, even in a continuous shift. The new solution not only guarantees control and monitoring of all machine and welding parameters, but is also open to the integration of camera-, photodiode-, or OCT-based quality control. Users gain additional flexibility for cost-effective production in the best possible quality.

Functionality has been successfully tested and confirmed in a pilot project with thyssenkrupp Automation Engineering in the 'High-Speed Laser' (HSL) machine system. The machine design used in the pilot project enables smooth processing of any sized workpieces in vertical or horizontal joining directions.

The suitable OCT for every laser welding task

Thanks to the intensive collaboration with its sister company Lessmüller Lasertechnik GmbH, Blackbird is presenting a new generation of its OCT solution package this year, with two different application variants. The combination of an intelli*SCAN* FT scanner

with xKITE OCT system offers a compact solution for mobile 2D applications, perfectly suited to the requirements of electromobility and battery production.
The proven combination of a 3D scanner with the xHAWK OCT solution offers maximum dynamics and can be used flexibly with single- and multi-mode lasers. Both solution packages have a 250 kHz measurement rate, can be controlled via ScanControlUnit (SCU) or ScannerControlBox (SCB) scanner controllers, and easily parameterized using Blackbird's user-friendly RSU application software.

When developing the systems, Blackbird paid special attention to their robustness for use in harsh production environments. These solutions convince every day with their performance and smooth hardware interaction with the new software version.

Printable images are available at
https://www.blackbird-robotics.de/en/company/news-press/picture-library

About Blackbird Robotics:
Blackbird Robotersysteme GmbH manufactures system solutions for remote laser welding with scan heads. The mirror-based beam deflection units can be integrated seamlessly into industrial production systems – especially robot cells. Our core competencies include the development of powerful control technology, intuitive user software and supplemental process monitoring solutions.
In combination with 2D and 3D scan systems from our sister company SCANLAB, Blackbird offers a wide spectrum of highly efficient, pre-integrated solutions for series production in automotive manufacturing, electric mobility and many other industrial sectors worldwide for machine and plant construction companies.

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