

New version of MVTec HALCON available from May 20, 2026

New Version of MVTec HALCON Focuses on Speed and Performance of AI and Rule-Based Methods

- **New version HALCON 26.05 to be released on May 20, 2026**
- **HALCON 26.05 offers significant speed improvements for AI and rule-based methods**
- **A new preview version of the IDE HDevelopEVO is also available as part of the HALCON release**

Munich, April 14, 2026 – MVTec Software GmbH will release the new version of its standard software, MVTec HALCON, for machine vision on May 20, 2026. HALCON users benefit from the regular release cycle through the continuous integration of the latest machine vision technologies, as well as the ongoing optimization of existing features. “The focus of the new HALCON release is speed. Our goal is for machine vision applications across all industrial sectors, including demanding automation scenarios, to operate not only robustly and precisely but also at exceptional speed. For HALCON 26.05, we have improved both the speed and performance of deep learning methods and rule-based approaches,” explains Jan Gärtner, Product Manager HALCON at MVTec.

For example, the new version includes a newly integrated rectification function in HALCON. This enables Data Matrix codes on curved or deformed surfaces to be read quickly and reliably. In addition, automated contour optimization is now available for shape matching. The optimization removes unstable or misleading contours based on sample images, making matching faster, more stable, and more accurate. MVTec is also expanding functionality in the area of AI-based object detection. The new generation of deep learning-based object detection in HALCON 26.05 enables significantly faster inference while maintaining high detection accuracy. Detection remains reliable even for small objects and strongly varying object sizes. Integrated data augmentation techniques also increase robustness against lighting changes, rotations, and occlusions.

As part of HALCON 26.05, a new preview version of MVTec's integrated development environment, HDevelopEVO, is also available. With the new release, it is now also possible to integrate scripts created in HDevelopEVO into your own applications using the .NET interface. In addition, multimodal LLM support has been expanded to include visual prompting. Developers can now incorporate image data directly into prompts for the AI Assistant.

Automatic contour optimization for Shape Matching: Reflections, shadows, and texture often introduce unstable contours that reduce matching reliability and require manual cleanup. The new automatic contour optimization in HALCON 26.05 removes these unreliable contours based on sample images, making matching faster, more stable, and more accurate — especially for reflective or textured objects in demanding automation scenarios.

Data Matrix rectification: Curved or deformed surfaces distort code geometry and reduce reading reliability. The new rectification capability in HALCON 26.05 compensates for these distortions before decoding and integrates optionally into existing workflows, with typical applications including cylindrical components, curved packaging, and flexible materials.

Enhanced data augmentation: A new operator-based approach in HALCON 26.05 replaces procedure-based augmentation and integrates directly into deep-learning pipelines. By defining flexible augmentation pipelines programmatically, developers improve model robustness and generalization and reduce reliance on large training datasets.

Next-generation AI object detection: A new generation of deep-learning-based object detection in HALCON 26.05 delivers up to 5x faster inference while maintaining high detection accuracy. It performs reliably even for small objects and varying object sizes, and integrated data augmentation increases robustness against illumination changes, rotation, and occlusion.

About MVTec Software GmbH

MVTec is a leading manufacturer of standard software for machine vision. MVTec products are used in a wide range of industries, such as semiconductor and electronics manufacturing, battery production, agriculture and food, as well as logistics. They enable applications like surface inspection, optical quality control, robot guidance, identification, measurement, classification, and more. By providing modern technologies such as 3D vision, deep learning, and embedded vision, software by MVTec also enables new automation solutions for the Industrial Internet of Things aka Industry 4.0. With locations in Germany, the USA, France, Benelux, Spain, China, Taiwan, and South Korea, as well as an established network of international distributors, MVTec is represented in more than 35 countries worldwide. www.mvtec.com

About MVTec HALCON

MVTec HALCON is the comprehensive standard software for machine vision with an integrated development environment (HDevelop) that is used worldwide. It enables cost savings and improved time to market. HALCON's flexible architecture facilitates rapid development of any kind of machine vision application. MVTec HALCON

Press release



provides outstanding performance and comprehensive support of multi-core platforms, special instruction sets like AVX2 and NEON, as well as GPU acceleration. It serves all industries, with a library used in hundreds of thousands of installations in all areas of imaging like blob analysis, morphology, matching, measuring, and identification. The software provides the latest state-of-the-art machine vision technologies, such as comprehensive 3D vision and deep learning algorithms.

The software secures your investment by supporting a wide range of operating systems and providing interfaces to hundreds of industrial cameras and frame grabbers, in particular by supporting standards like GenICam, GigE Vision, and USB3 Vision. By default, MVTec HALCON runs on Arm®-based embedded vision platforms. It can also be ported to various target platforms. Thus, the software is ideally suited for the use within embedded and customized systems.

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