

## New 3D Vision Technologies at HANNOVER MESSE 2009

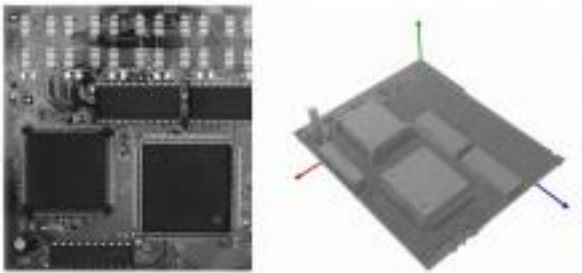
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Press release from: [MVTec Software GmbH](#)



The 3D shape of an object is determined by measuring the profile of the object along a projected line of light.



By sheet of light measurement, an elevation model can be determined. Primarily, this method is suitable for objects without texture, e.g. electronic components.

3D vision becomes more and more important, especially for robotics. So far, the machine vision software HALCON by MVTec (Munich, Germany) already provided many 3D technologies. At the HANNOVER MESSE 2009, MVTec Software GmbH will now showcase further 3D vision technologies of the recently published version 9.0:

### Methods for Perspective Matching:

The descriptor-based matching is a revolutionary new matching technology. This method is able to find perspective distorted objects. It is based on the detection of interest points where gray values are clearly differentiated from neighboring areas (brightness, curvature, corners, spots).

The perspective, deformable matching is also able to match perspective distorted objects. In contrast to descriptor-based matching, the perspective, deformable matching is edge-based (like HALCON's shape-based matching) and thus can best be used with objects with clearly distinguishable edges.

### Multigrid Stereo:

During stereo processing often the problem occurs that complete areas do not have any texture. To close this information gap, MVTec implemented the multigrid stereo that eliminates the disadvantages of the conventional stereo method. After processing by multigrid stereo, the areas without information appear as proper edges and structures. Thus, multigrid stereo can bridge texture gaps in stereo images and delivers highly accurate results.

### Sheet-of-Light Measurement:

Furthermore, HALCON 9.0 provides new operators for sheet-of-light measurement, which extract projected laser lines and thus generate a 2 1/2 D model.

#### 3D Camera Calibration:

HALCON disposes of a unique 3D camera calibration. By this method, the internal and external camera parameters and pose are determined and pixel coordinates can be converted into world coordinates. Thus, robot control becomes easier. In HALCON 9.0, the underlying camera model for 3D calibration was enhanced to also eliminate complex distortions as well as alignment errors of the lenses. Thus, the accuracy of results of 3D algorithms, e.g., 3D matching or stereo, gets enhanced significantly.

Conclusion: HALCON 9.0 provides comprehensive solutions for all demanding 3D vision challenges.

More information: [www.halcon.com](http://www.halcon.com)

More press releases: [www.mvtec.com/press/](http://www.mvtec.com/press/)

MVTec at the HANNOVER MESSE, 2009: Hall 17, Booth C34

#### About MVTec

MVTec is a leading manufacturer of standard software for machine vision. MVTec products are used in all demanding areas of imaging: Semi-conductor industry, web inspection, quality control and inspection applications in general, medicine, and surveillance. MVTec has more than 30 established distributors, located throughout North- and South-America, Asia, Australia, and Europe. In addition, MVTec, LLC works out of Boston, MA (USA), to better attend the North-American market since 2007. For more information refer to [www.mvtec.com](http://www.mvtec.com)

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