

Visometry introduces Twyn: Augmented Reality based Quality Inspection using Digital Twins.

Before components from suppliers get into production, incoming goods control must check and ensure the components' quality. With Twyn, the German deep tech start-up Visometry introduces a novel augmented reality based mobile inspection system to check components in real time. Twyn's first version is now being published, in time with Hanover Messe.



Product image of Twyn: Augmented reality superimposes the digital twin on the component for an as-is/as-planned comparison for quality assurance of incoming goods.

(Darmstadt, Germany) Visometry, the Germany based start-up known for its VisionLib (Augmented Reality Tracking Engine) introduces its second product called Twyn. This novel mobile inspection system uses augmented reality for a digitalized and highly efficient quality inspection of incoming parts and assemblies. The turnkey solution enables to compare real objects against their CAD specification. Localized through the tablet's camera, Twyn automatically registers and tracks inspected objects to compare the as-is situation against the as-planned digital twin, using precise augmented reality overlays.

These benefits prove themselves valuable particularly at the beginning of the production process, because downtimes can be avoided by finding errors at an early stage. Using Twyn, all parts, not just samples, can be backed up to reduce scrap, rework and costly recalls.

With its innovative visualization tools and precise auto-alignment of superimposed digital twin and physical object, Twyn finds deviations faster than ever before and allows to check more parts in shorter time. “This reduces the high risk for consecutive errors and follow-up costs in production or for repair tasks in the field”, says Visometry co-founder and COO Dr. Harald Wuest. With an integrated reporting process, defects are captured and tracked digitally from the beginning. The digital by design workflow enables a faster interaction of different business units to quickly identify sources of errors and supports them to consider improvements sooner in the product development cycle.

Since almost a year now, Twyn is already in regular use by pilot customers. One of them is agricultural machinery manufacturer Krone. With highly complex products and numerous configuration variants, Krone uses Twyn to improve quality inspection and to reduce complexities of the inspection process. Being able to find errors more quickly while increasing the inspection frequency, Krone avoids down times more often and speeds up iteration cycles between assembly and construction. “But what really impressed us was that Twyn enables us to perform checks unrealizable so far: Because Twyn is all mobile running on a tablet, our engineers can now bring the inspection to (even very big) assemblies, not the other way around.” says Andreas Audick, quality engineer at Krone. Parts do not have to be transported, they can be inspected right on site at, practically speaking, any time in the production cycle: incoming goods reception, end of line, or for quality documentation before the shipment.

For Visometry it was just an obvious next step to go deeper into the direction of quality assurance. Its core augmented reality tracking SDK VisionLib allows to align CAD to captured counterparts fast and accurately, which makes the enterprise-grade object tracking a cornerstone for industry 4.0 and digital twin technologies. According to Wuest, many companies still struggle putting AR to regular use, especially because of the laborious preparation effort of AR systems. “With Twyn we have simplified and eased the process to a minimum of data preparation, so users can focus on the inspection and engineering tasks itself, without becoming at first an IT or AR professional”, explains Wuest further.

At Visometry, however, this is just the next step towards Industry 4.0. With its background of more than 10 years in Computer Vision and mobile computing, Visometry is currently stretching the limits of its augmented reality tracking. The aim is to completely automate the inspection process so that Twyn checks for the existence of parts, whether the right parts are assembled, or whether position and orientation are accurate. “We have first pilots of this automated inspection running with promising feedback from pilot users.” says Wuest. While such technology brings a novelty in regards to comparable mobile inspection systems, a trial version of Twyn’s first release is now publicly available. Interested customers can now contact the company’s sales team to test Twyn for their use cases at visionlib.com/twyn.

About Visometry

Visometry is known worldwide for its VisionLib Engine, which is the basis for a wide range of augmented reality applications that require high performance object recognition and precise tracking. Its solutions are essential cornerstones for the digitalization of processes in the manufacturing industry. Being a young start-up and Fraunhofer spin-off, the team combines an innovative spirit with many years of R&D experience and deep know-how for augmented reality, computer vision technologies and their application in the industry.

Contact

Dr. Uli Bockholt
uli.bockholt@visometry.com