



Augmented reality for the construction industry: Design, order, repair, train

AR reality check at Fritzmeier CABS

Munich, bauma 2019. New technologies are relevant only if they address user needs. In cooperation with Austrian AR specialist Hololight, at bauma 2019 Fritzmeier CABS is showing that augmented reality is quite relevant for the construction industry in many areas. "From development to parts ordering to repair instructions, the possibilities are many and we're showing how they work", explains Fritz Schadeck, Vice President Marketing & Sales at Fritzmeier CABS. In addition, the company has been working on BIM applications together with the Technical University of Munich, machine control specialist VEMCON and automation company MTS Maschinentechnik Schrode. "At bauma we're showing how AR can be used as a training and demonstration tool for machine operators on construction sites. For this development, Fritzmeier and its partners took first place in the bauma Innovation Awards in the Science and Research category.

Product development with AR configurator

AR can be used to simplify development processes far upstream of series production, by visualizing different variants, colour combinations or technical options, realistically and economically. At bauma a sample cab is used show how it all works. The customer can have the AR show various components like headlights, mirrors and doors, and choose from different designs, colours and sizes. Once the desired configuration is in place, a digital image can be made and further refined as desired.

Ordering parts in daily operations

When a component is damaged, a new one is needed ASAP. But ordering and getting one can take a while, depending on the IT and logistics infrastructure. The approach developed by Fritzmeier CABS and Hololight takes an entirely new direction. The "Gaze Over" function lets the user pick out the part; this is demonstrated at bauma with a windscreen. The function opens an information panel with product and order information, inventory number and price. The customer can place an order directly and receive confirmation by e-mail. "We don't think it can get much simpler than this," says Alexandra Herrmann, who is responsible for Fritzmeier CABS Marketing and Communication. "With this demonstrator we are showing where this vision can lead."

Easy repair with AR instructions

Thumbing through manuals could also soon become a thing of the past. With augmented reality, repair instructions can be shown right on the respective component. Animations, information panels, and where necessary spoken directions also make repair instructions easier to understand. "To quickly show our trade fair visitors how it works, for bauma we've chosen a component that is installed in just four or five steps," explains Herrmann. "But the technique can also be used for complex repairs."

Using BIM data on-site and for training

The use of BIM data bundled with sensor data from machines, supply line plans and hazard zones, shown over the real site as 3D models in mixed reality data glasses, brings many advantages. Everyone involved has access to all relevant construction site information at a glance, without having to consult multiple plans. This kind of fast and easy information access enables significant time savings and more efficient working. A welcome side effect is the enhanced safety and precision, for example through the correct observance of safety zones.

Predictive planning and avoidance of errors, such as using the wrong access road and causing traffic jams and long wait times for construction vehicles, reduce unforeseen costs for machine downtime and machine use in general. New workers get up to speed on site procedures much faster, allowing more efficient resource planning. In addition, together with Munich Technical University, Hololight, VEMCON and MTS Maschinentechnik Schrode, Fritzmeier CABS is showing a solution that uses AR as an on-site machine operator training tool. Fritzmeier CABS also sees possible uses in planning, training assistance and user support.

Company profile

Fritzmeier CABS is a leading system supplier for manufacturers of off-highway and utility vehicles, and makes complete modules, cladding components and system modules for high-tech cabs. The company's development and production operations are aligned along the central benefits of safety, ergonomics, comfort, economy and integration capability. To serve its worldwide customers effectively, Fritzmeier CABS has multiple manufacturing locations in Europe, a joint venture in India and cooperation partners around the globe.

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