Construction Site 4.0 with holography technology
From augmented reality as a development tool to BIM in the cab.

Munich, January 2019 – New technologies aren't just flashy, they can help make processes faster, more economical and more transparent. Bauen 4.0 is on everyone's lips, the community strives to create the conditions to bring digitization to the construction site. The Chair of Materials Handling, Material Flow, and Logistics of the Technical University of Munich is working with Holo-Light, MTS, VEMCON and Fritzmeier Cabs on various augmented reality solutions. The goal is to give the driver the benefits of digitization and to take them into this new world of data and integrate them. For this purpose, the project "Driver guidance system 4.0" was created by the mentioned developer consortium. A sub-project of this has been nominated for the bauma Innovation Award.

"An exciting year in 2019 awaits us around the topic of Bauen 4.0 at the federal level, which was initiated by the VDMA. So far, it has not been possible to tackle the digitization of the construction site with VDMA, VDBUM and HDB. Also the cooperation of the big ones. The collaboration of the big associations towards standardizing construction machine data in this scope is also new and most welcome. It meshes with our initiative to include the machine operator in the action, by means of data glasses that use futuristic holography to show the requisite information about the construction process and the machine," explains Stephan Kessler, Academic Director of the Chair of Materials Handling, Material Flow, and Logistics at the Technical University of Munich.

Predictive planning and avoidance of errors such as using the wrong access road, leading to traffic jams and long wait times for construction vehicles, **reduce unforeseen costs** for machine downtime and machine operation in general. Only the machines actually needed are on site and there is no unnecessary excavation, since the mixed reality data glasses show an exact model of the site. New workers become familiarized with site procedures much faster, allowing **more efficient resource planning**. Individual objectives can also be visualized quickly by AR and compared with the actual status.

BIM data shown as 3D models over the real site is bundled with sensor data from machines, supply line plans and hazard zones in a single application. This offers **benefits for contractors, OEMs, architects, designers** and most of all for **machine operators.** All these individuals **have 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. All processes and changes on the construction site are trackable and transparent. A welcome side effect is the added safety and precision, for example through the correct observance of safety zones.

This research project has been nominated for the final round of the bauma Innovation Award in the Science and Research category.

Press inquiries:

Mrs. Sandra Müller / TU München
Phone: +49 89 289 15924

E-mail: mueller.sandra@tum.de