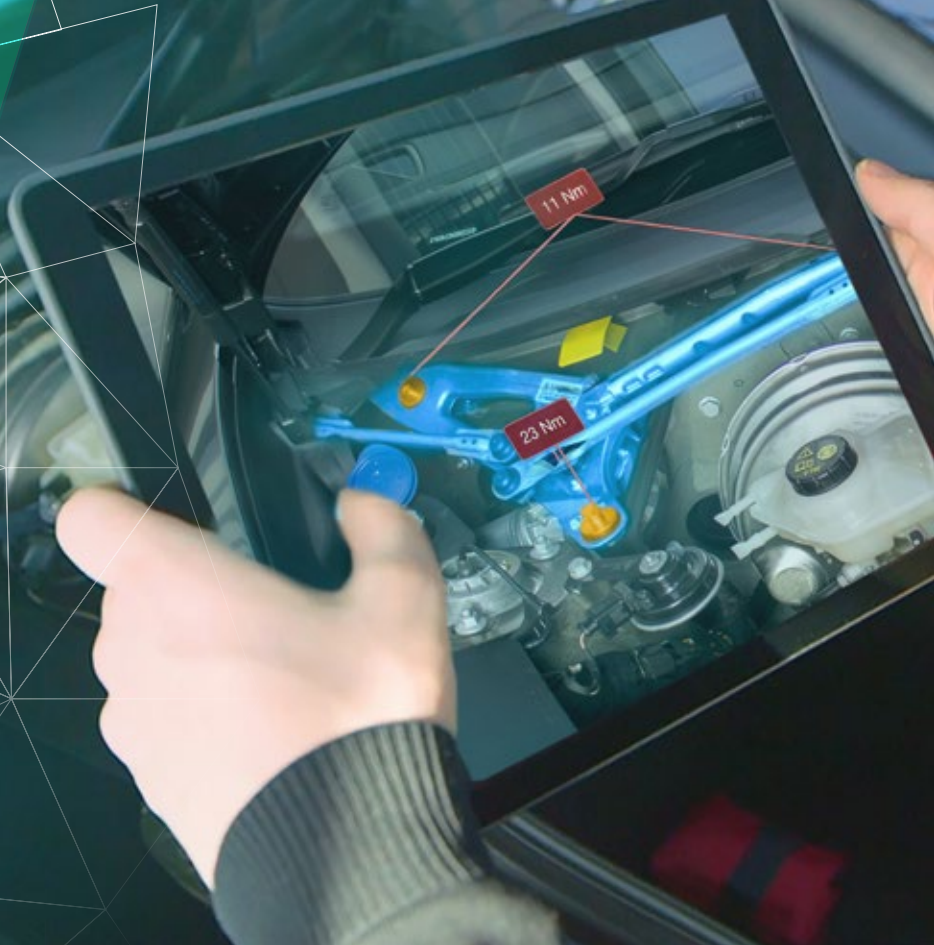


# Augmented Reality

for Maintenance  
and Service Support



# Augmented Reality for Maintenance and Service Support

Growing competitive constraints in industrial production result in a rising product complexity, in a large amount of product variants and in abbreviated development cycles. This complexity interferes with the maintenance strategies that have to support error recognition, repair, and overhaul with a maximum efficiency.

The required knowledge density can be supported by digitalization, if high-efficient man-machine interfaces are guiding service technicians in awareness of complex situations through difficult procedures. Thereby, the mobility of a service technician, that often has to move in large industrial areas, has to be assured. In this context, Augmented Reality (AR) can play a major role since the service technician is using his smartphone/tablet to assess information about the maintenance tasks.

Hereby, he captures the machines to be operated with his smartphone camera. The smartphone camera recognizes on the one hand the captured machine parts, on the other hand the pose (position and orientation) of the smartphone camera in relation to the captured objects can be tracked in real-time using advanced computer vision technologies.

Core technology thereby is a model-based 3D-tracking technology that registers CAD-models within the camera images and provides a stable and robust registration of the virtual content with its associated real objects and thus is intended in particular for industrial applications. Illustrating visualizations (e.g. 3D-animations, videos, HTML-sites etc.) can be then superimposed accurately to the machines to guide the technician through complex assembly procedures.

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