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Willi Ehrstein

Adaptation of a HoloLens into a Remote Maintenance System.

ABSTRACT - Masterthesis

Remote maintenance system of the future is a new way to make troubleshooting by large distances. A mobile system which shows disturbances are not solved in most cases without a specialist. This one is often not close by. Depending on the distance, it takes a lot of time and money to get a professional support there. The solution is the use of HoloLens (holographic data glasses). For this purpose a satellite connection is established, which connects a specialist with an operator of a system (e.g. on a ship). The specialist supports the operator on site for maintenance and troubleshooting. The HoloLens is designed to enable video, voice and other data transmission. Microsoft HoloLens is the first fully untethered Augmented Reality device which opens possibilities for new application which were not possible before. This Masterthesis presents a solution how Microsoft's HoloLens can be integrated into an existing remote maintenance system. In addition, it is checked to what extent such a transmission with a limited bandwidth of 256 kbit/s is possible. Programs are written exclusively in the C-Sharp language, which enable the transmission of a video stream from the HoloLens to the remote station, the integration of marking possibilities and the transmission of inputs into the field of view of the HoloLens. The goal is an interactive guided tour for visual support of the operator on site.