

HoloLens receive another out of this world assignment

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(<https://mspoweruser.com/wp-content/uploads/2017/04/hololens-in-space.jpg>)

Finnish research company VTT Technical Research Centre has developed an augmented reality tool using the HoloLens which is designed to help space station astronauts be more precise and efficient.

The two-year EdcAR project (Engineering data in cross-platform AR) led by VTT developed a solution to the challenges involved in maintenance and the provision of work instructions, which have been an issue for more than a decade. Since maintenance and other work tasks in space are critical, they must be carried out without errors and at the right time. Preparing for these requires in-depth practising, which involves coordinating the activities of various experts. Since astronauts' time is extremely valuable, their tasks and maintenance instructions must be unambiguous.

The new EdcAR project, based on the Microsoft HoloLens, makes the invisible visible by enabling the visualisation of telemetry data from equipment and other systems on board the space station, such as fault diagnostics, the latest maintenance data, life cycle, radiation, pressure or temperature – both in space and on the ground.

It also guides astronauts through tasks by displaying detailed visual instructions on the astronauts' AR glasses, guiding them step by step to perform the necessary procedures in the right order, such as "now press this button", "then turn the lever (B)". The system is expected to reduce mistakes, speed up the tasks and improve the clarity of the instruction by the use of AR technology.

"The AR system that we developed runs on the Microsoft HoloLens platform. It supports the astronauts' work in a completely new way by displaying key telemetry data through an IoT (Internet-of-Things) interface," explains Project Manager Kaj Helin of VTT.

In the future, it is envisaged that astronauts will be able to use this tool to perform maintenance tasks and real-time equipment monitoring in the demanding conditions of space. The first practical tests performed in the ISS-Columbus training mock-up located in the ESA's on-ground European Astronaut Centre (EAC) in Cologne, Germany, produced excellent results.

"This is very impressive! We are exploring possibilities for an EdcAR follow on," says David Martinez Oliveira, Technical Officer, ESA.

The two-year project was funded by ESA. The project partners are VTT Technical Research Centre of Finland, Thales Alenia Space, Italy and France, and ICCS (Institute of Communications and Computer Systems), Greece.

See a video demonstrating the technology below.

Augmented Reality operations in ISS-Columbus mock-up with HoloLens



SOURCE VTT RESEARCH (<http://www.vttresearch.com/media/news/augmented-reality-increases-maintenance-reliability-at-a-space-station>)

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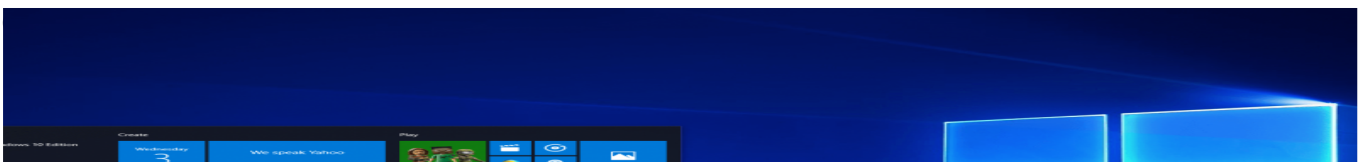
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I personally think that MS should be working with companies/organizations to build in HoloLens into helmets. The scripted replacement and repair when the expertise is not available will be invaluable. If MS pushes, they can make HoloLens and their Mixed Reality technology the standard for the next generation.

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