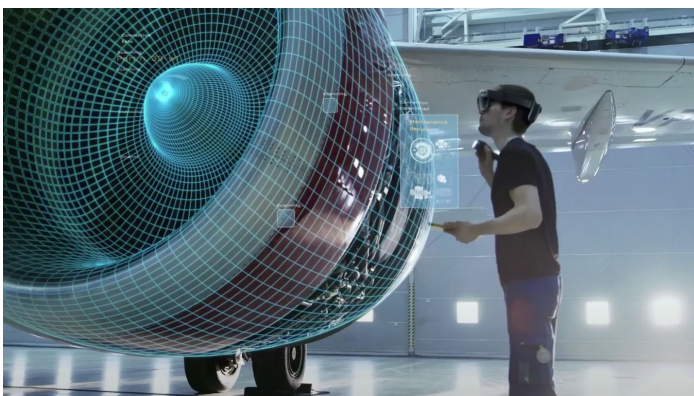# Enhancing Mixed Reality hardware's performance with artificial intelligence

Communication is key

This solution provided by OVA is aimed at reducing the required time for operators on how to learn, localize and repair defects without the need for human assistance. This Augmented Reality tool developed in a joint effort with aerospace manufacturers leaders, has already helped technical repair staff to optimize their supply chain processes and reports so far have shown a 5 hour gain in productivity activity. In the first iteration of this solution developed for a North American plane assembler, we were able to help them overcome major communication issues between departments and frequent mix-ups between work orders and components identification. Equipping their workers with Hololens has greatly improved their productivity and reduced human induced errors or miscommunication, but there was still one major hardware flaw to this system that we had to address. Enters our AI research and development.
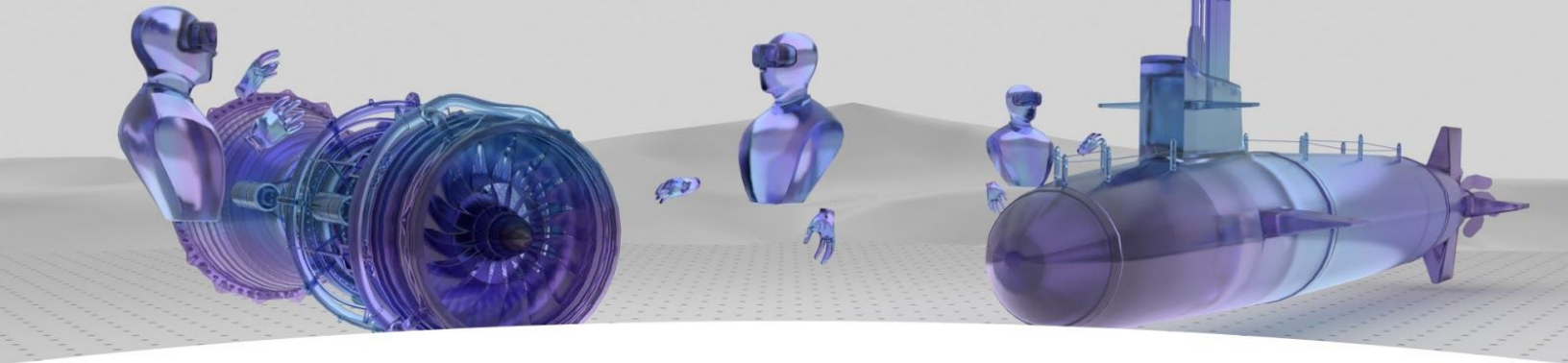

Making the best, better

Every single object has its own "cloud point signature", meaning that after being scanned, digitized and stored into a database, an object, a plane's component is considered to be unique just like somebody's face is unique. As a matter of fact, we've been working with top AI labs in Montreal to develop our proprietary identification algorithms that not only improve the hardware's tracking and anchoring stability on objects, but also allow for far more precise parts identification, that can then be matched with the appropriate repair task.

And with this capability, we were just getting started. Phase 1 of this project was to make sure that the hardware can support this kind of additional processing power as well as proving definitive ROI that using this type of technology can enhance employees effectiveness and ultimately, their productivity.

Tribal knowledge can be lost

The second most important aspect of this product is its ability to simplify the transfer from intangible knowledge (also known as tribal knowledge) to new employees. In fact, our aging workforce unfortunately leaves with a lot of information and processes that are hard or impossible to be laid down on paper, resulting in a decrease of efficiency from generation to generation.

If a picture is worth a thousand words, then the power of the digital twins if worth complete training sessions. Adding to the parts identification capabilities and upgraded anchoring right from the hardware, adding an animated digital twin on an existing piece of machinery, an engine component and anything in between can radically improve the way we train and onboard new employees.
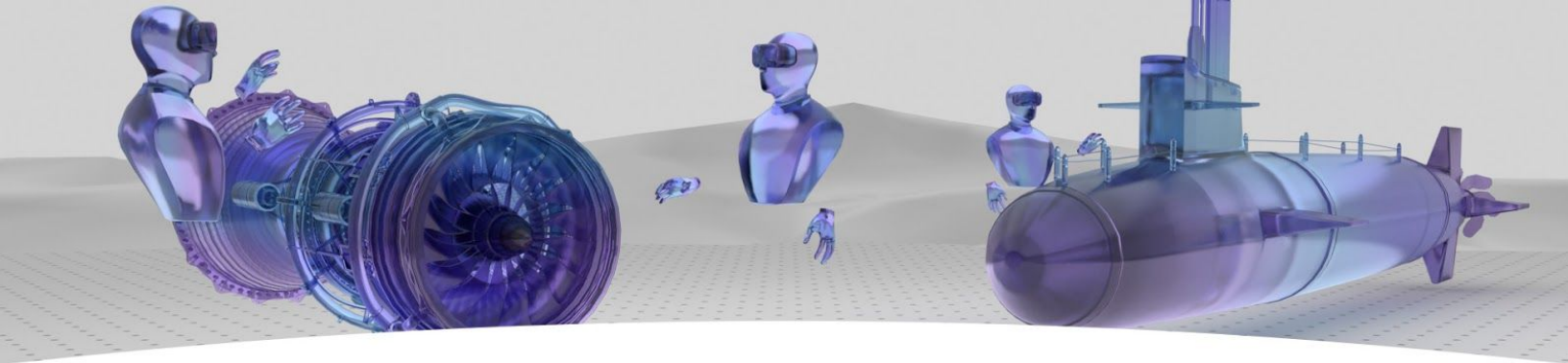

As shown in this picture, the operator can have a very clear view of what type of repairs have to be done on a fuselage panel, as well as how to proceed to this task. Color coded dots show the state of the work to be done, as well as it's precise location thanks to improved anchoring from our identification algorithms.

This type of interface is just one of many we can integrate as well as complying with your company's processes and visual standards.

Leave the guesswork and the stopped production lines behind and step into the future with hands-on and visual training performed through mixed reality.

A few of our major accounts

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73729903 - Educational Computer Software

73729902 - Business Oriented Software

33331800 - Other Commercial and Service

North American Industry Classification System (NAICS)

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541514 - Computer Systems Design and Related Services

Our R&D Partners

- Laval University
- Concordia University
- Reading University
- Nara University
- CIMMI Research Center
- CDRIN Research Center

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