

CASE STUDY

VOLKSWAGEN SELECTS MOVERIO FOR VIRTUAL TRAINING SESSIONS



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EPSON GLASSES PROVIDE INCREASED TRANSPARENCY IN INTERACTIVE

ARVIDA, a collaboration of 21 project partners from industry, SMEs and science, set out to test and employ virtual technologies to overcome the drawbacks associated with traditional training.

Fulfilling training and maintenance needs

Volkswagen's training department requires a high degree of flexibility, because of the breadth of individual skills, knowledge and requirements of the trainees. The maintenance department is therefore characterised by a different set of processes and specific content. For example, the planning requirements - identifying the problem, determining work processes, selecting tools and carrying out procedures - are greater in these departments than in pure production-line environments. Both service staff and trainees require many different types of information. Previously, if the information was not easily available, it took time to obtain from other staff or reference manuals.

The need for flexibility

One disadvantage of traditional training courses is that the students are taught in a uniform manner, with typically static content. A classic example of this is the training manual, which by its very nature cannot react to the individual needs of the trainee. Instead, the student needs to plough through the material, skipping any pages with familiar content in search of relevant new content. Additionally, this method of learning does not allow for progress or performance to be monitored. Although an improvement on traditional classroom learning, the delivery of training content via e-learning is still limited in its flexibility.

Smart use of smart glasses

The custom-made augmented reality system now in use has significantly improved the delivery of training. Information is superimposed on the field of view of the employee, using a pair of Epson's Moverio smart glasses. Initially, Moverio BT-100 glasses were introduced as head-mounted displays (HMDs) for the trainees, along with a tablet PC for the trainer. Via the tablet, which also reproduces the trainee's field of view, the trainer can select static content, such as illustrations. These are then shown on the trainee's display. Although this content is still not interactive, it can be selected in a much more targeted manner. In

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Key Facts

- Users can view digital information simultaneously, alongside or over, the real environment

The semi-transparent lenses and excellent display quality make Epson's Moverio platform ideal for implementing efficient and innovative staff training sessions.

Dr Johannes Tümler

Researcher



Moverio glasses as an integral part of a virtual, interoperable network environment

For more information,

addition, the speed at which content was presented could be changed when required and could also be continuously displayed in the trainee's field of vision, in order to minimise any distraction from the task at hand.

The second generation of Moverio, the BT-200, was perfectly suited to replace the initially static illustrations with genuine augmented reality content, thanks to its higher image quality, semi-transparent lenses and more comfortable fit. The smart glasses are used to overlay complex content onto real-life scenarios, making it easy for trainees to understand. Additionally, information about the object being examined can be emphasised with virtual arrows and other superimposed images, while not compromising the trainee's angle of view. Committed to continuous innovation and improvement, the upcoming Moverio Pro BT-2000 with its high end features and renewed design will represent yet another platform over and above this. This will allow ARVIDA to further enhance and develop the augmented reality software.

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Demonstrating clear results

The use of augmented reality technology allows training content to be communicated in a much more efficient way. Suitable for employees across all departments and of all abilities, the use of well-engineered augmented reality training offers countless opportunities.

A total of 76 employees were trained using these methods between June and July 2014 - both with and without multimedia glasses - and attendees were tested both before and after the sessions.

Training sessions with the multimedia glasses were deemed highly successful. Images were easily recognisable and the trainers also benefitted from the ability to see the trainees' content on the tablet and provide targeted assistance.

The application is already proving suitable for practical use in mass-production environments, particularly in situations where there is a requirement for complex situation-specific information.

Dr Johannes Tümler, Researcher at Volkswagen AG's Group Research Centre explains: "Thanks to progress in the development of high-performance multimedia glasses, we can now test and pilot innovative, helpful support systems for industrial and business processes. A basic element of all these systems is the provision of specific, comprehensive information in multiple forms.

Displaying this information directly in the trainee's field of view, using multimedia glasses, enables focussed work without distraction. Moverio's semi-transparent lenses help to enable such systems as the user can view digital information simultaneously, alongside or over, the real environment. This, combined with the excellent display quality, make Epson's Moverio platform ideal for implementing efficient and innovative staff training sessions. In future, we anticipate that the new BT-2000 glasses will be even more suitable for these kind of industrial applications. The increased brightness of the images shown by the glasses will increase the quality even further and ensure that augmented reality projections will be less susceptible to changing light conditions that might occur, for example, when a trainee moves their head."

Moverio allows training content to be communicated in a more efficient and cost-effective way

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