Viewpointsystem

EYE-OPENING: AUSTRIAN TECH BRINGS 'SMART GLASSES' TO THE PROFESSIONAL MARKET

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For anyone with even the faintest interest in technology, Google's ill-fated attempt at developing wearable consumer tech in 2013 might ring a bell. While 'Google Glass' eyeglasses never took off for the mass market, Vienna-based technology company Viewpointsystem has had more success developing 'smart glasses' as a tool for professionals. Viewpointsystem was one of the companies to win EDF funding in the category 'Advanced Biometrics in Training and Simulation'. *European Defence Matters* sat down with CEO and owner Nils Berger to learn more.

How did it all start?

In 2016, I was given the opportunity to transition a university spin-off specialised in mobile eye-tracking studies into a company. This spin-off had developed part-functional samples of smart glasses to conduct mobile eye-tracking studies. When these functional samples were presented to me for the first time, that was literally an eye-opener. Using the technology, you can visualise people's gaze behaviour and recognise where the wearer is looking in a particular situation. Furthermore, and this is crucial, the technology also decodes what the wearer perceives, and in what cognitive and emotional state the wearer is. At that moment, the idea of Viewpointsystem was born. There was still a lot of work ahead of us. We worked hard to bring our current smart glasses, the 'VPS 19', to market maturity, which we finally achieved in 2020.

Many people might think of Google Glass when thinking about smart glasses – and that was a flop.

We are fully focused on the enterprise space. It will be years before augmented and mixed-reality glasses are truly mature and ready for the consumer market. Google Glass was certainly more than 10 years too early. Both the technology and the market were far from ready. And even today, there are many improvements to be made in the areas of wearability, immersion and compelling use cases – just to name a few! Nevertheless, I believe in the huge potential. I am convinced that one day, they will replace the smartphone.

Has your product caught on?

Well, today we have around 150 enterprise customers in Europe, North America and Asia, mainly in manufacturing, mobility and transport, security, and research and analysis. We have established additional subsidiaries and sales offices in Europe and North America. Our goal is to strengthen our position as the hidden European champion for smart glasses-based remote support, training, analysis and documentation.

How do the smart glasses work?

Our system, the VPS 19, consists of lightweight eye-tracking glasses, and an external miniature computer – the 'smart unit' – for computing and transmissions, which can be worn on a belt or harness. When used for training of forces, the system connects the trainee and the remote trainer via video and audio stream. The trainee's field of view is streamed to the trainer's laptop or tablet screen. The visual focus of the trainee is also indicated on the screen, via the gaze point visualisation or a live heatmap. This allows the trainer to monitor live what the trainees are focusing on, or if they are distracted, and to give direct feedback. The trainer can also send information, such as photos or sketches, to the smart unit. Thus, the trainee's field of vision remains unobstructed. After the training, the recorded video stream be analysed using our evaluation software.

Why did Viewpointsystem get involved in the winning consortium for the EDF's 2021 call for Advanced Biometrics in Training and Simulation (ABITS)?

One of the core ideas of Viewpointsystem is to enhance an interface between humans and machines in a non-invasive and safe way. We would like to extend this idea by proactively monitoring the wellbeing of a person. In the ABITS project, we are focusing exactly on this. Using our smart glasses, we capture the data offered by the eyes and the gaze behaviour. Combined with biometric data from other sensors, they provide insights into the trainee's attention, stress and cognitive load. The goal is to explore a data-driven tactical indoor training solution, and ultimately to ensure the psychological and physiological health of a person in stressful and dangerous environments.

What are some industry obstacles to more European sensor-based defence collaboration?

Technology access shouldn't be defined purely on commercial justifiability. We need to ensure that SMEs can access technologies developed and owned by large enterprises, even if their motivation is simply research and experimentation. This would increase the chances of achieving meaningful and disruptive technologies and ensure global outreach.