

6 QUESTIONS TO NILS BERGER, CEO & CO-OWNER OF VIEWPOINTSYSTEM

1. What is the premise behind Viewpointsystem and the VPS 19?

We believe that there is one essential thing that Mixed Reality needs to succeed: A strong human-centered approach. The current smart glasses on the market have a major weakness: they may be technical miracles, but however, they cannot react intuitively to human behavior. You have to actively inform your device of what you want, because it can't read between the lines.

With eye tracking, we have found the master key to connect man and machine and to bring the user into the digital loop, so to speak. You may have noticed that major Silicon Valley technology giants have acquired small, specialized eye tracking companies over the past year. They are also searching for this key.

We think, however, that we are a decisive step ahead of them. We have more than twenty years of experience in eye tracking and we've developed a technology that can do more than other eye tracking systems. We can identify precisely where a person is looking at, but also, and this is decisive, what they truly perceive and how they are feeling in this situation.

For this reason, we also speak of 'Eye Hyper-Tracking'. The eye movements can hardly be manipulated, they are therefore an important key for determining the cognitive and emotional state of a human being. It is precisely this technology that is so exciting for the communication between man and machine.

Our declared mission is to bridge the gap between man and technology. We want to be at the forefront of developing technology that not only monitors but truly understands human behavior and supports people in interacting with their world.

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2. What is the VPS 19 and what does it do?

The VPS 19 is a pair of extremely light-weight smart glasses that – and that’s no overstatement – sets a new standard in Mixed Reality. With the VPS19 your eyes are the HMI, the Human-Machine-Interface. From now on, you can interact with the digital content through your eyes – no hands and no voice are needed. The VPS 19 combines eye tracking with display technology, thus creating a new depth of connection between people and the digital world.

The system consists of extremely light-weight Eye Hyper-Tracking glasses, a Mixed Reality click-on and a small piece of intelligent hardware called the Smart Unit. The glasses and the MR click-on weigh together only 95 grams (glasses 43g + MR click-on 52g) and can thus guarantee a truly immersive MR experience.

Put the glasses on your nose, stick the Smart Unit in your pocket and forget about both of them – they are that unintrusive and practical. Also, the VPS19 looks sporty and fashionable, making it socially acceptable in any work environment.

Inside the glasses we have three high-resolution and high-frame-rate HDR micro cameras and an image processing CPU, all integrated discreetly into the frame. The cameras, two inside the glasses and one on the outside, track exactly where you are looking – in any light, that’s new and unique.

The gaze-based MR click-on lets you display computer-written or even hand-drawn or 2D graphic information in the real world. You see the digital overlays exactly where you need them: VPS19 displays info in the line of sight where it can easily be processed – this means no distraction and no eye-fatigue. Other systems require the wearer to constantly shift their eyes, jumping back and forth between digital information and real life.

The digital overlays are reduced to the minimum. Based on our experience in eye tracking, we know exactly what kind of visual information a human is capable of processing in a real-life-situation. Too much or too overdesigned digital overlays will distract him and take him out of the situation.

The user can, from now on, communicate with his eyes: He can interact with the VPS 19 in an intuitive and hands-free way, simply by using his eyes instead of hands or voice. This feature makes the VPS 19 highly practical in any professional application.

Another magic happens in the combination of the VPS 19 glasses and the Smart Unit. For the first time, the power of using the eyes to interact with the digital world meets the power of a physical screen and a fully connective device. The user can record, stream, share, analyze and interact with others anywhere in the world.

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The system guarantees non-stop operation through battery swap while in use, e.g. during a video recording. The batteries have long lifespan of 8 hours plus.

Also, the design is created for long wearing comfort: The glasses offer a wide field of view, a steady fit in motion and maximum comfort. They can be worn for hours with no more strain or fatigue than from regular glasses. The VPS 19 meets the EN 166 standard for safety glasses.

3. Explain different applications for the VPS 19.

Our system can be used very flexibly and has nearly unlimited opportunities in commercial applications. Three key applications are:

3.1 Remote support through one-to-many bi-directional communication:

In case of emergencies such as machine stops, but also for general remote maintenance, the user, e.g. an onsite-technician, can connect live with an unlimited number of offsite experts, providing them a “We see what you see” view. This allows them to see the issue firsthand and advise the on-site technician the best course of action to repair a piece of machinery.

While streaming, the experts can not only speak to the onsite-technician, but also add computer-written information or drawings and scribbles as MR overlays to what the wearer is seeing while streaming. The technician can operate the VPS 19 with eye gestures, having his hands free for work.

Drawings can even be anchored to real, physical space:

For example, instead of explaining to the onsite technician which button he needs to press, the expert can simply draw an arrow - which now appears projected onto the worker’s VPS 19 MR click-on.

This effectively looks to the worker as if an arrow were floating in space above his machine. And this arrow even stays in place, no matter where and how the worker moves. In this way, the technician receives feedback directly in the physical world via Mixed Reality.

3.2 Barcode Detection

A unique feature will make barcode scanning processes in logistics and retail faster and much more effective: Using and operating the App “Barcode Scan”, the user selects the barcode with his eyes - regardless of whether it is further away or at an angle. The exact information appears on the display. The user selects and confirms the information with his eyes, having his hands free for work.

The system is also able to scan all barcodes that are in the field of view of the wearer at the same time within seconds (not one after the other as in present solutions). The right barcode is selected automatically, the barcode information appears on the display and is confirmed by the wearer by eye gesture.

Scanning multiple barcodes at once reduces significantly the time spent on the task and the costs associated with the task.

3.3 Real-time perception tracking in mobility & transport

Thanks to the Eye Hyper-Tracking technology we are using, the VPS 19 does not only read where the wearer is looking. It also detects if we really perceive something or not, and that in real-time. It can thus guide the gaze and help us to react correctly, although we are not perceiving every information which is important in a certain situation.

For example, if a pilot does not perceive important information in the cockpit, the system points this out accordingly on the display of the glasses. The system thus avoids human errors and contributes in making mobility & transport safer.

Through our ability to track a person's perception, we open the door to the subconscious decision-making process of a person.

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4. Who do you think will be the first adopters and why?

Any company with an affinity to new technologies and IOT is basically a first adopter and potential buyer for us. Our system can be used very flexibly, and it works in nearly all lighting conditions - that's why it is extremely practical in any industry.

With our one-to-many streaming, experts can connect to as many off-site specialists and receive their feedback inside the glasses - this unique and groundbreaking function is interesting to many different industries.

Anyone who has ever sent specialists to a remote production site, for example, knows how quickly travel costs and expenses strain the budget. In such situations, our system pays off very quickly. In addition, our product does not require high additional programming costs like many other systems, and it can grow along with the needs of our customer. The investment risk is therefore very low.

We have already more than 70 customers all over the world in 4 industries with our existing product, the VPS 16, including companies such as Heineken, Coca Cola, Jordans Dorset Ryvita and Takenaka.

I am sure that our existing customers will be very excited about the new technical highlights of the VPS 19 and that they, together with us, will take the step towards a new standard in Mixed Reality.

Especially the new barcode scanning feature and the one-to-many-streaming make the VPS 19 a valuable tool to save time and costs and to improve the quality of work.

5. How do you see the future of Mixed Reality?

If all of us working in this industry consequently put people before technology, I am absolutely convinced that MR will explode to blow our minds. Mixed Reality glasses will replace smart phones as these restrict our actions and constantly distract us.

Imagine, there are traffic signs in South Korea that warn drivers against distracted smart phone users! In London and the Netherlands, ground traffic lights protect smart phone users against traffic accidents.

My forecast is as follows: In 10 years, the mobile phone has been dead for 5 years and has been replaced by smart glasses, looking like normal glasses. The glasses incorporate all the functionalities of today's phone plus adding MR. This will be possible as the main technological blocking points, connectivity, miniaturized computing power, display contrast and battery power, have been solved.

All that leads to socially acceptable MR glasses which have penetrated first the B2B and now the B2C market.

6. What are your next generation products?

We will continue developing the VPS product series and our "Digital Iris", the underlying technology platform, over the next few years, using the eyes and adding a large number of components to the system. It is our target to create Individualized Behavior Prediction Models that predict events and behavior coming from the subconscious individual itself and not from outside parametrized data sets only.

Imagine it like that: So far, you have to TELL your device what you want, using your voice or your hands. Which is like a partner that you have to tell how you feel, and that you would really like a kiss right now. Wouldn't it be so much better if your device took one look at you and just KNEW?

A machine that you can read and that can read you – that's the communication of the future and our declared goal. Providing the right information at the right time, in the right emotional and situational context, that's what we will work hard for to come up with the best kind of interface between the digital and the human being.