

# Customer testimonial

Smart Eye Pro in a driving simulator

In collaboration with Aalen University of Applied Sciences  
and Blickshift GmbH.



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*In general, I am deeply impressed by the support and counselling by Smart Eye including the personal installation and implementation service. The Smart Eye product portfolio and the Blickshift analytic and visualization software capabilities are an ideal constellation in my opinion.*

– Prof. Dr. med. Ulrich Schiefer, Ophthalmologist & Head of “Vision Research” at Aalen University

## Background

Aalen University of Applied Sciences (Aalen UAS) was founded in 1963 and the scientific work and academic educations stretches from digital networking, health, and e-mobility to renewable energies, photonics or robotics.

For many years, Aalen UAS has been one of the most research-extensive universities of applied sciences in Germany. With around 5700 students, Aalen UAS is one of the larger universities of applied sciences in the federal state of Baden-Württemberg.

This workgroup is mainly conducted at the competence center "Vision Research" with its workgroup of the same name. This workgroup is mainly heading at the visual system and its possible disfunctions, especially the development and validation of examination and therapy processes.

## The Research

At the Aalen Mobility Perception and Exploration Lab, Smart Eye Pro is used for recording gaze vectors and head positions in driving simulator. The recorded eye tracking data set is synchronized with vehicle and environmental data from the driving simulator to examine the visual perception of virtual objects on the projection screen.

Analyzing this data with Blickshift Analytics is a two-stage process: The first step examines preconceived hypotheses. The software provides optimal access to all relevant data streams from Smart Eye and the simulator to compute statistical measures. The second step is a detailed analysis of drivers perception and behavior. Blickshift Analytics provides high-end Visual Analytics methods like the Parallel Scan Path visualization and scan path pattern search based on areas of interest for an explorative analysis of the data.

The combination of eye tracking visualization and automatic pattern recognition features ensures high scalability and reduces the time and effort needed to address a variety of research topics.

Research set-up

Cylindric projection wall

Projector

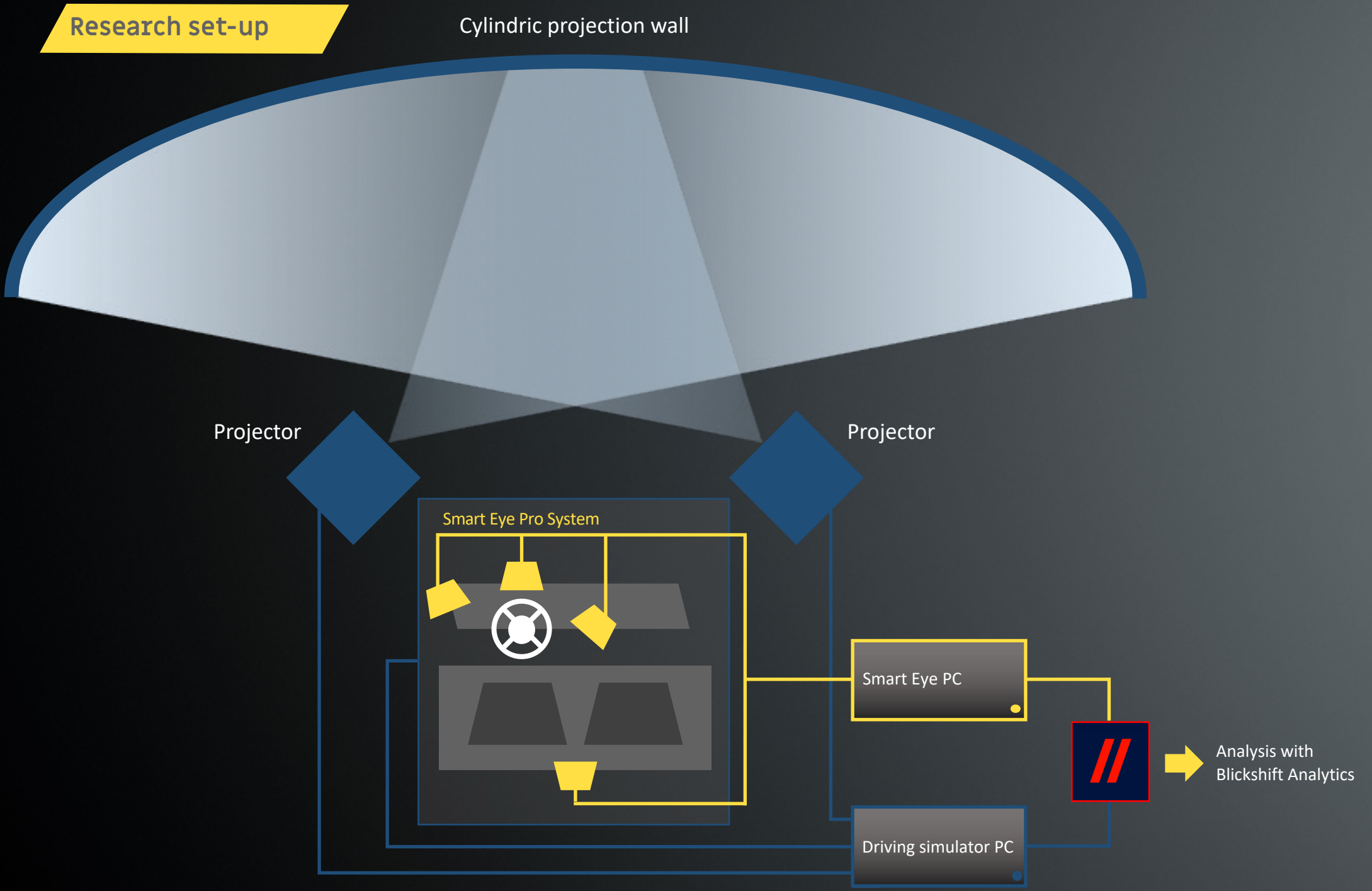
Projector

Smart Eye Pro System

Smart Eye PC

Driving simulator PC

Analysis with  
Blickshift Analytics



## Why Smart Eye Pro?

*"We needed a versatile eye & head tracking system with almost no influence on the tested subject. Therefore, we decided to go with a remote eye tracking system without the need for glasses or the like. Also, we needed comparatively high temporal resolution."*

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## Q & A

### **How did you find out about Smart Eye?**

Advertising & other simulator teams, using your system.

### **What made you start looking for our solution?**

The need for a versatile eye & head tracking system with almost no affection of the tested subject: Remote eye tracking (i.e. no further frames etc. needed). Comparatively high temporal resolution.

### **Which other products did you look at before deciding on ours?**

ERGONEERS, TOBII, SMI, EyeTribe.

Furthermore: Systems for analyzing limb motions (VELAMED)

### **Tell us about your experiences and what you've done with it?**

We use Smart Eye for recording eye-related metrics during night drive experiments to address the topic such as "is there a significant difference in eye movements between two different headlight systems?" Additionally, we plan to use the 180° projection for visual field measurements (from within the car but without a simulated environment). These require the patient to fixate a specified point on the screen (and not glance towards the stimulus). We intend to use Smart Eye to monitor whether this fixation is kept correctly, so that invalid measurements can be discarded and repeated automatically.

# smart eye

Smart Eye is committed to delivering the most advanced nonintrusive 3D head and eye tracking system in the world. We strive to establish a standard of reliability and availability which is unparalleled in the industry. We are equally committed to accommodating even the most complex applications and demanding field of view requirements from a remote perspective, while still maintaining superior accuracy.

## Contact

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