Customer testimonial:
At the Forefront of Human
Centered Automation within
Aviation and Sea

"Automated airplanes will also need to be monitored and led by humans"

Bill Josefsson LFV

This case describes a flight simulator research project called Reskill, which was created in collaboration with the Swedish eye tracking company Smart Eye, Sweden LFV (Luftfartsverket) and Linköpings University. It is a study that aims to better understand – and possibly answer – concerns and questions regarding Human Factors.

"Humans are at the very heart of automation" says Billy Josefsson, Head of Automation and Human Performance at LFV (the Swedish Civil Aviation Administration), to the Swed- ish tech magazine NyTeknik in an interview about Reskill.

Preparing the flight industry for automation

The purpose of Reskill is to develop a sustainable concept for how the education of flight operators and instructors could be strengthened. The purpose of the concept is to increase the flight operators' understanding of how automation works in critical situations, as well as the instructors' understanding of the operators' visual work patterns.

Sweden is at the forefront of research and implementation within remote traffic control, both in aviation, the operations of remote-control towers and at sea. New automation technology in these areas will allow for more efficiency and cost savings.

In high-stake environments, the performance of a highly skilled, human operator is central – now and in the foreseeable future. With the introduction of higher levels of automation, the challenges for the operators will increase, as they will have to monitor and control automation as well as their normal tasks.

Automation often brings issues such as "automation surprise", meaning "what is it doing now, and why?". It is therefore critical to design a system that will become a tool rather than a burden for operators. A system they can monitor and control and use to leverage their skills.

Six Smart Eye cameras installed

To monitor the operator and provide precision while tracking data for multiple screens of various sizes, the simulator used in Reskill is equipped with six Smart Eye eye-tracking cameras, and a high resolution head and eye-tracking system where all eye movements are recorded. The setup is non-intrusive, meaning that Smart Eye's technology measures the true human performance. Smart Eye's cameras are placed in positions where they will give their very best performance; short- or long-range lenses, together with free placement of illuminators, will provide for a robust performance no matter the lightning conditions – a setup that only Smart Eye could provide.

"Humans guarantee flexibility, safety and reliability. Our research aims to strengthen teamwork with automation, to increase efficiency, precision and safety with higher levels of automation", Josefsson concludes.

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.

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