

Driver Monitoring System

What is a Driver Monitoring System (DMS)?

Driver Monitoring Systems (DMS) use sensors and artificial intelligence (AI) to bring insight into the driver's state and behavior. A key technology for detecting driver distraction and drowsiness, DMS improves road safety, saving lives all over the world.

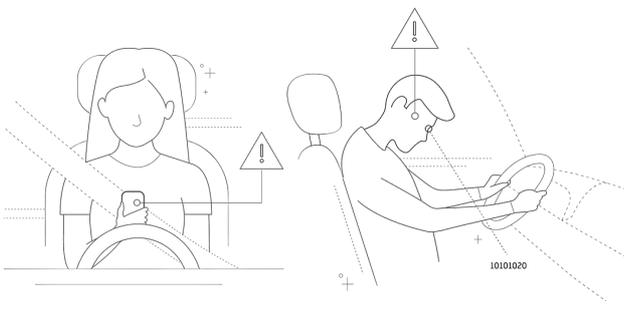
The new generation of DMS can identify different people and objects, enabling greater customization of the car's interior systems and features. From seats that automatically adjust to individuals to gaze-activated windshield wipers, to infotainment systems that can sense the driver's mood and emotions.



The Safety and Convenience Features of Tomorrow

Smart Eye's AI-based DMS software enables a wide variety of features for improved safety and mobility experiences. Powered by Affectiva's Emotion AI to capture nuanced emotions, reactions and facial expressions in real time.

- ✓ Face ID
- ✓ Object Detection
- ✓ Seatbelt Detection
- ✓ Driver Distraction
- ✓ Activity Detection
- ✓ Facial Expression Analysis
- ✓ Driver Drowsiness
- ✓ Body Key Points
- ✓ Speech Detection
- ✓ Dangerous Behavior
- ✓ Face Mask or Glasses Detection
- ✓ Driver Medical Status



The New Regulatory Landscape

In the last decade, Driver Monitoring Systems (DMS) have gone from an exclusive technology only found in premium cars, to an essential safety feature for preventing driver distraction and drowsiness. All over the world, legislators and influential organizations are recognizing the importance of Driver Monitoring Systems for increasing road safety.

The US, the EU and China all make out some of the largest and automotive markets in the world and are all in different stages of implementing regulations that require the use of Driver Monitoring Systems for preventing driver distraction and drowsiness.

Beyond regulation, Euro NCAP's latest update of their new car assessment protocol is expected to be very influential for the widespread adoption of DMS.

The European New Car Assessment Programme (Euro NCAP) is one of the world's most well-established and influential safety rating systems for new car models. Starting in 2023, Euro NCAP will reward points for active safety systems that monitor the state of the driver. Consequently, receiving a sought-after five-star rating from Euro NCAP will be very difficult without a Driver Monitoring System.

Technical Specifications

Smart Eye's industry-leading DMS selected by 18 OEMs for 194 car models. Flexible camera position supporting a wide variety of the latest optical RGB and IR sensors. Running in real time on low-power embedded systems, supporting practically all Automotive SOC's. Production-grade, fully GSR and Euro NCAP compliant.

Supported Cameras:

- Global Shutter Imagers
- Minimum 30 fps
- Minimum 1 megapixel resolution
- NIR, Dual Mode (RGB/IR)

Hardware Agnostic

- Currently supported: SOCs, ARM-based CPUs, DSPs, GPUs, CNN accelerators
- Examples: Nvidia, NXP Qualcomm, Renesas, TI, Xilinx, Ambarella

Flexible Camera Setup:

- 1-2 camera systems
- Examples of positions: steering column, A-pillar, center stack, rear-view mirror

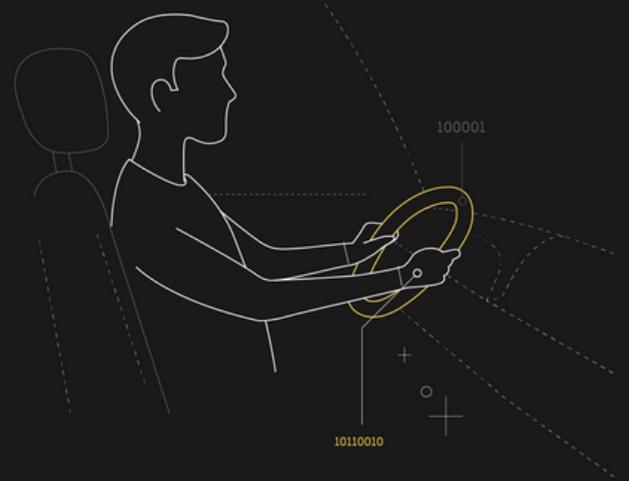
Diverse Operating System Support

Examples: QNX, Android, Linux, Windows, Green Hills

See Further in Automotive

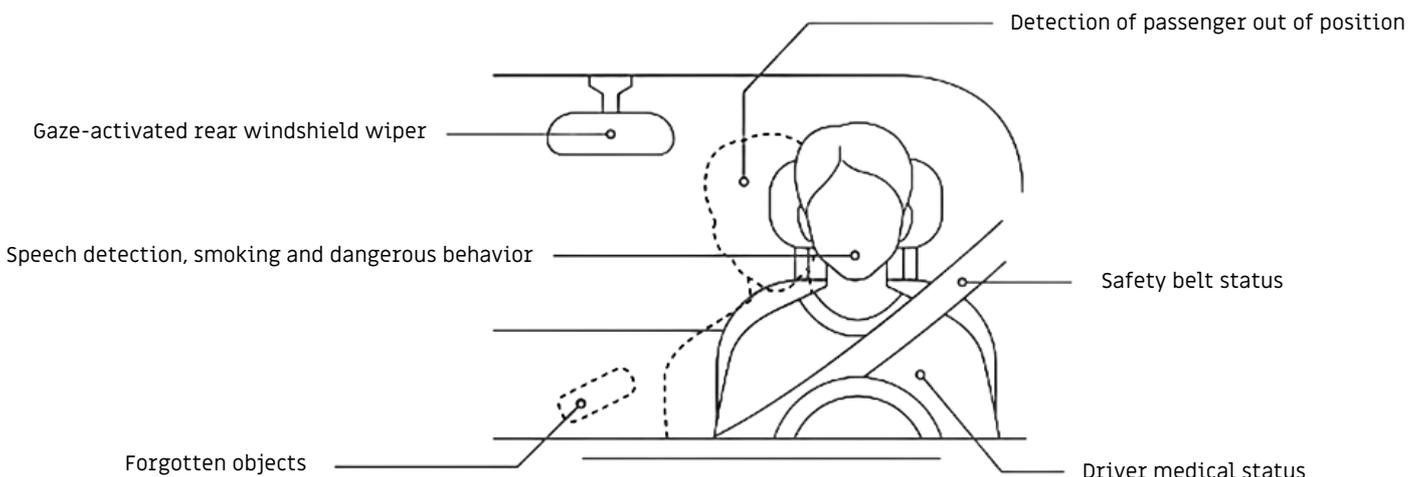
With over two decades of experience, Smart Eye is the preferred partner to the automotive industry. Today, our road-ready Driver Monitoring System software is in 194 cars by 18 of the world's leading OEMs.

1 000 000+ cars with
Smart Eye's DMS software
are currently on the road.



Driver Monitoring Evolving into Interior Sensing

For over 20 years, Smart Eye has been at the leading edge of this development by delivering AI-powered Driver Monitoring technology to the automotive industry. By combining Driver Monitoring with Cabin Monitoring, we expand the intelligence to the entire car interior and the people in it. This emerging technology is known as Interior Sensing, and is the next step towards improving safety for all road users while providing enhanced wellness, comfort and entertainment in tomorrow's vehicles.



About Smart Eye

Smart Eye is the global leader in Human Insight AI, technology that understands, supports and predicts human behavior in complex environments. We are bridging the gap between humans and machines for a safe and sustainable future. Our multimodal software and hardware solutions provide unprecedented human insight in automotive and behavioral research—supported also by Affectiva and iMotions, companies we acquired in 2021.

In automotive, we provide road-ready Driver Monitoring Systems and next-generation Interior Sensing solutions. Our technology is built on two decades of automotive experience and has been proven by 194 design wins from 18 of the world's leading car manufacturers, including BMW and Polestar. Our Driver Monitoring software is already included in more than 1,000,000 cars on the road. We also offer complete hardware and software aftermarket solutions for fleet and small-volume OEMs, powering vehicles on the road today. As the preferred partner to the automotive industry, Smart Eye is leading the way towards safer, more sustainable transportation and mobility experiences that enhance wellness, comfort, and entertainment.

A publicly traded company, Smart Eye was founded in 1999 and is headquartered in Sweden with offices in the US, UK, Germany, Denmark, Egypt, Singapore, China and Japan. Learn more at www.smarteye.ai.

Contact us:

info@smarteye.ai

www.smarteye.ai

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