

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.

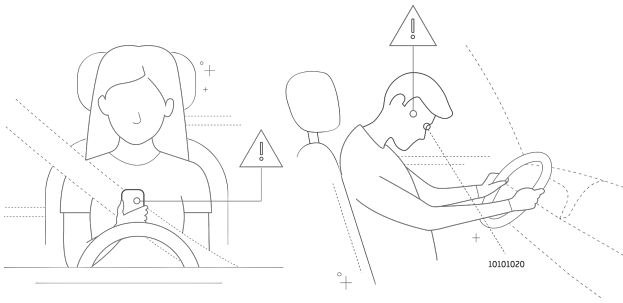
The new generation of DMS can identify different people and objects, enabling greater customization of the car's interior systems and features. From seats that automatically adjust to individual preferences, to infotainment systems that can sense the driver's mood and emotions.



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.

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|-------------------------|-----------------------------------|---------------------------------|
| ✓ Driver Identification | ✓ Dangerous Behavior | ✓ Seatbelt Detection |
| ✓ Driver Distraction | ✓ Object Detection | ✓ Facial Expression Analysis |
| ✓ Driver Drowsiness | ✓ Activity Detection | ✓ Speech Detection |
| ✓ Driver Attention | ✓ Face Mask and Glasses Detection | ✓ Unresponsive Driver Detection |



The New Regulatory Landscape

In the last decade, Driver Monitoring Systems (DMS) have gone from a 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 are some of the largest 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.

In Europe specifically, the EU's General Safety Regulation (GSR) mandates DMS in new vehicle type registrations from 2024, and for all new car registrations by 2026. This regulation reflects a growing consensus on the critical role of DMS in reducing accidents and improving road safety, and over the next few years we are likely to see similar legislations take form in other parts of the world as well – influencing the global automotive market.

Technical Specifications

Smart Eye's industry-leading DMS, selected by 20 OEMs for 296 car models, supports flexible camera setups and a wide variety of the latest optical 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
- Recommended 30 fps
- Recommended 1 MP resolution
- NIR, Dual Mode (RGB/IR)

Hardware Agnostic

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

Flexible Camera Setup:

- Single or multi camera systems
- Camera positions: steering column, A-pillar, center stack, rear-view mirror

Diverse Operating System Support

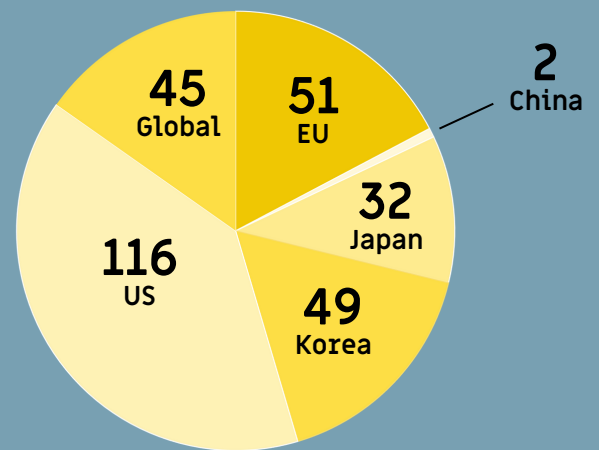
- Examples: QNX, Android, Linux, Windows, Green Hills

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 has been chosen for 296 car models by 20 of the world's leading OEMs.

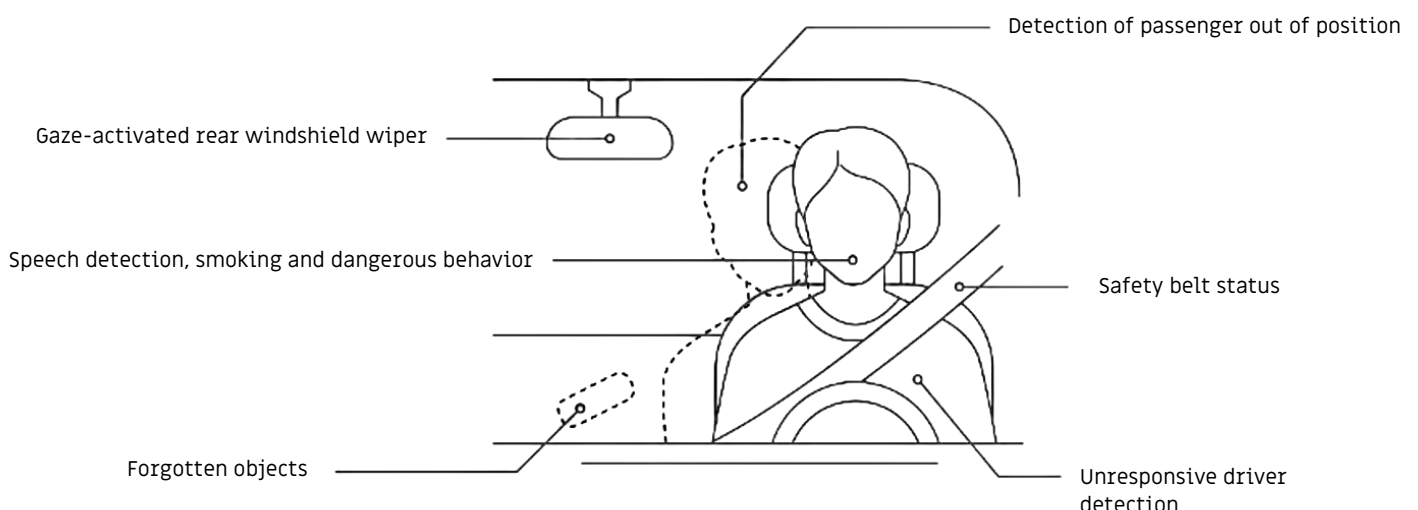
Smart Eye's current automotive production programs by region:

The most used DMS in cars on the road today.



Driver Monitoring Evolving into Interior Sensing

For over 20 years, Smart Eye has delivered 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 every single person 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 leading provider of Human Insight AI, technology that understands, supports and predicts human behavior in complex environments. The company is on a mission to bridge the gap between humans and machines for a safe and sustainable future. Supported by Affectiva and iMotions – companies it acquired in 2021 – Smart Eye’s multimodal software and hardware solutions provide unparalleled insight into human behavior.

In automotive, Smart Eye provides the world’s leading driver monitoring systems and next generation interior sensing solutions that improve road safety and the mobility experience. The company also offers complete hardware and software driver monitoring systems for fleet aftermarket installation and for small-volume OEMs.

Built on two decades of automotive experience, Smart Eye’s technology has been proven by 296 design wins from 20 of the world’s leading car manufacturers, including BMW, Polestar and Geely. Smart Eye’s driver monitoring software is already included in more than 1,000,000 cars on the road today.

Smart Eye was founded in 1999 and is headquartered in Sweden with offices in the US, UK, Germany, Denmark, Egypt, Singapore, China and Japan.

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