

Interior Sensing AI

Extend the Intelligence to the Entire Car

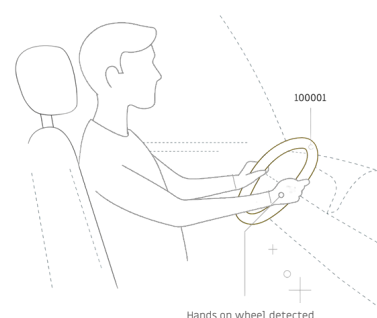
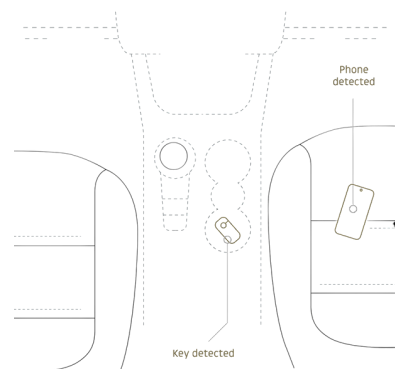
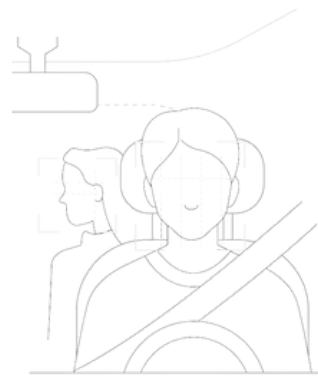
What is Interior Sensing?

Interior Sensing AI gives the vehicle a real-time understanding of everyone and everything inside the cabin. By combining Driver Monitoring (DMS) with Cabin and Occupant Monitoring (CMS/OMS), Smart Eye's system identifies who is in the car, what they're doing, how they're positioned, and whether they're in a safe state.

Built on advanced computer vision and multi-modal AI, our Interior Sensing technology analyzes driver behavior, passenger status, seat position, objects, and risk factors — creating a cohesive picture of the cabin that supports both safety and personalized experiences.

Smart Eye's CES 2026 Demo

At CES 2026, visitors can step into a four-seat buck demo that brings these capabilities to life. Each in-cabin event — from detecting driver alertness to identifying passengers, objects, and emotions — is processed in real time. By linking multiple events together, visitors can build their own journey and experience how Smart Eye's technology responds in each situation.



What Interior Sensing AI Can Detect

Through a unified set of driver, occupant, and cabin insights, Interior Sensing AI can provide a complete understanding of the in-vehicle environment. These examples represent the types of information this technology can support.

Driver Distraction

Is the driver keeping their eyes and mind on the road or are they distracted by something?

Driver Drowsiness

Is the driver getting drowsy or falling asleep?

Occupancy

How many people are in the cabin? Where are they sitting? Also includes seat position, seat belt detection and airbag deployment analysis.

Face Recognition

Recognizes registered drivers.

Activity Detection

Detects cell phone usage, eating, drinking, smoking, or other activities.

Occupant Size Classification

Identifies whether each occupant is a child, small adult, medium adult, or large adult, supporting optimized airbag and restraint deployment.

Child Seat Detection or Child Left Behind

Are there any children present in the car? Have any children been left behind in a parked car?

Pet Detection

Are there any pets present in the car? Have any pets been left behind in a parked car?

Object Classification and Object Left Behind

Detects bags, cell phones and other objects. Determines whether an object has been left behind.

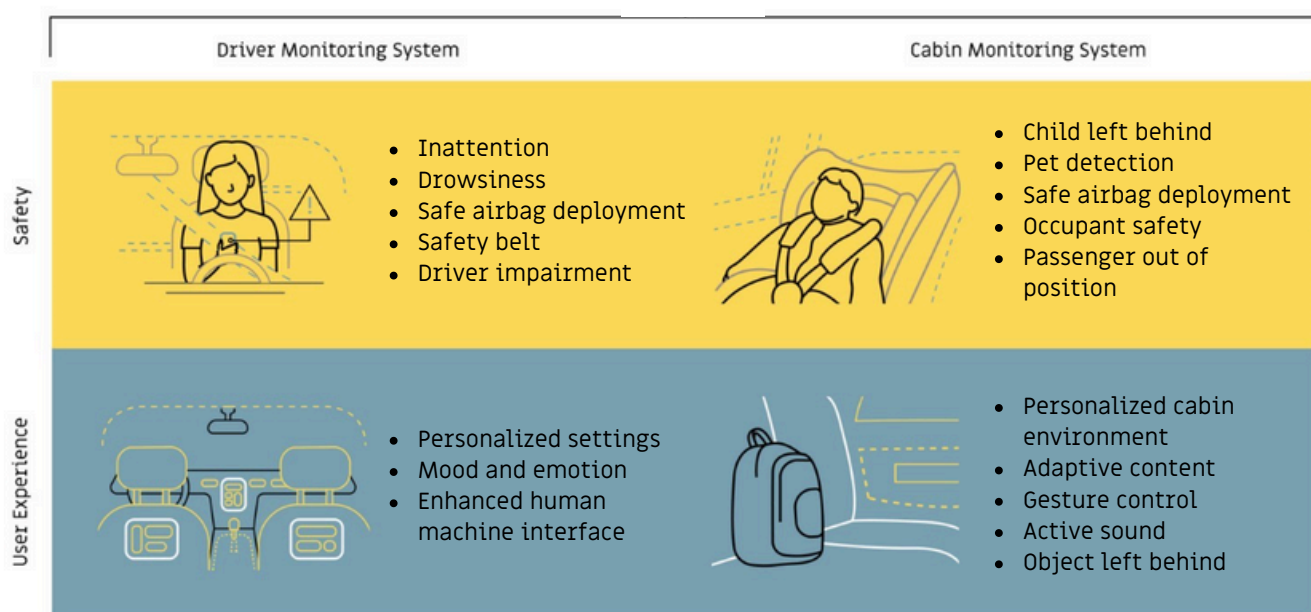
Facial Expression Analysis

How are people reacting to their environment and to content, such as music or video? Facial expression analysis helps the car understand the mood and behaviors of the people in the car.



Why Interior Sensing Matters

If a car has a better understanding of what goes on within the cabin, it can activate valuable functions based on the passengers' needs, whether that means providing the vehicle with the most advanced safety measures available or simply playing their favorite song at the right moment.



Safety

Interior Sensing is becoming essential for meeting next-generation safety standards. Euro NCAP's 2026 protocols place greater emphasis on in-cabin awareness — including child presence detection, adaptive restraint systems, seatbelt misuse detection, and driver engagement.

By understanding passengers' positions, posture, and state, the vehicle can deploy the right interventions at the right time. Interior Sensing also supports automated emergency responses by identifying who is in the car and how they're positioned.

User Experience

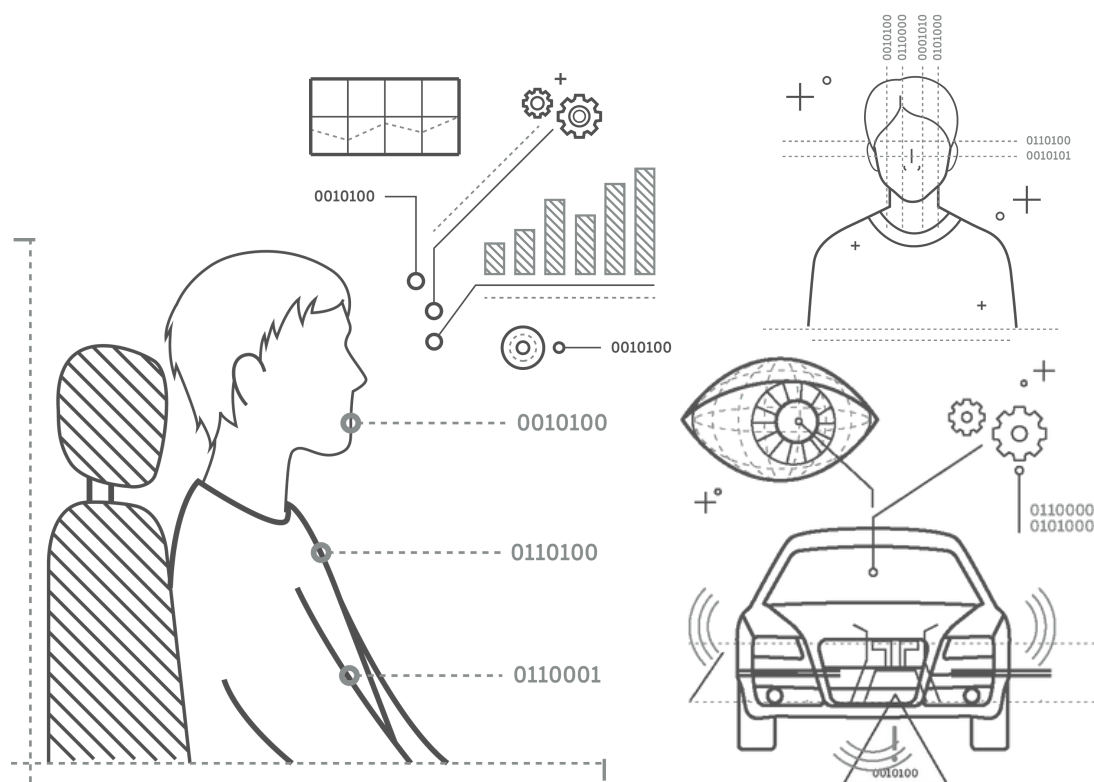
A system that recognizes who's in the car and how they're interacting with the cabin can tailor comfort, media, climate, and interface settings automatically.

With a better understanding of people and context, the vehicle can make the cabin more intuitive by automatically responding to posture, activity, or interaction.

Interior Sensing also helps the vehicle maintain a smoother, distraction-free journey by adapting interfaces and feedback based on engagement.

Technical Specifications

Smart Eye's Interior Sensing AI is designed for flexible vehicle integration. The system supports a wide range of camera configurations and hardware platforms, enabling OEMs to deploy robust in-cabin monitoring across different models and interior layouts.



Supported Cameras:

- Recommended IR imagers
- Recommended 30 fps
- Recommended 2 MP resolution
- Lens compatibility: wide angle, etc.

Hardware Agnostic

- 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: rear view mirror, center stack, overhead compartment, roof, second and third row

Diverse Operating System Support

- Examples: QNX, Android, Linux, Integrity