



seeingmachines

**GUARDIAN**

A PROUDLY  
**iun**  
COMPANY

**REAL-TIME  
DRIVER FATIGUE,  
DISTRACTION AND  
ACCIDENT PREVENTION  
TECHNOLOGY**

# ABOUT SEEING MACHINES

Seeing Machines is an Australian company with more than 15 years of research and development, commercial application and proven expertise in intelligent face and eye tracking technology that enable machines to see, understand and assist people. Our core Intellectual Property brings to life a range of technology applications that make vehicles smarter, with the intelligence to protect, enable and respond.

Today, Seeing Machines deploys technology in a number of cutting-edge applications such as commercial road transport, mining, automotive, and aviation.

Seeing Machines is now bringing the same life-saving technology to the wider transportation market and has joined forces with Insurance Underwriting Managers (Pty) Ltd (IUM) who supports road safety and the reduction of road carnage on the African continent. With the introduction of the Guardian system, fatigue has now become a preventable danger.

## TRUSTED BY THE BEST

Our philosophy is to partner with the best which is why we have built strategic relationships with world leaders such as Kelrn Vervoer, Yellow Jersey, Mafate Business Enterprises, and Loutrans.

# PREVENT. PROTECT.

Business efficiency and profit are some of the essential requirements for success, but operating a profitable commercial transport or logistics business requires more. Your drivers are fundamental to this success and SAFETY has to be a key consideration. Even the most experienced drivers are not immune to fatigue and distraction and these two factors can have dire consequences, posing large risks to their personal safety and your business.

“  
Guardian has been scientifically proven to reduce fatigue events by more than 90%

## HOW CAN YOU INFLUENCE THE BEHAVIOUR AND EFFICIENCY OF YOUR DRIVERS FROM THE CONTROL ROOM?

Guardian, by Seeing Machines, plays a pivotal role in protecting drivers and can assist you in preventing fatigue and distraction from happening in your vehicles. Guardian delivers an intelligent driver safety solution that uses in-cab sensors to monitor the driver's levels of fatigue and distraction, in real time. With 24/7 monitoring and analytics services, this is a complete safety solution for commercial vehicles.

The in-cab sensor monitors signs of fatigue or distraction, warns drivers through a set of alerts, providing protection in real-time. At the same time, managers are notified about the event and can take immediate action to manage the situation and keep their driver safe, straight away.

# HOW IT WORKS

## HARDWARE COMPONENTS

- 1 VIBRATION MOTOR
- 2 COMPUTER/CONTROLLER
- 3 IN-CAB GUARDIAN SENSOR
- 4 FORWARD-FACING CAMERA



REAL TIME IN-VEHICLE

24/7 SUPPORT



01  
EVENTS

Driver fatigue or distraction has been detected



02  
ALERTS

Seat vibration and audio alerts are activated to warn the driver



03  
ANALYSIS

Analysts review the footage and notify the manager

POST-EVENT FEEDBACK



04  
ACTION

Manager can act upon the notification and determine the best course of action - taking a break, ending the shift...



05  
EDUCATION

Ongoing changed behaviour, driver coaching and improved processes implemented by the operator

# INTERVENTION PROCESS

## REAL-TIME FATIGUE & DISTRACTION DETECTION

Fatigue is a major cause of large truck crash fatalities globally with micro-sleeps and drowsy driving impairing a driver's ability to concentrate on the road ahead. At the same time, distracted driving has become a serious problem with drivers often attempting to multi-task using mobile phones and communicating with others.

## REAL-TIME IN CAB ALERTS [AUDIO/VIBRATION]

Guardian provides audio alerts along with powerful seat vibration which was designed in off-road environments including the mining industry, to wake the driver up.

## REAL-TIME FATIGUE & DISTRACTION EVENT VALIDATION

When a fatigue or distraction event takes place the data and a video capture of the event are sent to the Guardian Centre for review and verification by an analyst.

## REAL-TIME INTERVENTION WITHIN MINUTES

Within minutes of a fatigue event being verified, the Guardian Centre will contact the fleet's nominated manager so that they can initiate an intervention plan.

---

### ADDITIONAL FEATURES:

- 24/7 monitoring and intervention by Guardian Centre
- Location of the event
- Speed detection
- Event Reports – validated and customised
- Daily/Weekly Activity Reports
- Dedicated account manager
- Data storage

# FREQUENTLY ASKED QUESTIONS

---

## 1. HOW DOES THE SYSTEM KNOW IF THE DRIVER IS FALLING ASLEEP?

Guardian tracks eye, face and head position to determine whether the driver is fatigued or distracted. If there are signs of fatigue or distraction detected, the system activates in-cab alerts.

## 2. WHEN IS THE DRIVER ALERTED?

As soon as the system detects a fatigue or distraction event.

## 3. WHEN DOES MANAGEMENT GET NOTIFIED?

If the event is verified as fatigue, the client gets notified in accordance with the agreed fatigue intervention plan (contact tree). If the event is a distraction event, management are able to view this at any time through Guardian Live.

## 4. DOES GUARDIAN HAVE CONTINUOUS RECORDING CAPABILITY?

**Please note Guardian is NOT a CCTV.**

Guardian has the capability to store approximately 24 hours of data (including driver and forward-facing footage) for review if required. During driving operation, new data will overwrite the old data after 24 hours. In order to preserve information, the data will need to be removed as soon as possible or the system disconnected until the data can be removed. Seeing Machines does not guarantee that footage will be recoverable, in particular where power to the processor is disrupted.

## 5. WHAT DATA IS CAPTURED FOR AN EVENT?

Guardian captures duration of the event, speed of the vehicle at the time, distance travelled during the event, which alarms were activated, GPS location, video footage of the driver together with footage captured by the forward-facing camera (if installed).

## 6. ARE YOU ABLE TO REMOTELY ACCESS THE CAMERA AND MONITOR THE DRIVER?

**NO.** Guardian is not a CCTV and cannot be accessed remotely under any circumstances. Although the sensor is always on, Guardian does not record and store normal driving behaviour – the footage is only taken during the fatigue or distraction event

## 7. DOES SEEING MACHINES SAVE FOOTAGE OF THE EVENT?

Verified events are available to view in Guardian Live for up to 12 months.

Almost 400 South Africans die every year from falling asleep at the wheel.

# BUSTING THE MYTHS

## DOES FATIGUE HAPPEN ONLY AT NIGHT?

**NO.** Fatigue can happen any time of the day or night. All day, every day.

## DOES FATIGUE HAPPEN ONLY DURING LONG TRIPS/LONG WEEKS?

**NO.** There are indications that some of the biggest risks actually come in the first couple of hours of shift or after a break.

## DO DRIVERS ALWAYS KNOW THEY ARE FATIGUING?

**NO.** Unfortunately, many drivers do not recognise when they start fatiguing and are surprised to learn that they have experienced a microsleep event.





1.35m people die on the world's roads every year.

Drivers who text are 23 times more likely to have a crash



# CLIENT TESTIMONIALS

If a driver falls asleep for just 4 seconds driving at 100km/h, the vehicle will travel 120m without the driver in control.

At Kelrn we have tried and tested a vast product range of driver camera systems but none were sufficient with regards to a pro-active solution for driver fatigue, until we found Guardian. Once we installed a few Guardian units for testing purposes we drastically reduced the risks caused by driver fatigue, once we realised the positive outcome of the unit we had the technology installed throughout our fleet.

Guardian has made it effortless to control fatigue and react immediately, but above all else we have cemented the relationship we have with our drivers as they know to what extent Kelrn will go to keep them safe. Guardian has been the only pro-active system that has reduced risk and created a safe environment for our drivers without interfering with our daily operations.

**Kelrn Vervoer**

Since we have implemented the Guardian System , it has reduced our fatigue risk dramatically.

We now have peace of mind on our fleet's safety , the system works.

From an operation's point of view the Guardian System has mechanised our fleet and made it easier and safer for our drivers to have a non-intrusive system that is keeping a safe eye on them.

**Loutrans**



seeingmachines

**GUARDIAN**

A PROUDLY  
**iun**  
COMPANY

---

**HEAD OFFICE**

38 Whittakers Way | Bedfordview | 2007

Telephone | +27 10 045 2761

Email | [lumay@seeingmachines.co.za](mailto:lumay@seeingmachines.co.za)

Website | [www.seeingmachines.co.za](http://www.seeingmachines.co.za)

The information contained in this material (including any intellectual property, such as trade marks, design, patents (whether registered or not) or other proprietary information of any kind) ("Information") is the property of Seeing Machines Limited and its related bodies corporate (Seeing Machines Group). Seeing Machines Group asserts its copyright entitlement and other intellectual property rights in respect of the Information. By viewing or using the Information, you acknowledge that Seeing Machines retains ownership of all intellectual property rights in the Information. The Information contained in this material contains only general information intended for reference only and does not constitute an offer, inducement, representation, warranty or contract. The Information is provided "as is" and any express or implied warranties are, subject to relevant law, disclaimed in their entirety by Seeing Machines Group. In no event shall Seeing Machines Group be liable for any loss or damages (including, without limitation, for any direct or indirect or consequential costs, loss or damage or loss of profits) sustained by any person viewing or relying on the Information, whether in contract, tort or otherwise. Any person who relies on the Information does so at their own risk. The statistics quoted herein are based on research findings provided by external sources and Seeing Machines Group does not guarantee accuracy.