

Minimise accidents by protecting
VRUs around heavy vehicles

MAX·SAFE✓ VRU Safety Solutions

The Danger

Vulnerable road users (VRUs) such as pedestrians, cyclists, scooter riders, and motorcyclists are increasingly at risk when navigating roads shared with heavy vehicles. With limited physical protection, they often come off second best in accidents involving large vehicles.

Heavy vehicles have significant blind spots and challenges with reaction times, turning, and braking. Many accidents occur because VRUs are unaware of the visibility limitations of heavy vehicles or the difficulty in their manoeuvrability. Recent figures show:

- **36% of all road deaths in Australia** involved VRUs (up from 33% in 2012)
- **47% of serious injuries** involved vulnerable road users
- **51% of Sydney fatalities involving heavy trucks** were with VRUs.

To reduce these impacts, governments worldwide, including Australia, are focusing on safety regulations such as mandatory safety equipment and driver awareness systems on large vehicles.

The Solution

Our range of **MAX-SAFE** VRU solutions provide essential protection for VRUs by offering advanced active and passive safety technologies for heavy vehicles that reduce the risk of fatal accidents and injuries.

These solutions:

- Detect VRUs with 99.9% accuracy
- Notify drivers only when there is an actual risk
- Can monitor VRUs around all sides of a vehicle (360°)
- Can audibly and visually alert a driver and VRU of impending risk
- Improve driver behaviour around VRUs.

Benefits

- Increased VRU protection through advanced AI and radar technologies.
- Driver assistance with clear audio and visual alerts.
- Accident prevention with automatic braking systems.
- Compliance with new regulatory requirements, including CLOCS-A standards.
- Part of SGESCO's MAX-SAFE Eco-System for full vehicle safety coverage
- Compliance with the UN regulations No.158 and No.159 for protecting VRUs when reversing and moving off.



"With 99+% detection accuracy of the VRUs, Veolia has been impressed with the reliability of the MAX-SAFE solutions."

Andrew Forbes
Veolia, Queensland



How it works

SGESCO-MAX's **Vulnerable Road User Protection** systems are designed to detect and respond to the presence of VRUs around heavy vehicles. Using advanced technologies like radar, and AI cameras, these systems provide continuous monitoring and ensure drivers are alerted to potential hazards in real time.

Our VRU protection systems are designed to work in all weather conditions and environments, providing reliable protection whether you're in a congested city or a busy industrial site.

1

Detection

The system uses radar and AI-based cameras to continuously scan for VRUs around the vehicle. It identifies pedestrians, cyclists, and motorcyclists in the vehicle's path, even in difficult-to-see areas like the sides or rear of the vehicle.

For example, the **MAX-SAFE Side View™** and **MAX-SAFE Corner View™** use AI cameras to cover wide areas, detecting VRUs at ranges of up to **14 metres** behind the vehicle and **190 degree arcs** on the front corners.

2

Alert

Once a VRU is detected, the system provides both visual and audible alerts to the driver. These warnings are designed to capture the driver's attention and ensure they respond quickly to potential hazards. In some cases, the system can also trigger external audible alerts or flashing lights to warn pedestrians or cyclists of approaching danger.

3

Automatic Response

In certain cases, if the driver fails to respond to the alerts, the system can initiate automatic braking to prevent a collision. For example, the **MAX-SAFE Reverse Watch®** system will apply brakes if it detects a person behind the vehicle while reversing.

Highlighting the Issue: Vulnerable Road User Fatalities

Heavy vehicle blind spots and the size of vehicles are key contributors to fatalities involving VRUs. In Sydney alone, over **51% of fatalities** from heavy vehicle crashes between 2015 and 2019 involved VRUs. These statistics highlight the urgent need for safety systems that protect VRUs from accidents caused by blind spots and driver oversight.

International programs like the **CLOCS Standard** in the UK have demonstrated how implementing these safety measures can dramatically reduce VRU fatalities. With a **47% reduction in fatal crashes** involving VRUs, the success of these initiatives is shaping safety standards worldwide, including in Australia.



“Drivers can operate more comfortably and effectively when driving around busy areas which involve a high rate of VRUs because operators are made aware of a VRU on the left-hand side of the vehicle.”

Matthew Wentman
Cleanaway Waste Management

Proven Solution

SGESCO-MAX offers advanced pedestrian protection solutions designed to enhance safety for vulnerable road users (VRUs) around heavy vehicles. Our MAX-SAFE range incorporates cutting-edge vision systems, radar technology, and audible and visual warnings to detect and alert drivers to the presence of pedestrians and cyclists.

Add-ons include the ability to automatically brake a vehicle before a driver can respond. These solutions are used extensively by the Australian waste management sector and, increasingly, other industries to protect VRUs day and night.



“The safety solutions provide superior protection of VRU from moving vehicles and known blind spots.”

Matthew Redman
JJ's Waste & Recycling



“While we had used different technologies in the past, the safety difference this solution made was like being on steroids in comparison. It actively alerted pedestrians and removed the arm risk much faster than any driver could manually do.”

Jonathon Dick
Smart Environmental



“Our drivers now have a solid safety system that they can rely on with confidence to protect VRUs and avoid property damage.”

John Kneebone
Veolia, Tasmania



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MAX-SAFE VULNERABLE ROAD USER SAFETY SOLUTIONS

MINIMISING ACCIDENTS BY PROTECTING VRUS AROUND HEAVY VEHICLES

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