



Advanced Emergency Braking Systems

Consultation Paper

What is the problem?

According to the *National Crash Dashboard*, there has been an average of 39 cyclist fatalities per year on Australia's roads from 2018 to 2022¹. Of these 195 cyclist fatalities, it is estimated that approximately 51%² occurred on roads with speed limits where an Advanced Emergency Braking System (AEBS) would have been active. Furthermore, the *Hospitalised Injuries from Road Crashes Dashboard* reported that in Australia, 8,163 cyclists were admitted to hospital resulting from a road crash in 2021 alone³. An AEBS automatically detects an imminent forward collision and activates the vehicle braking system to decelerate the vehicle with the purpose of avoiding or mitigating a collision.

The department currently mandates the fitment of an AEBS for passenger vehicles and light goods vehicles through Vehicle Standard (Australian Design Rule 98/00 – Advanced Emergency Braking for Passenger Vehicles and Light Goods Vehicles) 2021 (ADR 98/00) and Vehicle Standard (Australian Design Rule 98/01 – Advanced Emergency Braking for Passenger Vehicles and Light Goods Vehicles) 2021 (ADR 98/01). However, both ADR 98/00 and ADR 98/01 do not include requirements for the fitment of AEBS tested to car-to-bicycle scenarios.

The Case for Government Intervention

Objectives

Government intervention is an essential tool when the market fails to provide the most efficient and effective solution to a problem. In the case of road safety, significant levels of road trauma remain in Australia. With recent developments in vehicle technology, mandating technologies that will provide substantial safety measures are necessary to achieve Vision Zero – that is zero deaths and serious injuries on the roads by 2050.

It has been a longstanding policy to harmonise the ADRs with international standards where possible, through the adoption of international regulations developed by United Nations (UN) World Forum for the Harmonization of Vehicle Regulations (WP.29). The UN Regulations are recognised as the peak international standards available for vehicle safety performance requirements and forms part of the vehicle standards framework in many countries and regions, including the EU and Japan. Harmonising with UN requirements provides consumers with access to vehicles meeting the latest levels of safety and innovation, at the lowest possible cost.

On 30 September 2021, a new 02 series of amendments to UN Regulation No. 152 – Uniform provisions concerning the approval of motor vehicles with regard to the Advanced Emergency Braking System (AEBS) for M₁ and N₁ vehicles (UN R152) commenced, providing a set of requirements for UN type approval of an on-board system (AEBS) to:

- (a) avoid or mitigate the severity of a rear-end in lane collision with a passenger car;
- (b) avoid or mitigate the severity of an impact with a pedestrian; and
- (c) avoid or mitigate the severity of an impact with a bicycle.

¹ Bureau of Infrastructure and Transport Research Economics (BITRE), National Crash Dashboard, Australian Government, accessed 16 July 2025, <www.bitre.gov.au/dashboards>

² This considers cyclist fatalities at vehicle speeds of 60km/h or under divided by the total cyclist fatalities reported in the National Crash Dashboard, noting that AEBS shall be active at least within the vehicle speed range between 20 km/h and 60 km/h.

³ Bureau of Infrastructure and Transport Research Economics (BITRE), Hospitalised Injuries from road crashes dashboard, Australian Government, accessed 16 July 2025, <www.bitre.gov.au/statistics/safety>

The Australian Government is examining the case to introduce a new Vehicle Standard (Australian Design Rule 98/02 – Advanced Emergency Braking for Passenger Vehicles and Light Goods Vehicles) (ADR 98/02) to align with the regulatory changes in the 02 series of amendments to UN R152. This mandates the fitment of AEBS in passenger vehicles and light goods vehicles, that can avoid or mitigate the severity of an impact with a bicycle. The requirement seeks to reduce the number of cyclist fatalities and injuries from crashes on Australian roads. Harmonising with the latest version of UN R152 facilitates the rapid introduction of technological advances into the Australian market.

Justification

The introduction of ADR 98/02 is in line with the Australian Government's National Road Safety Strategy 2021–30 (NRSS 2021-30), that is committed to deliver significant reductions in road trauma over the next decade. Specifically, this addresses two key priorities under the NRSS 2021-30 namely: 'pursuing technological improvements and uptake of safer vehicles' and the 'protection of vulnerable road users'. ADR 98/02 will ensure vehicles are fitted with AEBS technology to reduce cyclist fatalities and injuries resulting from road crashes.

Impacts of the Australian Government's Proposal

Impacts on Businesses

Introducing a new ADR 98/02 will require manufacturers to certify their vehicles using the latest series of amendments to UN R152. This is expected to have a minor regulatory impact as the Australian Government already mandates the fitment of an AEBS through the existing ADR 98/00 and ADR 98/01. Additional testing scenarios will be required, but certification costs should not increase substantially relative to overall vehicle costs.

However, those manufacturers whose systems currently do not meet the technical requirements of the 02 series to UN R152, will need to update their systems. As there are no major Australian vehicle manufacturers of passenger or light commercial vehicles in Australia, and given the small size of the Australian new vehicle market, the development and certification costs can be amortised globally over a number of markets by the manufacturer. Furthermore, the 02 series of amendments to UN R152 will be mandatory in the European Union for all M₁ and N₁ vehicle types from July 2026⁴. Therefore, as Europe is a key market for sourcing vehicles into the Australian market, manufacturers providing vehicles there should have already developed these systems, again, minimising costs.

Impacts on the Community

Any reduction of cyclist fatalities and hospitalisations will have a significant social and financial benefit to the Australian community. A 2022 Australian National University study (on behalf of the Bureau of Infrastructure and Transport Research Economics) looked at the social cost of road crashes in Australia. It estimated that "social losses were approximately \$2.9 million per fatality, losses for a hospitalised injury were approximately \$241,100 per injury (including disability-related costs), and losses for non-hospitalised injury were approximately \$26,000 per injury"⁵. The Office of Impact Analysis (OIA) recommends a willingness to pay based value, otherwise known as the value of statistical life, as the most appropriate way to estimate the cost per fatality. Based on international and Australian research, the value of statistical life recommended by the OIA is \$5.7 million in 2024 dollars⁶.

⁴ EUR-Lex, *Regulation (EU) 2019/2144 of the European Parliament and of the Council*, European Union, accessed 2 October 2025, <eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02019R2144-20250901>

⁵ The Australian National University, September 2022, p.4, *Social Cost of Road Crashes*, Bureau of Infrastructure and Transport Research Economics (BITRE), accessed 16 July 2025, <www.bitre.gov.au/sites/default/files/documents/social-cost-of-road-crashes.pdf>

⁶ The Office of Impact Analysis, November 2024, *Guidance Note, Value of Statistical Life*, accessed 2 October 2025, <oia.pmc.gov.au/sites/default/files/2024-11/value-statistical-life-guidance-note.pdf>