Vehicle Standard (Australian Design Rule 97/00 – Advanced Emergency Braking for Omnibuses, and Medium and Heavy Goods Vehicles) 2022

Made under section 12 of the *Road Vehicle Standards Act 2018*

Explanatory Statement

Approved by The Hon Kevin Hogan MP, Assistant Minister to the Deputy Prime Minister

February 2022

CONTENTS

1. LEGISLATIVE AUTHORITY

Vehicle Standard (Australian Design Rule 97/00 – Advanced Emergency Braking for Omnibuses, and Medium and Heavy Goods Vehicles) 2022 (ADR 97/00) is made under section 12 of the *Road Vehicle Standards Act 2018* (the RVSA). Section 12 of the RVSA allows the Minister to determine National Road Vehicle Standards.

2. PURPOSE AND OPERATION

2.1. Overview of the regulatory framework

The RVSA establishes a regulatory framework to regulate the importation and first supply of road vehicles to the market in Australia. The core principle of this framework is that vehicles which comply with appropriate standards are suitable for provision to the market in Australia. The Australian Design Rules (ADRs) have set out those standards since the early 1970s. At that time, they were applied cooperatively by the Australian Motor Vehicle Certification Board representing the Commonwealth and state and territory governments. In 1989, this arrangement was replaced by the MVSA and the Australian Design Rules were determined as national standards.

Under the RVSA, the ADRs are National Road Vehicle Standards intended to make vehicles safe to use, control the emission of gas, particles or noise, secure vehicles against theft, provide for the security marking of vehicles and promote the saving of energy. The ADRs are applied to vehicles as criteria for approval under various regulatory pathways set out in the Road Vehicle Standards legislation. Vehicles approved under these regulatory pathways can be provided to the market in Australia for use in transport. ADRs apply equally to imported and locally manufactured vehicles.

2.2. Overview of the ADR

The purpose of ADR 97/00 is to specify requirements for Advanced Emergency Braking (AEB) systems for new omnibuses (ADR category MD and ME vehicles) and new goods vehicles greater than 3.5 tonnes Gross Vehicle Mass (GVM) (ADR category NB and NC vehicles), to avoid or mitigate the severity of rear-end in lane collisions.

AEB systems utilise inputs from a variety of sensors and cameras to monitor the road environment ahead. In the event that a collision with a vehicle in front is predicted, the driver is warned, through at least two modes from acoustic, haptic, or optical. Some initial braking may also be initiated during this warning phase. If the driver still does not respond to the warning, the system will execute an emergency braking phase in order to avoid or mitigate the collision.

Omnibuses specially designed with spaces for standing passengers, articulated omnibuses, vehicles with four or more axles, and vehicles ‘designed for off-road use’ (as defined in Appendix B of the ADR) are not required to comply with this standard (refer clause 3.2).

Clause 5.1 requires all vehicles to be fitted with an AEB system and meet the requirements set out in Appendix A of this standard, as varied by Section 6 Exemptions and Alternative Procedures. Appendix A is the United Nations (UN) Regulation No. 131 (R131) – UNIFORM PROVISIONS CONCERNING THE APPROVAL OF MOTOR VEHICLES WITH REGARD TO THE ADVANCED EMERGENCY BRAKING SYSTEMS (AEBS), incorporating up to supplement 2 to the 01 series of amendments.

Clause 6.1 provides exemptions from the requirements of Appendix A which relate to gaining a UN R131 Approval. This is because it is not a requirement to gain a UN Approval for vehicle supply to market in Australia, where the Commonwealth administers approvals through the RVSA and the ADRs.

Clauses 6.2, and 6.4 to 6.11, specify alternative requirements and procedures to various requirements agreed between the manufacturer and the technical service in Appendix A (UN R131). These have been included to enable vehicle manufacturers to demonstrate compliance to ADR 97/00 for the Australian market, without being required to obtain a UN R131 Approval.

Clause 7.1 specifies the technical requirements of the United Nations (UN) Regulation No. 131 (R131) – UNIFORM PROVISIONS CONCERNING THE APPROVAL OF MOTOR VEHICLES WITH REGARD TO THE ADVANCED EMERGENCY BRAKING SYSTEMS (AEBS), incorporating the 01 series of amendments, as an acceptable alternative standard to ADR 97/00.

To meet UN R131 (refer Appendix A of the ADR), an AEB system must be active at vehicle speeds above 15 km/h (unless manually deactivated). If a means (e.g. switch) is provided to manually deactivate the AEB system, the AEB function must be automatically re-instated at the start of each new ignition on (run) cycle, and a constant optical warning must be provided to inform the driver when the AEB system is deactivated. The performance of the AEB system is assessed in a stationary target test and a moving target test. The target vehicle used for both these tests must be a regular high volume series production passenger car, or a soft target representative of such a vehicle in terms of its identification characteristics. At the start of the functional part of each test the subject vehicle must be travelling at a speed of 80 ± 2 km/h and is at a distance of at least 120 m from the target vehicle. At least two collision-warning modes must be provided before the commencement of the emergency braking phase. Any speed reduction during the warning phase must not exceed either 15 km/h or 30 per cent of the total subject vehicle speed reduction, whichever is higher. The emergency braking phase cannot start before the time to collision with the target vehicle is 3.0 seconds or less.

UN R131 (refer Appendix A of the ADR) also includes failure warning signal, deactivation warning signal, and false reaction tests for the AEB system. In the false reaction test, the subject vehicle is driven for a distance of at least 60 m, at a constant speed of 50 ± 2 km/h to pass centrally between two stationary passenger cars, a distance of 4.5 m apart and facing in the same direction of travel as the subject vehicle. To pass this test, the subject vehicle must not provide any collision warning or initiate any emergency braking phase/response.

3. MATTERS INCORPORATED BY REFERENCE

3.1. Legislative Instruments

Clause 4.1.1 includes a reference to the Vehicle Standard (Australian Design Rule Definitions and Vehicle Categories) 2005 (which may also be cited as the Australian Design Rule – Definitions and Vehicle Categories). This sets out definitions for many terms used in the ADRs, including the vehicle categories used in ADR applicability tables.

Clause 6.2 includes a reference to the Australian Design Rule 35/… – Commercial Vehicle Brake Systems (ADR 35/…). ADR 35/… sets out braking requirements on commercial vehicles, large passenger vehicles and some light passenger vehicles to ensure safe braking under normal and emergency conditions.

The ADRs may be freely accessed online through the Federal Register of Legislation. The website is www.legislation.gov.au.

In accordance with subsection 12(2) of the RVSA, each of these ADRs are incorporated as in force or existing from time to time. In the case of the ADRs, the ellipses (…) indicates the version(s) (e.g. 00, 01 etc.) of the ADR in force at the time.

3.2. Other Documents

ADR 97/00 incorporates references to a number of technical standards that are routinely accessed by vehicle manufacturers as part of their professional library, including to ensure that vehicles comply with existing vehicle identification requirements in many other countries/regions of the world.

International Organization for Standardization

Clause 6.7.1 of ADR 97/00 references ISO 19206-1:2018 (Road Vehicles – Test Devices for Target Vehicles, Vulnerable Road Users and Other Objects, for Assessment of Active Safety Functions – Part 1: Requirements for Passenger Vehicle Rear-End Targets). This document specifies performance requirements for surrogate targets used to assess the system detection and activation performance of active safety systems.

Paragraph 6.8.1 of Appendix A includes a reference to ISO 612:1978 (Road Vehicles – Dimensions of Motor Vehicles and Towed Vehicles – Terms and Definitions). This document defines terms relating to dimensions of motor vehicles and towed vehicles.

ISO standards are all available for purchase only from the ISO and various associated national standards bodies. While not freely available, these ISO standards are all readily accessible and widely used by vehicle manufacturers, and the Department of Infrastructure, Transport, Regional Development and Communications (the Department) is investigating options to make them available free of charge.

In accordance with subsections 14(1)(b) and 14(2) of the *Legislation Act 2003*, each of these documents are incorporated as in force on the date this national road vehicle standard is made.

Section 12 of the RVSA allows the Minister to incorporate a broad range of documents, including as in force or existing at a particular time or as in force from time to time, when making national road vehicle standards. This ensures that

Australia's legislative framework is well-prepared for future developments in the international road vehicle space.

United Nations

Clause 7.1 includes a reference to the United Nations (UN) Regulation No. 131 – UNIFORM PROVISIONS CONCERNING THE APPROVAL OF MOTOR VEHICLES WITH REGARD TO ADVANCED EMERGENCY BRAKING SYSTEMS (AEBS) (R131), incorporating the 01 series of amendments. This is an international standard for AEB systems fitted to omnibuses, and goods vehicles over 3.5 tonnes.

Paragraph 1 of Appendix A includes a reference to the Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.6. This includes definitions for the UN vehicle category classifications used in Appendix A and the alternative standard under clause 7 of ADR 98/00.

Paragraph 5.1.1 of Appendix A includes a reference to UN Regulation No. 13 (R13). This is an international standard for road vehicle braking systems.

Paragraph 5.1.2 of Appendix A includes a reference to the UN Regulation No. 10 (R10). This is an international standard for electromagnetic compatibility for vehicles and vehicle components.

The Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.6, and the UN Regulations (including R10 and R13), may be freely accessed online through the UN World Forum for the Harmonization of Vehicle Regulations (WP.29). The WP.29 website is www.unece.org/trans/main/welcwp29.html.

In accordance with subsections 14(1)(b) and 14(2) of the *Legislation Act 2003*, each of these UN documents are incorporated as in force on the date this national road vehicle standard is made.

4. CONSULTATION

4.1. General Consultation Arrangements

It has been longstanding practice to consult widely on proposed new or amended vehicle standards. For many years, there has been active collaboration between the Commonwealth and the state/territory governments, as well as consultation with industry and consumer groups. Much of the consultation takes place within institutional arrangements established for this purpose. The analysis and documentation prepared in a particular case, and the bodies consulted, depend on the degree of impact the new or amended standard is expected to have on industry or road users.

Proposals that are regarded as significant need to be supported by a Regulation Impact Statement (RIS) meeting the requirements of the Office of Best Practice Regulation (OBPR) as published in the *Australian Government Guide to Regulatory Impact Analysis* or the *Regulatory Impact Analysis Guide for Ministers' Meetings and National Standard Setting Bodies*.

4.2. Specific Consultation Arrangements

A consultation RIS was posted on the Department's website for a six-week public comment period, which closed on 4 October 2019. Formal feedback to the RIS was received from members of the public, state government agencies, industry and road user organisations. A majority of the feedback strongly supported the implementation of a new ADR 97/00 mandating AEB systems for omnibuses, and for goods vehicles over 3.5 tonnes GVM.

ADR 97/00 was developed over the period 2019-2021 in consultation with the Technical Liaison Group (TLG) and the Strategic Vehicle Safety and Environment Group (SVSEG). Drafts of the ADR were circulated in July 2020 and July 2021 to SVSEG and TLG for comment as part of the consultation.

TLG consists of technical representatives of government (Australian and state/territory), the manufacturing and operational arms of the industry (including organisations such as the Federal Chamber of Automotive Industries and the Australian Trucking Association) and of representative organisations of consumers and road users (particularly through the Australian Automobile Association).

SVSEG consists of senior representatives of government (Australian and state/territory), the manufacturing and operational arms of the industry and of representative organisations of consumers and road users (at a higher level within each organisation as represented in TLG).

5. REGULATORY IMPACT

5.1. Regulation Impact Statement

A RIS was completed to analyse the policy options to increase the fitment of AEB systems to new heavy vehicles supplied to the Australian market. The best option is implementation of a mandatory standard under the RVSA, to require fitment of AEB systems for new omnibuses, and for new goods vehicles over 3.5 tonnes GVM. The OBPR reference number for the RIS is 25313.

5.2. Benefits and Costs

From the benefit-cost model used for the RIS, the implementation of ADR 97/00 is estimated to save 76 lives, avoid 1,934 serious injuries and generate net benefits of $53 million.

6. STATEMENT OF COMPATIBILITY WITH HUMAN RIGHTS

The following Statement is prepared in accordance with Part 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011.*

6.1. Overview

ADR 97/00 specifies requirements for AEB Systems fitted to omnibuses, and to goods vehicles over 3.5 tonnes 'GVM', to avoid or mitigate the severity of rear-end in lane collisions.

6.2. Human Rights Implications

ADR 97/00 does not engage any of the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*.

6.3. Conclusion

ADR 97/00 is compatible with human rights, as it does not raise any human rights issues.