Vehicle Standard (Australian Design Rule 107/00 – Emergency Lane Keeping Systems for Passenger Vehicles and Light Goods Vehicles) 2025

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

DRAFT FOR CONSULTATION

Explanatory Statement

Approved by the XXX, XXX

XXX 2025

CONTENTS

1. LEGISLATIVE AUTHORITY

1.1. National Road Vehicle Standards

The Vehicle Standard (Australian Design Rule 107/00 – Emergency Lane Keeping Systems for Passenger Vehicles and Light Goods Vehicles) 2025, which may also be cited as the Australian Design Rule 107/00 – Emergency Lane Keeping Systems for Passenger Vehicles and Light Goods Vehicles or ADR 107/00, is made under the *Road Vehicle Standards Act 2018* (RVSA). The RVSA enables the Australian Government to establish nationally uniform standards that apply to new road vehicles or road vehicle components when they are provided to the market in Australia. The RVSA applies to vehicles or components whether they are manufactured in Australia or imported.

The making of the vehicle standards necessary for the RVSA's effective operation is provided for in section 12, which empowers the Minister to "determine standards for road vehicles or road vehicle components".

1.2. Exemption from Sunsetting

ADR 107/00 is exempt from the sunsetting provisions of the Legislation Act 2003.

Source of the exemption

A standard made under section 12 of the RVSA is not subject to the sunsetting provisions of section 50 of the *Legislation (Exemptions and Other Matters) Act 2003* through section 12 of the Legislation (Exemptions and Other Matters) Regulation 2015 (table item 56C). A similar exemption was previously granted in respect of national road vehicle standards made under section 7 of the *Motor Vehicle Standards Act 1989* (MVSA) (item 40, section 12 of the Legislation (Exemptions and Other Matters) Regulation 2015). This exemption is important to ensure that Australian Design Rules (ADRs), including ADR 107/00, continue to remain in force and available to regulators and industry.

Intergovernmental dependencies

The exemption concerns ADRs which facilitate the establishment and operation of the intergovernmental vehicle standard regime that Commonwealth, State and Territory governments rely on to regulate the safety of vehicles on public roads.

The Commonwealth uses the ADRs as the basis on which approvals to supply types of road vehicles to the market are granted under the Road Vehicle Standards Rules 2019. States and Territories use the ADRs as the primary criteria on which vehicles are assessed for road worthiness. This 'in-service' aspect is dependent on the date of manufacture, which determines the applicable version of the ADRs against which the vehicle can be assessed. The ability to rely on national standards is particularly relevant given the long service life of vehicles – the average age of vehicles in Australia is over 10 years.

While the ADRs are regularly updated to reflect changes in technology, it is not possible to apply these new standards retrospectively to vehicles that are already in use. With former ADRs kept on the Federal Register of Legislation, State and Territory governments can use them to ensure vehicles continue to comply with the ADRs that were in force when they were first supplied to the market.

In the event that the Commonwealth could not justify the maintenance of the ADRs, State and Territory governments would be compelled to create their own vehicle standards. Whilst this could mean adopting the substance of the lapsed ADRs as an interim measure, the differing needs and agendas of each State and Territory government may result in variations to in-service regulations. Having different vehicle standards across the states and territories would make the scheme operate contrary to the underlying policy intent of the Act which is to set nationally consistent performance based standards.

Commercial dependencies

The effect on vehicle manufacturers to redesign existing models to comply with new ADRs would present a burden and be a costly and onerous exercise. Manufacturers should not be expected to continually go back to redesign existing vehicles. Furthermore, ongoing product recalls to comply with new ADRs would undermine consumer confidence with significant financial impact to manufacturers. This exemption allows vehicle manufacturers to focus their efforts to ensure new models supplied to the market continue to comply.

Review of Australian Design Rules

ADRs are subject to regular reviews, as resources permit, and when developments in vehicle technology necessitates updates to requirements. Reviews of the ADRs ensure the ongoing effectiveness of a nationally consistent system of technical regulations for vehicle design, which are closely aligned, wherever appropriate with leading international standards such as United Nations (UN) regulations. This method facilitates the rapid introduction of the latest safety devices and technological advances into the Australian market, while also contributing to the industry's cost competitiveness in the domestic market. Where a review results in a new or amended ADR, these changes are subject to full parliamentary scrutiny.

1.3. International Harmonisation

A majority of Australian road vehicle standards, including ADR 107/00, are closely harmonised with internationally based UN regulations, which are developed by the UN World Forum for Harmonization of Vehicle Regulations. Harmonisation ensures that vehicles built to the most recent safety, environmental and anti-theft standards are supplied to the Australian market at the least cost and that Australia has access to the latest vehicle technologies. In contrast, more Australian specific standards would require vehicles to be designed, developed and produced specifically for the relatively small Australian market. Unless needed to achieve legitimate policy objectives, a market specific standard would generally result in a significantly lower net benefit and benefit-cost ratio, than if costs were amortised over a number of markets, such as occurs with UN regulations.

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 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. The RVSA commenced in full and replaced the MVSA on 1 July 2021. A two-year transition period was provided between 1 July 2021 and 30 June 2023.

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.

2.2. Overview of the ADR

The purpose of ADR 107/00 is to specify requirements for Emergency Lane Keeping Systems (ELKS) for new passenger vehicles (ADR vehicle categories MA, MB, and MC) and new light goods vehicles (ADR vehicle category NA), to reduce deaths or injuries from unintended lane departures. The ADR provides manufacturers with minimum performance requirements for ELKS to be installed in new vehicles.

2.3. Effect of the ADR

Clause 3.1 requires new model passenger and light goods vehicles to be certified to this Standard from 1 November 2027 and all new passenger and light goods vehicles to be certified to this Standard from 1 November 2028

Clause 5.1 requires all vehicles to be fitted with an ELKS and meet the requirements of Appendix A, as varied by clause 6 (Exemptions and Alternative Procedures), or the alternative standard listed under clause 7 (Alternative Standards).

2.4. Emergency Lane Keeping Systems

ELKS is a driver assistance system that should provide warning to the driver and correct the trajectory only when the driver is unintentionally leaving the lane. An ELKS comprises a Lane Departure Warning System (LDWS) and a Corrective Directional Control Function (CDCF).

Specific requirements are listed under paragraphs 6.1 – 6.3 of Appendix A for ELKS. They detail failure warning, manual and automatic deactivation, and automatic suppression requirements. A constant visual warning signal must be given to the driver when the system cannot meet the requirements of the regulation, or when the system is manually or automatically deactivated. This is so the driver is aware of the system's current status.

Paragraph 8 of Appendix A also details the test requirements for CDCF, which encompass testing conditions, lane markings, subject vehicle conditions and test procedures.

2.5. Lane Departure Warning System

LDWS alerts a distracted or drowsy driver when the vehicle unintentionally drifts out of its travel lane. LDWS typically utilises a forward-facing camera to continuously monitor lane markings on the road ahead, detecting any unintentional drift of the vehicle from its lane. The LDWS will monitor solid and dashed lane markings in accordance with those identified in Annex 3 (Visible lane marking identification) to Regulation No. 130 of the United Nations Economic Commission for Europe (UNECE) – Uniform provisions concerning the approval of motor vehicles with regard to the Lane Departure Warning System (UN R130), incorporating the 01 series of amendments. The Australian lane markings in UN R130 are compatible with lane markings in Australian Standard AS 1742.2:2022 Manual of uniform traffic control devices (Part 2 Traffic control devices for general use).

The performance requirements of LDWS, as outlined in paragraph 6.5 of Appendix A, include the warning indication requirements and the operational speed range in which the system must be active. The LDWS must be operational within the vehicle speed range of at least between 65 km/h to 130 km/h (or the maximum speed if it is lower than 130 km/h) and under all load conditions, unless an action has been taken indicating an intention to depart from the lane by the driver, or the vehicle is optionally equipped with a means to manually or automatically deactivate the LDWS.

This is intended to address the speed range where a higher incidence of unintentional lane departure crashes occurs. When active within this speed range, the LDWS shall alert the driver through visual, acoustic, or haptic warnings if the vehicle crosses a visible lane marking by more than 0.3 m. Any failure of the LDWS must be easily verifiable by the driver.

Furthermore, it outlines the minimum conditions and scenarios under which the system must fulfil the performance requirements, recognising that the system may not encompass all conditions and scenarios that the vehicle could face during its lifespan.

Paragraph 7 of Appendix A also details the test requirements for LDWS, which encompass testing conditions, lane markings, subject vehicle conditions and test procedures.

2.6. Corrective Directional Control Function

CDCF corrects lane departure when the ELKS detects that the vehicle is unintentionally leaving its lane. The driver can maintain control and override the system at any time by making a deliberate steering action. The CDCF will monitor solid lane edge markings in accordance with those identified in Annex 3 (Visible lane marking identification) to Regulation No. 130 of the United Nations Economic Commission for Europe (UNECE) – Uniform provisions concerning the approval of motor vehicles regarding the Lane Departure Warning System (UN R130), incorporating the 01 series of amendments. The Australian lane markings in UN R130 are compatible with lane markings in Australian Standard AS 1742.2:2022 Manual of uniform traffic control devices (Part 2 Traffic control devices for general use).

The performance requirements of the CDCF, as detailed in paragraph 6.6 of Appendix A, encompass the warning indication requirements and the operational speed range in which the system must remain active. The CDCF must be operational within a vehicle speed range of at least 70 km/h to 130 km/h (or the maximum speed if it is lower than

130 km/h) and under all load conditions, unless it is partially or fully deactivated manually (if equipped) by the driver or automatically deactivated (if equipped) by the vehicle's complex electronic systems, such as during off-road use, towing a trailer, or when the electronic stability control system is intervening.

There exists a minimal speed discrepancy between the LDWS and CDCF. To ensure the safety of the driver, the LDWS will be activated before the vehicle reaches the operational speed range of the CDCF. This ensures that the driver receives a visual, audible, and haptic warning prior to any intervention by the CDCF in the event of an emergency situation. This coordinated approach enhances overall safety and driver awareness during critical moments.

Paragraph 6.6.3 of Appendix A details the steering override requirements of the system. Specifically, a maximum allowable force of 50 N is established as the limit to override the system. This decision is informed by input from international vehicle experts regarding the maximum limit of 50 N. Where differential braking is utilised, a steering angle of no more than 25 degrees is necessary for the driver to regain control of the vehicle from the ELKS if they choose to do so. The CDCF must provide a warning indication to alert the driver of any intervention. These warnings should escalate throughout the duration of an intervention or during consecutive interventions to effectively inform the driver of the situation.

Furthermore, Paragraph 8 of Appendix A outlines the test requirements for CDCF, including testing conditions, lane markings, subject vehicle conditions and test procedures.

2.7. Special requirements to be applied to the safety aspects of electronic control systems

Annex 3 of Appendix A defines the special requirements for documentation, fault strategy and verification with respect to the safety aspects of Electronic System(s) and complex electronic control systems. This annex does not specify the performance criteria for "*the system*" but covers the methodology applied to the design process and the information which shall be documented.

2.8. Exemptions and Alternative Procedures

2.8.1. Exemptions

Clause 6 provides exemptions from some requirements of Appendix A (UN R17X) which pertain to gaining a Type Approval in the UN context. This is because they are not required under the Australian regulatory framework where the Commonwealth administers approvals through the Act and the ADRs. Consequently, manufacturers supplying new vehicles to Australia are exempt from most administrative (non-technical) requirements of UN R17X.

Clause 6.1 states that, paragraphs 3, 4, 9, 10, 11, 12, 13 and annexes 1 and 2 of UN R17X are not required for the purposes of complying with ADR 107/00. This is because they refer to gaining a Type Approval in the UN context.

2.8.2. Alternative Procedures

Clause 6 identifies procedures to which vehicles may comply, which are acceptable alternatives to those created by UN R17X. These have been adapted for the Australian

market to enable vehicle manufacturers to demonstrate compliance to ADR 107/00 where they have not gained a type approval in the UN context.

Clauses 6.2 clarifies that in paragraphs 6.5.2, 6.6.2, 7.2.1 and 8.2.1 of Appendix A, manufacturers are required to test their vehicles to demonstrate compliance with lane markings to the 01 series of amendments to UN Regulation No. 130, which includes the requirements for Australian specific lane markings.

Clauses 6.3 to 6.21 clarify the administrative arrangements of the UN R17X where they differ from the RVSA framework; for example, there is no technical service under the RVSA framework.

Clause 6.22 clarifies the precedence in the event of a conflict between clause 6 and Appendix A.

2.9. Alternative Standards

Clause 7 sets out standards which are considered to be equivalent to ADR 107/00. If a vehicle meets the technical requirements of one of these standards, it is therefore deemed to comply with ADR 107/00. Vehicle manufacturers have the flexibility to demonstrate compliance to ADR 107/00 through clause 5.1 and Appendix A as varied by clause 6 (Exemptions and Alternative Procedures), or through clause 7.1 (Alternative Standards). Clause 7.1 identifies UN R17X, as an acceptable alternate standard and is applicable for the purposes of this National Road Vehicle Standard. In addition, clause 7.1.1 requires that when using the alternative standard to demonstrate compliance to ADR 107/00, manufacturers are required to test their vehicles to demonstrate compliance with lane markings to the 01 series of amendments to UN Regulation No. 130.

3. MATTERS INCORPORATED BY REFERENCE

3.1. Legislative Instruments

Clause 4.1.1 include references to the Vehicle Standard (Australian Design Rule Definitions and Vehicle Categories) 2005. This sets out definitions for many terms used in the ADRs, including the vehicle categories used in ADR applicability tables.

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

In accordance with paragraph 12(2)(b) of the Act, each of these ADRs are incorporated as in force or existing from time to time.

3.2. Other Documents

ADR 107/00 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.

United Nations Regulations and / or Resolutions

Clauses 6.2 and 7.1. in this standard, as well as Paragraphs 6.5.2., 6.6.2., 7.2.1. and 8.2.1. of Appendix A in this standard include a reference to United Nations Regulation No. 130 – UNIFORM PROVISIONS CONCERNING THE APPROVAL OF MOTOR VEHICLES WITH REGARD TO THE LANE DEPARTURE WARNING SYSTEM

(LDWS). This is an international standard for the provisions for LDWS fitted to motor vehicles of the categories M_2, M_3, N_2 and N_3 primarily used under highway conditions.

The footnote to Paragraph 1 in Appendix A includes a reference to the Consolidated Resolution on the Construction of Vehicles (R.E.3) (ECE/TRANS/WP.29/78/Rev.6, para. 2.2.5.4.). This international standard provides information about the legal texts under the framework of the 1958 Agreement (UN Regulations, Rules and specific requirements) applicable in the vehicle design, aiming for the improvement of safety and the protection of the environment.

The footnote to Paragraph 6.2.1.1. in Appendix A includes a reference to the Mutual Resolution No. 2 (M.R.2) of the 1958 and the 1998 Agreements (ECE/TRANS/WP.29/1121). This international standard contains definitions of vehicle propulsion systems.

Paragraph 4.2 of Annex 3 in Appendix A includes a reference to Schedule 8 of Revision 3 of the 1958 Agreement. This international standard contains general conditions for virtual testing methods.

The UN Regulations 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**

European Union Regulations

The footnote to the Table of Contents in Appendix A includes a reference to the European Union (EU) Regulation 2021/646. This Regulation requires passenger cars and light commercial vehicles to be equipped with emergency lane-keeping systems.

The requirements for the UN Regulation for ELKS has been adapted from EU Regulation 2021/646.

The EU Regulations may be freely accessed online through the EUR-Lex website at **www.eur-lex.europa.eu/homepage.html?locale=en**

4. CONSULTATION

4.1. General Consultation Arrangements

It has been a 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 an Impact Analysis (IA) meeting the requirements of the Office of Impact Analysis (OIA) as published in the *Australian Government Guide to Policy Impact Analysis 2023.*

4.2. Specific Consultation Arrangements

The Department has previously conducted consultations regarding Lane Keeping Systems. As a result of this consultation, it was determined that this ADR should harmonise with emergency lane keeping systems available as an international vehicle

standard. Consequently, the Department initiated the development of a new international UN Regulation specifically for Emergency Lane Keeping Systems, which is based on the requirements set forth by the European Union for the local European market. This new UN Regulation is anticipated to come into effect at the end of 2025 or early 2026 and will mirror these requirements in this ADR,

[Further information to be inserted once this round of consultation is completed]

Forthcoming.

5. REGULATORY IMPACT

5.1. Benefits and Costs

Introducing a new ADR 107/00 harmonised with the new UN Regulation for ELKS for M_1 and N_1 vehicles (equivalent to ADR category MA, MB, MC and NA) supports the Australian Government's priorities under the National Road Safety Strategy 2021-30 that includes pursuing technological improvements and uptake of safer vehicles. It also completes one of the actions under the National Road Safety Action Plan 2023-25, i.e. introduce a new ADR for lane keep assist systems for light vehicles. This ADR aims to reduce the likelihood of fatalities and serious injuries associated with crashes involving unintended lane departures.

This option also meets the Australian Government's long-standing policy of harmonisation with UN Regulations. Harmonisation with the UN Regulations allows Australia to fulfil its obligations as a Contracting Party under the 1958 Agreement and as a signatory under the World Trade Organisation Technical Barriers to Trade Agreement.

5.2. Impact Analysis

A Preliminary Impact Analysis was submitted to the Office of Impact Analysis (OIA) and it was determined in January 2025 that a detailed analysis is not required under the Australian Government's Policy Impact Analysis Framework. The OIA reference number for the IA is OIA25-08818.

Previously a Regulation Impact Statement (RIS) was prepared for public consultation in February 2022. The Office of Best Practice Regulation (OBPR) reference number for this RIS is OBPR21-01230. Submissions received supported the introduction of a new regulation mandating the fitment of lane keeping systems. The Australian Government has decided to harmonise the ADR with a UN Regulation for ELKS, which did not exist at the time of consultation.

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 107/00 is a new legislative instrument. It specifies requirements for an ELKS fitted to passenger vehicles and light goods vehicles, to reduce deaths and injuries from unintended lane departures.

6.2. Human Rights Implications

ADR 107/00 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 107/00 is compatible with human rights, as it does not raise any human rights issues.