

National Road Vehicle Standard (Australian Design Rule 107/00 – Lane Keeping Systems) 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

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1. LEGISLATIVE AUTHORITY

National Road Vehicle Standard (Australian Design Rule 107/00 – Lane Keeping Systems) 2022 (ADR 107/00) is made under the Road Vehicle Standards Act 2018 (the Act). Section 12 of the Act allows the Minister to determine National Road Vehicle Standards enabling 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.

2. PURPOSE AND OPERATION

2.1. Overview of the regulatory framework

The Act 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 Act, 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 107/00 is to specify requirements for Lane Keeping Systems for passenger vehicles (ADR categories MA, MB and MC vehicles) and light goods vehicles (ADR category NA vehicles), to prevent the driver from leaving their lane unintentionally.

ADR 107/00 prescribes the requirement for the fitment of lane keeping systems, performance requirements for lane keeping systems, and requires that lane keeping systems default to being active.

Lane keeping systems primarily target crashes involving head on collisions, side-swipes and single car run-off road crashes. These types of crashes result in 55 per cent of all road fatalities involving light vehicles. This increases to 72 per cent at highway speeds.

2.2.1. Lane Departure Warning System (LDWS)

LDWS provides the driver with a warning when the system detects the vehicle is unintentionally leaving its lane. Section 7.4 prescribes performance requirements for LDWS including a minimum operational speed range of 65 km/h and 130 km/h or the maximum vehicle speed if lower than 130km/h. This is because the risk of serious injury from a head on collision increases sharply in this speed range, from 20 per cent at 65 km/h to 95 per cent at 110 km/h.

It sets performance requirements for lane detection where the system needs to be able to detect lane markings described in Appendix A. By staying in the lane, 22 per cent of fatal head on collisions, side-swipes and single car run-off crashes can be avoided.

The LDWS requires at least two warning means out of visual, acoustic and haptic, or one warning means out of haptic and acoustic and provide an indication of the direction of unintended drift. The warning is intended to alert the driver so they do not unintentionally leave the lane.

Section 8 prescribes the test requirements for LDWS, including testing conditions, subject vehicle conditions, and test procedures.

2.2.2. Corrective Directional Control Function (CDCF)

CDCF compliments LDWS. CDCF can provide lateral intervention to prevent lane departure when the system has detected the vehicle is unintentionally leaving its lane and LDWS has provided the driver with a warning. Section 7.5 prescribes performance for CDCF. It sets a minimum operational speed range of between 70 km/h and 130 km/h or the maximum vehicle speed if lower than 130km/h. CDCF targets the same type of crashes as LDWS but actively prevents unintentional lane departure through either a steering input or through differential braking.

It provides performance requirements for lane marking detection which are the same as for LDWS listed above.

Section 7.5 sets the requirement for a steering effort of not more than 50 N will override the system. If the system has been overridden a visual warning needs to be displayed to the driver for at least 1 second. There are additional requirements for warnings after longer and consecutive interventions. The warnings ensure the driver is aware they have overridden the system to enable the driver to assess if the system has unintentionally been overridden and to alert them that the system is no longer active.

Section 9 prescribes the test requirements for CDCF including, testing conditions, subject vehicle conditions, and test procedures.

3. MATTERS INCORPORATED BY REFERENCE

3.1. Legislative Instruments

Clauses 3.1, and 5.1 include 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.

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)(b) of the Act, this ADR is incorporated as in force or existing from time to time.

3.2. Other Documents

Australian Standards

The specifications for the solid line and dashed lane markings used for testing in this National Road Vehicle Standard are defined in the Australian Standard AS 1742.2-2009 Manual of uniform traffic control devices - Part 2: Traffic control devices for general use. AS 1742.2-2009 defines the road markings, road signage, traffic devices, and traffic control for Australian roads. The website is **<https://www.standards.org.au>**.

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

Section 12 of the Act 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.

European Union

The requirements in this National Road Vehicle Standard have been adapted from EU Regulation EU 2021/646 Emergency Lane Keeping Systems (ELKS) which is the EU regulation that sets the performance and testing requirements for ELKS of motor vehicles in all of the Member States of the European Union. This document may be freely accessed online through the Publications Office of the European Union. The website is **eur-lex.europa.eu/homepage.html**.

The requirements for this National Road Vehicle Standard adapted from EU 2021/646 include the warning, deactivation, system performance and testing requirements of both LDWS and CDCF, and for LKS in general.

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

[to be completed following consultation]

5. REGULATORY IMPACT

5.1. Benefits and Costs

ADR 107/00 is expected to prevent 6,989 fatalities and 23,648 serious injuries with this reduction in road trauma providing a net benefit of \$2,442 million to the community.

The Regulatory Burden Measurement shows an average increase in cost of \$70 million per annum associated with the additional hardware and software required for LKS. The total increase in cost will be \$613 million which is outweighed by the \$3,055 million total benefit to the community resulting in a Benefit Cost Ratio of 5.0.

5.2. Regulation Impact Statement

A Regulation Impact Statement (RIS) was completed to analyse the policy options for the fitment of lane keeping systems in light vehicles. The best option is implementation of a mandatory standard under the Act, to require the fitment of Lane Keeping Systems to passenger and light goods vehicles. The OBPR reference number for the RIS is OBPR21-01230.

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 prescribes performance and testing requirements for LKS, including the LDWS and the CDCF.

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.