



## Emergency Lane Keeping Systems

## Consultation Paper

### What is the problem?

In Australia, a large proportion of fatalities resulting from light vehicle crashes involved unintentional lane departures. Monash University Accident Research Centre's (MUARC) recently published report, *'The Potential Benefits of Lane Keep Assist Systems in Australian Light Vehicles'*<sup>1</sup>, estimated that 42% of all fatal crashes and 55% of resulting fatalities between 2013 and 2019 in Australia involved unintentional lane departures that could have been potentially mitigated by an Emergency Lane Keeping System (ELKS). However, in Australia, fitment of an ELKS is not currently mandated, with almost 40% of new passenger vehicles and light goods vehicles that entered the Australian market in 2021 not fitted with an ELKS<sup>2</sup>. An ELKS is a driver assistance system that provides warning to the driver and corrects the trajectory only when the driver is unintentionally leaving the lane.

### The Case for Government Intervention

#### Objectives

Government intervention is often 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 still remain in Australia. With recent developments in vehicle technology, mandating such technologies that will provide substantial safety measures may be 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 Australian Design Rules (ADRs) with international standards where possible, through the adoption of international regulations developed by the 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.

Australia (represented by the Department) has progressed a proposal to introduce a new UN Regulation in regards to the fitment of ELKS on passenger vehicles and light goods vehicles. This new UN Regulation is closely aligned with the requirements of European Union Regulation 2021/646 and seeks to facilitate a consistent approach across all Contracting Parties (UN member countries to the 1958 agreement) for ELKS. ADR 107/00 will be harmonised with this new UN Regulation for ELKS.

While there is currently limited data on the fitment of ELKS in new passenger vehicles and light goods vehicles entering the market, it is estimated that market forces would increase the fitment rate of ELKS over time. The relatively high fitment rate of ELKS projected under market conditions may be an impediment to introducing a new regulation as the Government incurs additional costs to develop, implement and administer a regulation. However, without a mandatory standard in force, the fitment rate of ELKS would begin to plateau at some point

<sup>1</sup> Stuart Newstead, Linda Watson & Laurie Budd, Released March 2023, *The Potential Benefits of Lane Keep Assist Systems in Australian Light Vehicles*, Monash University Accident Research Centre (MUARC), accessed 14 January 2025, <[www.monash.edu/\\_\\_data/assets/pdf\\_file/0009/3219570/The-Potential-Benefits-of-LKAS-in-Australia-MUARC-Report-365.pdf](http://www.monash.edu/__data/assets/pdf_file/0009/3219570/The-Potential-Benefits-of-LKAS-in-Australia-MUARC-Report-365.pdf)>

<sup>2</sup> Department of Infrastructure, Transport, Regional Development, Communications and the Arts, December 2021, *Regulation Impact Statement Lane Keeping Systems for Light Vehicles*, Australian Government, accessed 14 January 2025, <[www.infrastructure.gov.au/sites/default/files/documents/lks-regulation-impact-statement.pdf](http://www.infrastructure.gov.au/sites/default/files/documents/lks-regulation-impact-statement.pdf)>

in time, and more than likely never reach 100%. Furthermore, there is the potential for ELKS fitted to vary in performance, lessening the safety impact on consumers. Government intervention offers an important advantage to all road users and the wider community through guaranteed 100 per cent fitment rate of ELKS and minimum performance requirements as a standard feature to all new passenger vehicles and light goods vehicles sold in Australia, assuming full compliance over time.

### Justification

While there has been a downward trend in road trauma over the last few decades, strong population growth resulting in an increase of the number of vehicles on Australian roads means that advanced approaches to road safety is needed to continue to reduce the road toll.

Studies have shown that technologies that alert and assist the driver of an unintentional lane departure can help reduce fatalities and/or injuries.<sup>1</sup> Such technologies, like an ELKS, already exist, and are becoming common place on newer vehicles, where the fitment has been positively impacted by manufacturer initiatives and consumer choices driven by non-regulatory programs such as the Australasian New Car Assessment Program (ANCAP). Even though the fitment rate in Australia is anecdotally quite high, there are still vehicles that do not come with ELKS as standard.<sup>2</sup> In addition, a recent pilot study undertaken by ANCAP reported that performance differs in those vehicles that are fitted with a lane support system, sometimes creating an adverse driver experience.<sup>3</sup> Therefore, Australia is proposing to mandate the fitment of ELKS on passenger vehicles and light goods vehicles through the introduction of a new ADR. The new ADR will mandate standardised minimum performance standards for all ELKS, that will provide a cost-effective solution in an effort to reduce unintentional lane departures. The steering assistance function known as the Corrective Directional Control Function (CDCF) of the ELKS must be active at least between 70km/h and 130 km/h (or the maximum vehicle speed if it is below 130 km/h), aimed at reducing unintentional lane departures in rural and highway settings. The CDCF is tested against standard Australian solid lane markings, again, aiming at reducing vehicles leaving the road in rural/highway settings.

## Proposal

### Impacts on Businesses

It is anticipated that there will be a minor regulatory impact to manufacturers from the introduction of a new ADR due to the relatively small size of the total Australian market (representing approximately one percent of the global new vehicle sales market in 2023<sup>4</sup>). This means that manufacturers can amortise additional costs across their new vehicle fleet, reducing any on-costs to Australian consumers. Furthermore, the European Union already mandates the fitment of an ELKS for the European market through EU Regulation 2021/646. Therefore, as Europe is a key market for sourcing vehicles into the Australian market, the manufacturers providing vehicles in Europe will have already developed these systems, which lowers the overall development costs.

### Impacts on the Community

Introducing a new ADR 107/00 is estimated to have a positive road safety benefit to the community. The aforementioned report<sup>1</sup> published by MUARC estimated that a 100% fitment rate (when compared to a 0% fitment rate) of ELKS would result in over 70 fewer fatal crashes and more than 500 fewer serious injury crashes annually in the Australian community.<sup>1</sup>

<sup>3</sup> Australasian New Car Assessment Program (ANCAP), 26 Jul 2024, *Pilot research project lifts the lid on usability of lane support systems*, accessed 14 January 2025, < [www.ancap.com.au/media-and-gallery/media-releases/a62a71](http://www.ancap.com.au/media-and-gallery/media-releases/a62a71) >

<sup>4</sup> International Organization of Motor Vehicle Manufacturers, Registrations or sales of new vehicles – All types 2019-2023, accessed 15 January 2025, < [www.oica.net/wp-content/uploads/total\\_sales\\_2023.pdf](http://www.oica.net/wp-content/uploads/total_sales_2023.pdf) >