



2025 ROADS AUSTRALIA FELLOWSHIP

ROAD SAFETY - REDUCING ROAD FATALITIES

IMPLEMENTATION OF INTELLIGENT SPEED ASSISTANCE (ISA)

17 October 2025 | NSW Group 1



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Table of Abbreviations

Abbreviation	Meaning
ADAS	Advanced Driver Assistance System
ANCAP	Australasian New Car Assessment Program
API	Application Programming Interface
AS	Australian Standard
DSL	Digital Speed Limit
EU	European Union
GPS	Global Positioning System
ISA	Intelligent Speed Assistance
KPI	Key Performance Indicator
NTC	National Transport Commission
NSW	New South Wales
OEM	Original Equipment Manufacturer
TfNSW	Transport for New South Wales
TTM	Temporary Traffic Management
WHS	Work Health and Safety
ADAS	Advanced Driver Assistance System

1 Executive Summary

Australia is facing a worsening road safety crisis, with 1,300 deaths in 2024, marking an 18.5% increase since 2021. Speeding is the leading cause, particularly in NSW which recorded 136 speed related fatalities in 2024. Despite national strategies, Australia is not on track to meet its Vision Zero by 2050 targets.

Intelligent Speed Assistance (ISA) is a proven, advanced driver-assistance system that uses GPS, digital mapping, and traffic sign recognition to help drivers comply with speed limits. International evidence, especially from the EU, where ISA is now mandatory, shows ISA can reduce fatalities by up to 50%. Local trials in NSW suggest ISA could prevent up to 19% of deaths annually if adopted fleet wide.

1.1 Key Recommendations:

- **Mandate ISA in all new vehicles by 2030** through national legislation, aligning with global best practice.
- **Invest in digital infrastructure**, including a national speed limit database to improve ISA accuracy.
- **Launch targeted pilot programs** on high-risk corridors and roadwork zones.
- **Drive public education and incentives** to accelerate adoption and address concerns.
- **Plan for integration** with existing and future vehicles.

1.2 Benefits:

- Significant reduction in road deaths and serious injuries.
- Improved compliance and safer roads for all users, including road workers.
- Alignment with Vision Zero and 2030 safety targets.
- Enhanced public trust through evidence-based, technology-driven policy.

1.3 Public & Industry Insights

- 70% of Australians believe ISA can reduce speeding, 51% support mandatory ISA
- Fleet trials (e.g CPB Contractors, Acciona) show reduced speeding fines and maintenance costs
- Barriers include cost, technical reliability and public concerns over control, privacy and trust
- Suggestions include phased rollout, optional deactivation, better infrastructure and public education

ISA is described as the most effective life-saving vehicle technology currently available. Strong leadership and decisive action are needed to implement ISA nationally and save lives.

1.4 Economic Impact

- Road incidents costs Australia approximately \$9 billion annually
- ISA implementation has a cost benefit ratio of 6:1 meaning every dollar invested could have a sixfold saving in incident-related costs
- Reduced speed also lowers road maintenance costs, as excessive speed contributes to infrastructure wear

1.5 Fleet vehicles as a strategic entry point

- Fleet vehicles make up 50% of all new vehicle sales
- Mandating ISA in fleets is a low-resistance, high impact strategy due to WHS obligations
- Trials (e.g CPB Contractors, Acciona) show significant reductions in speeding infringements and maintenance costs

1.6 Public Trust and Cultural resistance

- While 75% support full or partial ISA mandates, concerns remain around:
 - Loss of driver control
 - Privacy and surveillance fears
 - Technical reliability & accuracy
- Addressing these concerns through education, transparency and opt-out option could improve acceptance

1.7 Technical Benchmarking

- The EU mandate (Regulation 2019/2144) sets a precedent for Australia
- Cities like New York and London have shown measurable success with ISA in municipal fleets
- Australia risks falling behind global safety standards without coordinated action

1.8 Technology Readiness

- ISA is already included in ANCAP 5-star safety ratings, encouraging manufacturers to adopt it
- NSW is leading in digital speed zone mapping which support ISA accuracy
- However, infrastructure gaps (e.g, signage errors, roadwork zones) must be addressed to ensure reliability.

2 Overview

2.1 The Challenge

Australia is reaffirming its commitment to significantly improve road safety, refusing to accept road deaths and serious injuries are part for the course. Building on progress made under the 2011–2020 National Road Safety Strategy, such as better infrastructure, tighter enforcement, and safer vehicles, governments have acknowledged that while road fatalities have declined by 22.5%, the target was not met.

Looking to the decade ahead, the 2021–2030 strategy is underpinned by three focus areas: *Safe roads*, *Safe vehicles*, and *Safe road use*, with speed management integrated throughout. The goal is to halve road fatalities and reduce serious injuries by at least 30% by 2030, paving the way toward Vision Zero by 2050.

Last year 2024 was one of the deadliest years on our roads, with the latest Bureau of Infrastructure and Transport Research Economics figures [1] showing 1,300 fatalities, representing a 4 year upward trend and 18.5% higher than 2021. To date in 2025, there has been 143 people killed on Australian Roads, up from 122 at this this time last year [Ref: 025 Fellowship Group Project].

Data [2] shows 136 people died in speed related crashes in New South Wales (NSW) in 2024, making speeding the leading cause of road fatalities in the state.

As speeding is the most significant contributor to fatalities and injuries of road users and road workers, speed management is our key focus. Our proposed solution examines innovation related to eliminating speeding vehicles and improving safety outcomes.

There has been numerous trials and pilots conducted to improve road safety that are typically centred around road and infrastructure improvements including technology and/or driver behaviour, however, to substantially reduce these numbers, significant change is required.

The research and statistics have therefore moved us toward investing in Intelligent Speed Assistance (ISA), which is an emerging technology that assists drivers in complying with posted speed limits by actively managing the vehicles speed and removing poor driver behaviour.

2.2 The Solution

Intelligent Speed Assistance is an Advanced Driver Assistance System (ADAS) designed to prevent speeding related crashes by aiding drivers in maintaining appropriate speeds through driver warnings or acting as an automatic speed limiter, preventing the driver from accelerating beyond the nominated speed limit.

Intelligent Speed Assistance uses technologies such as GPS, digital maps, traffic sign recognition (TSR), and vehicle-to-infrastructure communications to determine the current speed limit and alert or intervene when the vehicle attempts to exceed it.

As an example, if the posted speed limit is 60km/h and a driver attempted to accelerate past 60km/h the system would provide a warning and/or depending on the system installed, could

physically prevent the vehicle from increasing speed beyond 60km/h. The concept is explained in Figure 1.

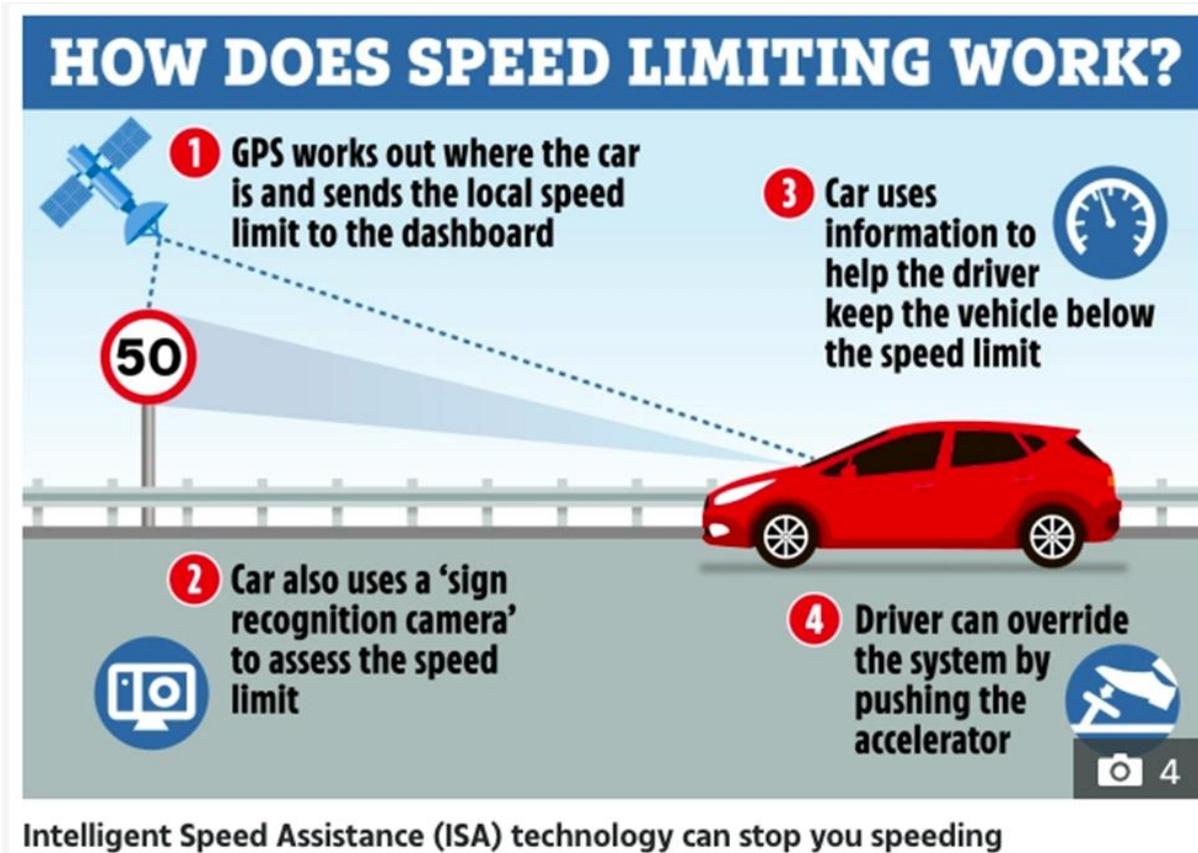


Figure 1 Intelligent Speed Assistance infographic [3]

Intelligent Speed Assistance (ISA) was first introduced in Europe during the early 1980s through a series of driver behaviour studies in France, followed by large-scale trials in Sweden (Biding & Lind, 2000). These early trials evaluated systems that provided driver alerts and haptic feedback through the accelerator pedal.

Over subsequent decades, ISA technology has evolved significantly. The development of Global Positioning System (GPS) capability marked a major advancement, enabling vehicles to determine their position relative to posted speed limits with greater accuracy.

ISA systems are generally categorised into three types [4], differentiated by the degree of driver assistance and control:



1. Advisory (or Informative) ISA systems provide visual, audible, or haptic alerts to the driver when the legal speed limit is exceeded. These alerts prompt voluntary compliance, allowing the driver full control of the vehicle. Typical interfaces include dashboard notifications, heads-up display warnings, or vibrations through the accelerator pedal or steering wheel. Advisory ISA serves as a low-intervention safety feature that increases driver awareness of speed limits, particularly in unfamiliar areas or where speed zones change frequently. While the system relies entirely on driver discretion, studies have shown it can lead to moderate reductions in mean speeds and improve speed-limit compliance.



2. Supportive (or Voluntary) ISA adds an active component by restricting engine power or throttle response once the legal speed limit is reached. Drivers retain the ability to override the system—for example, by applying greater pressure on the accelerator pedal—allowing flexibility for overtaking or merging manoeuvres.

This form of ISA balances safety with driver autonomy and has been shown to produce stronger behavioural change than advisory systems. By subtly increasing the physical effort required to exceed the speed limit, it reduces instances of unintentional speeding while maintaining driver comfort and acceptance



3. Limiting (or Mandatory) ISA represents the highest level of intervention. These systems actively prevent the vehicle from exceeding the legal speed limit by electronically capping engine output or adjusting powertrain response. Driver override is typically restricted to defined emergency or safety-critical situations.

Mandatory ISA is intended to deliver consistent compliance with speed limits, significantly reducing crash risk and severity. While its safety benefits are substantial, acceptance among drivers can be lower due to perceived loss of control or situational flexibility. As such, its deployment is often prioritised for fleet, public transport, or government vehicles where compliance and safety outcomes are paramount.

Intelligent Speed Assistance (ISA) has been described as the ‘single most effective new vehicle safety technology’ currently available in terms of its life-saving potential’ [5] and is aligned with the National Road Strategy Priorities of ‘Vehicle Safety’ and ‘Risky Road Use’ as it moves toward a national approach to the regulation of automated driving systems, specifically the establishment of national guidelines to support the introduction of ISA into vehicle fleet.

2.3 Methodology

The project followed a structured, evidence-based process to evaluate the potential of Intelligent Speed Assistance (ISA) in reducing speeding-related road trauma and to develop a practical implementation framework for Australia. The approach involved four key stages — defining the problem, reviewing existing research and case studies, consulting with industry and technical stakeholders, and analysing findings to shape the final proposal , as illustrated in Figure 2.



Figure 2 Methodology overview showing project stages

3 Literature Review

3.1 Statistics

3.1.1 National Trends

National road safety data reveal a concerning upward trend in fatalities across Australia. For the 12 months ending August 2025, there were 1,353 road deaths nationally, representing a 4.3% increase compared to the previous 12-month period. This equates to a fatality rate of 4.9 deaths per 100,000 population, which is 2.8% higher than the corresponding period in the previous year [6]. The month of August 2025 alone recorded 118 fatalities, approximately 25.8% above the five-year average for August, indicating a recent acceleration in fatality numbers. Refer to Table 1 for details.

Table 1 National Road Deaths Summary, 12 months ending August 2025 [6]

Indicator	Value
Road deaths (12 months to Aug 2025)	1,353
% change vs previous 12 months	+4.3%
Fatality rate per 100,000	4.9 (+2.8%)
August 2025 deaths vs 5-year average	+25.8%

3.1.2 Jurisdictional Variations

Jurisdictional trends show considerable variation in fatality patterns. New South Wales recorded the largest increase, with 375 deaths over the 12 months to August 2025, a 16.1% rise compared to the previous year. Tasmania also experienced a marked increase of 31.2%, rising to 42 deaths. By contrast, Victoria observed a slight reduction in fatalities (-2.0%), while the Northern Territory experienced a 38.2% decrease. These differences highlight the uneven distribution of road trauma across Australia's states and territories, influenced by varying traffic volumes, road environments, and enforcement regimes [6]. Refer to Table 2 for details.

Table 2 Road Deaths by Jurisdiction, 12 months ending August 2025 (Australian Road Safety Data Hub, 2025). [6]

Jurisdiction	12-month deaths	% Change vs prev. 12 mo	YTD Deaths 2025 vs 2024	% Change
NSW	375	+16.1%	251 vs 202	+24.3%
Victoria	290	-2.0%	196 vs 190	+3.2%
Queensland	311	+7.2%	206 vs 197	+4.6%
South Australia	89	-10.1%	57 vs 57	0.0%
Western Australia	196	+7.7%	129 vs 121	+6.6%
Tasmania	42	+31.2%	30 vs 19	+57.9%
Northern Territory	42	-38.2%	28 vs 46	-39.1%
ACT	8	+14.3%	3 vs 6	-50.0%
Total	1353	+26.2%	900 vs 838	+7.5%

The posted speed environment remains a critical factor in fatal crashes. In the 12 months to August 2025, roads with posted speed limits of 100 km/h and above accounted for 345 fatal crashes, representing the largest share of fatalities nationwide. While crashes in these high-speed zones decreased marginally by 0.6% compared to the previous year, they continue to dominate fatal crash statistics. Conversely, low-speed environments (≤ 40 km/h zones) accounted for only 2.3% of fatal crashes [6]. Refer to Table 3 for details.

Table 3 Fatal Crashes by Posted Speed Limit, 12 months ending August 2025 [6]

Speed Zone	Fatal Crashes (12 mo to Aug 2025)
≤ 40 km/h	29
50 km/h	148
60–75 km/h	312
80–90 km/h	211
100 km/h	345
110 km/h	139
Total Fatal Crashes	1353

3.1.3 Demographic Patterns

Disaggregating fatalities by road user type and demographic group reveals further insights. Drivers accounted for 624 deaths (a 9.5% increase), while passenger deaths rose sharply by 25.6% over the same period. Vulnerable road users—including pedestrians, motorcyclists, and cyclists—collectively accounted for 500 fatalities, up 2.7% compared to the previous year. The 75+ age group experienced the largest proportional increase (+22.5%), reflecting the heightened fragility and injury severity associated with older road users. Meanwhile, fatalities among 17–25 year-olds declined by 6.6% [6].

Table 4 Fatalities by Road User Category, 12 months ending August 2025 [6]

Category	Deaths	% Change vs prev. year
Drivers	624	+9.5%
Passengers	206	+25.6%
Pedestrians	206	+4.3%
Motorcyclists	260	-9.4%
Pedal cyclists	34	-5.6%
Total deaths	1330	

3.1.4 Key Implications

Overall, the results demonstrate a reversal of long-term downward trends in Australian road fatalities, with increases driven by particular jurisdictions, user groups, and speed environments. High-speed road networks continue to be overrepresented, indicating opportunities for systemic interventions such as targeted speed management, infrastructure treatments (e.g., median barriers, shoulder sealing), and broader adoption of Intelligent Speed Assistance technologies.

Demographic shifts, especially among older drivers and passengers, point to the need for tailored safety strategies that account for vulnerability and exposure differences across population groups.

3.2 Policy and Regulations

3.2.1 Australian current policy and regulatory landscape

While ISA is beginning to appear in some Australian vehicles due to global market influences, its implementation is inconsistent and lacks national coordination. Compared to the international jurisdictions outlined in Table 5, Australia remains behind in adopting a formal policy or regulatory approach to ISA.

Since its introduction in 1992, the Australasian New Car Assessment Program (ANCAP) has influenced the adoption of advanced safety features by assessing vehicles against a star rating system (1 to 5 stars). To achieve a 5-star rating, vehicles must meet stringent criteria across multiple crash and safety tests. The program now also incorporates emerging technologies such as Intelligent Speed Assistance (ISA), allowing for comparative evaluations of new vehicles against contemporary safety benchmarks.

To strengthen its position, Australia could introduce a national regulatory framework, mandate ISA for new vehicles, and support uptake through targeted government fleet programs. Investment in accurate digital speed mapping and public education would further enhance ISA effectiveness and public acceptance.

3.2.2 International policy and regulatory landscape

ISA technology is being implemented and tested at varying levels globally, with the European Union leading the charge with full mandatory implementation.

Countries like the United Kingdom, Australia, Norway, Sweden, and Germany are conducting trials and pilot programs, while the United States and New Zealand are exploring ISA's potential through localized trials. The implementation of ISA aims to reduce speeding-related accidents and enhance road safety, aligning with broader goals like Vision Zero.

The trialling of ISA systems globally have shown positive results in improving road safety by reducing speeding-related incidents, enhancing compliance with speed limits, and protecting vulnerable road users. While some challenges remain in terms of driver acceptance and the loss of perceived control, the data supports ISA's potential to reduce fatalities and injuries, making it a key component of road safety strategies worldwide. Countries like the **European Union, Norway, and Sweden have shown the most progress**, with mandatory and widespread use, while Australia, Germany, and the U.S. continue to explore and refine the technology through regional trials and pilot programs.

As of July 2024, the **European Union** has mandated that all new vehicles must be equipped with Intelligent Speed Assistance (ISA) systems. This is part of the EU's General Safety Regulation, aimed at improving road safety by ensuring that drivers adhere to speed limits. The law requires that vehicles not only notify drivers when they exceed the speed limit but also provide active interventions to reduce vehicle speed if necessary.

Since the introduction of mandatory ISA in July 2024, data has shown a reduction in speeding violations among vehicles equipped with ISA systems. Drivers are less likely to exceed speed limits, as the system actively intervenes or provides continuous alerts when speed limits are breached.

3.3 Ongoing trials and pilot programs

In 2010, The NSW Centre for Road Safety trialled ISA technology in over 100 vehicles, revealing a 30% reduction in the median probability of speeding and improved compliance in 89% of participating vehicles. Mathematical modelling from the trial estimated that if ISA technology was adopted fleet-wide, serious and fatal crashes could be reduced by approximately 19%, potentially saving around 200 lives annually across Australia [3]. These findings highlight the potential of ISA to significantly reduce road fatalities and injuries.

A summary of international regulatory frameworks, pilot trials, and programs is presented in Table 5

Table 5 Regulatory status and ISA Implementation status (by Country)

Location	Policy/Regulation	Implementation Status / Notes
Australia	No mandatory regulation	ISA is not yet mandated under regulation Some vehicle manufacturers are including ISA systems in new vehicles, often as a result of complying with European regulations. NSW Government has a free smartphone app, Speed Adviser, which is a form of ISA. The app provides audio and visual warnings when you exceed the speed limit and when in a school zone.
European Union	Regulation (EU) 2019/2144 [6]	Mandatory for all new vehicles and all vehicle types from July 2024 Provides visual, audio and haptic feedback It can be overridden by the driver. However, vehicle manufacturers must report data on ISA usage, including time/distance ratios with the system on/off, compliance with speed limits, override instances, and switch-on/off timing, broken down by feedback type. Approval authorities will compile this data and report it to the European Commission starting 7 July 2024 and every 6 months thereafter. Early data shows a reduction in speeding violations among ISA-equipped vehicles and ISA is a cornerstone of the EU's Vision Zero strategy, aiming to eliminate road deaths by 2050

Location	Policy/Regulation	Implementation Status / Notes
United Kingdom	<p>Transport for London (TfL) Bus Safety Policy [7]</p> <p>Department for Transport</p>	<p>Mandatory for all new buses from 2019 under TfL Safety Policy</p> <p>While the UK is no longer part of the EU, most manufacturers are expected to include ISA as standard in UK sold vehicles from July 2024</p> <p>Undertaking a ISA Trial Program with early findings indicating some drivers become more conscious of speed limits, resulting in voluntary reduced speed, higher compliance with posted speed limits, however other drivers expressed concerns about the loss of control and annoyance of frequent alerts. Key findings - 30% reduction in injury accidents, 50% reduction in fatal accidents. ISA is now mandatory for all new buses in London since 2019</p>
United States	<p>Strengthening Traffic Enforcement, Education, and Responsibility Amendment Act (STEER) Act 2024 – Virginia, United States [8]</p>	<p>STEER Act 2024 applies to the state of Virginia only. Mandatory for drivers convicted of serious speeding offenses may be mandated to install ISA devices that limit vehicle speed according to posted limits. Offenders are generally responsible for installation costs, however subsidies exist for low-income earners.</p>
Norway	<p>No mandatory regulation</p>	<p>Integration of ISA into its road safety initiatives undertaking ISA trials</p> <p>Vision Zero initiative which aims for zero road fatalities</p> <p>The use of ISA systems in municipal vehicles and some private fleets has contributed to a reduction in speeding-related accidents and a decrease in fatalities.</p> <p>The results have highlighted ISA as an effective tool for meeting Norway's ambitious road safety targets.</p>
Germany	<p>No mandatory regulation</p>	<p>undertaking ISA trials on particular high-traffic highways trials have led to a decrease in speeding violations and an improvement in overall traffic flow.</p> <p>ISA trials has helped prevent accidents caused by drivers exceeding speed limits, particularly in areas with dynamic speed limits</p> <p>ISA's integration with adaptive cruise control systems has had a positive effect on enhancing driving comfort while maintaining safety</p> <p>trials suggest that when used in tandem with other ADAS technologies, ISA helps reduce human error on the road</p>

Location	Policy/Regulation	Implementation Status / Notes
New Zealand	No mandatory regulation	Ongoing trials in selected areas, with a focus on integrating ISA into its road safety strategies The government is using the data from these trials to determine the feasibility of wider implementation. ISA is being considered as part of New Zealand's road safety modernization efforts, aligned with Vision Zero principles
NSW Centre for Road Safety (2010 Trial)	No mandatory regulation	Trialled ISA in over 100 vehicles Results - 30% reduction in the median probability of speeding, 89% of vehicles showed improved compliance. Modelling suggests fleet wide adoption could reduce serious and fatal crashes by 19% equating up to 200 lives saved annually
New York City (USA) - Municipal Fleet Pilot (2022–2024):	No mandatory regulation	The city launched a pilot program equipping 500 municipal vehicles with ISA and the results showed a 64% reduction in speeding incidents, strong evidence of improved compliance and reduced risk. Due to the success, the program is expanding to 2,100 vehicles, making it the largest ISA fleet deployment in the U.S. This initiative is part of NYC's broader Safe Streets strategy

Findings

Survey data indicates strong public belief in the effectiveness of Intelligent Speed Assistance (ISA), with 70% of Australians agreeing it can reduce speeding and over half supporting mandatory inclusion in new vehicles. Support is notably higher when financial incentives are offered, such as reduced registration or insurance costs. However, cost remains a significant barrier, with one-third of respondents unwilling to install ISA regardless of price.

ISA has been integrated into the ANCAP 5-star safety rating criteria, encouraging manufacturers to include it in new models. This move aligns with national road safety strategies focused on vehicle safety and reducing risky road behaviours.

Evidence from fleet operators shows voluntary adoption is already underway. Acciona reports 70% of its fleet equipped with ISA (alarm-only), resulting in fewer speeding fines and lower maintenance costs. CPB Contractors NSW has fitted all new vehicles with ISA since 2021, leading to a reduction in speeding infringements from 30% in 2022 to 6% in 2025.

Stakeholder insights highlight ISA's compatibility with other mandated technologies and its potential to leverage NSW's advanced speed zone mapping. While ISA accuracy is generally high, errors persist near motorway exits and school zones, pointing to infrastructure gaps. Fleet vehicles are considered ideal for initial rollout due to workplace health and safety obligations and lower resistance.

Globally, ISA has demonstrated significant safety benefits, including up to 30% reduction in accidents and 20% fewer fatalities. These outcomes are most pronounced when ISA is implemented through regulatory frameworks rather than market-driven adoption.

Recommendations

To maximise the safety benefits of Intelligent Speed Assistance (ISA) and overcome implementation barriers, the following actions are recommended:

1. **Mandate ISA in All New Vehicles by 2030**
Introduce regulatory requirements to ensure ISA is standard in all new vehicles, aligning with ANCAP safety criteria and national road safety strategies.
2. **Invest in Digital Infrastructure**
Develop and maintain a national speed limit database and improve digital mapping accuracy, particularly in areas prone to ISA errors such as motorway exits and school zones.
3. **Pilot Programs in High-Risk Zones**
Launch targeted ISA trials in urban corridors and regions with high crash rates to demonstrate effectiveness and refine implementation strategies.
4. **Public Education Campaigns**
Build public trust and understanding through awareness initiatives that explain ISA's benefits, address misconceptions, and highlight its role in reducing road trauma.
5. **Fleet-First Strategy**
Prioritise ISA adoption in fleet vehicles due to lower resistance, existing WHS obligations, and proven success in reducing speeding infringements and operational costs.

These measures will support a smoother rollout, enhance public safety, and deliver strong economic returns through reduced crash-related costs.

4 Consultation

Our consultation process aimed to capture diverse perspectives on the implementation of Intelligent Speed Assistance (ISA) across technical, operational, and policy domains. Engagement activities included targeted interviews with technical stakeholders and fleet managers, complemented by an industry-wide survey to gauge broader awareness, attitudes, and perceived barriers to adoption. Together, these inputs informed a balanced understanding of ISA readiness within the Australian transport context.

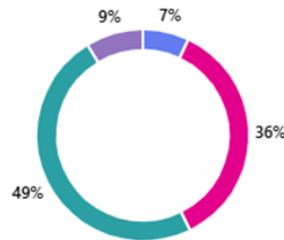
4.1 Industry Survey (September 2025)

To gain insights and an understanding of people’s knowledge and perception of Intelligent Speed Assistance we published an online survey and invited people from industry and the general community to complete it. The survey comprised of thirteen questions specifically related to Understanding of Intelligent Speed Assistance and Perception and Attitudes towards it, four questions about the responder and a free text general comment question. A record of the survey is provided in Appendix A.

A total of 356 people responded to the survey, with the demographics of respondents as outlined in Figure 3.

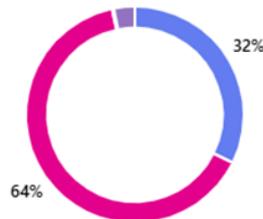
14. Please indicate your age bracket

● 16-25 years	25
● 26-40 years	127
● 41 -60 years	173
● 61+ years	31



15. Which gender do you most identify with?

● Woman	115
● Man	229
● Non-binary	1
● Prefer not to say	11



16. Where do you live?

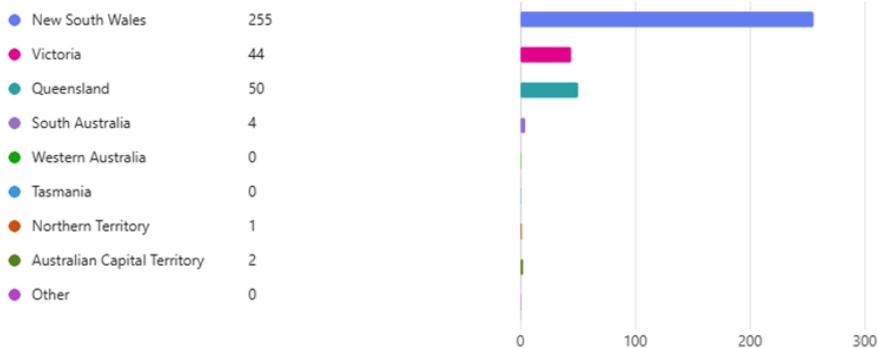


Figure 3 Demographics of respondents from Industry Survey (September 2025)

Of note, it was also identified that most respondents drive less than 20 hours per week.

The data from the questions related to the respondents' understanding and perceptions identified that in excess of 70% of participants said their current daily drive wasn't fitted with Intelligent Speed Assistance or they were unsure. Of those who had Intelligent Speed Assistance fitted in their car there was almost even split between those that said it had a positive impact on reducing speed to those who said it did not. Interestingly however, out of all respondents when asked if they think Intelligent Speed Assistance being fitted to their vehicle would reduce speeding, over 85% responded that it would.

In relation to the cost of Intelligent Speed Assistance being prohibitive, a third of respondents said they wouldn't install it regardless of cost, 35% said they would install if the cost was <\$500 and the remaining 34% said it becomes restrictive between \$501-\$2000.

Regarding decisions on purchasing new vehicles, 44% of people said having Intelligent Speed Assistance fitted as mandatory wouldn't make any difference to the vehicle they purchased, whereas 31% said it would make them more likely to buy that vehicle, 13% would be less likely and 12% weren't sure. There was however a relatively positive response to mandating Intelligent Speed Assistance with 75% in full or partial support. This was even more supported when proposed that buying a car fitted with Intelligent Speed Assistance would reduce registration and/or insurance costs.

Cost and driver reluctance / uncertainty were seen as the most likely barriers to mandating Intelligent Speed Assistance. In response to what could improve people's perception of and trust in Intelligent Speed Assistance, there were no standouts with a relatively even split across all proposed initiatives as outlined in

12. What would improve your perception or trust in Intelligent Speed Assistance technology?

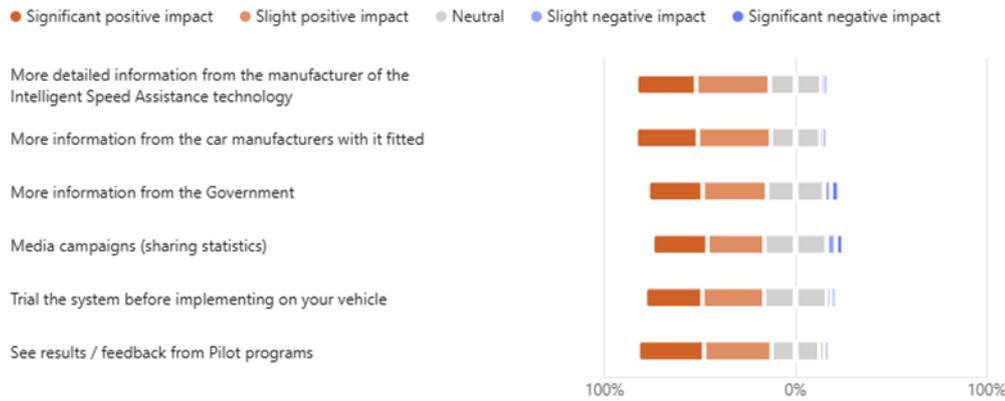


Figure 4 Survey responses indicating factors that would most improve public trust and perception of ISA

The overall feedback was slightly in favour (56%) of mandating Intelligent Speed Assistance as a road safety tool in Australia which highlights that although support outweighs those not in favour, there is still a significant amount of work required to increase acceptance and support of the system.

The following is a summary of the responses captured in the general comments question which provided opportunities for further research and to explore avenues to improve understanding and perceptions in targeted areas.

Category	Finding
 Supportive Views	<p>Safety Potential: ISA is seen by some as a valuable tool to reduce speeding and save lives, especially for learner drivers and heavy vehicles.</p> <p>Driver Awareness: Several respondents say ISA helps them stay mindful of speed limits and reduces cognitive load during travel.</p> <p>Cruise Control Integration: ISA complements adaptive cruise control and auto speed reset features, making driving smoother.</p> <p>Standardisation Support: Some believe ISA should be free and standard in all new vehicles, aligning with global safety benchmarks like the EU.</p>
 Concerns & Criticisms	<p>Loss of Control & Driving Performance</p> <p>Overtaking Risks: ISA may hinder overtaking, particularly on single lane roads, where quick acceleration is sometimes necessary.</p> <p>Driver Complacency: Automation could reduce situational awareness and driving skill over time.</p> <p>Override Limitations: Users want full control, including the ability to permanently disable ISA—not just override it temporarily.</p>
 Technical Reliability	<p>Inaccurate Speed Detection: ISA systems often misread speed zones, especially near school zones, off-ramps, and roadworks.</p> <p>Distracting Alerts: Excessive chiming or beeping is seen as annoying and potentially unsafe.</p> <p>Infrastructure Dependency: Reliability depends on accurate signage, power stability, and proper traffic management—areas where Australia may lag.</p>

Category	Finding
 Cultural Resistance	<p>Freedom of Choice: Many respondents reject mandatory implementation, citing personal autonomy and distrust in government motives.</p> <p>Rev Head Culture: Some believe ISA won't change ingrained driving behaviours like hooning or aggressive driving.</p> <p>Public Trust: Acceptance hinges on transparency, education, and addressing fears around surveillance and control.</p>
 Suggestions & Recommendations	<p>Make It Optional: Allow full deactivation and avoid mandatory rollout until public trust is built.</p> <p>Improve Signage & Infrastructure: Address roadworks mislabelling and outdated signage to prevent ISA errors.</p> <p>Educate & Inform: Provide clearer explanations of ISA technology before surveys or implementation.</p> <p>Focus on Broader Safety Culture: Tackle root causes like poor driving habits, distractions, and infrastructure gaps—not just speed.</p> <p>Phased Introduction: Incentivise voluntary adoption before considering mandates, with cost-neutral options for consumers.</p>

4.2 Technical Stakeholders

Discussions with technical stakeholders focused on the functional and integration aspects of ISA systems. Participants shared insights into data reliability, system interoperability, and the alignment of ISA with vehicle and infrastructure technologies. Feedback highlighted the importance of standardised data sources, robust digital mapping, and effective collaboration between technology providers, regulators, and operators to enable consistent and scalable deployment across networks.

A summary of these discussions is provided in the tables below.

Interview with Bernard Carlon Chief Centre for Road Safety at Transport for NSW
<ul style="list-style-type: none"> ▪ Speed Adviser App, has been downloaded by 160,000 people and has made a positive impact to road safety ▪ Alcohol instruments in cars started as court appointed control for high range PCA offenders. Over 9000 installed to date. This has had a major impact on reducing repeat offenders so it's evidence mandated initiatives work ▪ ANCAP looking at making ISA a requirement ▪ Speedzone maps get shared with car manufacturers to allow them to load speed info (NSW most advanced). Helps accuracy of cars understanding speed zones. ▪ Issues with detecting speed zones is an issue, one trial showed that motorways were particularly bad where exit ramps would show signs at much lower speeds. Same issue exists for back of buses that show 40km/h signs ▪ Main barriers are public opinion, political narrative, question of reduced traffic flows (which isn't correct) ▪ Sweden changed tack around 30 years ago and instead of focusing on drivers / behaviours they focused on the road safety systems / network, and it had a much better outcome

- Biggest opportunity for initial implementation is 'Fleet Vehicles' as it takes away individual preferences and is supported by WHS legislation in relation to ensuring workers are safe using all reasonable controls.
- Fleet vehicles are 50% of all vehicle sales
- Transurban did a trial a while ago (for Fleet Vehicles) and we should be able to get that report from our contacts. Approximate costs of \$9bn / year on road incidents
- Cost benefit ratio for road safety initiatives is generally around 6:1
- For the 350+ fatalities a year (NSW), there are 11,000 serious injuries which cost huge \$ so anything that reduces incidents has a positive impact on cost (initiative costs are dwarfed by road incident costs so the argument that technology costs government money is not accurate).
- Loss of revenue from speeding fines is a drop in the ocean compared to money saved on injury costs so better outcome for government

Interview with Karen Stephan | Road Safety Manager at Transurban

Karen provided a comprehensive overview of Intelligent Speed Assistance (ISA) systems, their types, technical challenges, behavioural impacts, and strategic opportunities from both operational and policy perspectives.

Types of ISA Systems

- Advisory systems offer visual and auditory alerts to drivers when speeding.
- Supportive systems provide physical feedback (e.g., pedal resistance) but allow override.
- Mandatory systems actively limit vehicle speed (e.g., fuel cut-off) with no override option.

Technical & Behavioural Observations

- Speedometers often under-report speed by ~10%, affecting driver perception.
- GPS is used for truck speed tracking; mandatory systems rely on fuel cut-off mechanisms.
- Driver engagement tends to decrease when control is reduced.
- Override mechanisms can require significant physical strength, raising concerns about gender bias.

Trial Learnings

- Fleet trials (e.g., TAC) used mixed technologies including ISA and following distance warnings.
- Mapping speed zones across the state was a major challenge, especially in merge zones where speed differentials increased crash risks.
- Sign placement is governed by engineering standards, which may not always align with optimal safety outcomes.

Behavioural Impact

- Advisory ISA systems reduced speeding among repeat offenders, but effects diminished once systems were removed.
- Acceptance is lower when systems are perceived as intrusive or lack customization.
- Young male drivers were identified as a high-risk group; parental feedback mechanisms were trialled.

Data & Evaluation

- Crash reduction estimates are based on average speed and time spent over the limit.
- Swedish studies were more demonstrative than rigorous.

- Continuous, high-frequency data collection yielded the most reliable results.

Policy & Economic Considerations

- ISA units are estimated to cost around \$100, with potential for customer-funded models.
- Reduced speeding fines could impact government revenue.
- Break-even analyses were conducted across different driver demographics.
- Insurance incentives via telematics are common in the US but less adopted in Australia.

Implementation Challenges

- Retrofitting older vehicles is technically complex.
- Variable speed zones (e.g., school zones) and time-based limits complicate data accuracy.
- Speed zone data must be updated promptly to maintain system integrity.

Strategic Recommendations

- Position supportive ISA as a helpful tool rather than a controlling one.
- Emphasise visual alerts over auditory ones to reduce intrusiveness.
- Encourage manufacturers to include advisory ISA systems through regulation.
- Leverage RedBook and Transurban data for fleet readiness and crash analysis.

Operational & Policy Opportunities

- Fleet Integration: Use RedBook data to assess compatibility and pilot ISA in high-risk groups.
- Data Infrastructure: Invest in real-time speed zone mapping and use tolling data for feedback.
- Community Engagement: Frame ISA as a safety feature and partner with insurers for incentives.
- Design & Regulation: Influence vehicle standards and ensure override mechanisms are inclusive.

4.3 Car Manufacturers / Fleet Managers

To gain insights and an understanding of car manufacturer's uptake of ISA, and companies with fleet vehicles experience with ISA, we interviewed two company fleet managers.

We found that new vehicles purchased by both companies are fitted with ISA since 2021, and speeding infringements have decreased significantly for CPB since 2022 as the older cars without ISA are being phased out.

4.3.1 Justin Ritchie - Acciona Fleet Manager

Acciona operates a fleet of approximately 300 vehicles, with around 70% currently equipped with Intelligent Speed Assistance (ISA) technology, and the remaining vehicles expected to be updated in the coming years. All newly supplied fleet vehicles now include ISA as an original equipment manufacturer (OEM) feature, limited to an audible speed alert rather than active speed intervention.

The fleet manager reported that the introduction of ISA has contributed to a reduction in speeding fines and overall vehicle maintenance costs.

4.3.2 Wade Rogan - CPB Contractors NSW Fleet Manager

Wade Rogan reported that the NSW fleet comprises approximately 310 vehicles, primarily Toyota Hilux, Prado GXL, RAV4, and Hiace models. Since 2021, all new vehicles have been fitted with Intelligent Speed Assistance (ISA) as part of Toyota’s Safety Sense system. With a typical five-year vehicle replacement cycle, full fleet coverage is expected within the next year.

The introduction of ISA has coincided with a significant reduction in speeding infringements, dropping from 30% of vehicles in 2022 to an expected 6% in 2025, demonstrating clear safety and compliance benefits, refer to Figure 5 for details.

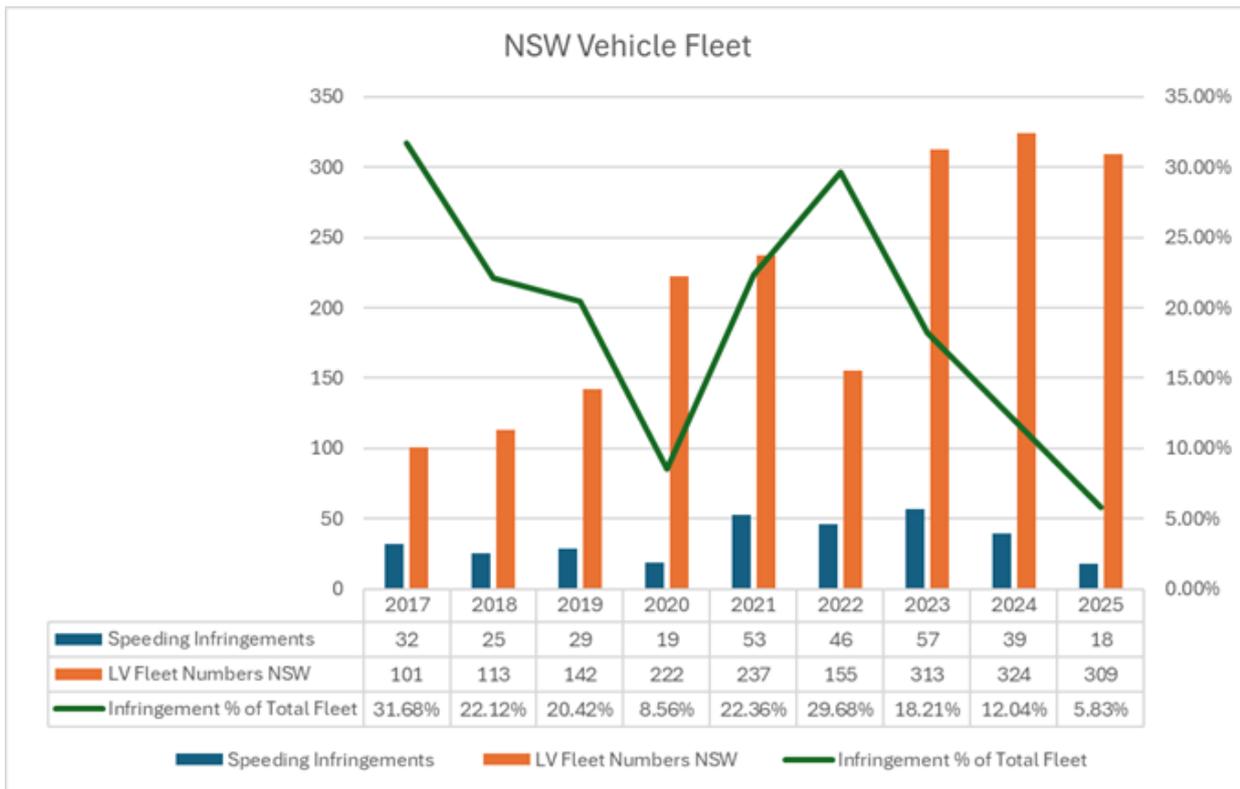


Figure 5 CPB Contractors Speeding Infringements and Fleet Vehicles over timeProposal

5 Proposal

5.1 Potential Implementation Policy

5.1.1 Purpose

The purpose of this policy is to provide a consistent national framework for the staged implementation of Intelligent Speed Assistance (ISA) technology across Australian jurisdictions. The policy aligns with international best practice—particularly European Union Regulation (EU) 2019/2144 [7] and Delegated Regulation (EU) 2021/1958 [8]—and leverages evidence from Australian trials demonstrating ISA’s potential to significantly reduce speeding behaviour and road trauma [9].

5.1.2 Objectives

- Improve speed compliance across the road network by enabling vehicles to reliably detect and respond to legal speed limits.
- Reduce fatalities and serious injuries resulting from speeding through widespread adoption of advisory and supportive ISA systems.
- Provide authoritative Digital Speed Limit (DSL) data to underpin safe and reliable ISA operation.
- Establish governance, data, and asset standards to support industry integration and innovation.
- Build public and stakeholder confidence through clear override rules, privacy protections, and transparent performance reporting.

5.1.3 Scope

This policy applies to:

- State and territory road authorities managing speed assets and digital data.
- Public sector vehicle fleets and contracted fleets.
- OEMs, map vendors, and technology suppliers seeking to integrate ISA in Australia.
- Design and construct (D&C) contractors and maintenance providers responsible for speed signage and work zone management.

5.2 Proposed Implementation Framework

5.2.1 Governance

- Lead agencies will act as the DSL custodians, maintaining a machine-readable, authoritative speed limit database.
- ISA pilots and deployments will follow the NTC Automated Vehicle Trial Guidelines (2023) [10].
- EU Regulation 2021/1958 will be adopted as the minimum technical benchmark for ISA system performance and override provisions.

5.2.2 Data & Infrastructure

- Establish and maintain a national DSL schema and API, including permanent and temporary speed limits.
- All roadwork and TTM must provide real-time digital speed payloads via a state API.
- Signage readability will comply with Austroads AP-R627-20 [11] and AS standards to ensure camera and map fusion accuracy.

5.2.3 Fleet & OEM Integration

- Public fleets and contractors must procure vehicles with ISA compliant to EU 2021/1958, default-ON, with visual and audible feedback.
- OEMs and map vendors will establish data-sharing MOUs to audit DSL ingestion and support dual-source perception.
- Fleet systems will log overspeed events and override time, with anonymised data shared for evaluation.

5.2.4 Staged Roll-Out Timeline

Phase	Key Actions
0–6 months	Adopt policy and governance; stand up DSL schema; pre-qualify sign vendors; select pilot corridors; update procurement clauses.
6–12 months	Launch ISA pilots on priority corridors; enable OEM ingestion; integrate temporary speed data; deploy public fleet vehicles with ISA.
12–24 months	Expand DSL coverage to state networks; embed ISA deliverables in D&C contracts; publish annual KPIs.
24+ months	Broaden adoption to local networks; scale fleet integration; support transition to supportive/limiting ISA in selected contexts.

5.2.5 Key Performance Indicators

- ISA availability (% network with valid DSL/sign coverage)
- Speeding exposure (proportion of vehicle-km >+5 km/h or >+10 km/h over limit)
- False limit rate & correction latency
- Work zone digitisation coverage
- Fatal and serious crash trends on ISA corridors vs controls

5.2.6 Community, Safety & Privacy

- ISA systems must always allow immediate driver override, consistent with EU requirements.
- Permanent deactivation is discouraged and must be logged.
- Fleet data will be anonymised and used only for safety and program improvement.
- Public messaging will emphasise ISA as driver assistance, not enforcement.

5.3 Implementation Opportunities

The opportunities to use ISA to reduce fatalities and serious injuries on our road aligns with the Vision Zero and 2030 safety targets as summarised below:

- **Mandate ISA in all new vehicles by 2030 through national legislation, aligning with global best practice**
 - Approximately 4 – 6 million (18% to 28% of fleet vehicles) of all new vehicles in Australia have ISA
 - Agree level of ISA to be mandated:
 - **Advisory ISA:** alerts the driver when the legal speed limit is being exceeded
 - **Supportive / Voluntary ISA:** prevents the vehicle from exceeding the speed limit by restricting acceleration when the legal speed limit is reached, however, can be overridden by the driver
 - **Limiting ISA / Mandatory ISA:** prevents the vehicle from exceeding the speed limit by restricting acceleration beyond the legal speed limit, and only allows for the driver to override in certain conditions
- **Invest in digital infrastructure, including a national speed limit database**
 - Government to support states to work together updating digital infrastructure
 - Government to support building and sharing a national speed limit database
 - Government to support vehicle suppliers with ISA technology advancements
- **Launch targeted pilot programs on high-risk corridors and roadwork zones.**
 - Identify high risk road corridors and roadwork zones to launch pilot program
- **Drive public education and incentives to accelerate adoption and address concerns.**
 - Educate the public in ISA benefits, safety features and latest capabilities
- **Plan for integration with existing and future vehicle fleets.**
 - Mandate ISA in all new vehicles as per above, and provide incentives to integrate ISA into existing vehicles, drive innovative improvements

Adopting ISA nationally is a high-impact, evidence-backed policy lever for immediate and long-term safety benefits. Strong leadership and decisive action from government and industry are essential to realise this opportunity and save lives.

All of the above will reduce or could potentially eliminate speeding vehicles by actively managing a vehicles speed to prescribed speed limits, inherently improving driver behaviour, improved compliance and safer roads for all users, including road workers.

5.4 Implementation Barriers/Constraints

The successful implementation of Intelligent Speed Assistance (ISA) in Australia requires not only technical innovation but also careful navigation of regulatory, financial, operational, and behavioural challenges. This section outlines the key barriers and constraints that could limit adoption, together with potential mitigations to address each risk. The aim is to provide a balanced view of the issues facing policymakers, industry, and road users, and to highlight pathways that can enable effective, nationally consistent rollout of ISA.

Category	Barrier / Constraint	Explanation	Mitigation
Regulatory & Policy	Lack of consistent national standards	Variations across states and territories slow implementation and create uncertainty.	Develop a nationally consistent ISA standard through Austroads/RA consultation; align with international frameworks (EU).
	Legislative hurdles	Existing road rules and enforcement frameworks may not yet accommodate ISA integration.	Update road rules and legislation in line with ISA deployment; staged reforms with pilot projects.
	Approval processes	Multiple agencies involved create lengthy, complex pathways.	Establish a streamlined regulatory pathway and inter-agency working groups to fast-track approvals.
Financial & Economic	High upfront costs	Retrofitting vehicles, technology procurement, and infrastructure upgrades require significant capital.	Introduce government subsidies or tax incentives; staged rollout prioritising high-risk corridors.
	Limited funding models	No clear cost-sharing arrangements between government, industry, and manufacturers.	Explore public-private partnerships and shared funding schemes with manufacturers/importers.
	Uncertain ROI	Benefits are long-term and societal.	Build business cases that quantify crash reduction, productivity gains, and healthcare savings.
Technical & Operational	Technology maturity	Compatibility between vehicle systems, maps, and infrastructure is still developing.	Phased pilots to test interoperability; collaboration with OEMs and standards bodies.
	Data reliability	Accuracy of speed zone databases and GPS is critical.	Establish national real-time speed limit database with government oversight; ongoing quality assurance.
	Maintenance & updates	Resource-intensive to maintain maps, software, and roadside tech.	Long-term contracts with technology providers; automated update systems.
Stakeholder Acceptance	Industry buy-in	Manufacturers and freight operators may resist mandatory adoption.	Industry consultation and incentives; align with global markets to reduce compliance burden.

Category	Barrier / Constraint	Explanation	Mitigation
	Public perception	Concerns about autonomy, regulation, and reliability.	Public awareness campaigns emphasising safety benefits; transparent trials demonstrating success.
	Behavioural change	Drivers may disable/override ISA.	Mandate minimum safety functions (e.g. advisory mode); design user-friendly override alerts.
Implementation Risks	Transition phase	Mixed fleet of ISA-enabled and non-enabled vehicles.	Gradual introduction with focus on new vehicles; incentives for retrofits in high-risk sectors (e.g. heavy vehicles).
	Legal liability	Unclear responsibility in ISA-related crashes.	Develop liability frameworks and insurance guidance; clarify OEM vs driver accountability.
	International alignment	Need to match overseas standards.	Adopt harmonised standards with EU/UNECE to ensure interoperability of imported vehicles.

6 Conclusion

Australia stands at a critical juncture in its road safety journey. Despite decades of progress, the recent upward trend in fatalities underscores the urgent need for transformative, technology-driven interventions. Intelligent Speed Assistance (ISA) represents one of the most effective tools available to address speeding — the leading cause of road deaths — by directly linking human behaviour, vehicle technology, and road environment in a unified safety system.

Evidence from both international experience and Australian trials clearly demonstrates ISA's capacity to deliver substantial reductions in speeding behaviour, serious injuries, and fatalities. The technology is proven, cost-effective, and aligned with the strategic objectives of Vision Zero and the 2030 National Road Safety Strategy. Its integration into new vehicles, supported by a robust national digital speed limit database, presents an unparalleled opportunity to improve compliance and save lives at scale.

However, the success of ISA implementation depends on strong national coordination, transparent governance, and proactive management of public trust. Public concerns around autonomy, accuracy, and privacy must be met with education, transparency, and clear override safeguards. The transition period — where ISA-equipped and non-equipped vehicles coexist — requires clear standards, fleet leadership, and measurable performance targets.

By mandating ISA in all new vehicles by 2030, investing in the supporting digital infrastructure, and prioritising fleet adoption, Australia can achieve meaningful reductions in road trauma and align itself with global best practice. The challenge is not technological readiness but collective will. With decisive leadership from government, industry, and the community, ISA can become the next major milestone in Australia's journey toward a safer, smarter, and more sustainable transport future.

7 References

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Appendix A Industry Survey (September 2025)

Responses Overview Active

Responses

358 

Average Time

16:19 

Duration

45 Days 

1. Prior to this survey, had you heard of Intelligent Speed Assistance (ISA)?



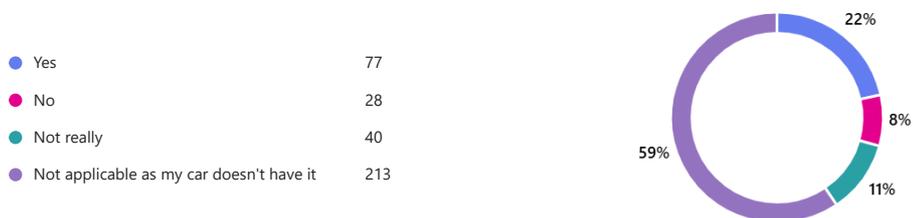
2. If yes, what is your level of understanding of Intelligent Speed Assistance?



3. Does your current vehicle have Intelligent Speed Assistance?

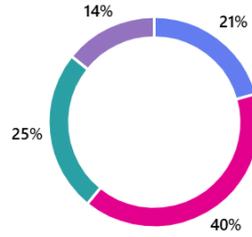


4. If yes, has Intelligent Speed Assistance had an impact on reducing you speeding?



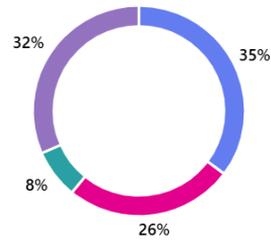
5. Do you think Intelligent Speed Assistance being fitted to your vehicle would reduce you speeding

● Yes, always	74
● Yes, sometimes	144
● Maybe	89
● No	51



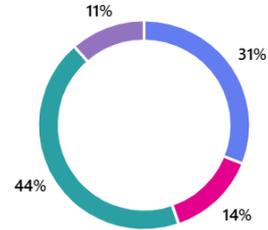
6. If you had the option to fit Intelligent Speed Assistance at what cost does it become prohibitive?

● <\$500	126
● \$501-\$1000	92
● \$1000-\$2000	27
● I wouldn't install regardless of cost	113



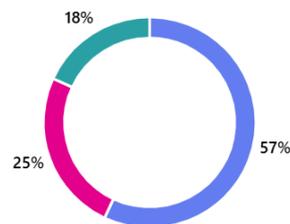
7. If buying a new vehicle would Intelligent Speed Assistance being fitted as mandatory by the OEM impact your decision on the type of vehicle you buy?

● Yes, it would make it more likely to buy that vehicle	111
● Yes, it would make it less likely to buy that vehicle	49
● No, it wouldn't make any difference	157
● Unsure	41



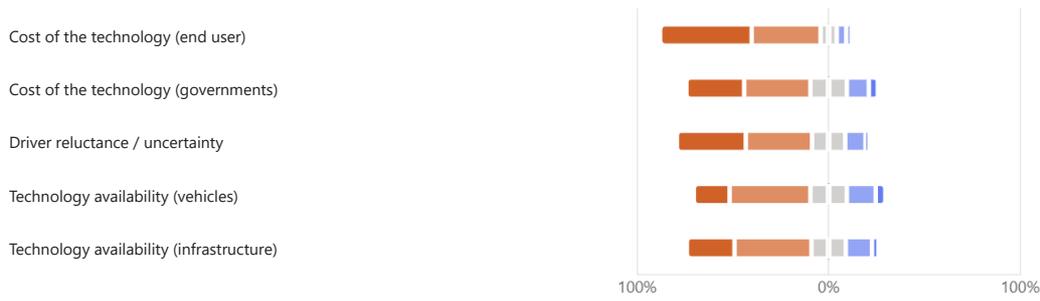
8. Would you be comfortable with Intelligent Speed Assistance being mandatory in all new vehicles in Australia?

● Yes	204
● No	89
● Maybe	65



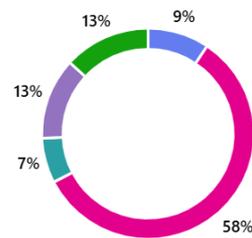
9. What do you think are the most likely barriers to mandating Intelligent Speed Assistance in Australia?

Very Likely L Likely Neutral Unlikely Very Unlikely



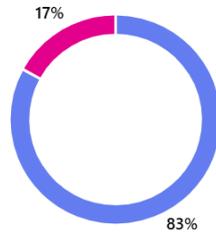
10. If Intelligent Speed Assistance was mandated, how do you think it would impact driver behaviors over time?

- Reduce drivers speeding in all occasions 42
- Reduce drivers speeding in some occasions 260
- No change to driver's speed 31
- Encourage drivers to frequently override the system 56
- Encourage drivers to occasionally override the system 59



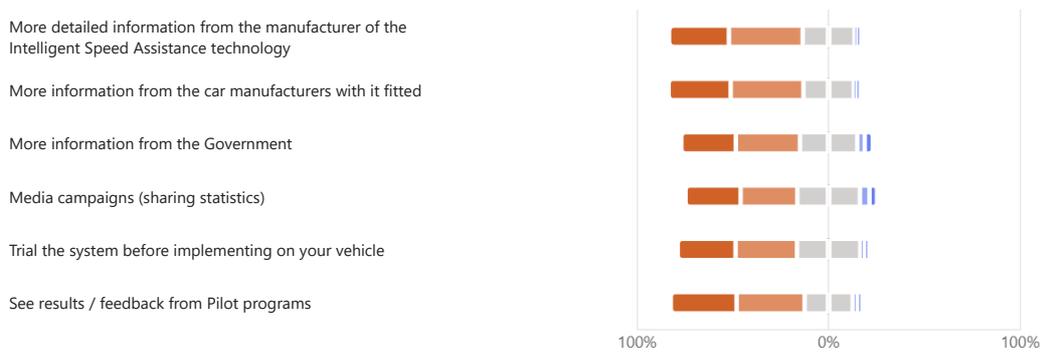
11. Would you be more likely to buy a car with Intelligent Speed Assistance if it meant lower insurance premiums / registration costs?

- Yes 297
- No 61



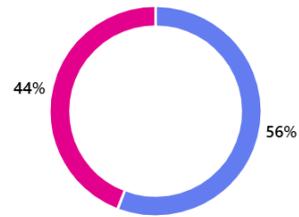
12. What would improve your perception or trust in Intelligent Speed Assistance technology?

Significant positive impact Slight positive impact Neutral Slight negative impact Significant negative impact



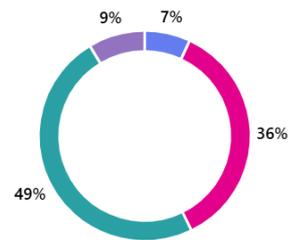
13. In your opinion, should Intelligent Speed Assistance be mandated as a road safety tool in Australia?

● Yes	200
● No	158



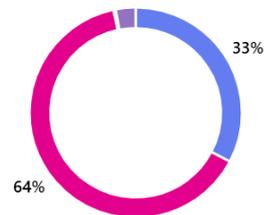
14. Please indicate your age bracket

● 16-25 years	25
● 26-40 years	128
● 41-60 years	174
● 61+ years	31



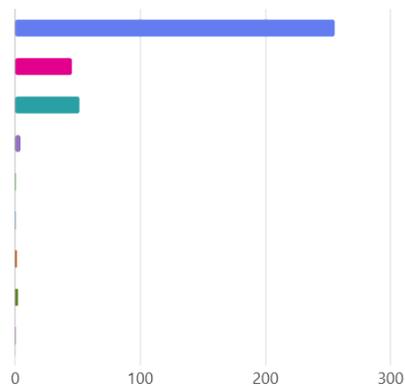
15. Which gender do you most identify with?

● Woman	117
● Man	229
● Non-binary	1
● Prefer not to say	11



16. Where do you live?

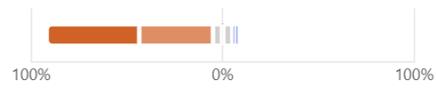
● New South Wales	255
● Victoria	45
● Queensland	51
● South Australia	4
● Western Australia	0
● Tasmania	0
● Northern Territory	1
● Australian Capital Territory	2
● Other	0



17. How many hours a week do you drive

0-10 11-20 21-30 31-40 41+

Drive hours



18. Any other comments regarding Intelligent Speed Assistance?

113
Responses

Latest Responses

"How do you implement ISA in older model ? Say cars before 2010"
"Government inference, No reward for good driver only punishment"

...

23 respondents (20%) answered cars for this question.

