INFRASTRUCTURE AND TRANSPORT
MINISTERS' MEETING

2024–27 National Connected and Automated Vehicle (CAV) Action Plan

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Preamble

The *2024–27 National Connected and Automated Vehicle (CAV) Action Plan* helps implement the *National Road Transport Technology Strategy* vision of a **safer**, more **efficient**, **productive**, **sustainable** and **accessible** transport system for all Australians through deployment and uptake of new road transport technologies to enhance social, environmental and economic well-being.

The 2024–27 Action Plan builds on the 2016–19 and 2020–23 National Land Transport Technology Action Plans to prepare Australia for the deployment of CAVs, including Cooperative Intelligent Transport Systems (C-ITS), and related future mobility technologies and services. Significant progress has been made in preparing for the deployment of CAVs under the 2016–19 and 2020–23 action plans.

In February 2022, Infrastructure and Transport Ministers from all jurisdictions agreed to develop a national automated vehicle (AV) safety law (AVSL).[1] The new law will primarily regulate the corporations that assume responsibility for vehicles with an Automated Driving System (ADS), so that AVs operate safely and legally on public roads. Australia is participating in work underway at the United Nations to develop international standards for AVs. These international standards will then form the basis of Australian Design Rules (ADRs) for the first provision of vehicles with an ADS to the Australian market. Work has also started on updated state and territory road traffic laws to regulate the human users of AVs and so enforcement officers have powers to interact with AVs at the roadside. This will allow the end-to-end regulatory framework to support the deployment of AVs across their initial provision and on-road life.

The Australian Communications and Media Authority (ACMA) made the *Radiocommunications (Intelligent Transport Systems) Class Licence 2017,*[2] making available 70 MHz of spectrum in the 5.9 GHz band for C-ITS applications. The Commonwealth, in partnership with Queensland, New South Wales and Austroads examined possible C-ITS deployment models for Australia[3], and the *Principles for a National Approach to Co-operative Intelligent Transport Systems (C-ITS) in Australia* were endorsed by Infrastructure and Transport Ministers[4] to help guide future work on establishing C-ITS in Australia. An iMOVE project that examined specific issues relating to C-ITS short-range communications, and associated standards[5] is also helping to inform C-ITS next steps.

The National Transport Commission (NTC), in partnership with Austroads, published the *Guidelines for Trials of Automated Vehicles in Australia* (the most recent update was published in 2023) and consolidated information for CAV trial applicants through an online information hub.[6] Austroads developed an online portal to consolidate lessons learned from Australian CAV trials.[7] All states and territories have trialed CAVs, and Queensland, New South Wales and Victoria have also trialed C-ITS. Trials have grown in size and complexity with Queensland undertaking the largest on-road CAV and C-ITS trial to date – this also included a pilot of a Security Credential Management System for C-ITS that makes sure the messages exchanged with and between vehicles and/or infrastructure are genuine.

The Austroads Future Vehicles and Technology (FVaT) Program is working on the digital and physical infrastructure and data needs of CAVs, and the Australian and New Zealand Governments have delivered early Open Services for SouthPAN that provides satellite positioning accuracy nationally potentially capable of supporting CAV operation.[8]

Key priorities for 2024–27

CAVs, including C-ITS, are the key currently emerging road transport technologies and were the main focus of the last two action plans. This 2024–27 Action Plan makes this focus explicit.

The 2024–27 Action Plan sets out **national priority actions that the Commonwealth, states and territories, and relevant agencies will work together to implement** that can take Australia forward to deployment of CAVs.

The key priorities for the Action Plan are to:

- complete the work underway to establish the end-to-end AV regulatory framework for the safe commercial deployment of AVs in Australia
- further advance nationally consistent C-ITS deployment in Australia, and
- consider cross-cutting issues including data sharing, workforce impacts, supporting infrastructure and accessibility and sustainability issues.

Alongside work underway by states and territories,[9] the Action Plan also aims to address technology readiness gaps that span the areas of:

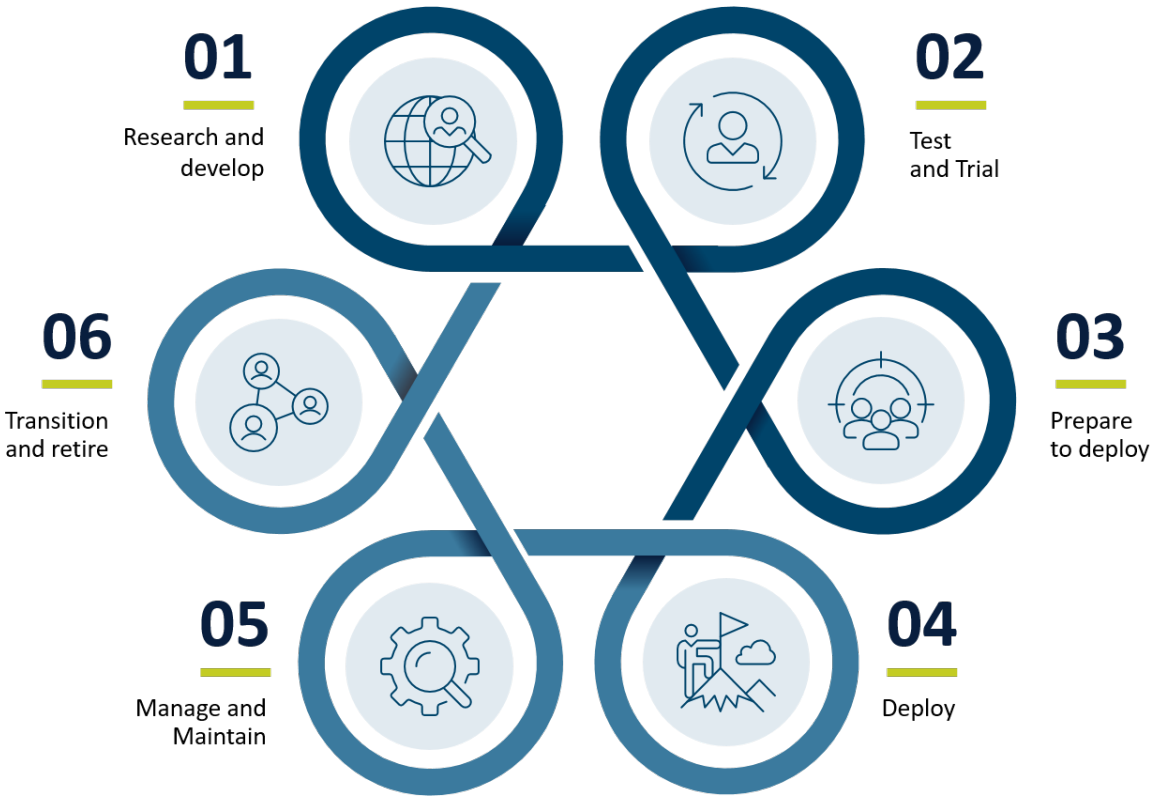
- Policy and legislation
- Supporting infrastructure
- Technology and innovation, and
- Business and community acceptance.

Each action in this Action Plan references back to the relevant technology readiness pillar identified above.

Structure

The Action Plan is structured around three workstreams: vehicle automation, vehicle connectivity and cross-cutting actions to support CAVs. It sets out the lead jurisdiction or agency for each action, and timing for completing the action. It also indicates where each action fits in the technology deployment cycle (see diagram 1 and the explanatory text below) and the relevant area of technology readiness which provides a useful, alternative lens for grouping actions in the Action Plan.

Diagram 1: Technology deployment lifecycle



The Action Plan identifies and maps the actions across the stages of the technology deployment lifecycle to show how close the technology is to deployment:

- The research and development stage considers the emerging opportunities, and costs and benefits of deployment.
- Trials/pilots are used to test solutions, confirm cost and benefit assumptions, and ensure that the opportunity meets the objectives and end-user needs.
- Preparing to deploy may include development of supportive policy, regulation, standards, guidelines, specifications and investment strategies, and enabling digital and physical infrastructure development to support deployment.
- Deployment moves the solution into production, with an opportunity to evaluate, harden and extend services during the manage and maintain phase.
- The transition and retire stage prepares for the next stage of deployment – this may be upgrades to the next generation of technology or a new technology platform, or decommissioning and disposal including recycling.

Table 1: Action Plan actions organised by technology readiness pillar and deployment stage

Technology deployment stage |	Technology readiness pillar			
	Policy and legislation	**Supporting infrastructure**	**Technology and innovation**	**Business and community acceptance**
Research & develop	Action 3.2	Action 2.2, Part (a) Action 2.3, Part (a) Action 3.3 Action 3.5	Action 2.5 Action 3.6 Action 3.10	
Test/trial				
Prepare to deploy	Action 1.1 Action 1.2 Action 1.3 Action 1.4, Parts (a) & (b) Action 1.5 Action 1.8 Action 2.1 Action 2.6 Action 3.1 Action 3.4 Action 3.7	Action 1.8 Action 2.2, Part (b) Action 2.3, Part (b)	Action 1.8	Action 1.6 Action 1.7 Action 1.8 Action 3.8 Action 3.9
Deploy				
Manage/ maintain		Action 2.4		
Transition & retire				

As the table above demonstrates, the actions in the 2024–27 Action Plan predominantly fall into the 'Research and develop' and 'Prepare to deploy' stages of the cycle. While there are no specific trial/pilot actions in this national action plan, it does not mean trial activity has not been, or is not being, undertaken. For example, there is continuing work by jurisdictions to test and trial C-ITS that builds on earlier trials and seeks to further develop the evidence base for national policy decisions, including a multi-jurisdictional trial of C-ITS using the AIMES testbed in Melbourne[10]. There is also nationally coordinated work underway to consider opportunities to enhance AV trial arrangements, including opportunities for a more nationally coordinated and aligned approach to trials, and developing national priorities and objectives to send clearer signals to industry and the research sector about the types of AV trials that would help inform policy settings.

How we will deliver and monitor progress on the action plan

The action plan has been endorsed by the Infrastructure and Transport Ministers' Meeting (ITMM). Implementation of individual actions in the action plan will be undertaken by the jurisdictions or entities identified in the 'Lead' column of the tables below, from within their resources.

Items identified for implementation by the 'Commonwealth, states and territories' will be led by a working group Chaired by the Commonwealth (the Department of Infrastructure, Transport, Regional Development, Communications and the Arts), with representatives from state and territory transport agencies, the National Transport Commission and Austroads.

When implementing the actions in the action plan, relevant stakeholders will be engaged and consulted where appropriate including local government, industry, the disability sector and First Nations people. The Department of Social Services has published *Good Practice Guidelines for Engaging with People with Disability*[11] (Guidelines), to help governments and organisations effectively engage with people with disability. These Guidelines will be used to help inform consultation and engagement when implementing the Action Plan.

The Department of Infrastructure, Transport, Regional Development, Communications and the Arts will report annually on progress against the action plan, on behalf of jurisdictions.

2024–27 Actions

Workstream 1: Vehicle automation

Action	Description	Lead	Timing	Technology deployment stage	Technology readiness pillar
1.1 Participate in developing international standards for Advanced Driver Assistance System (ADAS) and automated driving system (ADS) functionalities and harmonise Australian Design Rules (ADRs) as necessary	This action would ensure relevant ADRs are developed and/or updated, based on international standards that are fit-for-purpose for Australia, as ADAS and ADS are developed (including ADRs for driver monitoring systems), so that vehicles with these features and systems can be supplied in Australia. Wherever possible, vehicle standards are aligned with relevant international standards to minimise barriers to entry and deployment.	Commonwealth (lead), in consultation with the states and territories and NTC	2024-2027	Prepare to deploy	Policy and legislation
1.2 Lead inter-jurisdictional coordination and engagement to support delivery of the national end-to-end regulatory framework for AVs	This action continues the National Transport Commission's (NTC) work to coordinate and foster collaboration across the Commonwealth, states and territories to deliver an integrated national AV regulatory framework. This coordination role is expected to continue until the regulatory framework is in place.	The NTC (lead) in consultation with the Commonwealth, states and territories	2024-2027	Prepare to deploy	Policy and legislation
1.3 Implement next steps for the national AV safety law from introduction of legislation through to commencement, and establish the AV in-service safety regulator	This action would complete work underway to develop and implement the national AV safety law (AVSL) to enable the safe commercial deployment of AVs in Australia. It would also complete work underway to design, stand-up and commence operation of the AV in-service safety regulator. The timing of this work is subject to ITMM-agreed timeframes.	Commonwealth (lead), in consultation with the states and territories and NTC	2024-2027	Prepare to deploy	Policy and legislation

Action	Description	Lead	Timing	Technology deployment stage	Technology readiness pillar
1.4 Progress complementary state and territory law changes to support the national AV safety law: • **Part (a) – Develop national policy positions and/or model law, and** • **Part (b) – Implement state and territory law changes and changes to state and territory operational systems**	This action builds on previous work to develop national policy positions and coordinate across the Commonwealth, states and territories to deliver an integrated national AV regulatory framework. Part (a) will develop national policy positions/model law to support the states and territories to implement the complementary law changes. Part (b) would update state and territory road traffic laws, operational systems, including vehicle registration, and on-road enforcement activities to regulate the human users of AVs based on the national policy positions/model law developed under Part (a).	The NTC will lead Part (a), in consultation with the states and territories and Commonwealth States and territories will lead Part (b), in consultation with the NTC and Commonwealth	2024-2027	Prepare to deploy	Policy and legislation
1.5 Monitor progress in implementing changes to state and territory-based motor accident injury insurance schemes, with a view to ensuring appropriate insurance arrangements are in place to deal with crashes involving AVs	This action would monitor progress to implement changes flowing from the review into state and territory-based motor accident injury insurance schemes (an action in the 2020–23 Action Plan). The changes are intended to be in place to align with the national AVSL.	States and territories (lead), in consultation with the NTC and Commonwealth	2024-2027	Prepare to deploy	Policy and legislation
1.6 Develop and maintain a central repository of education and training materials for ADAS and ADS that can be used by government and industry to facilitate consistent messaging for vehicle users	This action would help educate vehicle users about the operation and use of vehicles with ADAS features and ADS (once they enter the market). It would develop and maintain a central repository of education and training materials for government and industry building on Austroads *Incorporating advanced driver assistance systems into driver licensing, education and training practices* (SRL6287).[12] The materials would be updated as technologies develop and include targeted, accessible communication materials suitable for specific groups e.g. people who are culturally and linguistically diverse, First Nations people, people with disability.	Austroads (lead), in consultation with the Commonwealth, states and territories and NTC	2024-2027	Prepare to deploy	Business and community acceptance

Action	Description	Lead	Timing	Technology deployment stage	Technology readiness pillar
	The action may support the in-service regulator's educative role once the in-service regulator is established (see also Action 1.7). Note, this action would be subject to Austroads Board approval.				
1.7 Develop education materials targeted towards commencement of the national AV safety law, to facilitate consistent messaging for industry and vehicle users	This action would help educate industry and the public about user and entity responsibilities under the national AVSL. The materials developed would include targeted, accessible communication materials suitable for specific groups e.g. people who are culturally and linguistically diverse, First Nations people, people with disability. The AV in-service safety regulator, once established, is expected to have a key educative role in relation to AV regulation for industry and vehicle users.	Commonwealth (lead), in consultation with the states and territories and NTC	2025-2027	Prepare to deploy	Business and community acceptance
1.8 Review Australia's readiness for the commercial deployment of AVs at regular intervals	Understanding Australia's readiness for AVs will help identify readiness gaps and inform actions in the lead-up to AV deployment. This action captures the NTC's regular assessments of Australia's readiness for the commercial deployment and adoption of AVs. The AV readiness assessments help- measure Australia's overall progress towards deployment.	NTC (lead), in consultation with the Commonwealth, states and territories	2025 and 2027	Prepare to deploy	All

Workstream 2: Vehicle connectivity

Action	Description	Lead	Timing	Technology deployment stage	Technology readiness pillar
2.1 Develop and publish a national C-ITS roadmap for Australia that enables a staged and flexible approach to meet the different needs and timeframes of jurisdictions, while ensuring national consistency	This action would set out the agreed next steps for building on the *Principles for a National Approach to Co-operative Intelligent Transport Systems (C-ITS) in Australia*[13], drawing on outcomes from industry and public consultation and research comparing short-range communications and associated standards. The roadmap could potentially cover things like: • a standard set of initial use cases to be deployed nationally • data sources, data sharing, alignment of data standards (including for existing use cases) and mechanisms for achieving a common data repository (single or interoperable systems) • approach to short and long-range communications, including statement of intent on standards, international harmonisation and/or radiofrequency spectrum • approach to governance of a nationally harmonised C-ITS • approach to developing a national C-ITS architecture • approach to data sovereignty and managing the security of C-ITS messages • approach to leveraging existing government and private sector initiatives, and consumer devices to deliver C-ITS • consolidated investment view and identifying strategic corridors.	Commonwealth, states and territories	2024-2025	Prepare to deploy	Policy and legislation
2.2 Develop a nationally harmonised repository or repositories of road manager data to support third party services and common C-ITS use cases across jurisdictions: • **Part (a) – Identify potential options and provide guidance, and**	This action would form part of the C-ITS roadmap (action 2.1). Part (a) would identify potential options for a nationally harmonised data repository or repositories to hold the road manager data to support common use cases, including for C-ITS, across jurisdictions. It would also provide guidance to support harmonised systems that meet the needs of all jurisdictions and support a range of business models, including third party services and C-ITS. The options and guidance could include consideration of issues such as: standardised data formats, data exchange	Austroads will lead Part (a), in consultation with the Commonwealth, states and territories Commonwealth, states and	2024-2027	Research and develop (Part (a)) and Prepare to deploy (Part (b))	Supporting infrastructure

Action	Description	Lead	Timing	Technology deployment stage	Technology readiness pillar
• **Part (b) – Prepare a business case**	standards, service levels, governance, architecture, design, costs (including economies of scale) and operations; and relevant data security, cyber-security and privacy rules. Part (a) would provide the technical inputs to inform Part (b). Note, Part (a) would be subject to Austroads Board approval. Part (b) would build on Part (a) to identify preferred options and develop a business case for a data repository or repositories to support common road manager data use cases across jurisdictions. It would be informed by previous Austroads work including[14]: • *Connected vehicle and road agency data exchange* (FCA6314) • *Guidance for Developing Standardised Transport Data Exchange for Australia and New Zealand* (CAV6376) • *Road Authority Data for Connected and Automated Vehicles* (RADCAV) (AP-R662-21) which identifies high priority data sets to make available for CAVs, and • *Agency Business Capability Model to Support Connected Vehicles (*AP-R664-22).	territories will lead Part (b), in consultation with Austroads			
2.3 Develop a national system to manage the security of C-ITS messages that is compatible with national security requirements: • **Part (a) – Identify potential options, and** • **Part (b) – Prepare a business case**	This action would form part of the C-ITS roadmap (action 2.1). Part (a) would build on the lessons learned from the *Ipswich Connected Vehicle Pilot*[15] to identify the options for a national system for managing the security of C-ITS messages, including the associated benefits, costs and technical requirements for each option. A security management system would ensure that messages exchanged via C-ITS are genuine. Part (a) would provide the technical inputs to inform Part (b). Note, Part (a) would be subject to Austroads Board approval. Part (b) would build on the Austroads technical work under Part (a) to develop a business case for a national system for managing the security of C-ITS messages that is compliant with national security requirements.	Austroads will lead Part (a), in consultation with the Commonwealth, states and territories Commonwealth, states and territories will lead Part (b), in consultation with Austroads	2024-2026	Research and develop (Part (a)) and Prepare to deploy (Part (b))	Supporting infrastructure

Action	Description	Lead	Timing	Technology deployment stage	Technology readiness pillar
2.4 Monitor radiofrequency spectrum arrangements for C-ITS with a view to ensuring they remain fit for purpose and align with key international markets	This action would form part of the C-ITS roadmap (action 2.1). It would monitor international spectrum developments with a view to ensuring that Australia's spectrum arrangements remain aligned with key international markets, and are able to appropriately support both short-range and long-range C-ITS communications. This will help to enable the supply of compatible C-ITS equipment and vehicles to the Australian market.	Commonwealth (lead), in consultation with Austroads, states and territories	2024-2026	Manage and maintain	Supporting infrastructure
2.5 Identify any impediments to implementing the eCall in-vehicle automated crash notification (ACN) system, and develop options to overcome identified impediments to eCall implementation in Australia	This action would provide the information base, including potential costs and benefits, to inform consideration of how eCall could be implemented in Australia. It would include consideration of the potential interactions with smartphone functionality. It would build on Austroads work to consider current approaches to eCall for Australia and New Zealand (CAV6424).	Commonwealth (lead), in consultation with the states and territories	2024-2025	Research and develop	Technology and innovation
2.6 Participate in developing international standards for vehicle connectivity functionalities and harmonise ADRs as necessary	This action would ensure relevant ADRs are developed and/or updated, based on international standards that are fit-for-purpose for Australia, as connectivity features develop in vehicles, so that vehicles with these features can be supplied in Australia. Wherever possible, vehicle standards are aligned with relevant international standards to minimise barriers to entry and deployment.	Commonwealth (lead), in consultation with the states and territories	2024-2027	Prepare to deploy	Policy and legislation

Workstream 3: Cross-cutting actions supporting CAVs

Action	Description	Lead	Timeframe	Technology deployment stage	Technology readiness pillar
3.1 Consider and develop an approach for looking holistically at the treatment of CAVs under Commonwealth, state and territory law	The AVSL is intended regulate the safety of AVs but would not specifically address safety risks of connected vehicles. This action would complement the AVSL and be a next step for ensuring Australia has appropriate laws to deal with CAVs, including C-ITS. The connectivity in vehicles falls within the scope of Commonwealth telecommunications law. CAVs may also be governed by other laws including privacy law, competition and consumer law and security law. It would develop an approach to examining existing laws (Commonwealth, state and territory) that govern CAVs to determine whether they are appropriate and identify any gaps. This action would also consider whether there are aspects of C-ITS that should be regulated, and whether there are laws beyond road traffic laws (which the AVSL is expected to cover) that require actions by drivers and what changes may be needed if human drivers are no longer present in higher level AVs. The action would help address incomplete action 5.3 from the 2020–23 Action Plan on researching competition impacts of AVs.	Commonwealth, states and territories, in consultation with the NTC	2024-2027	Prepare to deploy	Policy and legislation
3.2 Explore opportunities for data sharing and management between government and industry to support CAVs	Data sharing between government/road managers and industry can help support CAV operation and improve the safety, efficiency, productivity and sustainability of road transport. The Vehicle Generated Data Working Group (VGDWG) has been reconvened with a renewed focus on improving road safety outcomes through the sharing of practical, harmonised, aggregated vehicle and road data. Priorities for the group will be informed by industry and government consultation. The action complements action 2.2 (which considers road manager data sharing) by considering sharing of vehicle generated data.	NTC (lead), in consultation with the Commonwealth, states and territories	2024-2025	Research and develop	Policy and legislation

Action	Description	Lead	Timeframe	Technology deployment stage	Technology readiness pillar
3.3 Examine efforts in key international markets (e.g. the European Union (EU), United States (US), United Kingdom (UK)) and nationally within Australia to develop a ratings framework/s for assessing the readiness of roads for CAVs and consider their applicability to the Australian context	CAVs will need to know which roads will support their operation. This action would examine international efforts to develop framework/s for assessing road readiness for CAVs and consider their applicability for Australia. It would build on a number of projects in the EU and US that have developed potential frameworks including the Permanent International Association for Road Congresses (PIARC) (World Road Association) Smart Roads Classification: A PIARC special project and Smart Roads Classification System (SRC), INFRAMIX and Connected Roadway Classification System Development.[16] It would also build on Austroads *Infrastructure Changes to Support Automated Vehicles on Rural and Metropolitan Highways and Freeways: Audit Specification* (AP-T347-19).[17] Note, this action would be subject to Austroads Board approval.	Austroads (lead), in consultation with the Commonwealth, states and territories	2025-2027	Research and develop	Supporting infrastructure
3.4 Develop guidance on the physical road infrastructure needed to support CAVs	CAV technology may work more effectively or be able to operate on more of the road network if the needs of CAVs are factored into how physical road infrastructure is designed and built. This action would build on Austroads *Minimum requirements for signs, signals and lines* (CAV6383) that synthesises 2022 and 2019 Austroads projects and further identified physical infrastructure practices that could support CAVs and inform road agency decision-making in Australia and New Zealand. [18] The guidance could include, for example, minimum requirements (e.g. width, clarity, retro-reflectivity) for longitudinal and other line markings; harmonisation of practices relating to non-electronic signs (e.g. standard designs, lateral and vertical placements, visibility and legibility levels) across jurisdictions; and/or what would be required to 'train' machine vision systems for operation on Australian roads. Note, this action would be subject to Austroads Board approval.	Austroads (lead), in consultation with the states and territories and Commonwealth	2024-2027	Prepare to deploy	Policy and legislation

Action	Description	Lead	Timeframe	Technology deployment stage	Technology readiness pillar
3.5 Investigate how precise positioning offered by SouthPAN and the National Positioning Infrastructure Capability can support CAVs and the practical steps needed for CAVs to make use of these services	CAVs may work more effectively if the vehicle is able to position itself precisely in the road environment. Satellite navigation systems allow devices equipped with a receiver to determine their location to high precision. This action would investigate how precise positioning can support CAVs. This would include a comparison of SouthPAN and the National Positioning Infrastructure Capability, including how they work, their coverage and their existing and planned future capabilities, and identifying what role each could play in supporting CAVs.[19] It would also identify the practical steps needed for CAVs to make use of these services, including any need to work with OEMs on product roadmaps. Note, this action would be subject to Austroads Board approval.	Austroads (lead), in consultation with the Commonwealth, states and territories	2024-2025	Research and develop	Supporting infrastructure
3.6 Investigate how visual alerts, sound and haptic technologies are currently being deployed in vehicles, including their impact on vehicle occupant distraction, safety and accessibility, and how this is regulated internationally	How humans are able to make use of, and respond to, the technology in vehicles will impact its effectiveness in achieving safety and other benefits. This action would consider market and regulatory developments internationally in the area of visual alerts, sound and touch technologies for vehicles, including alerts/warnings communicated to vehicle occupants (including drivers) from systems like C-ITS and cloud connected services, and visual, sound and haptic (e.g. vibrations) feedback when using systems in the vehicle. It would also consider the impact on vehicle occupant distraction, safety and accessibility (e.g. for older drivers and people with disability), and identify potential implications for the Australian environment. This work could build on the 2019 National Roadmap on Driver Distraction[20] which sets out solutions/strategies to address the issue of driver distraction including designing for safer interaction and lists projects that could help implement the strategies including evaluating human machine interfaces, shaping vehicle design rules and working with OEMs on product roadmaps.	Commonwealth (lead), in consultation with Austroads, states and territories	2025-2026	Research and develop	Technology and innovation

Action	Description	Lead	Timeframe	Technology deployment stage	Technology readiness pillar
3.7 Develop guidance for CAV manufacturers and deployers on making CAVs accessible	CAVs, if designed appropriately, could improve accessibility for people with disability and people with reduced mobility. This action would build on iMOVE research on CAV opportunities and barriers for people with disability.[21] It would develop guidance to help developers and deployers of CAVs make their vehicles and services accessible. The guidance would address issues such as vehicle design, monitoring and direct assistance, the human machine interface and CAV operations. The action could also consider the outcomes of the iMOVE project looking at perceptions of ADAS and AVs in older adults, including their interactions with currently available technologies and the extent to which ADAS and AVs can improve older driver safety and mobility.[22]	Commonwealth (lead), in consultation with the states and territories	2024-2025	Prepare to deploy	Policy and legislation
3.8 Identify the workforce impacts of CAVs over the next 5-10 years, including the key disrupted and emerging occupations; and the skills, training and education needs for the CAV impacted and emerging CAV workforce	CAVs will change the jobs and skills needs of road transport. Understanding these changes is important to enable transition planning. This action would identify the workforce impacts of CAVs (considering both the connectivity and automation elements) over the next 5-10 years, including the key disrupted occupations and need for reskilling, and the emerging occupations and needs of a future CAV workforce (e.g. CAV technology development, deployment, operations and maintenance, training to support provision of inclusive transport services and customer service to CAV passengers). It would consider the skills, training and education requirements to support reskilling and an emerging, inclusive CAV workforce (workforce capability is a key driver of CAV industry investment and deployment decisions); and the potential role(s) for governments in supporting the transition, including the role of Jobs and Skills Councils. It would build on iMOVE research[23] on workforce implications of transport digitalisation and automation.	Commonwealth (lead), in consultation with the states and territories	2024-2025	Prepare to deploy	Business and community acceptance

Action	Description	Lead	Timeframe	Technology deployment stage	Technology readiness pillar
3.9 Investigate whether there is a role for national coordination of Mobility as a Service (MaaS) implementation in Australia	MaaS has traditionally been a state and territory issue, linked to public transport ticketing systems which are bespoke and not interoperable. Accessibility of the systems to book, hail and inform vehicles of the intended destination are as important as accessible vehicles. This action would look at whether there is a need for national coordination of MaaS. NSW and QLD are trialing MaaS platforms that include transport options like taxis, rideshare and e-scooters as well as public transport.[24] This action could also consider if there is a technological solution that would enable a national approach to MaaS, and whether a national approach would assist with accessibility.	Commonwealth (lead), in consultation with the states and territories	2025-2026	Prepare to deploy	Business and community acceptance
3.10 Identify potential strategies for reducing greenhouse gas emissions from road transport through the optimal deployment of CAVs, including C-ITS, across the technology lifecycle	Australian governments are committed to achieving net zero greenhouse gas emissions by 2050, and decarbonising transport is an ITMM priority. This action would look at potential strategies to maximise the greenhouse gas emission reduction benefits of road transport technologies, including CAVs and MaaS, separate from electric vehicle uptake. It would help inform development of policies and regulations, and investment in supporting systems, by considering ways to maximise emissions reductions through design, deployment, operation and management of CAVs, including C-ITS. This would include consideration of end of life decommissioning and recycling. Note, this action would be subject to Austroads Board approval.	Austroads (lead), in consultation with the Commonwealth, states and territories	2024-2026	Research and develop	Technology and innovation

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[9] State and territory strategies and roadmaps set out the activities they are each undertaking within their own jurisdictions to facilitate technology deployment.

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