



ADVI Narrative Position Paper

Who are we?

In mid-2014, the Australian Road Research Board (ARRB) started advocating for driverless vehicle technology and initiated for the creation of a funded national partnership program. Following an industry roundtable event later that year, the Australian Driverless Vehicle Initiative (ADVI) was launched on 21 July 2015 in Adelaide by the South Australian Premier, Jay Weatherill.

The ADVI is now a national cooperative partnership program comprising more than 50 Australian and international organisations and is funded and supported by a range of government, industry and academic research partners.

The ADVI vision is to accelerate the safe and successful introduction of driverless vehicles onto Australian roads, which will ultimately position Australia as an international leader in the development of new technologies and attract developers, innovation and investors. ADVI presents one face for Australia.

The ADVI strategic goals are as follows;

- Build momentum by rapidly exploring the impacts and requirements of driverless vehicles in a truly Australian context;
- Coordinate the multiple activities of a range of contributors in this space nationally including government, industry and academia;
- Create a truly collaborative multi-sectoral approach with a shared vision to help enable positive change, where each organisation gains benefit individually whilst working towards a shared outcome;
- Minimise duplication of effort, adopting and adapting practice where sensible, building on international experience, and developing new knowledge where it strengthens Australia's position;
- Help inform necessary changes to legislation, regulation, policy, business models and industry practices to deliver safer, easier, cheaper mobility for Australians of all generations and opening up Australia's economic opportunity, fostering innovation and international competitiveness;
- Raise community awareness, understanding and acceptance of driverless vehicles;
- Position Australia competitively on a world scale to foster increased investment and research, employment and educational opportunities.

What is a driverless vehicle?

Many modern cars have some form of partial automation (level 2), with adaptive cruise control, and self-park systems becoming common place. Within the context of ADVI, the term 'driverless' refers to all vehicles with level 3 or above automation, as shown in the chart below. This means that at a minimum a driver does not have their hands on the steering wheel and all dynamic driving tasks are automated.



THE PAST

Level 0 - No automation

Everything is done manually, there's not even power-assisted steering.

Level 1 - Driver Assistance

You complete most of the driving task with the assistance for either steering.

THE PRESENT - Opportunity to shape introduction of automated vehicles into Australia

Level 2 - Partial Automation

Some automated functions for steering acceleration and braking but your hand must still be on the wheel at all times

THE FUTURE

2017 to 2020 Level 2

Driver assistance features Adaptive Cruise Control, Lane Keeping Assistance and Automated Emergency Braking become standard in most production vehicles

2020 to 2025 Level 3

Conditional Automation Hands off the wheel all aspects of the driving task are automated but driver is still in control and must be ready to take back control

2026 to 2030 Level 4

High Automation – Vehicles equipped with lidar as standard, driver no longer needed to be in control on certain roads and in certain conditions for all the driving task. Driver needs to be able to take back control when vehicle is outside of these designated routes. Heavy vehicle (trucks, buses, trams, containers) progressing to full automation in industrial applications and on remote regional roads.

2035 beyond Level 4

High automation on much of the road network, Level 5 full automation on industrial sites, such as ports, airports, on freeway, good delivery services, taxis operating in full automation in dedicated zones. On demand robo taxi services for people living with a disability.

ADVI will look to shape the introduction of driverless vehicles into Australia to ensure suitable and adequate policies are in place to take advantage of these technologies, whilst providing increased mobility for citizens, and maintaining a safe environment for all.

Is Australia ready for self-driving vehicles?

There is a great deal of work to be done — especially legislative, policy and infrastructure changes. One of the biggest challenges is the lack of consistency across States and Territories when it comes to policy and infrastructure.

While these technologies will continue to develop in the years ahead, the transition from semi-automated to fully driverless technology can be expected within the decade.

While driverless vehicles are sure to be seen as a disrupting technology when it comes to the mobility of people and movement of freight, the introduction of this technology is inevitable, and under the right circumstances, we could see a 50-75% autonomous fleet mix between 2035 and 2045.¹

What are the benefits?

Driverless vehicles have the potential to provide significant road safety, economic, environmental and social benefits including improved social inclusion. This technology will make driving easier and safer, allow people to be more productive and offer greater mobility to a wider range of people than ever before, reduce emission and ease congestion.

Bierstedt, J., Gooze, A., Gray, C., Peterman, J., Raykin, L., & Walters, J. (2014). Effects of Next Generation Vehicles On Travel Demand and High\Way Capacity. Princeton. Retrieved May 7, 2015, from http://orfe.princeton.edu/~alaink/Papers/FP_NextGenVehicleWhitePaper012414.pdf