Submission No 11

TRANSPORT TECHNOLOGY SECTOR

Organisation: The Australia and New Zealand Driverless Vehicle Initiative (ADVI)

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Submission to the inquiry into the transport technology sector

Australia & New Zealand Driverless Vehicle Initiative

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About ADVI

The Australia and New Zealand Driverless Vehicle Initiative (ADVI) is the peak advisory body and is a trusted adviser to government and industry partners alike.

Since our launch in July 2015 the ADVI collaboration has welcomed over 150 Australian and international organisations across the wide ecosystem that supports our vision to safely accelerate the introduction of driverless vehicles to Australia and New Zealand.

At the core of ADVI is collaboration. We understand that cross – sector partnerships are critical for the introduction of the transport technologies of the future and is reflected in our membership. Figure 1 represents the logos of our 150 partners.

With ADVI's Centre of Excellence based in Chippendale in Sydney, and with over 25% of our partners with head offices based in New South Wales, we feel that we can provide informed feedback to the New South Wales Inquiry into the Transport Technology Sector how local research and development can deliver transport service innovation.

Figure 1 ADVI Membership

Introduction

The majority of the 150 partner organisations of ADVI are Australian and are collectively contributing to the research and development that will drive innovation to transport services.

These organisations include the people doing the research, commissioning the work and also deploying the applied research onto their public and private networks.

A critical factor in the adoption of any new product including new transport services is understanding the customer attitudes to the existing and proposed solutions.

Whether it has been the bionic ear, laser surgery, robotic body parts or any number of other innovative breakthroughs, the community has seen how technology can transform lives of people with disability. The introduction of connected and automated vehicles offer a previously unobtainable level of freedom that could see people living with a disability relying far less on carers, family and public transport, ADVI is keen to see that in all considerations of new transport services, we prioritise the needs of people living with a disability and addressing the transport disadvantage that the current services provide.

In the following submission we offer insights to the Committee from the most recent Australasian Public Perception survey conducted in 2021, and from our industry knowledge, gained from across our membership and the vast international networks that have been developed since our inception in 2015.

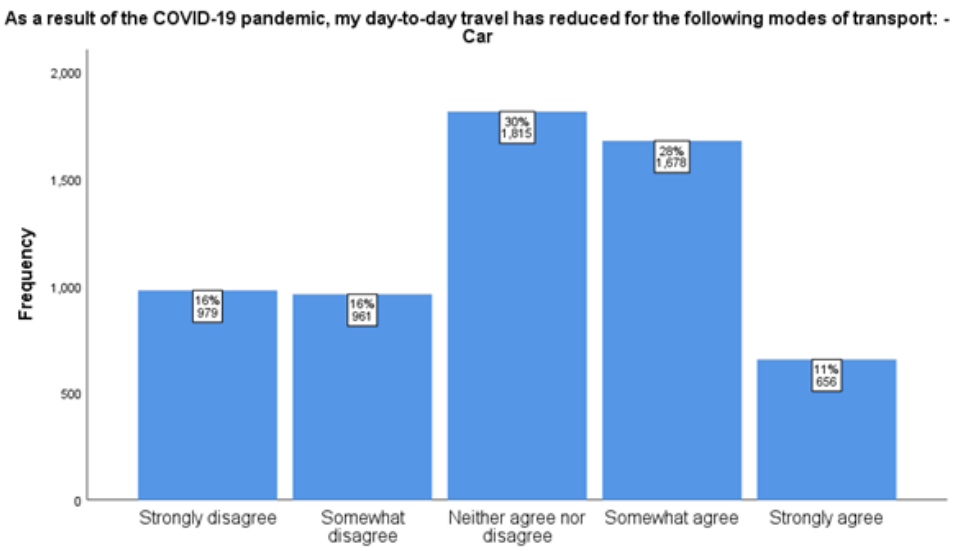
Insights into Community Attitudes

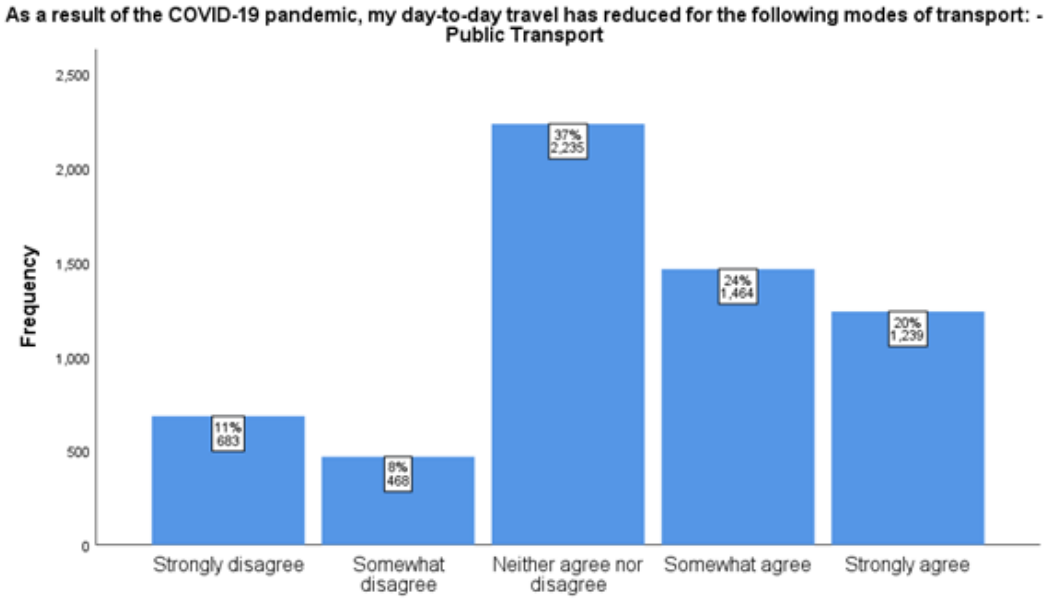
It is people, more so than technology that will shape the future of transport. While we may be taking the driver out of the vehicles, we still want to put people first, which is why since 2016 ADVI has been running the largest scientific and Australasian representative survey of public attitudes to driverless vehicles and their allied technologies.

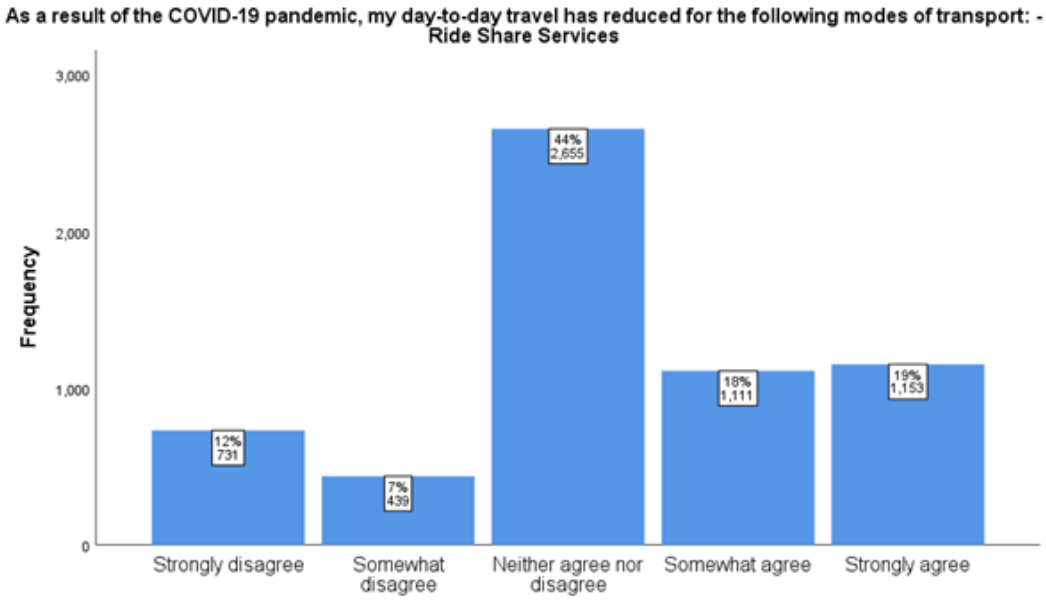
Now in its fourth iteration, the responses from this survey, provide insights into current and changing community attitudes to all the topics that are referenced by the Committee on Transport and Infrastructure's Terms of Reference.

Findings from Wave 3 of the ADVI Public Perception Survey show between 2016 and 2019, awareness of automated functions, such as a car changing lanes by itself or parking itself, increased significantly. Findings over this period also show the perception of safety of fully automated cars decreased. These findings indicated that there is still much more to be done to increase the understanding and confidence in new transport technologies, such as driverless vehicles with the community.

Our 2021 survey introduced questions on what, if any, impact COVID 19 had on the use of transport modes, including private, public and shared. Results indicate that approximately 40% of respondents strongly or somewhat agreed that COVID had resulted in reduced use of these transport modes.


As a result of the COVID-19 pandemic, my day-to-day travel has reduced for the following modes of transport: - Car
Frequency
2,000
1,500
1,000
500
0
16%
979
16%
961
30%
1,815
28%
1,678
11%
656
Strongly disagree
Somewhat disagree
Neither agree nor disagree
Somewhat agree
Strongly agree


As a result of the COVID-19 pandemic, my day-to-day travel has reduced for the following modes of transport: - Public Transport
Frequency
2,500
2,000
1,500
1,000
500
0
11%
683
8%
468
37%
2,235
24%
1,464
20%
1,239
Strongly disagree
Somewhat disagree
Neither agree nor disagree
Somewhat agree
Strongly agree



As the Committee consider the research that is supporting new transport modes it is imperative that we collectively understand the impacts that COVID19 has had on road user choices.

The declining use of ride share, private and public vehicle reported in this survey will take time to recover, if it does. ADVI partners are keen to understand how this change in regular day to day transport choices affects the commercial business cases for investment in new transport services.

We seek to work with the committee to understand the impacts of this change in travel choices and how to shape travel choices that the community will make as we recover from COVID 19.

Mobility as a Service (MaaS)

The concept of Mobility as a Service has existed in commercial application in parts of Europe since mid-2010.

The key to the success of any MaaS scheme is to have an integrated payment and reliable service offering, that will be as attractive, or more, than the current transport choices.

In Australia many of our members have been partnering with state and local governments to test mobility offerings that move us closer to a MaaS offering.

The New South Wales government's collaboration with Uber, initially in 2019, when public transport information was integrated into the Uber app, was a step toward MaaS. In March 2021 the announcement of a soon to be launched trial that would see a single payment method and discounts offered if a shared trip, with Uber, Lime Bikes or via Ingogo Taxi, was undertaken within 60 minutes of a public transport journey, will take users closer to a full MaaS experience.

ADVI acknowledges the significant investment from Government and Industry to develop payment integration and data sharing to create a reliable and seamless journey for commuters. This investment is facilitated by NSW Government's leadership and incentives for commuters and we expect that this trial will could be readily extended to other States in Australia and New Zealand.

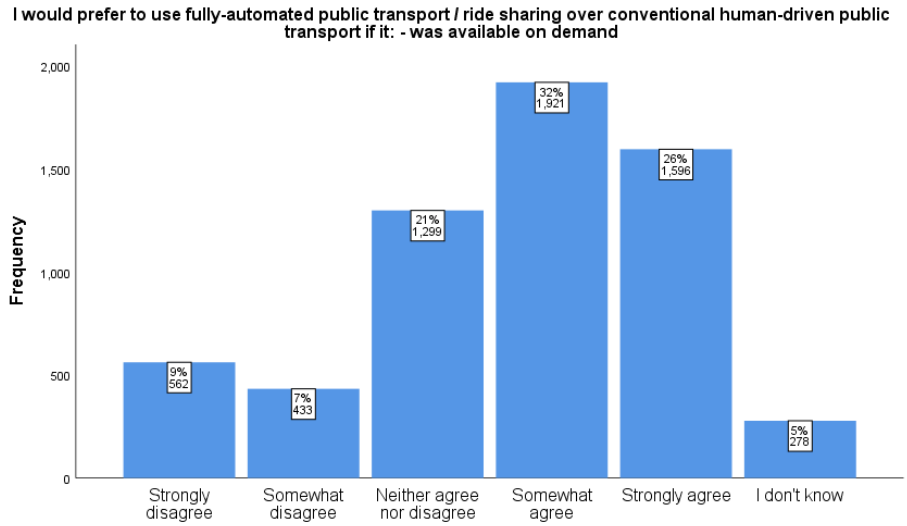
The outcomes of this trial will provide significant insights into the future of a true MaaS application for NSW and across Australia and New Zealand and ADVI welcomes sharing of outcomes and learnings from this trial, so that the rest of Australia can benefit and invest in MaaS.

Real time public transport journey management

Real time public transport journey management would facilitate public transport aligning closer to the on-demand services that the community seems to have a high preference for. Evidence of this comes from the results of our survey response to the question of whether people would be more receptive to riding on automated public transport if it was available on demand.

58% of respondents indicated that they somewhat or strongly agreed with this.

This is one of the highest agreement scores recorded in our survey, suggesting that concerns about automated transport could be offset with a more tailored on demand solution.



ADVI partners are involved in developing sensing technology and location insight that support real time information to assist the scheduling of public transport. As a result of COVID we have seen an increase in data available to transport operators on occupancy rates, which has also been shared with commuters.

Data sharing between users and operators, has enabled more reliable and safer use of public transit services. Further development using data fusion from multiple sources, including traffic congestion, customer demand and fleet suitability and availability, will be required to achieve a future state where the right size vehicle is provided to service the needs of commuters on demand.

ADVI supports a cross sector approach to delivering real time information to both commuters and public transit operators, so that enhanced shared and public transport services can be designed and delivered.

ADVI through our extensive partnership network and community insights, can assist governments and industry to understand the roles they should play, collectively and individually to manage public transport in real time and deliver the community the on demand service that they desire.

First and last mile transport services

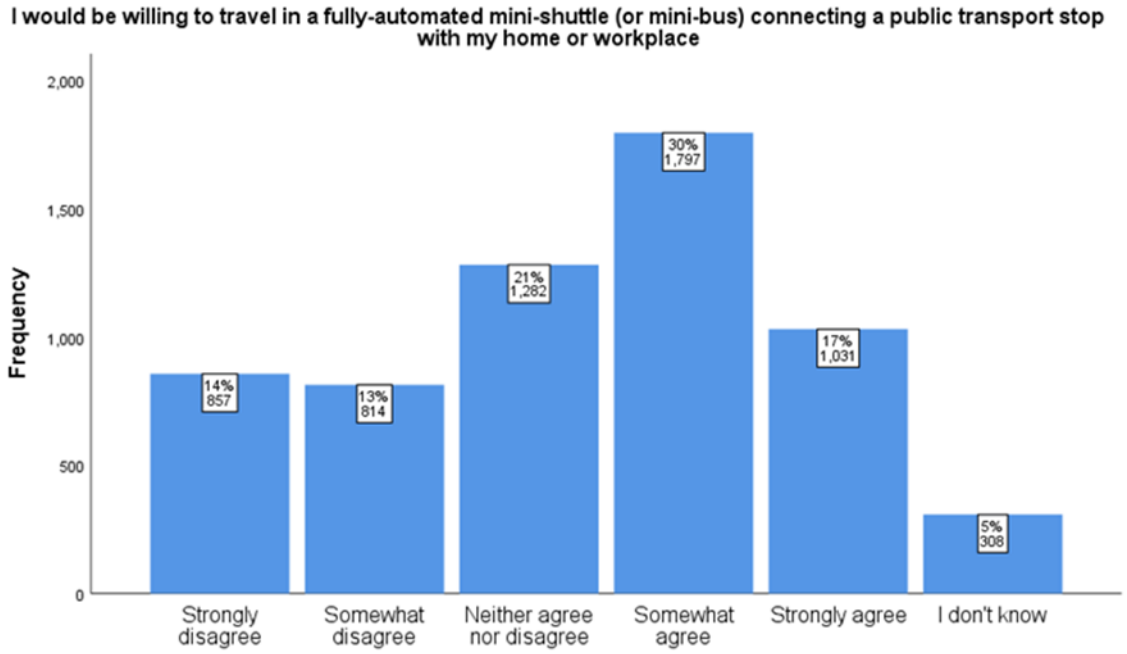
Our 2021 survey findings indicated that almost 50% of respondents were willing to travel in an automated shuttle or minibus in conjunction with a traditional public transport trip. This support is significant when viewed in isolation, but when we consider that there is a declining community acceptance of the safety of automated vehicle technology, it seems that the need for enhanced first and last mile services may outweigh the perceived concerns.

This data provides confidence that there is existing market acceptance of replacing an existing, first, or last mile vehicle trip with a shared service.

The opportunity to grow this market also exists when we consider how these first and last mile services may support people who cannot access public transport because they require support to reach their destination and either do not have the physical or cognitive ability to make this connection.

Australia's ageing population stands to benefit from new vehicle technology, which provides an effective transport solution and opportunity to maintain a full and independent life rather than the isolation that can come from losing independent mobility. First and last mile solutions can support to maintain access to public transit services and that people who give up their driving, due to deteriorating health or confidence.

ADVI partners have been working on developing first and last mile services for a wide range of applications, including for retirement and aged cares villages, regional public transport offerings and across University campuses in Victoria, Western Australia, and South Australia.

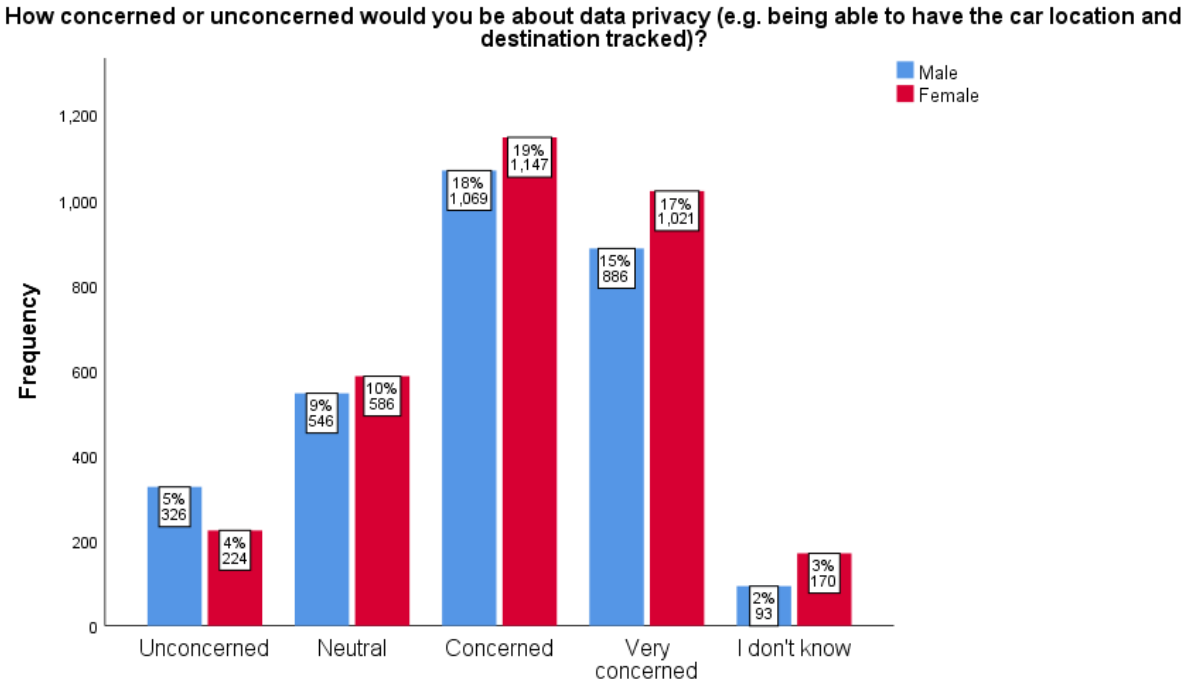


These use cases have had limited extension past the trial stage in Australia and ADVI would be keen to see how we can assist in understanding how reallocating investment in traditional park and ride infrastructure and traditional buses, could be used to support first and last mile services for people living with a disability and also clusters of ageing communities.

How data might be used to improve access and safety for travellers, including for women

The use of data to support improved services to the public must first consider if the public is willing to share this data.

The ADVI Survey has found that women, whom may be expected to receive increased safety when travelling if data was shared, are more concerned than men, about data privacy and being tracked.



Access to data and who owns the data generated by our vehicles, phones and other devices is a matter of ongoing debate globally.

In Australia, access to de-identified data is increasing with open data being available from the New South Wales Government and other govenrments across Australia. There are also multiple private organisations who sell data from their customers for a range of purposes, including traffic planning and management.

Insurance partners of ADVI have progressed a number of programs with customers to incentivise safer driving through monitoring of driving from in car devices and or applications.

In Europe, Volvo Cars already provides information to traffic managers on black ice detected by their vehicles as well as hard braking and incidents on the roadway.

As vehicles become more and more self driving, the data that they collect on the road condition and travel patterns will become more useful to road operators and managers.

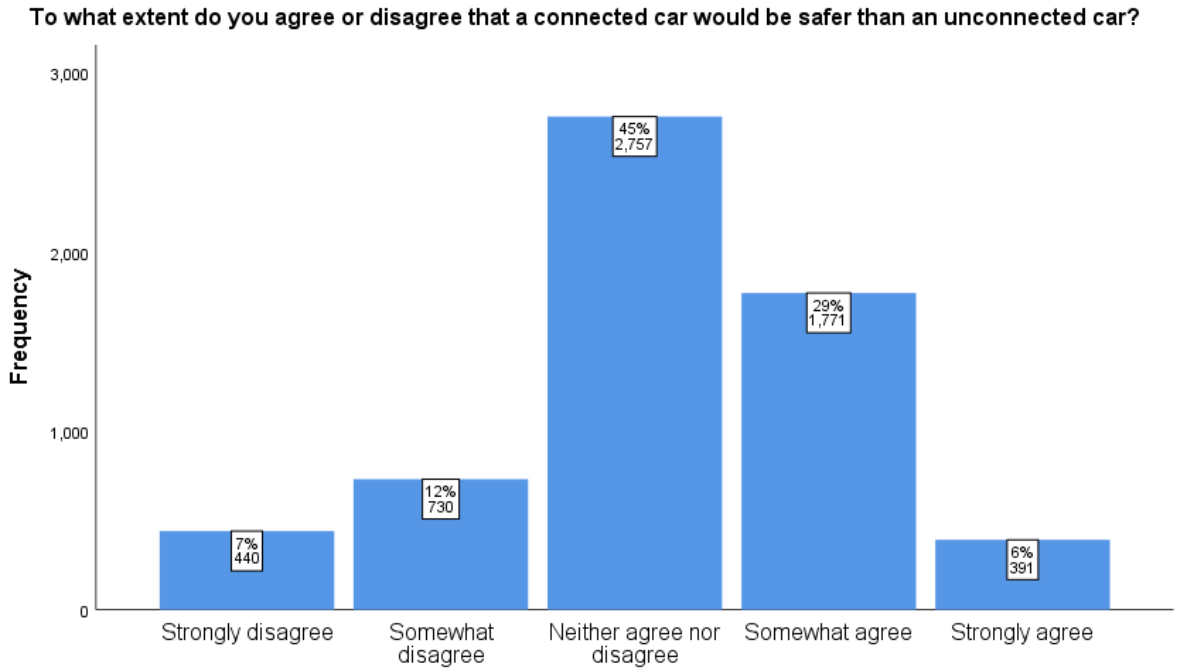
ADVI's activities include linking governments and vehicle manufacturers with data wholesalers to determine what data matters and how it can be accessed.

The ethical considerations and regulations in the development of connected and automated vehicles (CAVs)

The ADVI survey responses indicate that the public has limited awareness of the safety benefits of connected cars. The lack of awareness of the benefits, may also be contributing to concerns that connected vehicles may lend themselves to be hacked, which our survey responses indicate high levels of concern from both male and female respondents.

New South Wales, through the Cooperative Intelligence Transport Initiative (CITI) testbed, has developed significant insights into connected and automated vehicles since its inception in 2013. The test bed has also provided the opportunity for drivers of passenger and commercial vehicles to experience the safety benefits from connected vehicles.

Connected vehicle technology is a very mature technology sector and in Australia we have world leading expertise, that has supported Victoria, South Australia and Queensland having also invested in connected vehicle test beds ADVI supports a city-wide deployment of this technology in a major capital city to allow greater exposure of the community to the benefits of this technology.



Unlike connected vehicle technology, Australia is currently a receive of automated driving technologies and therefore we have little opportunity currently to understand and dictate the ethically programing of these technologies.

The key barrier to understanding the ethics and how to regulate the introduction of automated vehicles, is that we are unable to test how the systems have been programmed to respond to situations in an Australian context.

The absence of uniquely Australian datasets for testing and certifying automated driving systems is seen to be a signficant gap. ADVI through our partnership network are actively seeking to address this gap.

While the general public can look forward to a safer, more productive motoring future, those who might be vision impaired, ageing, living with a disability, or have a medical condition that precludes them from owning a driver's licence, can also look forward to a new and exciting era of mobility.

Ethical considerations of addressing the current transport disadvantage for people living with a disability must be prioritised higher than is currently the case. ADVI is working with key interest groups to ensure that people living with a disability are not excluded in the planning and development of driverless technology and regulation in Australia. In 2020 ADVI released a thought leadership paper that highlighted the current gaps that we expect automated vehicles to fill, to deliver the road to independence for people living with a disability.

Conclusion

This submission is intended to provide the Committee with insights gained from the ADVI Public Opinion Survey and activities across our partnership of over 150 organisations.

In summary ADVI believes that there is significant local research and development taking place in Australia and New South Wales that will support an enhanced transport service for communities.

Key areas that we have highlighted in this submission are summarised as follows where we believe that ADVI can lend support:

- Sharing of outcomes and learnings from trials run by New South Wales to ensure that the rest of Australia can benefit and invest in new transport services such as MaaS.
- A cross sector approach to delivering real time information to both commuters and public transit operators, so that enhanced shared and public transport services can be designed and delivered.
- Extension of first and last mile services for people living with a disability and clusters of ageing communities.
- Linking governments and vehicle manufacturers with data wholesalers to determine what data matters and how it can be accessed
- Increased focus on ethical considerations of addressing the current transport disadvantage for people living with a disability.
- Development of a uniquely Australian dataset for testing and certifying automated driving systems.
- A city-wide deployment of connected vehicle technology to allow greater exposure of the community to the benefits of this technology.

ADVI welcomes the opportunity to expand on this submission in person or as required to the Committee

For further information please contact Executive Director Rita Excell by email on [redacted]

advi.org.au

Australia & New Zealand Driverless Vehicle Initiative

CONTACT

Level 2, 36 – 42
Chippen Street, Chippendale,
Sydney 2008, New South Wales

T: +61 2 9282 4405
E: info@advi.org.au