National Road Transport Technology Strategy Draft - John McPherson Comments

20231102

Policy principles

1. Improving transport outcomes:

Government decisions to support road transport technology deployment will be based on the capability of the technology/ies to improve safety, efficiency, productivity, sustainability and accessibility outcomes for transport users, the economy, environment and broader society as identified in the vision for this Strategy.

Comment: It should be stressed in this first principle that the success criteria will be assessed in a human rights context. 'Accessibility' and 'Equity' are mentioned frequently in the Strategy draft, but accessibility and equity for people with disabilities may not be equal or equivalent to that of other passengers in CAVs. The need for a rights-based Strategy should be stated.

2. Safe and secure operations:

Government decisions to support road transport technology deployment will be based on the ability to ensure the safe and secure deployment, operation and maintenance of these technologies in the Australian context. When systems fail they must fail safely.

Comment: Agree. They must also fail providing options for journey continuation or seeking assistance.

3. Nationally compatible deployment:

Where technologies will be deployed across jurisdictional borders, governments will take a national perspective on implementation recognising the impacts on other jurisdictions/operators, including by:

a. identifying critical standards for harmonisation internationally and across jurisdictions – relevant international or regional standards should be adopted, unless there is a compelling reason for a unique Australian requirement, and

Comment: Agree. Standards Australia not infrequently adopt European standards as Australian Standards, adding Australia specific appendices where appropriate.

b. ensuring systems and practices are compatible and interoperable to enable a seamless user experience across Australia.

Comment: Agree. Residents of Adelaide should be able to seamlessly use the systems in Sydney when visiting.

4. Evidence based, strategic and value for money investment:

Where government investment is identified as needed to support the deployment of new technologies, that investment will be evidence-based, consistent with long term strategic planning, and deliver value for money for the whole of life of the investment.

Comment: Agree.

5. Leveraging existing investments, market approaches and devices:

Where appropriate, planning for new technologies will leverage existing infrastructure and networks (private sector or government, including public transport), market approaches and consumer devices and equipment (such as smart phones) in order to encourage effective, efficient and equitable deployments.

Comment: A digital divide already exists and over reliance on new or existing digital systems risks exacerbating this divide.

Infrastructure Australia recognises over reliance on IT solutions as a risk in its *Australian Infrastructure Audit 2019*[1].

> 4. Challenge
> Users that are disadvantaged, such as those with low digital literacy or with disability, may be unable to access infrastructure services provided through new technologies. Not extending the benefits of change to all Australians is likely to increase inequality and reduces quality of life by limiting access to services for some members of the community.
>
> 163. Challenge
> The quality of telecommunications services varies for different groups across Australia, with digital inclusion lagging for low-income households, people who did not complete secondary school, those aged over 65 and people with disability.

6. Encouraging competition and innovation:

Where feasible and appropriate, governments should avoid favouring particular technologies, applications and business models, and new technologies should be implemented in a way that supports appropriate data sharing in line with privacy and security requirements.

Comment: Industry has a history of ignoring or overlooking accessibility for people with disability. Government has the responsibility of guiding industry towards accessible and inclusive innovation. To state that government 'should avoid favouring particular technologies, applications and business models, and new technologies' risks poor or discriminatory outcomes.

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[1] https://www.infrastructureaustralia.gov.au/sites/default/files/2019-08/Australian%20Infrastructure%20Audit%202019.pdf

7. Sustainable technology deployment:

Road transport technology deployment decisions should consider the whole of life sustainability impacts of the technology, including decommissioning and recycling at end of life.

Comment: Agree.

8. User-centric implementation:

New technologies should be designed, implemented and delivered in a way that meets the diverse needs of those using them (e.g. travelers with disability, older and younger travelers, those on low incomes, First Nations Australians, culturally and linguistically diverse people, those in regional and remote areas, pedestrians, cyclists and users of multiple transport modes), including in a way that is consistent and familiar, and protects user privacy and security.

Comment: Agree in principle. The human-rights of the cohorts mentioned in Principle 8 should also be recognised. The 'should' is better expressed as 'must'.

The aim of 'user centric implementation' should be Universal Access via Universal Design. This should be stated clearly. Engineers Australia have noted this in their Chapter 8 Recommendations in *Engineers Australia 2022 Universal Design for Transport-Transport Australia Society Discussion Paper*[2]:

> *8. Recommendations*
> 1. Recognise that compliance alone doesn't mean good accessibility – focus on universal access.

Excerpts from the Discussion Paper read:

> The Disability Standards for Accessible Public Transport (DSAPT) establish minimum accessibility requirements to be met by providers and operators of public transport. Rather than simply complying with such standards, world best practice is now moving towards the concept of Universal Access, based upon the concepts of Universal Design.

Universal Access and Universal design are best achieved through consultation and co-design with the disability sector. This engagement is good practice that inevitably leads to outcomes that benefit the public in general. Once again, Engineers Australia[4] have recognised this point that universally designed rather than just 'compliant' outcomes benefit 'all individuals in the broader community'.

> Universal accessibility offers inclusion to all individuals. For those with disability, benefits arise from the opportunity to live a less dependent life and the enjoyment of enhanced respect, dignity, privacy, and rights. While universal design promotes access for

[2] https://www.engineersaustralia.org.au/sites/default/files/2022-10/universal-design-for-transport-discussion-paper.pdf

individuals with disabilities, it also benefits all individuals in the broader community through good design, by easing the complexity and pressure in transport system use and by eliminating some of the barriers to mobility in our everyday life.

9. Adapting to future change:

New technologies should be implemented in a way that supports resilient, reliable and scalable solutions, backwards compatibility or equivalent functionality, future upgrades, and possible future transitions to other technology platforms.

Comment: Agree.

Accessibility

People are not disabled until a disabling environmental factor makes them so. New road transport technologies will work well for those people for who they work well. They will not work well for people whose accessibility needs have not been properly considered.

The draft Strategy makes the valid point that 'Achieving the accessibility benefits will depend on how these technologies are deployed.' Accessibility 'solutions' for public transport are frequently 'compliant' with DSAPT but are non-functional for many people with disabilities. The same could easily occur with road transport. Existing technology such as audio tactile crossing signal controls can often be installed in a manner that makes operation from a wheelchair difficult or impossible.

New 'accessible' road transport technologies can just as easily be inappropriately procured and installed as existing accessible technology.

The pros and cons of CAVs are listed in the Commonwealth's *People with Disability and Connected and Automated Vehicles*[3].

How human error on the part of designers and jurisdictions is to be circumvented in the rolling out of the Strategy should be clearly stated.

[3] https://www.infrastructure.gov.au/infrastructure-transport-vehicles/transport-accessibility/people-with-disability-connected-automated-vehicles

Equity

If the diverse needs of a diverse community are properly explored via a co-design process, and the definitions of 'success arrived at are implemented, a truly equal or equivalent transport system is possible. Guidelines on how to successfully engage with people with disability have recently been issued as part of *Australia's Disability Strategy 2021-2031*[4],[5].

Supporting infrastructure

'Supporting Infrastructure' focuses narrowly on the physical infrastructure of the CAV environment. The Strategy should also recognise that none of the IT or physical transport technologies operate in their own closed system. The intelligent pedestrian crossing is of limited value if the surrounding precinct access paths do not easily allow pedestrian to reach the crossing. Similarly, passengers do not materialise and then dematerialise in CAVs. Rather, passengers must board and alight from designated loading zones or other appropriate locations. This boarding / alighting infrastructure must be accessible to people with disabilities, as must the access paths of the surrounding precinct, or the CAVs will fall short of their potential.

[4] https://www.dss.gov.au/about-the-department/news/67676
[5] https://www.disabilitygateway.gov.au/good-practice-guidelines

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3.5 Develop guidance on the physical road infrastructure needed to support CAVs

In addition to 'intelligent' infrastructure, the accessibility of the boarding and alighting points for CAVs must be considered. These must be in conformance with the Disability Standards for Accessible Public Transport (DSAPT) and also must be recognisable by the CAV. Boarding and alighting points must be connected to surrounding precincts by access paths that conform to the AS 1428 suite of Australian Standards and relevant Austroads Guidelines.

Development of this guidance is best addressed by a co-design process involving all stakeholders.

3.6 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

Precise positioning will be essential if people with vision or cognitive impairments are to be confident that the CAV will arrive at their precise location and will take them precisely to the point where they wish to alight.

3.7 Investigate how 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

Sound and haptic technologies are potentially very useful for people who have sensory impairments. Their use, particularly when passengers are interacting with touch screen technology, is likely to make operating systems far more accessible.

3.8 Develop guidance for CAV vehicle manufacturers and deployers on making CAVs accessible

The pros and cons of CAV accessibility are listed in the Commonwealth's *People with Disability and Connected and Automated Vehicles*[6]. If the CAVs

[6] https://www.infrastructure.gov.au/infrastructure-transport-vehicles/transport-accessibility/people-with-disability-connected-automated-vehicles

are offering a public transport service they must conform to DSAPT requirements and any relevant Australian Design Rules.

There will be many design challenges in making CAVs accessible to people with disability. These challenges are best addressed by a co-design process involving all stakeholders.

3.9 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 not necessarily reduce the public transport workforce. Rather, they will offer the opportunity to shift from driving a vehicle to offering customer service to passengers of the CAV.

The BBC recently reported on a CAV initiative: *UK's first driverless bus begins passenger service in Edinburgh*[7]. The buses will initially have a 'driver' to ensure the vehicle operates safely. It will also have a 'bus captain' to assist passengers with boarding and ticketing.

It is highly unlikely that people with a disability who currently require staff assistance to board a vehicle will be able to independently board an unstaffed CAV. The on-board customer service role for CAVs is therefore likely to be a high employment priority in future. Disability awareness training will be a high priority for these staff. Design of this training is best undertaken as a co-design project involving all stakeholders.

3.10 Investigate whether there is a role for national coordination of Mobility as a Service (MaaS) implementation in Australia

Mobility as a Service is an emerging transport option and would benefit from a national rather than state or regional approach. State and regionally based fares and ticketing systems have added unnecessary complexity and difficulty to travel when away from the home state or region. The current approach to fares and ticketing will allow easy fare payment options when interstate. MaaS operating systems should offer the same convenience to travellers away from the home state or region.

Of equal importance to the accessibility of the vehicles is the accessibility of the systems used to book, hail and inform the vehicle of intended destination. Over reliance on even accessible IT systems may exclude potential users from low-income families and some people with a disability. Dezuanni, M., et al (2023) in their *Digital inclusion is everybody's business; Key findings from the ARC Linkage Project Advancing digital inclusion in low-income Australian families*[8]. The report

[7] https://www.bbc.com/news/uk-scotland-edinburgh-east-fife-65589913
[8] https://apo.org.au/node/324660

detailed the digital divide facing some Australians and made a number of recommendations. Recommendation 7 is of relevance to MaaS and CAVs.

> *Recommendation 7. Digital service delivery platforms must be accessible for the most digitally excluded people:*
>
> Governments and service providers must appropriately design digital service delivery platforms for the most digitally excluded people including low-income families, people from culturally and linguistically diverse backgrounds and those living with a disability.

This design process is best undertaken as a co-design project involving all stakeholders.