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QUEENSLAND DEPARTMENT OF TRANSPORT AND MAIN ROADS

RESPONSE TO THE NATIONAL TRANSPORT COMMISSION'S DISCUSSION PAPER ON GOVERNMENT ACCESS TO VEHICLE GENERATED DATA

Introduction

The Department of Transport and Main Roads (TMR) welcomes the opportunity to provide a submission to the National Transport Commission's (NTC) discussion paper on *Government Access to Vehicle Generated Data* (VGD). While this submission is reflective of a TMR view only, a broad range of perspectives were considered, including officer-level input from a range of relevant Queensland Government agencies.

In formulating this submission TMR has considered the information and proposed options contained within the NTC's discussion paper as well as the broader data and information sharing context. It is critical to remember that government access to VGD will not occur in a vacuum, and will be impacted by varying technological, economic, social and political factors.

At a high-level our position includes five key messages.

1. We must focus on the future

The discussion paper has highlighted several existing issues with the current ability for governments to derive value from VGD. However, we must not lose sight of the opportunities which the deployment of future vehicles (that are increasingly connected and automated) will present.

TMR expects that many of the current issues associated with sharing VGD will be resolved as future vehicles are progressively deployed. This includes fleet penetration of vehicle connectivity and reduced costs associated with data collection, storage, transmission, analysis, exchange and use. Continued advancements in the operating environment, such as upgraded physical and digital infrastructure, will improve the capability for industry and government to exchange data. In turn, as this operating environment becomes more favourable, market investment in industries such as Automated Vehicles (AVs), telematics and other satellite industries will also enhance capability.

Future vehicles may also change the relationship between industry and government by altering the willingness and incentives for data exchange. We assume that all parties in the future will be motivated to provide efficient and safe mobility to their consumers/constituents, and this will likely necessitate the exchange of some data. For example, where a vehicle's operation depends on public infrastructure (such as roadside connectivity or digital maps) it will be beneficial for industry to report on the status of that infrastructure to governments who can ensure it is properly maintained.

A focus on future vehicles and future environments may allay industry concerns relating to mandating data collection and exchange technologies which could increase the cost of vehicles without clear benefits for consumers and industry. A future focus to deriving public value from VGD should leverage market capability as it is developed and deployed rather than dictate specific technological solutions.

To further support collaboration between governments and industry the rhetoric around the scale of VGD must also change. Governments are not seeking to mandate access to all VGD (often estimated at more than four terabytes of data per vehicle per day). Such an approach would jeopardise the commercial viability of future vehicles and paralyse government systems. A nuanced view is required. The scale of data that is exchanged is likely to be proportionate to the problems and opportunities being addressed.

2. We need a broad, flexible and strategic data exchange framework

There is a high degree of uncertainty surrounding future vehicles and it is impossible to accurately predict all future use-cases for VGD. This is exacerbated by a lack of agreement about the context, goals, roles, responsibilities and processes which will underpin the exchange of VGD. To address this, we advocate for governments and industry to collectively develop and agree on a flexible, strategic and future-focused data exchange framework.

To support the development of a data exchange framework, we propose the draft design principles below.

A data exchange framework should:

1. Maximise the public value derived from VGD by leveraging, not dictating, market capability.
2. Seek outcomes based on a positive business case, considering the impact on consumers, industry, governments and the general community.
3. Focus on insights over raw data, as insights can be drawn from a variety of data sources.
4. Be technology and business model agnostic to ensure resilience and uptake.
5. Facilitate collaboration between governments, industry and consumers.
6. Ensure consumer privacy is appropriately protected while allowing individuals to participate in data exchange where they perceive value. Where personal information is required, legislative privacy protections should apply.
7. Avoid duplications and inconsistencies to provide a streamlined process for all participants.
8. Be nationally consistent and, where appropriate, internationally aligned.
9. Be flexible, broad, strategic and adaptable in approach with a focus on the future.

Rather than a focus on non-commercial sharing of data from industry to governments, a data exchange framework could allow for data to be shared or exchanged between participants on a range of terms in a consistent manner. In this context, government access to VGD could be considered across the following categories.

- Mandated (using a variety of regulatory instruments – for example, statutory obligation or conditions within an access permit).
- Non-commercial (shared freely between participants).
- Commercial (available for purchase or exchange).
- Restricted (not available for government access).

There are likely many frameworks in use domestically and internationally which could be adapted or inform the development of such a data exchange framework (one such example is Estonia's X-Road data exchange framework).

An appropriate entity must be identified to take the lead in the formation and implementation of a data exchange framework. Our view is that Austroads would be a logical candidate given it represents all Australian road agencies and is developing relevant technical expertise within the Future Vehicles and

Technology Program. Such an entity will require new specialised data expertise. Other entities could and should still work on various VGD access, sharing and exchange initiatives. For example, we call on the NTC to progress mandated AV data access requirements below. This work should be aligned to and inform the development of a data exchange framework. We also note ITS Australia has played an important role in industry and government collaboration and negotiations for prior data initiatives (for example, the single tolling solution for Australia in the 1990s) and may add value in this space.

A data exchange framework must be broad in its vision but targeted in its implementation. Once a data exchange framework has been developed it should be tested and iterated with small proof of concepts involving some or all participants. To support this, governments and industry should identify data gaps and expose the range of data collected to inform opportunities. Proof of concepts could then be prioritised as relevant and do not need to be agreed at this stage. Based on the broad support of most stakeholders, some road safety use cases may be a logical place to start, but this should be further assessed once a data exchange framework has been developed.

Work in developing and implementing a data exchange framework must not delay or create barriers for initiatives currently in-train or under investigation. Any such framework should build upon and be informed by existing approaches and examples. For example, TMR is currently investigating the opportunities and barriers around the use of data to address mobile phone driver distraction, which may include some VGD. The Transport and Infrastructure Council has endorsed the National Roadmap on Driver Distraction which includes a variety of data-focused initiatives to encourage greater on-road compliance and nudge drivers toward safer driving behaviours. Industry and governments have worked together in developing this Roadmap and identifying a range of solutions to reduce road trauma resulting from driver distraction.

3. Governments have a critical enablement role to play

The development of a data exchange framework will provide the foundation for the future use of VGD. However, ensuring the efficient use of this data to deliver public value will require reforms across government.

Governments will need to focus on:

- strategic enablement of emerging technologies and business models that have touchpoints to safer, increasingly connected and automated vehicles. This may include considering infrastructure needs (physical and digital) as well as removing regulatory barriers.
- building adequate capability to use VGD to deliver the intended public value. To maximise the value of VGD governments will require an uplift in capability in relation to enabling technologies, processes and governance. While such capability will grow organically over time, effective strategies could accelerate this to ensure governments are ready to take full advantage of future opportunities.
- identifying data sets and insights that could be shared or exchanged with industry and/or consumers within a data exchange framework.
- developing policy and regulatory incentives to support industry in improving vehicle safety, interoperability and levels of consumer adoption. As an example, The Australasian New Car Assessment Program (ANCAP) has a long and successful track record for incentivising safer vehicles through safety ratings. ANCAP may one day also play a role in incentivising uptake of vehicles that are more capable of collecting and exchanging VGD.

- improving communication with industry to ensure a clear understanding of government data policies and address real or perceived barriers. For example, government open data policies should not be a barrier to VGD exchange. Depending on the terms of VGD exchange, such data may be precluded from any broader sharing or release.

4. Learn from, but don't constrain, the heavy vehicle experience

The heavy vehicle industry has a successful record of sharing data with governments to support road access, safety, asset management and productivity. Lessons should be learned from this experience and many of the existing heavy vehicle data sharing frameworks, standards and governance models may be able to be repurposed for broader application. The involvement of Austroads, including Transport Certification Australia, would support this.

Based on this experience, many heavy vehicle reform initiatives rely on VGD. This includes future assurance schemes for restricted access vehicles and national Heavy Vehicle Road Reform (Land Transport Market Reform) initiatives. It is critical that any broader work considering government access to VGD, does not jeopardise or constrain existing and future heavy vehicle data access and use.

The heavy vehicle experience highlights the importance of data exchange on a range of terms. Heavy vehicle data predominately supports compliance and assurance activities based on the higher-risk these vehicles present to road infrastructure and use. Government access and use of this data is often mandated using a range of regulatory instruments. A data exchange framework should be broad enough to facilitate such continued access and use, which in turn may help to identify other related opportunities.

5. A greater emphasis on AVs is required

While it is acknowledged the NTC's discussion paper does not specifically focus on AVs, consideration of AV data needs is required as a priority. Some access to AV data will need to be mandated to support the in-service safety outcomes proposed under the national AV framework. The specific AV data needs of regulators (both national and state/territory) and other relevant parties (for example, licensed insurance companies) still need to be identified. It is foreseeable though that this will include, for example, data to support the investigation of crashes and other critical safety incidents to determine causes and assess liability. In these cases, data cannot be restricted from governments or need to be purchased. Clear obligations and associated data requirements need to be developed for industry to comply with and this will need to be settled ahead of broad commercial deployment of AVs.

This work should build on the data requirements being incorporated into the Commonwealth Government's implementation of the agreed AV safety assurance criteria as part of first-supply arrangements. TMR is of the view that progressing these mandatory AV data access arrangements should be one of the NTC's priorities moving forward. This will be critical to the success of the proposed end-to-end regulatory framework for assuring AV safety.

Next Steps

TMR's position best aligns with the proposed Option 2, the establishment of a government and industry data exchange partnership. However, more detail is required to progress this proposal to a stage which would allow agreement and implementation.

To support this, TMR proposes the following next steps:

- Identify an accountable entity to progress development of a data exchange framework and establish necessary governance. Such an entity will require relevant technical and policy expertise. An initial starting point for such entity could be the establishment of agreed design principles between all stakeholders.
- The NTC should narrow their data focus to develop mandatory access arrangements for AV data, including relevant legislation.
- All governments should begin to consider enablement activities, including building the necessary capability to efficiently use VGD to deliver public value.

Response to specific consultation questions

1. Do our problem and opportunity statements accurately define the key problems to be addressed, and do they capture the breadth of problems that would need to be addressed?

Opportunity Statement

TMR agrees there is an opportunity for stakeholder collaboration on exchanging VGD. While maintaining a focus on road safety, it is important to note that there are many other possible opportunities (for example, mobility, environment, infrastructure). As such, the key will not be in any one single use case or theme, but in developing a data exchange framework to enable consideration of a broad range of future opportunities. The opportunity statement might best be reframed as a chance *'to develop a strategic data exchange framework that enables emerging technologies, new industries and enhances future public service delivery and outcomes.'*

Problem Statement 1

TMR agrees with the core issues identified but considers this is a symptom of a broader problem. While incentives and mechanisms are required to ensure effective, reliable and accessible data, the primary roadblock at this stage is a lack of clear understanding and alignment between governments and industry on what opportunities and problems could be addressed using VGD. Productive relationships, supported by a data exchange framework, would assist governments and industry in progressively identifying data gaps, problems and opportunities for VGD. An iterative approach to this will help government to understand use cases in enough detail to clearly state data requirements, access and use conditions.

TMR agrees that opportunities stemming from VGD are limited by current vehicle connectivity. This component appears to duplicate Problem Statement 3.

Problem Statement 2

TMR agrees that a lack of a data exchange framework is, in some cases, a blocker to taking advantage of the opportunities associated with VGD. Addressing this problem should be the focus for the next stage of work in this space. The development of a data exchange framework should build on, and not stifle, existing instances of government access to VGD, such as the heavy vehicle experience.

Any standards development for sensors, systems or data must include significant engagement with industry and align with international best practice where appropriate. To support this, an iterative approach using small proof of concepts should be considered.

Problem Statement 3

The current penetration of 'live' connectivity (connected via C-ITS or mobile networks) across the Australian vehicle fleet has the potential to limit the near-term public value of VGD. To address this problem TMR suggests a broad range of future-focused policy options must be explored rather than a focus on any one technological solution, such as eCall.

There is also the potential to explore policy options which offer incentives or create a more favorable environment to accelerate the deployment of connected vehicles with data capture capabilities beyond regulatory requirements, such as infrastructure upgrades. A strategic data exchange framework is likely to provide a useful forum to engage industry on this issue to better understand what measures would be most effective.

2. In our table, have we accurately captured all the regulatory and legislative mechanisms government could use to access vehicle-generated data?

There are other regulatory mechanisms under development that are not reflected in the table. For example, an option being considered under the Heavy Vehicle National Law Review is the development of a technology and data framework that would be future-focussed and recognise technology as a primary data generator that can underpin compliance, enforcement and assurance. We suggest that the NTC's Heavy Vehicle National Law Review team be engaged to provide additional information on this approach and the implications for any broader work in relation to government access to VGD.

In addition, current powers of enforcement agencies to access VGD under existing privacy frameworks (for example, under a warrant or court order) are not reflected in the table. It is not proposed that these powers be expanded, but analysis of the data ecosystem would benefit from a broad understanding of all existing access powers.

As VGD use cases evolve regulatory access provisions will need to be regularly reviewed and amended. For example, specific legislation will be required for mandatory AV data access as part of the national AV regulatory framework.

3. Are there other major local or international jurisdictional developments providing further access powers or arrangements for VGD?

There are a number of European regulations and initiatives worth exploring further. For example:

- Regulation EU 2019/2144 on type-approval requirements for motor vehicles.
- Directive EU 2010/40 on the framework for deployment of intelligent transport systems in the field of road transport and for interfaces with other modes of transport.
- Commission delegated regulation EU 2015/962 on the provision of European-wide real-time traffic information services.
- Commission delegated regulation EU 886/2013 on data and procedures for the provision, where possible, of road safety-related minimum universal traffic information free of charge to users.
- Commission delegated regulation EU 2017/1926 regarding the provision of European-wide multimodal travel information services.

In addition to European developments, the United States, Japan and Korea have initiatives in this area that are worth investigating.

4. Do you agree with our assumptions on the currently low uptake and limited availability of technology that supports the generation of vehicle data and that there are a few and limited current government access arrangements for VGD?

TMR generally agrees that there is limited capability in the current vehicle fleet in Australia to support significant and wide-scale public value being derived from VGD. This highlights the need to focus on the future where it is assumed that increasing connectivity and automation will increase this capability.

An important caveat must be made in relation to the Australian heavy vehicle fleet, which has far more data collection and connectivity capacity than the light vehicle fleet. Some estimates predict as much as 90% of the heavy vehicle fleet currently employ some form of on-board data telematics (mostly consumed by industry for fleet management purposes). A future focus to government access to VGD should not be at the expense of current and near-term opportunities in the heavy vehicle space.

We disagree with the assumptions made regarding AVs, as well as the framing of their consideration. It is highly likely that the deployment of AVs will increase the need for collaboration and cooperation between industry and governments to ensure consumer mobility is optimised. AVs will also generate and capture an unprecedented amount of data and will likely be connected allowing some of that data to be transmitted and exchanged more easily. The genesis of this project was to ensure governments are well placed to take advantage of the opportunities that AVs present and this should not be lost in the analysis of current barriers.

5. What issues do you believe will be created if ExVe is adopted and that would need to be considered in Australia?

TMR is of the view that any technical proposal or solution is premature at this stage. We stress the importance of understanding the broader ecosystem and developing a holistic data exchange framework prior to considering specific solutions or technical proposals. It will also be critical to consider industry views on an extended vehicle concept in much more detail at the appropriate time.

A data exchange framework should be technology neutral and support a range of future technical implementation models. For example, the heavy vehicle industry has already invested heavily in on-board telematics systems. Future technical proposals must consider impacts to existing models including maintaining value of existing systems.

6. Is there value in establishing a national data aggregator or trust broker? Could good data definitions, practices and cooperation between entities achieve the same outcome?

A focus of a data exchange framework should be on identifying data gaps, opportunities and problems that need to be addressed by both governments and industry. Once developed, such a framework and any technical solutions should support this multi-way exchange of information.

A national data aggregator or trust broker might play a valuable role in a data exchange framework, but further analysis and detail is required. We support the underlying objectives of avoiding duplication and minimising burden on industry. Likewise agreed and harmonised data standards will also support a data exchange framework and should be aligned with international best practice, where appropriate.

This again highlights that a better understanding of the data ecosystem is required before committing to any specific technical solution. In addition to achieving consistency for governments and industry, consumer experience must be central to these discussions. This includes, how consumers receive

information about data exchange, what options are afforded to them to opt in or out and what protections govern their privacy.

7. Can you provide us with more information on either the costs or benefits of government access to VGD for the use cases listed in Appendix B?

As the discussion paper has highlighted, it is challenging to estimate benefits and costs at this stage. However, TMR assumes that there will be a net benefit in the future associated with government access to VGD in some circumstances. Similarly, there will likely be benefits to industry and consumers in having access to government created data.

This highlights the need for a principles-based approach. Governments and industry could collectively agree that *outcomes should be mutually beneficial and based on a positive business case, considering the impacts on consumers, industry and governments*. Such a business case should consider alternative ways of solving identified problems to ensure that VGD is the best source.

TMR opposes the mandating of any specific sensor/system which will unnecessarily increase the cost of manufacture/sale of future vehicles for the primary purpose of deriving public value from VGD (for example, systems not otherwise required for vehicle operation). Instead, a data exchange framework should support the identification of relevant problems and opportunities, and then enable industry to provide technical solutions. As a caveat to this point, governments will have a continued role in facilitating and incentivising safer vehicles and greater interoperability between vehicles. Initially this may be through schemes like ANCAP, and as market penetration increases this will likely involve adopting and adapting international standards.

8. Are there relevant international standards that should be adopted for VGD? Are there any standards that could be developed locally?

TMR supports the consideration and adoption of international standards as they become available, if appropriate for the Australian environment. This is in line with standard practice where Australia generally adopts, and if necessary, adapts, international standards, particularly European automotive standards.

TMR agrees there may be value in developing or adopting standards for modes of data transmission for differing connectivity forms (such as V2X) and that there is likely a benefit in examining standards for heavy vehicles to see what could be adopted more generally. Relevant local (for example, the National Telematics Framework and National ITS Architecture) and international (for example, Estonia's X-Road data exchange framework or ITS standards developed by CEN/TC 278) frameworks should also be considered. Lessons may be learned from the successful development and implementation of the General Transit Feed Specification (GTFS) which has standardised the sharing of public transport schedules to enable interoperability across platforms. Of relevance, a standardised list of data definitions will be of value.

9. Have we accurately described the key barriers to accessing VGD? Are there any additional barriers?

We note there are a variety of barriers to widescale data exchange between industry and governments and that more/different barriers which will arise over time. This includes barriers to both governments and industry accessing data collected by the other party. Our goal should be to develop a data exchange framework which can enable governments and industry to collectively identify opportunities and resolve any barriers.

To minimise any barriers associated with industry accessing government created data sets, governments should identify and make industry aware what data and insights are available for exchange within a data exchange framework. It is understood that a current Austroads project is currently investigating this issue (Road Authority Data for Connected and Automated Vehicles).

Consumers and industry are more likely to embrace new technology, share and exchange data or upgrade vehicles where they see material benefits in doing so. Communication of these benefits to consumers will be critical. Lessons learned from the heavy vehicle experience indicate that the take up of technology and sharing of data is improved where:

- operators are informed of the benefits, and are confident the sharing of data will not have negative commercial effects,
- drivers find the technology useful and usable,
- industry is confident that the systems are reliable and cost-effective, and
- all users believe that privacy will be protected.

The principles proposed in the introduction to this response are intended to address many of the existing barriers to governments and industry data exchange, particularly those relating to concerns about trust. Legislative access and use provisions will be required where personal information is necessary to ensure consumer privacy concerns are sufficiently addressed.

In addition, clear and accurate communication is required about existing government data policies to ensure incorrect perceptions are not perpetuated. For example, industry concerns about government open data policies, as noted by the NTC, are likely founded in a lack of understanding rather than real risk of commercial or sensitive information being shared broadly without consent.

The issue of consumer trust in government data access and use is not unique to transport. Of relevance, the Australian Data and Digital Council have developed draft trust principles based on respect, security, transparency and accountability.

10. Do you agree that Road Safety data should be considered the priority purpose for which we seek to exchange data with industry?

While we note the initial value in developing a variety of use cases, and ultimately use-case themes, a pure focus on advancing government access to VGD based on single theme is not be the most effective approach. At a thematic level it is expected road safety will consistently be ranked as the priority for government access and use of VGD. Reducing road trauma is a clear priority for government and industry alike. However, TMR cautions against taking such a narrow focus at the early stages of developing a data exchange framework.

At a use case level 'road safety' is difficult to strictly define and stakeholders have differing views as to what constitutes road safety. Many use cases which have been grouped into other themes in the discussion paper also contribute to road safety and there may be little value in debating about specific use cases at this stage. An effective and future focused data exchange framework must be flexible enough to provide for all possible data uses. Once such a framework is developed with clear roles, responsibilities, collaboration protocols and feedback mechanisms, it could be tested with any number of use cases or themes depending on stakeholder priorities at such point in time.

A narrow focus on road safety also neglects to consider the range of terms on which VGD might be exchanged. As noted in response to question 17, a broad range of terms is required to support different use cases.

11. What are the key data needs of transport agencies beyond those already identified?

The NTC has largely captured the existing data needs of transport agencies related to VGD. Other needs which have not been specifically considered or ruled out of scope include enforcement and compliance for AVs, broader mobility use cases such as Mobility as a Service and urban development (smart cities) concepts.

There will be many additional uses of VGD in the future. We again reinforce the importance of developing and implementing a holistic data exchange framework which is flexible enough to enable future uses. Early value may be derived by identifying and resolving the data gaps of industry and governments to facilitate exchange.

12. What further benefits from VGD should be considered?

Benefits derived from VGD (for consumers, industry and government) will be many and varied. These will emerge over time as problems and opportunities are identified.

The quality and quantity of vehicle sensor data will improve over time. This will likely correlate with a reduction in costs associated with the collection, transmission, storage, analysis and sharing of data. In turn this will improve the ability for consumers, industry and governments to realise the benefits of VGD.

13. We contend that a prioritised starting point should be established from which other purposes can be further developed. Are there other approaches which could achieve this?

TMR agrees with this statement. However, such prioritisation is best completed once a data exchange framework has been developed and agreed upon, with clearly defined roles and responsibilities, collaboration protocols and processes.

The priorities of involved parties will evolve over time and will depend on many circumstances which may not be foreseeable. A data exchange framework would allow these priorities to be explored in greater detail at the appropriate time and provide consistency and reliability for government and industry. Under such a framework, communication protocols should be two-way to inform government action in creating a more enabling and favorable operating environment for future vehicles.

14. Do you agree with the analysis presented in Table 7? What other opportunities are there for VGD, and why?

TMR is of the view that while the analysis presented in Table 7 is not incorrect, more standardised data sets and protocols would be of benefit. We also note the limited detail provided on AVs.

15. Have priorities changed for land transport policy and for data access from vehicles with the onset of Covid-19?

The COVID-19 health pandemic should not substantially impact the approach to progressing this work. Over time stakeholder priorities will continuously shift depending on circumstances. A flexible data exchange framework will enable these to be addressed in a structured and agreed manner.

The COVID-19 health pandemic has again highlighted the need to carefully consider privacy impacts and how initiatives are communicated with industry and consumers. The cautious public attitude toward use of the COVIDSafe application is a good example of this.

While too soon to say with certainty, it is possible that the COVID-19 health pandemic will change the willingness and incentives for data exchange between governments and industry. For the foreseeable future, all parties will likely be operating in constrained fiscal environments. Data exchange could therefore become vital to ensure the value in investments is maximised. This may hold true for both governments (infrastructure investment) and industry (research and development investment).

16. Should road safety be adopted as the priority for developing use cases for government use of VGD? If not, what other approach should Australia take?

TMR again notes the priority at this stage should be on understanding the ecosystem and developing a holistic data exchange framework at this stage. As the exchange framework matures, proof of concepts will be required to test and refine targeted implementation.

17. Can data other than for the purposes of road safety be exchanged on non-commercial terms?

The terms on which data is shared or exchanged will need to be considered on a case-by-case basis as opportunities arise and solutions are developed. A data exchange framework must support the consistent application of these terms as far as reasonable possible. To support this, it may be helpful to consider government access to VGD across the following categories.

- Mandated (using a variety of regulatory instruments – for example, statutory obligation or conditions within an access permit).
- Non-commercial (shared freely between participants).
- Commercial (available for purchase or exchange).
- Restricted (not available for government access).

This broader view of data sharing and exchange reflects a nuanced view of the data ecosystem where incentives and motivations will differ depending on the business case.

18. Does the NTC's preferred approach (option 2) best address the problems we have identified? If not, what approach would better address these problems?

Of the three options presented, TMR agrees Option 2 is the most appropriate. However, it is noted that these options are not mutually exclusive. For example, certain mandatory data access provisions will need to be legislated (Option 3). This is the case currently for most heavy vehicle data access and will be the case for future AV data access to enable efficient investigation and enforcement of AV laws, particularly relating to assessing liability for safety breaches.

TMR supports, in principle, the establishment of a national data exchange partnership as a forum for developing and maintaining a data exchange framework. A productive forum for industry and government engagement is essential to further this work. However, we will need to understand what this would look like in practice and to ensure the forum fits within the broader data ecosystem in Australia.

The success of such a forum will largely depend on a willing and capable entity providing administrative/secretariat support. Identifying such an entity should be the priority of future work. In the first instance it may be that Austroads is best placed to investigate this issue further.

Consideration should also be given to how existing forums can best be leveraged. For example, the Bureau of Infrastructure, Transport and Regional Economics currently facilitate the Australian Transport Data Action Network (ATDAN) with membership from all commonwealth, state and territory transport and infrastructure agencies. There may be a role for ATDAN in providing strategic direction on VGD from a government perspective.

19. Does the NTC's preferred approach best address the problem we have identified? If not, what approach would better address these problems?

Insufficient evidence has been presented for TMR to support mandating eCall in new vehicles supplied to the Australian market. TMR understands that eCall is a specific technical solution to support the timely attendance of emergency services at the scene of a vehicle crash. It is not clear if this is a problem in Australia, nor is it clear if eCall would solve this problem in the Australian context. Issues associated with telecommunications network coverage and the ability of emergency service dispatchers to manage eCall signals need to be further analysed.

Any proposal to mandate eCall in Australia must stand up on its own merits based on the primary use case. In addition, consideration of the potential benefits associated with increasing the connectivity generally must factor other technologies that could also have this impact. For example, while Europe has historically mandated eCall, it is currently in the process of developing a modernised C-ITS platform for connected vehicles. Therefore, adopting eCall in Australia as a tool to boost connectivity generally does not align with current international approaches.

More generally, policy approaches that accelerate the deployment of safer vehicles (that are increasingly connected and automated) seem appropriate to consider. However, significantly more policy analysis is required before specific options can be developed and considered.

TMR recommends that the current NTC project focusses on outputting recommendations that progress the establishment of a data exchange framework that can leverage market capability as it is deployed. It should not be within the scope of the current project to consider mandating specific technological solutions that increase the connectivity of the vehicle fleet.