



Tesla Submission: Autonomous Vehicle Framework Consultation

11 June 2024

Introduction

The Department of Infrastructure, Transport, Regional Development, Communication and the Arts (DITRDCA) has provided an understanding of the current landscape and highlighted a desire to keep Australian policy development transparent while simultaneously creating a space for innovation. Tesla welcomes the opportunity to provide input on the proposed regulatory framework and look forward to continued collaboration as this space develops in Australia.

Organisation questionnaire response

Privacy Setting: I agree for my response to be published with my name and position withheld.

What organisation do you represent?	Tesla
How suitable are the matters we propose to include in an ADSE's safety management system? Should other matters be considered?	It is our opinion that the listed certification requirements are sensible, but will require further consideration and, potentially, specification. As an example, we suggest that 'data recording and sharing capability' requirements are defined in more detail so that an ADSE is able to determine the regulatory expectations in terms of e.g., data types or elements to be collected, retention times, obligations and response times pertaining to the sharing of data. In addition, further consideration is necessary of how the confidential or privileged nature of certain data or report will be maintained once these have been provided by the ADSE, in particular if such data is further shared with multiple audiences.





Are there are other matters that the law enforcement and emergency services interaction protocol should account for?	We would be eager to exchange further with the Australian authorities so that common standards or approaches may be developed in terms of ensuring safe and appropriate interaction by law enforcement officers and emergency service workers with an ADS. This should include, but not be limited to, the appropriate authentication of such personnel, interaction protocols with an ADSE, collaboration in the event of an incident, etc. Similar requirements to develop a LEESIP are already enforced in the United States, but a common protocol that is applied by manufacturers across various states has not yet been developed.
Do the certification procedures for aftermarket installations of an ADS adequately manage safety risks or should other matters be considered?	Based on the provided consultation document and supporting materials, it is insufficiently clear at what point a software update to an ADS on the market should be considered as an “aftermarket installation” or an update that falls under typical certification. We offer three examples: • Should an extension of the operational domain from urban operations to highway operations be considered as an aftermarket installation, or as recertification? • Should the extension of the operational domain from 60 km/h to 80 km/h in rainy conditions warrant full recertification? • Should a minor update that improves response to a dynamic situation require full recertification? We recommend that minor software updates should not be grounds for a full ADS (re)certification unless substantive changes are made to the ADS’ operational domain, or if the software update introduces an upgrade of the automation system from one SAE J3016 level of automation to another. In both cases, we disagree with the consultation that this should be considered to be an ‘aftermarket’ installation considering the necessary the hardware for such capabilities were already equipped on the vehicle at point of introduction into the market even if we agree on a certification of this change.

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Are there other modifications that should be considered significant? Is there other information an ADSE should provide when seeking authorisation for a significant modification?	We agree that modifications are an important safety consideration and that specific attention should be given to the cases of an aftermarket-installed ADS hardware package by a third party especially if an ADS system is already certified for the vehicle, or of an aftermarket modification of an ADS by an unauthorized party. Both scenarios can introduce a significant safety risk, but also a significant legal and reputational risk for the original vehicle manufacturer or ADSE. Not only unauthorized installation, but also modification should be grounds for an offence. We recommend that further clarity is provided how 'modifications' interplay with 'software updates' or 'aftermarket installations' in the context of the AVSL and that the concept of 'modification' is further simplified to mean: – Any significant or unauthorized modification of software following the deployment of the ADS that impacts the system's operational domain or capability. – Any significant or unauthorized modification of hardware following the deployment of the ADS that impacts the system's operational domain or capability. Some manufacturers currently present in Australia regularly perform software updates or deploy hardware improvements to vehicles equipped with ADAS, and in the future expect to maintain this approach for an ADS deployed in Australia. In this sense, we agree that any significant modification which would significantly affect the system's ability to operate in its defined operational domain or significantly modifies the ADS' operational domain should warrant (re)certification. We however disagree that minor software updates or modifications of hardware which do not meaningfully impact the ADS' operational capabilities should fall subject to this requirement (e.g., the installation of a newer generation GPS receiver or a SIM exchange).
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What are your views on the proposed additional AVSL measures to manage the safety risks of repairs, maintenance and modifications? In your response, please consider:

- a. Are the risks arising from repairs to an ADS different enough to the risks arising from repairs to a conventional vehicle to require additional regulatory measures?
- b. Is express authorisation of repairers, maintainers and modifiers a suitable approach to manage the risks of unqualified parties working on an ADS?

- a. Improper repairs or modification of the ADS' or other vehicle parts can directly impact the safe operation of the system, which lead to liability and legal implications. An ADS repair, modification or maintenance should only be performed by authorized facilities irrespective of whether the ADS is deployed on a privately-owned or commercial vehicle. Alternatively, if such third-party unauthorized repair is enforced, provisions should be introduced to impose the assumption of (a degree of) liability for the ADS' continued safe operations.
- b. Yes, it should remain within the explicit control of the ADSE whether or not such extension is necessary. Mandatory authorization of third parties could have direct safety, legal and commercial impacts to the business model and commercial profitability.

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c. What is an appropriate balance between the level of control or discretion an ADSE has over who it authorises to work on its ADSs, and the level of responsibility placed on either the ADSE or the repairer, maintainer or modifier doing that work? e. Should the AVSL include safety duties for repairers, maintainers and modifiers of ADSs? If so, how suitable are the proposed elements of the safety duty on repairers, maintainers and modifiers?	c. If repair by unauthorized parties would be legally mandated, we believe that a distinction should be made between ADS vehicles which are commercially operated or which are providing commercial service, versus vehicles equipped with an ADS which are privately owned. e. Yes, including potential responsibility in terms of liability of the ADS' continued safe performance.
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f. How may the proposed additional measures for repairs, maintenance and modifications affect business models for both ADSEs and repairers, maintainers and modifiers?	f. We would be happy to discuss this matter and potential implications further in a direct exchange with the regulator.
Are there measures we should consider to manage the consumer impacts of an ADS being disabled due to suspension, cancellation or surrender of certification?	While we agree with the general principles outlined in terms of ensuring continued appropriate compliance with an offered certification, we disagree that a change in corporate structure or key personnel, or determination of appropriate financing, should be considered as sufficient grounds to suspend or even cancel a certification. We agree that an ADSE should aim to ensure that the regulator is appropriately informed of changes in key processes or points of contact who are engaging with key stakeholders, such as law enforcement or emergency services, however we do not believe that a turnover of, e.g., a senior executive is sufficiently relevant. In addition, due to the direct public or commercial impact due to the commercial service offered by an ADSE or the direct impact on a customer who has ownership of a vehicle with an ADS provided by the ADSE, we recommend that the regulator maintains a balanced approach to suspensions accounting for such impacts especially if a direct safety-critical reason for suspension has not been determined. Suspensions should be balanced against the consequences of a suspension and should possibly be implemented in stages (e.g., a limitation in the service offered, or number of vehicles) or limited to specific conditions (e.g., a suspension of operations in night-time conditions if a safety issue has been determined for those conditions). Such measures are ideally negotiated with the ADSE in question. A cancellation of the certification should only be applied in extreme cases.

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For how long should ADSEs be required to retain data? Should there be different periods for different types of information?	We suggest aligning data retention requirements to align with other applicable legislation to the extent relevant, such as privacy and tax laws, which require data to be retained for varying periods of time. Beyond existing requirements, we suggest that the ADSE is allowed to determine an appropriate retention period in agreement with the regulator depending on the types and content of the data to be retained.
Are there risks associated with information management that are not covered in these proposals?	Where ADS-relevant data is requested from the ADSE, we believe it is critical that such information can be provided under privilege. When the regulator wishes to share such information with a third party, the ADSE should be provided the opportunity to redact information that is confidential or would have a meaningful business impact.
What are your views on the proposed additional AVSL measures to manage the safety risks of remote operation of a vehicle with an ADS? In your response, please consider: b. Do you agree with the proposed scope of remote operations to be managed under the AVSL, and if not, which forms of remote management do you consider should be managed under the AVSL?	b. We agree with the proposed limitation but consider the development of clear legal requirements pertaining to remote driving to be helpful to facilitate such business models in Australia in the future, especially in the context of cross-state navigation.

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c. Should an ADSE have responsibility for the safety remote operation performed to support its ADS? Should we consider other models for allocation of safety responsibility for remote operation? f. What specific skills or proficiencies should be required of remote operators?	c. We agree in principle, however feel that the responsibility determination should be subject to the business-to-business terms of agreement defined between the ADSE and a third party offering the service, if applicable. This contract should determine the applicability and limitations of responsibility assumption in terms of safe remote operation. If an alternative approach is pursued where a separate entity is defined for remote operation and this entity maintains a 'supplier' relationship with the ADSE, accelerated certification of such an entity based on the ADSE certification should be possible. We are however concerned that this approach would add significant complexity to start operations in Australia, increasing the burden for new competitors to offer commercial service. Further, we believe that a clear differentiation should be made between remote monitoring (e.g., helping the ADS to make the right decision) versus actual remote operation (e.g., direct remote control). This may also have statutory consequences considering, generally, vehicle compliance with design rules and technical standards are within the federal jurisdiction whereas vehicle control and road/passenger transport rules are within state/territory jurisdiction. f. We suggest that the remote operator should have a valid driver's license in any Australian state, no recent criminal record and should be appropriately trained by the ADSE to safely operate the ADS.
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Should an ADSE be required to ensure certain technical information is provided to consumers to inform purchasing decisions?

We agree that technical information provision is especially pertinent in the context of so-called dual-mode ADS which enable both manual and ADS operation. This, for instance, can be applicable to ADS equipped to privately owned vehicles, as well as commercially operated logistics vehicles that may operate in automated mode during some part of the journey. We however feel that such a requirement would not be meaningful in the context of commercially operated ADS that do not offer manual human operation from within the vehicle, such as a Robotaxi service.

We also wish to caution that an automated vehicle register will require appropriate resourcing to ensure that appropriate and up-to-date information is provided at all times. For example: Tesla current deploys software updates every 2 to 3 weeks which may affect the capabilities of the ADAS deployed to a given vehicle. Assuming that an ADSE regularly updates an ADS or decides to extend or adapt the operational design domain of an ADS, this will have to be appropriately reflected in the register within a short timeframe. Similarly, an ADSE may regularly update the list of authorized repairers. In addition, we wish to point out that a 'subscription' model may be applicable to privately owned vehicles capable of equipping an ADS which can mean that even though a vehicle maybe ADS-capable, the customer may have decided against having ADS capabilities available at a given point in time.

As such, we recommend that the automated vehicle register is developed with a reasonable scope at first iteration, focusing on the education of a customer of ADS capabilities in the event that a purchasing decision is made. In addition, we recommend that the register is limited to dual-mode ADS that are commercially available for private or commercial purchase, but do not extend to ADS that are not available for purchase (such as a Robotaxi deployed and managed by ADSE).

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	In terms of ADS marketing, we suggest that such requirements are subject to existing information assurance laws. Any additions within the AVSL should only pertain to dual-mode ADS that are available for purchase, but not to ADS that commercially run but not available for purchase.
Should the AVSL include offences in relation to misrepresenting vehicle capabilities?	We kindly request further clarity beyond the information provided in the consultation document in terms of how “misrepresentation” is determined.
What are your views on how we should approach laws for human user obligations in vehicles with highly or fully automated driving features? In your response, please consider: a. Which types of vehicle control and seating configurations are being considered or developed by industry for vehicles with highly or fully automated driving features? Can vehicle control/seating design help to determine the obligations for users of these vehicles?	a. At this time, we do not believe that vehicle control or seating design are an appropriate determinant for related user obligations and we are concerned that overly conservative requirements will provide a burden on innovation in vehicle design permitted by the integration of higher automation. Provided appropriate safety measures are implemented, vehicle designs that facilitate fully reclining or rotating seats, or designs without forward-oriented seats are imaginable or vehicle designs where only a center seating position (e.g., for Heavy Duty Vehicles) are foreseeable. Further, even in the context of dual-mode vehicles, fallback or direct control capability can be provided by remote operators. Due to these factors, we recommend that particular focus is put on defining clear obligations related to automation state change communication and related instruction to vehicle occupants or the human driver that is about to resume control.

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b. In vehicles with higher levels of driving automation that are configured with manual driving controls, should there be specific requirements about seating position when the ADS is engaged? Do you support any of the options identified, or propose any other options?	b. No. As this would negatively impact for-purpose designs in terms of safety or comfort. For example, when a level 4 ADS is operational, the system may allow the driver-turned-occupant the possibility to fully recline their seat and to sleep. In terms of seatbelt requirements, we suggest that these are applicable when the human driver is in control of the vehicle only unless specifically instructed or required otherwise by the ADS.
c. How should licensing requirements apply to users of vehicles with highly and fully automated driving features with accessible manual controls? Do you support any of the options identified, a combination of options, or propose any other options?	c. We believe that a licensed driver should only be required to sit in the driver's seat in the context of dual-mode ADS which allow the possibility for a human to manually control the vehicle, or in the context of ADS where a human driver is expected to serve as a fallback in case of a (severe) failure. In all other cases, such as in the context of commercial Robotaxi operations, unlicensed persons should be permitted to occupy any position in the vehicle considering there is no longer a 'driver seat' in the vehicle in question. In such case, requiring the ADSE to determine a 'driver seat' and to limit access for occupants making use of the service, would significantly negatively impact commercial operations and the service's viability.

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d. How should drug and alcohol restrictions apply to users of vehicles with highly and fully automated driving features? Do you support any of the options identified, a combination of options, or propose any other options? e. Do you think there should be a requirement to always have a person capable of driving travelling in a vehicle with highly or fully automated features? Why or why not?	d. It is our understanding that current legislation already addresses such restrictions, and we believe that they should continue to apply for SAE level 3 and 4 dual-mode ADS where the person should be capable of safely assuming manual control either when that person requested a transition from automated mode or when serving as a fallback ready user In other cases where occupants do not have a responsibility to assume manual control in specific circumstances, we do not believe that such restrictions on drivers should apply for occupants that are making use of a given commercial service. e. It is our opinion that this should only apply when the ADS requires a human driver in the vehicle as a fallback ready user or in the context of a dual-mode ADS. In all other cases, we believe that this would significantly negatively impact the viability of the ADS, especially when offering a commercial service.
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f. Do you support permitting a person seated in the driving position in vehicles with highly or fully automated driving features to undertake secondary activities? Do you support any of the options identified, a combination of options, or propose any other options?	f. We do not believe that there should be a restriction on a driver's ability to engage in secondary activities as long as the ADS is capable of effectively ensuring response from the driver, in particular for dual-mode ADS or where the driver serves as a fallback ready user. For ADS that does not allow human manual control, there should not be any restriction.
g. How should non-dynamic driving task obligations be assigned or shared in vehicles with highly and fully automated driving features? Do you agree with our analysis?	g. We suggest that the regulator carefully and in-depth considers the implications of a determination on this matter, in relation to the particular use case, design or business model pertaining to the ADS. A number of rules listed, such as appropriate headlight control or usage of seatbelts, can reasonably be handled by the ADS' software and hardware design. However, a number of other rules, such as the obligation to "remove fallen things from the road," reasonably are difficult to apply to an ADS or the occupants of the vehicle at a given point in time. For instance, depending on the secondary activities permitted, a human occupant in the driver seat of a dual-mode ADS may be sleeping as the ADS is navigating to a given destination. In this case, neither the ADS nor the human occupant may be aware that of a fallen object that is on a nearby lane, and therefore may not make the decision to stop within proximity of the object in order to remove said object. Further, if mandated, there is a high risk for false-positive events where the ADS determines an object to be a 'fallen thing' which is then subsequently determined by the human driver to be irrelevant. Similarly, the application of rules 268 and 298 may be irrelevant or will be difficult to manage in the context of an ADS unless the ADS is simply permitted to query confirmations from human occupants.





Do you support third-party interference offences being included in both the AVSL and state and territory law?	We believe that a federal approach would be preferable if this can be achieved, but we would suggest careful consideration of any additional requirements against existing legal requirements pertaining to property offences. While a federal approach would be preferable, any additional requirements in this area should be carefully evaluated against existing laws relating to property offences. In addition, we suggest that vandalism or intentional abuse of an ADS by a third party should be classed as a third-party interference.
Do you support the proposed automated vehicle regulatory framework as a whole, and are there any barriers to its implementation?	Yes, we are supportive of the proposed regulatory framework with the inclusion of a number of amendments based on the learnings from this consultation. In addition, we would urge the regulator to establish clear timelines coupled with implementation of obligations to ensure and/or accelerate the development of secondary law. This approach would be similar to the Autonomous Vehicle Act as recently adopted in the United Kingdom. In addition, we would urge the regulator to include a specific framework to enable the commercial licensing of ADS services at the federal level in Australia, similar to the provisions that were adopted in the Autonomous Vehicle Act. We believe that this is especially pertinent to facilitate the deployment of Robotaxi and heavy-duty vehicle ADS commercial services at scale, possibly cross-state. A pertinent issue will be to resolve existing state and territory road laws deeming individuals in controls of vehicles and requiring they maintain control, in addition to other specific elements in these laws that assume human reasoning or the presence of a human driver.



Managing automated vehicle safety before the regulatory framework is in place	This problem statement assumes that there are ongoing or likely issues with the (safe) deployment of ADS ahead of the introduction of the framework. In addition, ahead of commercial deployment, ADSE will highly likely perform state-by-state trial testing and deployment activities subject to existing legislation. While the new regulatory framework will introduce many improvements, it is our understanding that the current legal frameworks may be sufficient to facilitate limited deployments within states or territories. An outright ban on the deployment of ADS before this framework is in place will de-facto put a moratorium on the development of this technology in Australia until this time, negatively impact the prioritization of Australia by international ADSE developers in favor of other markets, or inhibiting the development of home-grown developers of this technology in Australia.
Is it necessary to restrict aftermarket installation of an ADS, or use of an ADS to approved trials only, before the automated vehicle regulatory framework is in place?	No. It is unclear to us at this time when we may reasonably expect the AVSL to be fully in force. As noted previously, any action here puts a moratorium on any ADS development, thereby restricting innovation and development of this technology in Australia.

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What are the barriers to more complex and large-scale trials in Australia? How could trial arrangements be improved? Should there be provision in the AVSL for interim certification to support trials?	Australia currently lacks a clear pathway to scaled commercialization of ADS across states and territories, which we believe the AVSL may address depending on the regulatory choices made. A pathway to commercialization is pivotal in order to justify the R&D investment made by a company to develop a full-fledged ADS. In terms of large-scale trials, it is our understanding that unfortunately there is significant state and territory-level fragmentation of trial requirements inhibiting such activities at a large scale. To this end, we recommend that the regulator adopts a federal 'Code of Practice' similar to the instrument adopted in the United Kingdom in order to enable and accelerate such activities. This instrument has proven successful in terms of facilitating trial activity in the United Kingdom in a safe and secure manner.
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