

Written evidence submitted by DAC Beachcroft LLP (SDV0012)

About Us¹

We are a leading international legal business with offices across the UK, Europe, Asia Pacific and Latin America.

We are a forward-thinking business. We are committed to helping facilitate practical and beneficial legal reforms and technological innovation.

We have co-ordinated an Automated Vehicles team that draws from our strength as one of the UK's leading insurance law firms, consisting of 15 members from a wide range of specialist areas, including: motor claims and liability (civil and criminal), product liability and recall, data and cyber risk, technology, insurance regulatory, commercial, property and infrastructure and transport and logistics. Through Legalign, our global partnership of like-minded law firms, we also have access to legal experts in Germany and the United States.

We have responded to every government, parliamentary and Law Commission consultation and call for evidence related to automated vehicles and the future of motor transport since 2016. We have hosted multi-jurisdictional seminars, spoken at industry-wide events, published articles and been featured in many interview panels. Our AV expertise has been relied upon by insurers, trade organisations and trade publications.

Introduction

We believe that automated vehicles (AVs), if properly introduced and regulated, could eventually improve road safety in Britain significantly.

The technology currently available is not sufficiently advanced to be classified as automated driving. It is inadequate to guarantee the safety of road users without driver supervision. This is particularly true of automated lane keeping systems (ALKS).

Additionally, the UK's physical and digital infrastructure is not ready to cope with AVs outside trial environments.

Rushing to legalise products not yet ready for purpose on a road network lacking properly updated infrastructure risks causing unnecessary harm, public mistrust in the technology and delaying by years the widespread adoption of AVs.

We have strongly urged the government to exercise due caution by waiting for thoroughly tested automated driving systems (ADS). We encourage the Transport Committee to adopt this stance.

Meanwhile, government can encourage the use of advanced driver assistance systems (ADAS), especially ALKS, whilst recognising that drivers cannot be allowed to come 'out of the loop' entirely, nor engage in secondary activities that distract from the dynamic driving task. It should also focus on investment in the physical and digital infrastructure necessary for widespread adoption of AVs.

Once ADS technology is sufficiently advanced and the required infrastructure in place to allow the widespread AV use, we would welcome the safety benefits they should provide.

Terminology

Throughout, we have used the terms adopted by the Law Commission in 'Automated Vehicles: joint report'.²

Discussions of AV generally involve highly technical points, often using many terms that consumers already find confusing. A coalition of consumer safety groups and automotive experts³ has been urging automakers, regulators, governments and other stakeholders since 2019 to adopt standard terms.

The UK government's change from using 'automated driving' to 'self-driving vehicles' goes against the effort to standardise terms. It is also misleading for consumers and potentially dangerous in encouraging reliance on capability

that does not exist. The government should return to using “automated driving” and commit to consistent use of existing terms.

Potential implications for infrastructure

Both physical and network infrastructure have largely been overlooked by the government to date. Without addressing these fundamental issues, the practical application of AVs will be very limited.

AVs will reduce accidents through increased communication with other vehicles and smart infrastructure (traffic lights, gantries, etc.). This requires placement of both the physical devices and widespread availability of 5G internet. The 2020 KPMG Autonomous Vehicles Readiness report noted that one of the primary challenges the UK faces in achieving widespread adoption of AVs is improving the quality of telecoms infrastructure.⁴

Adequate internet coverage must be UK-wide to ensure that over-the-air updates, especially those that are safety critical, are downloaded by every relevant AV in a timely manner.

Security of infrastructure

It will be a matter of public concern that interference with separate external infrastructure required for the operation of AVs, for example networks, beacons, or data held within the system, could have serious consequences for occupants of AVs, pedestrians and other road users.

Whilst most conceivable forms of interference would be covered by existing criminal offences, applying the tampering offence to external infrastructure would provide clarity, increase public confidence and act as a deterrent. This should apply to all external infrastructure required for the operation of AVs as above.

The regulatory framework, including legal status, approval and authorisation processes and insurance

Regulating vehicle standards and safety

It is vital that all automated driving type approvals be domestic. As we in the UK drive on the left, type approval for driving on the right under European driving conventions will be of no use. ADS sensors, for example, need to be recalibrated for the different road configuration.

We endorse the Law Commission's proposal for a safety assurance scheme responsible for authorising ADS before they are deployed for use, and monitoring safety standards thereafter. We refer to our response to question 12 of the Law Commission's preliminary consultation on AVs ('the primary consultation').⁵

We also support the Law Commission's proposal that every ADS should be backed by an entity (and where appropriate a licensed operator), UK-based or with UK agents, which takes responsibility for the safety of the system and is subject to regulatory sanctions and criminal liabilities. We refer to our response to question 9 of the preliminary consultation.⁶

Regulatory sanctions must have 'teeth'

Having regard to AVs' potential to endanger human life if not properly controlled, regulatory and criminal sanctions must have sufficient 'teeth' to regulate the behaviour of those responsible for the deployment, maintenance and use of AVs. We refer specifically to our responses to questions 24(4), 33 and 34 – 37 in the preliminary consultation.⁷

Cyber security

Cyber security is an absolute imperative to ensuring the safe operation of AVs, as highlighted in our response to question 46 of the preliminary consultation.⁸

Safety and perceptions of safety, including the relationship with other road users such as pedestrians, cyclists and conventionally driven vehicles

Safety concerns and standards

We have concerns about allowing drivers to engage in secondary tasks until ADS technology has improved significantly. A 2021 report by the Insurance

Institute for Highway Safety and the Massachusetts Institute of Technology concluded that: *'The longer drivers use [Volvo's] Pilot Assist partial automation system, the more likely they are to become disengaged, with a significant increase in the odds of participants taking both hands off the steering wheel or manipulating a cell phone.'*⁹

If the driver is not involved in the driving process, because they are allowed to engage in secondary tasks, they will not have detailed knowledge of the current situation when an incident requires their attention.

There are further considerations regarding the adequacy of both the physical and network infrastructure before any AVs can be considered 'safe enough' for use on British roads, as we highlighted in response to question 46 of the preliminary consultation.¹⁰

Agreeing safety standards for AVs necessarily involves issues of ethics and is a matter of public policy. Defined safety standards will also affect the degree of public acceptance of AVs.

Public acceptance

Public acceptance is vital if AVs are to achieve mass market penetration; this should be a primary consideration when deciding the appropriate standard to adopt. Policy will need to take into account societal conservatism when it comes to relinquishing control of the vehicle.

KPMG's 2019 Autonomous Vehicle Readiness Index noted, in particular for the UK, that: *'Improving consumer acceptance will be critical for the deployment of AVs. To achieve this, government and industry have a role to play in communicating the benefits of AVs and the efforts being taken to ensure their safety.'*¹¹

Public acceptance is likely to dictate that AVs need to be at least as safe as a competent and careful human driver. Consumers will withdraw their consent if they perceive that AVs are not 'safe enough'. The power of the media to undermine consumer confidence in AVs in the wake of incidents involving

serious and/or fatal injuries should not be underestimated; parallels can be drawn with the recent vehicle emissions scandal, which significantly undermined consumer confidence in diesel engines.

It is therefore vital that empirical evidence is gathered by the proposed safety assurance agency regarding accident rates following deployment of AVs.

Safety assessment should use a variety of techniques. Assessment methods for AV safety are still developing. ADS is still in its early stages. As the technology changes and diversifies, we will acquire greater knowledge of what safety assessments work best. For these reasons, assessment methods should be regularly reviewed and updated.

Establishing a thorough and transparent safety assessment system before AVs are widespread will help ensure that teething problems are caught early, allowing for a smoother integration into the UK's road network and quicker acceptance by the public of AVs' safety benefits.

Immediate concerns with ALKS

Our strong view is that the government's priority must be to maximise safety. We have concerns about the government's current intention to: implement a 10 second transition period; and classify ALKS-equipped vehicles as AVs for the purposes of AEVA.

Until the technology has improved to the point that a system that purports to be capable of automated driving is capable of driving itself without needing to resort to such a short transition demand period, it should be classified as ADAS, not ADS.

If the proposed transition period is limited to 10 seconds, as suggested in the DfT's ALKS call for evidence, we question the how a user-in-charge can turn their attention back to the dynamic driving task ('DDT'). If a user-in-charge is to be expected to evaluate the situation and retake control of a moving vehicle in 10 seconds, they need to have been monitoring the DDT, at least to some degree, even when not responsible for it.

Studies have made it plain that the majority of people who want AVs would use the technology so that they could engage in two activities: using their mobile phones and sleeping. In either case, bringing drivers back into the loop so that they are able to resume control of the vehicle safely will take longer than 10 seconds.

In a 2013 study, researchers found that resumption of manual control (in terms of steering behaviour in particular) continued to be erratic for up to 40 seconds after the transfer of control.¹²

The role of Government and other responsible bodies, such as National Highways and local authorities

At this stage of AV development, the most important decisions need to be made by the national government. The government's role should be that of a supervisory body, overseeing regulations, developing and supervising national schemes of basic safety and testing standards. It is imperative the government provide guidance and support without hindering development.

Developing an adequate safety framework will become especially important once mobility as a service ('MaaS') incorporates AVs. There are reasonably robust safety standards in place for the sorts of vehicles that are currently operational in public places. Once AVs enter the public sphere, however, the current standards will be inadequate for the purposes of guaranteeing the safety of passengers, vulnerable road users, and operators and passengers of other vehicles. If MaaS is going to incorporate AVs successfully, especially level 5 vehicles, the national government will need to develop safety standards that not only protect all road users but inspire confidence in the safety of AVs.

The decision whether a vehicle is sufficiently safe to 'safely drive itself' should be made by the Secretary of State, as is currently provided for by AEVA 2018, though we do not approve of the lack of oversight provisions contained within section 1.

At present, the Secretary of State is not required to consult or seek the advice of an advisory body before compiling the list of vehicles capable of self-driving.

It appears that the government plans on using this power to implement the UNECE ALKS regulations and defining ALKS-equipped vehicles as capable of self-drive for the purposes of AEVA. Matters this important to public safety require greater oversight.

We agree with the Law Commission's proposal that the Secretary of State's decision should ultimately be informed by the advice of a specialist regulator and that, should the Secretary of State wish to go against the regulator's advice, they should be under an obligation to publish their reasons for doing so.

Use of ADS should be prohibited unless they are authorised. It should be a criminal offence to use an unauthorised ADS on roads or other public places. In the interests of public safety, we would suggest that the existence of an unauthorised or improperly modified ADS should render the vehicle's ADS unusable until it is made compliant and reinspected. Additionally, we endorse the Law Commission's recommendations for sanctions against manufacturers and suppliers as set out in chapter 7 of 'Automated Vehicles: joint report'.¹³

ADS should undergo rigorous testing to ensure that they are as safe as possible before they are authorised to be used on roads or other public places. An approval regime based on both self-certification and third-party testing should be able to evolve to ensure the safety of new ADS as far as reasonably possible. The two can and should work together harmoniously and should improve consumer confidence and safety.

For testing to be as thorough as possible, it is vital that the Secretary of State have the ability to permit use of unauthorised systems, under carefully controlled conditions, for use in tests and trials.

Whilst AEVA was a good foundation for the basics of AVs, it now lacks the detail necessary for regulation-making purposes. For this reason, a new legislative framework should provide regulation making powers to specify the points raised above.

Given the importance of stakeholder involvement in this area, the government should be required to engage in extensive public consultation throughout the process of developing both the legislative framework and regulations. The establishment of an advisory committee would further improve assessment of AVs.

Education and training

The importance of consumer education and training cannot be overstated. This is to ensure that AVs are as safe as reasonably practicable when in operation. There have been a number of well reported incidents pointing to a lack of understanding and an over-reliance on ADAS systems, notably in the US.¹⁴

Studies going back to the 1970s show that skilled operators are better at taking control of automated systems than unskilled operators. Those who have been properly trained make the minimum number of required actions allowing for faster and more seamless changeover.¹⁵ There needs to be adequate mandatory education or training in ADS or ADAS for each driver who wants to use the system.

In 2019, the Association of British Insurers published 'Defining Safe Automated Driving'¹⁶, in which one of its 12 key criteria addressed driver training and education: 'Vehicles must ensure and validate that drivers understand the system functionality and their roles and obligations in Automated Driving before automation can start.'

We interpret that to mean that driver education needs to include the following:

1. It needs to be compulsory. Drivers cannot activate ADS until they have completed the training; and
2. Each driver needs to complete the training. The vehicle needs to detect if there is a new driver and will then require completion of the training.

In addition, we believe the following would be beneficial to safe use of ADS:

- Training should be in the ADS-equipped vehicle, via the infotainment system, with the vehicle's sensors checking to make sure the driver is engaged with the training session;
- To ensure that drivers are kept up-to-date with changes to the ADS as they are improved, ADS-equipped cars should require refresher training courses. These do not need to be as comprehensive as the original training session;
- Just as the DVLA recently incorporated use of satnav in the driving test, it would be beneficial to include ADS in the driving test in the next few years.

All of the above should apply equally to ADAS, especially ALKS. As well as being a fundamental part of the safety regime around use of ADAS, this would provide a test environment in which to assess the best way to deliver and enforce the training requirements for ADS when the time comes.

Manufacturers, government and insurers need to work together closely to ensure that the training and education that drivers receive is clear, adequate and maximises the likelihood that all drivers who choose to use ADS and ADAS will do so safely.

Manufacturers' primary role will be to develop the necessary training element, provide it via the vehicle's infotainment system, and ensure that all drivers complete the compulsory training before they can engage the ADS or ADAS. They will need to work closely with government and insurers to ensure that their products conform to legal requirements and maximise safety of all road users.

'Defining Safe Automated Driving' states: *'The [training] system must be inherently simple and intuitive to understand that the need for training is minimised.'*

Manufacturers will need to bear this in mind when they develop their training systems.

Government's role will be to listen closely to manufacturers and insurers and, based on their expert advice, set mandatory training standards, oversee compliance and regulate for failure to comply. It will need to ensure that all training is compulsory for all drivers.

Insurers need to set out in greater detail their requirements for training standards so that manufacturers and government know what will satisfy insurers' requirements and guarantee ADS- and ADAS-equipped vehicles are insurable, preferably at reduced risk and lower premiums when compared to level 0 and 1 vehicles.

Conclusion

Automated vehicles, if properly introduced and regulated and accompanied by the necessary infrastructure changes, are likely to make the UK's road network safer for all users. Any attempt to get them on the road before they are ready, or using the ADS classification before it is appropriate, runs the risk of causing unnecessary harm to road users and turning the public against the technology.

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Endnotes

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² See the Glossary at pages xvii-xxi.

³ This group includes the American Automobile Association, Consumer Reports, The [US] National Safety Council, Partners for Automated Vehicle Education and SAE International

⁴ <https://assets.kpmg/content/dam/kpmg/xx/pdf/2020/07/2020-autonomous-vehicles-readiness-index.pdf>

⁵ Automated Vehicles: A joint preliminary consultation paper by the Law Commission of England & Wales and the Scottish Law Commission – Response on behalf of DAC Beachcroft LLP, Q12

<https://www.dacbeachcroft.com/media/2321324/law-com-preliminary-consultation-on-avs-a-response-from-dac-beachcroft-llp.pdf>

⁶ Ibid, Q9

⁷ Ibid, Q 24(4), 33 - 37

⁸ Ibid, Q46

⁹ <https://www.iihs.org/topics/bibliography/ref/2231>

¹⁰ Automated Vehicles: A joint preliminary consultation paper by the Law Commission of England & Wales and the Scottish Law Commission – Response on behalf of DAC Beachcroft LLP, Q46

¹¹ KPMG, 2019 Autonomous Vehicle Readiness Index, p 20.

¹² See, e.g., N Merat et al, 'Transition to manual: Driver behaviour when resuming control from a highly automated vehicle', Transportation Research Part F: Traffic Psychology and Behaviour, Vol 27, Part B (2014), pp 274-282, which found that resumption of manual control (in terms of steering behaviour in particular) continued to be erratic for up to 40 seconds after the transfer of control.

¹³ See pages 121-133.

¹⁴ <https://www.nhtsa.gov/sites/nhtsa.gov/files/2022-06/ADAS-L2-SGO-Report-June-2022.pdf>

¹⁵ L Bainbridge, 'Ironies of Automation', IFAC Proceedings Volumes, 15.6 (1982), pp 129-135.

¹⁶ <https://www.abi.org.uk/globalassets/files/publications/public/motor/2019/defining-safe-automation-technical-document-aug-2019.pdf> , published in conjunction with Thatcham Research