MILLS & REEVE

Law Commission and Scottish Law Commission: Automated Vehicles – A joint preliminary consultation paper

Comments provided by Mills & Reeve LLP

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INTRODUCTION

This document is in response to the preliminary consultation on Automated Vehicles issued by the Law Commission of England and Wales and the Scottish Law Commission in November 2018 (the "**Consultation Document**").

Mills & Reeve is a national UK law firm with 116 partners and a total strength of over 1,000 staff operating from six offices including London, Manchester, Birmingham and Cambridge. Mills & Reeve is one of the top performing law firms in the UK when it comes to client satisfaction, according to the latest editions of legal directories Chambers UK and The Legal 500, and has been named for a record fifteenth year running as one of the 100 Best Companies to Work For in The Sunday Times annual survey. Mills & Reeve acts for a range of clients who have an interest in the development of automated vehicles including automotive manufacturers and suppliers to automotive manufacturers and insurers as well as new entrants to the market that propose alternative automated transport solutions. We advise a range of clients on issues relating to automated transport and therefore have a close interest in seeing that a robust legal and regulatory framework is put in place.

We have quoted the questions from the Consultation Document followed by our responses.

CHAPTER 3: HUMAN FACTORS

A new role in driving automation: the "user-in-charge"

Consultation Question 1 (Paragraphs 3.24 - 3.43):

Do you agree that:

(1) All vehicles which "drive themselves" within the meaning of the Automated and Electric Vehicles Act 2018 should have a user-in-charge in a position to operate the controls, unless the vehicle is specifically authorised as able to function safely without one?

(2) The user-in-charge:

(a) must be qualified and fit to drive;

(b) would not be a driver for purposes of civil and criminal law while the automated driving system is engaged; but

(c) would assume the responsibilities of a driver after confirming that they are taking over the controls, subject to the exception in (3) below?

(3) If the user-in-charge takes control to mitigate a risk of accident caused by the automated driving system, the vehicle should still be considered to be driving itself if the user-in-charge fails to prevent the accident.

We agree with (1) to the extent that where vehicles "drive themselves" there should be a person in a position to operate the controls unless the vehicle is specifically authorised to operate without one. However, we question whether "user-in-charge" is the most helpful way to describe this person (as discussed in our response to question 2 below).

We agree with (2)(a) and 2(b). However, the appropriate conditions for the transfer of responsibility back to that person in (c) may need be more than the driver "confirming that they are taking over the controls" (see our comments on overriding below).

2(c) suggests a hugely problematic scenario, fraught with the potential for confusion and additional risk. For example, the question does not deal with a situation where the "user-in-charge" takes control because they wrongly perceive an accident as imminent. In doing so, they might cause an accident that the automated driving system would otherwise have avoided. Similarly, even if an accident is in fact imminent, a misguided human intervention might make that accident more serious than it would have otherwise been. In either of these circumstances, allowing a "user-in-charge" to somehow intervene, risks creating a situation where no party is fully responsible for the scenario. The "user-in-charge" is not responsible as they are not a driver and the manufacturer or developer would be able to deny any liability due to the input of the "user-in-charge".

Our concern with (3) is that it does not deal with a situation where the "user-in-charge" takes control because they wrongly perceive an accident as imminent and in doing they cause an accident that the automated driving system would otherwise have avoided, or make an accident worse. In these circumstances, the manufacturer or developer might be unfairly blamed under (3).

To further illustrate the confusion arising from Question 1(3), assuming that a vehicle driving itself has access to the same range of controls as a human driver, the "user-in-charge" would generally not be in a position to carry out a manoeuvre that could not at least theoretically be carried out by an automated driving system. In this situation, any attempted human emergency evasive action would require the human to know that the vehicle driving itself is not itself going to carry out that evasive action. This may be obvious in certain circumstances (for example, where it is clear the vehicle is malfunctioning), but it will be more marginal in other cases (for example, where a driver swerves off the road to avoid a collision that the vehicle has calculated can be avoided by braking alone). This raises the more general question of when, if ever, a vehicle driving itself should allow a human driver to override the controls without a managed transition from autonomous to human driving. Such a managed transition might, for example, include the vehicle completing any ongoing

manoeuvres and the human driver holding the controls for ten seconds before any actual control is transferred to the human driver.

In our view, one area which the Consultation Document fails to adequately address is whether there should be a standard which manufacturers and developers must meet in relation to the action of the automated driving system when faced with the risk of an accident. Perhaps more critically, should there be a standard for the action of the automated driving system when an accident is unavoidable? We consider that the Law Commissions are well placed to give a guide as to what standard will likely need to be met given that it is now a system in control, not a human being.

The Consultation Document focuses on how to remove the driver from the scenario, or how the system should replicate the driver. We consider that it would be equally appropriate and just as important for the Law Commissions to address how an automated driving system should be expected to behave as a new starting point. Once expected standards have been set, this is not so much an ethical question as a technical one. We think it should be possible to create a straightforward algorithm to address real-world scenarios. An automated driving system could be seen akin to a tram on virtual rails, where there is an added opportunity to steer around obstructions if it is safe and legal to do so. In the absence of a safe and legal ability to drive around an obstruction, the automated driving system should simply drive so as to avoid impacting any obstruction or, if an impact is unavoidable (which should only be the case if an obstruction has, in a manner inconsistent with the expected use of the public highway, entered the vehicle's immediate path of movement) then the automated driving system should act so as to mitigate the impact of any collision. We would encourage the Commissions to give further thought to this area as, in our experience, it presents a block to the actual deployment of automated driving systems without a fallback safety driver in place.

While we acknowledge that there may be an extremely limited number of abnormal scenarios where such an algorithm does not produce the perfect result, we suggest that it could address virtually all real-world scenarios and would therefore be better than any other alternative approaches that have been suggested to date.

Applying these principles to Question 1(3), it can be seen that there should be no scenario where a "user-in-charge" should be permitted to intervene because in any given scenario the automated vehicle system can follow the clear algorithm. The only scenario where it might be useful to enable a "user-in-charge" to intervene would be in a clear circumstance where the vehicle appears to have malfunctioned. In such a scenario, one would have thought the only control function that should be available to the "user-in-charge" is a "stop" button – not dissimilar to that found on elevators or escalators or the red handle in trains (although it is acknowledged that on "driven" trains, the red handle merely alerts the driver).

Consultation Question 2 (Paragraph 3.45):

We seek views on whether the label "user-in-charge" conveys its intended meaning.

The label “user-in-charge” is helpful to distinguish driving-related responsibilities from other responsibilities associated with operating a vehicle. It captures the approach discussed in the Consultation Document that when an automated driving system is engaged, the human in the driver’s seat will no longer have any driving-related responsibilities but will still be considered the “user” or “in charge” for the purposes of any other responsibilities associated with operating a vehicle referred to in road traffic legislation.

This approach may be the most economical from a legislative perspective, but it risks making a single individual responsible for performing a disparate range of responsibilities that may ultimately be performed by a range of entities. For example, responsibility for being ready to take back control from the automated driving system (once automated driving is no longer available or once the vehicle has achieved its minimum risk condition) might fall to a remote operator, responsibility for ensuring the vehicle is insured might fall to the owner and responsibility for ensuring children are wearing seatbelts might fall to a responsible adult within the vehicle (who may or may not be able to take over operation of the controls due to, for example, a disability).

Instead, the law should focus on (i) identifying the responsibilities associated with owning, using and operating automated vehicles and (ii) assigning these responsibilities appropriately (ie where the person in the vehicle is not automatically the most appropriate choice). For example, where a vehicle is capable of “driving itself” within the meaning of the AEV 2018, responsibility for roadworthiness may more naturally sit with the manufacturer or developer, even though the vehicle still requires a human fallback driver to take back control in certain circumstances in order to ensure safety.

It may well be that for practical reasons the concept of a “user-in-charge” is the best approach to get the first wave of automated vehicles “driving themselves” safely and legally on public roads. However, even if that is the case, we would not view it as an appropriate long-term solution for the reasons set out in the paragraphs above. As the technology develops, the practical reality of automated vehicles will move further and further from human driving. And as that happens, a more radical overhaul of the relevant legislation will be required to avoid an outdated legal framework restricting innovation and/or human-centred concepts being inappropriately strained.

Consultation Question 3 (Paragraphs 3.47 - 3.57):

We seek views on whether it should be a criminal offence for a user-in-charge who is subjectively aware of a risk of serious injury to fail to take reasonable steps to avert that risk.

In our view, this situation should be analogous to a bus passenger intervening where it is apparent that a bus driver is having a cardiac arrest. The passenger would not be criminally liable in the event they fail to intervene, but in many cases they would in fact intervene on the basis of instinct, self-interest or moral duty.

If a "user-in-charge" were to be found criminally liable for a failure to intervene, we would expect this to be under more general criminal law rather than as an offence specifically developed to apply in the case of automated vehicles.

More generally, automated driving systems should be developed on the assumption that responsibility for the driving activity at any point in time rests with **either** the automated driving system or the human driver (and never both). Making the "user-in-charge" criminally liable for failing to override the automated driving system risks confusing this position, potentially leading to a situation where both the automated driving system and the "user-in-charge" act as though the other is ultimately responsible for safety.

Our comments in response to Question 1 are equally relevant here. A clear, simple, straight-forward algorithm should be developed along the lines described in our response to Question 1. Question 3 would then become redundant as there will be no circumstances where a "user-in-charge" would be expected to intervene.

When would a user-in-charge not be necessary?

Consultation Question 4 (Paragraphs 3.59 - 3.77):

We seek views on how automated driving systems can operate safely and effectively in the absence of a user-in-charge.

The technology for this is still under development and so the law should aim to avoid being overly prescriptive about how this achieved. Instead, the law should focus on clarifying the range of responsibilities associated with autonomous driving in a way that is sufficiently flexible to allow for different technologies and business models.

We would ultimately expect the law to make it clear who bears primary responsibility for ensuring appropriate arrangements are in place for the safe operation of autonomous vehicles, but that this entity would be able to fully discharge these responsibilities by putting appropriate arrangements in place with third parties. We would expect these "appropriate arrangements" to be specified as part of standards developed for the operation of autonomous vehicles.

When considering the safety critical operation of an automated driving system faced with the risk of an accident, our comments in response to Question 1 are equally relevant here. A clear, simple, straight-forward algorithm should be developed along the lines described in our response to Question 1.

Consultation Question 5 (Paragraphs 3.59 - 3.77):

Do you agree that powers should be made available to approve automated vehicles as able to operate without a user-in-charge?

In our view, this question illustrates why assigning a disparate range of responsibilities to a single "user-in-charge" may be unhelpful (see our response to Question 2). If a vehicle is approved as safe to operate without a "user-in-charge", it then becomes necessary to reassign the non-driving-related responsibilities previously held by the "user-in-charge", such as roadworthiness, seatbelts and insurance. In practice, it may make more sense to either (i) view these non-driving-related responsibilities as separable from the driving task or (ii) not describe this arrangement as the operation of an automated vehicle without a "user-in-charge" but to instead allow the "user-in-charge" to discharge their responsibilities by engaging an appropriately accredited automated driving system.

When should secondary activities be permitted?

Consultation Question 6 (Paragraphs 3.80 - 3.96):

Under what circumstances should a driver be permitted to undertake secondary activities when an automated driving system is engaged?

In general, whether particular secondary activities can be carried out safely will heavily depend on the nature of the automated driving system being used. We envisage an evidence-based approach that reflects the practicalities of the transition of the dynamic driving task will be the most appropriate way to evaluate the lawfulness of specific secondary activities.

As noted in our response to Question 1, before an automated driving system can achieve an approved status, it must be the case that (i) it can achieve an accepted minimum risk condition and (ii) it must be programmed to behave appropriately in any given potential accident scenario. It would seem likely that a driver would be able to undertake secondary activities once an automated driving system can achieve these requirements.

A concern that arises with high level automation is that should secondary activities not be permitted a driver may quickly become bored with monitoring the system and engage in secondary activities anyway. It is also practically difficult to see how certain activities could be permitted whilst others are restricted.

If the law does take the approach of allowing autonomous vehicles which require a "user-in-charge" to be available to take control, then the only effective way forward is for the secondary activities to not be an impediment to the driver re-taking control. As outlined in our response to Question 1, we do not think there should be any circumstances where a "user-in-charge" should be required to re-take control in a sudden situation and so have not continued to consider this line of reasoning.

Consultation Question 7 (Paragraphs 3.80 - 3.96):

Conditionally automated driving systems require a human driver to act as a fallback when the automated driving system is engaged. If such systems are authorised at an international level:

(1) should the fallback be permitted to undertake other activities?

(2) if so, what should those activities be?

For the reasons outlined in Chapter 3 of the Consultation Document (in particular, at paragraphs 3.7, 3.18, 3.19 and 3.28), the idea of a "fallback" driver seems fraught with difficulties. It is therefore our view (as explained in our response to Question 1 above) that any automated driving system should (i) be able to achieve an accepted minimum risk condition and (ii) a clear, simple, straight-forward algorithm should be developed to determine the appropriate course of action in any particular set of circumstances.

CHAPTER 4: REGULATING VEHICLE STANDARDS PRE-PLACEMENT

A new safety assurance scheme

Consultation Question 8 (Paragraphs 4.102 - 4.104):

Do you agree that:

(1) a new safety assurance scheme should be established to authorise automated driving systems which are installed: (a) as modifications to registered vehicles; or (b) in vehicles manufactured in limited numbers (a "small series")?

(2) unauthorised automated driving systems should be prohibited?

(3) the safety assurance agency should also have powers to make special vehicle orders for highly automated vehicles, so as to authorise design changes which would otherwise breach construction and use regulations?

Consultation Question 9 (Paragraphs 4.107 - 4.109):

Do you agree that every automated driving system (ADS) should be backed by an entity (ADSE) which takes responsibility for the safety of the system?

Consultation Question 10 (Paragraphs 4.112 - 4.117):

We seek views on how far should a new safety assurance system be based on accrediting the developers' own systems, and how far should it involve third party testing.

We consider that the comparison with pharmaceutical trials discussed in the Consultation Document is a useful one. Extensive development work and engagement with third party testing organisations offers a good model for progress. Viewing a new type of automated driving system in the same way as a new pharmaceutical would, we think, be a more suitable way forward than the current type approval regime. The ADS as a whole should be tested, and we support the use of incremental testing as safety is demonstrated at different levels of deployment.

Consultation Question 11 (Paragraphs 4.118 - 4.122):

We seek views on how the safety assurance scheme could best work with local agencies to ensure that it is sensitive to local conditions.

As a general rule, automated driving systems should be developed to take account of any conditions they might encounter within their operational design domain. Areas with local conditions that would require specific adaptations should be excluded from the operational design domain of any automated driving systems that have not been adapted or otherwise approved to reflect those local conditions.

As discussed in the Consultation Document, automated vehicles are initially likely to be developed for narrowly defined geographical areas. Where this is the case, we would expect the safety assurance scheme to work with local agencies to ensure the local conditions within that geographical area are appropriately reflected. We also expect that without appropriate further approval those automated vehicles would not be permitted to operate outside of that geographical area.

Where automated driving systems are developed for more general operation and not restricted to particular geographical areas, we anticipate that national or regional agencies (for example, the UK highway authorities) may seek to restrict the use of automated vehicles to reflect particular local conditions within their jurisdiction. Although these local agencies may be the most qualified body to assess local conditions, it is unlikely that they have the resources and expertise to properly assess which autonomous vehicle technologies can be safely used within their jurisdiction. Therefore, a framework will need to be developed that combines the local area expertise of local agencies and the general technological expertise of the safety assurance scheme body. While the Road Traffic Regulation Act 1984 may give local highway authorities the necessary powers to control the use of automated vehicles, it does not provide a means of ensuring these powers will be used where necessary (and only where necessary).

CHAPTER 5: REGULATING SAFETY ON THE ROADS

A new organisational structure?

Consultation Question 12 (Paragraphs 5.30 - 5.32):

If there is to be a new safety assurance scheme to authorise automated driving systems before they are allowed onto the roads, should the agency also have responsibilities for safety of these systems following deployment?

If so, should the organisation have responsibilities for:

(1) regulating consumer and marketing materials?

(2) market surveillance?

(3) roadworthiness tests?

We seek views on whether the agency's responsibilities in these three areas should extend to advanced driver assistance systems.

In principle, it would make sense for a single agency to have similar responsibilities in respect of automated and advanced driver assistance systems as there is likely to be significant overlap in the range of expertise required. However, there are two potential risks with his approach. Firstly, the line between non-advanced driver assistance systems and advanced driver assistance systems may not be sufficiently clear to properly determine which driver assistance systems this new agency would be responsible for and which would remain the responsibility of those other bodies. Secondly, it is crucial that the public appreciates the importance of the distinction between advanced driver assistance systems and automated driving systems, and this might be lost if the same body is responsible for approving/monitoring both. For these reasons, it may be better for this new agency's responsibilities to extend only to automated driving systems.

Driver training

Consultation Question 13 (Paragraphs 5.54 - 5.55):

Is there a need to provide drivers with additional training on advanced driver assistance systems?

If so, can this be met on a voluntary basis, through incentives offered by insurers?

In our view, advanced driver assistance systems should be capable of being safely used by a competent driver of currently available vehicles. The risk of requiring additional training for the use of advanced driver assistance systems is that it has the potential to raise the expectations the manufacturer/developer is entitled to place on the driver, which may increase the risks associated with their use. In addition, as the technology associated with driver assistance systems is still being developed and varies between manufacturers, it would be very challenging to develop standardised training to cover a wide range of advanced driver assistance systems. Training would need to be tailored to a particular type of vehicle, making it difficult and even dangerous for users to switch between vehicles. Non-professional drivers should not be expected to develop a new set of skills in order to manage and monitor a highly complex technology. Developers should build in clear notifications and instructions to users, as they currently do with consumer computers and smartphones, for example.

One area that might usefully be added to driver training is raising awareness of the limitations of advanced driver assistance systems. This would make drivers aware that unless they are in a vehicle that is capable of driving itself in defined circumstances, and is in fact doing so, they retain responsibility at all times for the driving task.

Accident investigation

Consultation Question 14 (Paragraphs 5.58 - 5.71):

We seek views on how accidents involving driving automation should be investigated.

We seek views on whether an Accident Investigation Branch should investigate high profile accidents involving automated vehicles? Alternatively, should specialist expertise be provided to police forces.

There are good arguments for both approaches. Initially, we would expect that any accidents involving automated vehicles would broadly resemble other accidents and the expertise within police forces would be well-suited to carrying-out any investigations (with appropriate external expertise). However, as the technology develops and becomes more widespread it is likely that a more systems-focused approach will be required, at which point the benefits of a dedicated Accident Investigation Branch is likely to outweigh the cost.

We would also anticipate the cost of investigating such accidents will fall dramatically as the use of black box and other sensor and tracking technology improves. Much of the cost of investigating current road accidents arises from the lack of immediate intelligible data regarding the actions of each actor and participant in any accident. Accidents will become more about data analysis and less about data collection and the intent of or blame to ascribe to humans will become less of an issue to investigate and determine.

Setting and monitoring a safety standard

Consultation Question 15 (Paragraphs 5.78 - 5.85):

(1) Do you agree that the new safety agency should monitor the accident rate of highly automated vehicles which drive themselves, compared with human drivers?

(2) We seek views on whether there is also a need to monitor the accident rates of advanced driver assistance systems.

In our view, there is a need to monitor the accident rates of advanced driver assistance systems because their use introduces specific risks that should be monitored (eg. inappropriate use). Whether this would be done by the Department for Transport or whether this should be done by the new safety agency envisaged in the Consultation Document will depend on whether responsibility for advanced driver assistance systems is given to the new safety agency (see our response to Question 12).

The technical challenges of monitoring accident rates

Consultation Question 16 (Paragraphs 5.86 - 5.97):

(1) What are the challenges of comparing the accident rates of automated driving systems with that of human drivers?

(2) Are existing sources of data sufficient to allow meaningful comparisons? Alternatively, are new obligations to report accidents needed?

There are challenges when attempting to compare the accident rates of automated driving systems with those of human drivers. For example, where automated driving systems only operate within geofenced areas, a comparison will only be possible where equivalent data has been collected from human drivers operating under the same constraints, which is unlikely to be practical/possible. Comparisons might be possible where automated driving systems are confined to specific operational domains, such as motorways, although for a fair comparison to be made, this would have to take account of any driving conditions under which the system is designed to operate. So, for example, it would not be appropriate to compare an automated driving system that only operates on motorways in good weather with all motorway driving for human drivers. In addition, it is likely that the performance of automated driving systems will rapidly improve and, depending on the overall accident rate, it may not be possible to take a meaningful "snapshot" of automated driving system performance that can inform a fair assessment of relative performance.

In terms of new obligations to report accidents that may be needed, it is difficult to predict at this stage what additional data may be of most use. However, we expect an obligation to monitor and, perhaps, report incidents requiring emergency human driver intervention may also be appropriate, in addition to accidents involving injury or death. The connected nature of automated driving systems is likely, we believe, to make unbiased and comprehensive reporting easier, and account should be taken of this when comparing incident rates.

CHAPTER 6: CIVIL LIABILITY

Is there a need for further review?

Consultation Question 17 (Paragraphs 6.13 - 6.59):

We seek views on whether there is a need for further guidance or clarification on Part 1 of Automated and Electric Vehicles Act 2018 in the following areas:

(1) Are sections 3(1) and 6(3) on contributory negligence sufficiently clear?

In our view, these sections are sufficiently clear that any ambiguity could be satisfactorily resolved by the courts. However, for the sake of clarity and accessibility, it would be helpful if the legislation were clarified to address the issues identified in the Consultation Document.

(2) Do you agree that the issue of causation can be left to the courts, or is there a need for guidance on the meaning of causation in section 2?

Section 2 uses the term "caused by". We note that there is a distinction between causation in fact and in law. In this situation we query whether the intended standard of causation is "but for" or material contribution. We consider that guidance on this would be appropriate.

In addition, we note that an automated vehicle may "cause" an accident but query what standard of care should apply to a vehicle in self-driving mode. The standard of a care for a human driver is that of a competent and experienced driver - a lower standard is not applied to learner drivers. Issues of breach of duty and causation are closely intertwined. How are the courts expected to approach such issues when an accident occurs whilst a car is in self-driving mode? Again, we consider that guidance would be helpful.

These questions might best be considered alongside the safety standards discussed in Chapter 5 of the Consultation Document.

In practice, we expect that a degree of initial uncertainty is inevitable regardless of whether causation is left to the courts or new guidance is developed. As the technology develops, new scenarios are likely to emerge that fall outside current case law precedent and would not have been anticipated in forward-looking guidance. For this reason, we expect it will be difficult to avoid the need for early cases to be litigated to establish the detail of how the current law on causation applies in the case of automated vehicles.

(3) Do any potential problems arise from the need to retain data to deal with insurance claims? If so: (a) to make a claim against an automated vehicle's insurer, should the injured person be required to notify the police or the insurer about the alleged incident within a set period, so that data can be preserved?

(b) how long should that period be?

There are potential problems that arise from the need to retain data, but these are not specific to the use of automated driving systems and would apply wherever large quantities of data potentially relevant to a future claim are collected.

Notifying the police or the insurer should not be a prerequisite to a claim and the current limitation periods should continue to apply in respect of claims against an automated vehicle's insurer. We agree that a minimum dataset and retention period should be enforced and tentatively suggest that notifying the police or an insurer of an event might serve to extend the retention obligations in respect of that event.

In our view, the ABI's suggested 6 month retention period seems broadly appropriate.

We note that the retention of large amounts of data about identifiable individuals can be problematic under data protection law such as the European General Data Protection Regulation. Retention for the purposes of criminal investigation or civil claims is normally permitted, but it would be necessary for those retaining the data to be clear as to what data is being retained, for what purpose and for how long. Clear legal requirements in this area would help to shape suitable data retention policies. We note, however, that this is outside the scope of this review.

Civil liability of manufacturers and retailers: Implications

Consultation Question 18 (Paragraphs 6.61 - 6.116):

Is there a need to review the way in which product liability under the Consumer Protection Act 1987 applies to defective software installed into automated vehicles?

In our view, there is no need to review the application of the CPA 1987 to software specifically in the context of automated vehicles. Generally, we would expect the manufacturer to have responsibility for software as part of the overall "product". Although this means they would be liable under the CPA 1987 for any defects arising from software provided by third parties, we would expect them to manage this liability contractually between them. Manufacturers could seek an indemnity from software providers if the software provided renders the product defective under the CPA 1987. The parties would normally only accept liability that they were able to insure.

Consultation Question 19 (Paragraphs 6.61 - 6.116):

Do any other issues concerned with the law of product or retailer liability need to be addressed to ensure the safe deployment of driving automation?

We agree with the position taken in the consultation document and we do not consider that a general review of product or retailer liability in the context of automated vehicles is required at this stage. However, depending on the automated vehicle business models that emerge, a review may be useful in future for the purposes of commercial certainty.

The Consultation Document highlights how several of the key questions in determining civil liability come back to the regulatory standard that is set for autonomous driving systems. It is particularly important, therefore to establish appropriate safety standards in a way that both secures public acceptance and provides a clear and manageable set of requirements to developers and manufacturers. See our responses to Question 1 and 2 on this point.

CHAPTER 7: CRIMINAL LIABILITY

Offences incompatible with automated driving

Consultation Question 20 (Paragraphs 7.5 - 7.11):

We seek views on whether regulation 107 of the Road Vehicles (Construction and Use) Regulations 1986 should be amended, to exempt vehicles which are controlled by an authorised automated driving system.

In practice, we expect that the process of judicial interpretation would ultimately mean that no amendment is necessary, but an amendment to clarify that automated driving systems are sufficient would be beneficial for the sake of certainty.

Consultation Question 21 (Paragraphs 7.5 - 7.11):

Do other offences need amendment because they are incompatible with automated driving?

Offences relating to the way a vehicle is driven

Consultation Question 22 (Paragraphs 7.14 - 7.19):

Do you agree that where a vehicle is:

(1) listed as capable of driving itself under section 1 of the Automated and Electric Vehicles Act 2018; and

(2) has its automated driving system correctly engaged;

the law should provide that the human user is not a driver for the purposes of criminal offences arising from the dynamic driving task?

Yes.

Consultation Question 23 (Paragraph 7.21):

Do you agree that, rather than being considered to be a driver, a user-in-charge should be subject to specific criminal offences? (These offences might include, for example, the requirement to take reasonable steps to avoid an accident, where the user-in-charge is subjectively aware of the risk of serious injury (as discussed in paragraphs 3.47 to 3.57)).

See our responses to Questions 1(3) and 3 above.

Consultation Question 24 (Paragraphs 7.23 - 7.35):

Do you agree that:

(1) a registered keeper who receives a notice of intended prosecution should be required to state if the vehicle was driving itself at the time and (if so) to authorise data to be provided to the police?

Yes.

(2) where the problem appears to lie with the automated driving system (ADS) the police should refer the matter to the regulatory authority for investigation?

Yes.

(3) where the ADS has acted in a way which would be a criminal offence if done by a human driver, the regulatory authority should be able to apply a range of regulatory sanctions to the entity behind the ADS?

In principle, yes. However, the majority of human driver criminal offences are unlikely to be straightforwardly translatable to the automated driving system entity as they generally relate the inferred awareness/mental state of the driver rather than just whether a particular act has been carried out.

(4) the regulatory sanctions should include improvement notices, fines and suspension or withdrawal of ADS approval?

Yes. The threat of suspension or withdrawal of approval is likely to be a significant deterrent for manufacturers of automated driving systems.

Responsibilities of "users-in-charge"

Consultation Question 25 (Paragraphs 7.37 - 7.45):

Do you agree that where a vehicle is listed as only safe to drive itself with a user-in-charge, it should be a criminal offence for the person able to operate the controls ("the user-in-charge"):

(1) not to hold a driving licence for the vehicle;

(2) to be disqualified from driving;

(3) to have eyesight which fails to comply with the prescribed requirements for driving;

(4) to hold a licence where the application included a declaration regarding a disability which the user knew to be false;

(5) to be unfit to drive through drink or drugs; or

(6) to have alcohol levels over the prescribed limits?

Yes to all of the above, but subject to our comments on the concept of "user-in-charge" in our response to Question 2 above.

Consultation Question 26 (Paragraphs 7.37 - 7.45):

Where a vehicle is listed as only safe to drive itself with a user-in-charge, should it be a criminal offence to be carried in the vehicle if there is no person able to operate the controls.

Yes, but subject to our comments on the concept of "user-in-charge" in our response to Question 2 above.

Responsibilities for other offences

Consultation Question 27 (Paragraphs 7.48 - 7.65):

Do you agree that legislation should be amended to clarify that users-in-charge:

(1) Are "users" for the purposes of insurance and roadworthiness offences; and

(2) Are responsible for removing vehicles that are stopped in prohibited places, and would commit a criminal offence if they fail to do so?

We agree in principle that legislation should be amended to clarify who these obligations fall on, but for the reasons set out in our response to Question 2, we question whether the concept of a "user-in-charge" will always be the best approach.

Consultation Question 28 (Paragraphs 7.59 - 7.61):

We seek views on whether the offences of driving in a prohibited place should be extended to those who set the controls and thus require an automated vehicle to undertake the route.

Broadly, yes. However, with time we expect those who set the controls will be increasingly reliant on the automated driving system for route planning and general navigation. There is therefore likely to be a cut-off point at which the automated driving system entity takes over responsibility (and liability for any associated offences). More thought will need to be given as to when this cut-off point is reached.

Obligations that pose challenges for automated driving systems

Consultation Question 29 (Paragraphs 7.71 - 7.88):

Do you agree that legislation should be amended to state that the user-in-charge is responsible for:

(1) duties following an accident;

(2) complying with the directions of a police or traffic officer; and

(3) ensuring that children wear appropriate restraints?

We agree that legislation should be amended to state how these responsibilities are assigned where a vehicle is driving itself. However, this is an example of where the "user-in-charge" approach is potentially overly restrictive. While in practice it will often be the case that (1), (2) and (3) all fall on the same individual, there is no necessary reason that this should always be the case (see our response to Question 2). For example, (1) and (2) might fall to the individual responsible for taking over the controls (possibly a remote operator), but (3) might fall to a responsible adult within the vehicle.

The Consultation Document notes the recent introduction of the eCall system for major accidents, but identifies a problem with reporting less serious incidents. We query whether requiring a "user-in-charge" to deal with small incidents is realistic in a situation where the

automated driving system is operating unattended and the "user-in-charge" is engaged in secondary activities. The "user-in-charge" may be unaware of the sequence of events and not in a position to make an informed report.

Consultation Question 30 (Paragraphs 7.71 - 7.88):

In the absence of a user-in-charge, we welcome views on how the following duties might be complied with:

(1) duties following an accident;

(2) complying with the directions of a police or traffic officer; and

(3) ensuring that children wear appropriate restraints.

We consider the concept of "user-in-charge" to be potentially unhelpful here, as discussed in our responses to Questions 1 and 2. Even though there may not be a "user-in-charge" as defined in the Consultation Document, however, we would expect that there would still be a need for there to be a responsible party (or parties) in a position to fulfil each of these obligations, even where all driving-related activities have been taken over by the automated driving system. As the Consultation Document notes, in the event of an accident there is currently an emphasis on face-to-face interactions. This becomes less appropriate as automation increases. A move towards internet-based reporting systems makes more sense.

Consultation Question 31 (Paragraphs 7.71 - 7.88):

We seek views on whether there is a need to reform the law in these areas as part of this review.

The duties themselves will not generally need to change. However, we suggest that legislation may need to be amended to enable more flexibility around how these duties are assigned and can be discharged. For example, there may need to be consideration of whether in the context of mobility as a service vehicle occupants are responsible for complying with the directions of a police officer and whether by ensuring an automated driving system is properly engaged they would be deemed to have properly discharged this responsibility.

Aggravated offences

Consultation Question 32 (Paragraphs 7.92 - 7.123):

We seek views on whether there should be a new offence of causing death or serious injury by wrongful interference with vehicles, roads or traffic equipment, contrary to section 22A of the Road Traffic Act 1988, where the chain of causation involves an automated vehicle.

As noted in the Consultation Document, the majority of acts covered by any such new offence would already be covered by existing offences. However, as well as ensuring dangerous behaviour is appropriately criminalised, introducing a new offence would help to raise public awareness of the consequences of interfering with roads or traffic equipment and would allow potentially higher sentences in appropriate circumstances.

Consultation Question 33 (Paragraphs 7.113 - 7.123):

We seek views on whether the Law Commissions should review the possibility of one or more new corporate offences, where wrongs by a developer of automated driving systems result in death or serious injury.

The potential for harm associated with automated vehicles means it is of utmost importance that developers of automated driving systems can be held fully accountable where their wrongs lead to death or serious injury. As discussed in the Consultation Document, there are circumstances where this may not necessarily be the case under the current law. We would therefore welcome a further review by the Law Commissions. One beneficial side effect of introducing new corporate offences is that it might help clarify to what extent different entities within the automated vehicle ecosystem are ultimately responsible for safety. It would make sense to introduce any new corporate offences in the context of the standards setting process discussed under Question 10. So, for example, failure to carry out testing as required by the approval process could, in extreme cases, give rise to criminal sanctions.

CHAPTER 8: INTERFERING WITH AUTOMATED VEHICLES

Consultation Question 34 (Paragraphs 8.1 - 8.58):

We seek views on whether the criminal law is adequate to deter interference with automated vehicles. In particular:

(1) Are any new criminal offences required to cover interference with automated vehicles?

(2) Even if behaviours are already criminal, are there any advantages to re-enacting the law, so as to clearly label offences of interfering with automated vehicles?

We expect new forms of potential interference will emerge as the technology develops, so these re-labelled offences may be need to supplemented in future (either through further re-labelling or the introduction of entirely new criminal offences).

Amendment of the Computer Misuse Act 1990 to include explicit reference to vehicles would be helpful.

Tampering with vehicles

Consultation Question 35 (Paragraphs 8.28 - 8.31):

Under section 25 of the Road Traffic Act 1988, it is an offence to tamper with a vehicle's brakes "or other mechanism" without lawful authority or reasonable cause. Is it necessary to clarify that "other mechanism" includes sensors?

While we expect that "or other mechanism" would be interpreted broadly to include sensors, it is also important that it adequately covers all other relevant aspects of an automated vehicle, including any software associated with safety systems. It is unlikely to be possible, or desirable, for section 25 to set out the full range of "other mechanisms" that should be captured by this offence. However, a more expansive term than "other mechanisms" or an explicit reference to safety critical systems may be beneficial.

Unauthorised vehicle taking

Consultation Question 36 (Paragraphs 8.32 - 8.39):

In England and Wales, section 12 of the Theft Act 1968 covers "joyriding" or taking a conveyance without authority, but does not apply to vehicles which cannot carry a person. This contrasts with the law in Scotland, where the offence of taking and driving away without consent applies to any motor vehicle. Should section 12 of the Theft Act 1968 be extended to any motor vehicle, even those without driving seats?

In principle, yes. However, this raises the question of whether this offence should apply only in the case of automated road vehicles or whether it should be captured by an equivalent offence that covers automated vehicles more generally to include drones, for example.

Causing danger to road users

Consultation Question 37 (Paragraphs 8.6 - 8.12):

In England and Wales, section 22A(1) of the Road Traffic Act 1988 covers a broad range of interference with vehicles or traffic signs in a way which is obviously dangerous. In Scotland, section 100 of the Roads (Scotland) Act 1984 covers depositing anything a road, or inscribing or affixing something on a traffic sign. However, it does not cover interfering with other vehicles or moving traffic signs, even if this would raise safety concerns. Should section 22A of the Road Traffic Act 1988 be extended to Scotland?

Yes.

CHAPTER 9: "MACHINE FACTORS" – ADAPTING ROAD RULES FOR ARTIFICIAL INTELLIGENCE DECISION-MAKING

Rules and standards

Consultation Question 38 (Paragraphs 9.6 - 9.27):

We seek views on how regulators can best collaborate with developers to create road rules which are sufficiently determinate to be formulated in digital code.

This process is likely to be incremental. Initial efforts should focus on clarifying rules that apply within the particular operational design domains that automated vehicles are most likely to operate in. We anticipate that the significance of ambiguities in current road rules will only become apparent through testing, so it is likely that the focus of any such collaboration should be determined by industry rather than regulators.

This question raises a related point of whether a separate, more determinate "digital" set of road rules should only apply to automated driving systems or whether these "digital" road rules should replace the "analogue" rules currently in force. Which is the more appropriate approach is likely to depend on whether automated vehicles are ultimately developed to emulate current human driving or whether they emerge as an alternative transport system using the same regulated space. It is our firm view that automated vehicles should be seen as an emerging alternative transport system using the same regulated space; to suggest that automated vehicles should emulate human driving is like suggesting that the automobile should have been designed to act like a horse when the horseless carriage was first introduced at the turn of the 20th century.

While a "digital" highway code is an attractive long-term objective, difficulties arise when road users include a mixture of human drivers and ADSs. An evolutionary approach towards fully digital and automated driving may be the best approach.

The Consultation Document does not address the prospect of enhanced perceptive capabilities of ADSs, and the scope for interaction and communication between ADSs and between them and the surrounding road infrastructure. In our view, this offers opportunities to dispense to a large extent with the need for traditional approaches to road rules. Where for example, an emergency vehicle is moving through traffic, it would be desirable to communicate this to ADSs in the path of the emergency vehicle well in advance. They could then prepare to allow the emergency vehicle to pass well before the vehicle coming within audible or visual range.

Equally, the improved perceptive capabilities expected for an ADS, using multiple sensors to detect other road users that may be out of visual range, are likely to significantly enhance the ability of an ADS to anticipate potential problems and adopt a suitably cautious approach to potential difficulties and hazards.

However, caution should be exercised when placing too much reliance on the likely benefits of "connected" vehicles and infrastructure as current technological progress in these areas are perhaps less advanced than for standalone automated features.

Should automated vehicles ever mount the pavement?

Consultation Question 39 (Paragraphs 9.6 - 9.37):

We seek views on whether a highly automated vehicle should be programmed so as to allow it to mount the pavement if necessary:

(1) to avoid collisions;

The first question this raises is how in practice an automated driving system would be able to determine that it is safe to mount the pavement (particularly if this is outside of its operational design domain) and, if so, whether this ability is something that would need to be considered as part of the approval process. Given the likely variables (for example in speed, angle of approach, tyre pressure, strength and height of kerb etc) it seems highly unlikely that mounting the pavement will ever by designed to be within an automated vehicles operational design domain.

We suggest that there should be no need for an automated vehicle to ever "decide" to mount the pavement to avoid a collision and prefer the algorithm outlined in our responses to Questions 1 and 3. In due course, we also prefer the potential approach of early evasive action through enhanced perception and communication facilities as outlined in our response to Question 38.

(2) to allow emergency vehicles to pass;

See our response to Question 38.

(3) to enable traffic flow;

In principle, no. However, it is not clear how this would be applied on more informal roads, where the distinction between the pavement and a passing-place may not be clear.

See also our response to Question 38.

(4) in any other circumstances?

As a general comment, in practice, we expect all of these situations to be managed by other means, for example a degree of redesign in the road environment within the relevant operational design domain, and improved anticipation and evasive action through better connectedness and perceptive capability.

Consultation Question 40 (Paragraphs 9.6 - 9.37):

We seek views on whether it would be acceptable for a highly automated vehicle to be programmed never to mount the pavement.

There may be situations where an inability to mount the pavement causes an obstruction or restricts an automated vehicle's ability to make satisfactory progress. However, this is a limitation that would ideally be dealt with through the design of automated driving systems and the road environment rather than extending their operational design domain to include areas not intended for vehicle use, such as pavements. When designing trains and trams

and the like, we do not seek to extend their design domains simply to avoid theoretically unlikely sets of circumstances.

Our response to Question 1 is also relevant here.

Should highly automated vehicles ever exceed speed limits?

Consultation Question 41 (Paragraphs 9.40 - 9.47):

We seek views on whether there are any circumstances in which an automated driving system should be permitted to exceed the speed limit within current accepted tolerances.

It is conceivable that there may be situations in which this is not the case, such as poorly signposted temporary speed limits. Where that is the case, it would potentially be mitigating factor if an automated driving system is found to be speeding, but it should not mean speeding is "permitted".

Edging through pedestrians

Consultation Question 42 (Paragraphs 9.49 - 9.55):

We seek views on whether it would ever be acceptable for a highly automated vehicle to be programmed to "edge through" pedestrians, so that a pedestrian who does not move faces some chance of being injured. If so, what could be done to ensure that this is done only in appropriate circumstances?

The efficient operation of society is likely to involve a degree of risk to humans from autonomous vehicles. If there is no such risk then the operational effectiveness of autonomous vehicles will depend on humans' strict compliance with legislation which prohibits "jay-walking" or interference with the progress of traffic – which in practice is unlikely. On that basis, we do not think it would be inappropriate for humans to expect the possibility of injury if they were to step in front of an autonomous vehicle in circumstances when they should not do so (much in the same way that a human would expect the risk of injury if they stepped in front of other forms of transport currently). Conversely, we do not envisage an environment where it is appropriate to travel at the maximum speed limit where there are many pedestrians in the environment (after a public event for example). A degree of proportionality will be required, and finding the right balance will be key.

Avoiding bias in the behaviour of automated driving systems

Consultation Question 43 (Paragraphs 9.68 - 9.74):

To reduce the risk of bias in the behaviours of automated driving systems, should there be audits of datasets used to train automated driving systems?

There is a separate question of whether such an audit would be the most appropriate way of establishing the existence of bias. On the assumption any such bias would be unconscious, it may not be apparent in an audit of the training data. We expect the risk of bias would be more appropriately addressed through testing of the developed system, through testing its performance across an appropriately representative sample, for example, rather than examining the data used to train the system.

Transparency

Consultation Question 44 (Paragraphs 9.76 - 9.88):

We seek views on whether there should be a requirement for developers to publish their ethics policies (including any value allocated to human lives)?

As the Consultation Document highlights, open public engagement and transparency on the part of developers is likely to make an important difference to the promotion of public acceptance and trust in automated driving systems. The current environment of suspicion and mistrust of major technology companies among both policy-makers and members of the public has in large part arisen from unexpected "behind-the-scenes" activity, including misuse of personal data for example. A new and more transparent approach to the development of technology is being championed by third sector organisations such as think tank doteveryone.[1] However, we would expect an ethics policy to be at a very high level of abstraction and on its own unlikely to be sufficiently determinative to give an informative overview of an organisation's approach to the development of automated driving systems. We do not therefore support a requirement on a developer to publish an ethics policy as such.

Regulatory requirements and guidance and industry codes on transparency of the development process are likely to be a more effective way of both ensuring accountability and explaining the approach being taken to the public. Coupled with a clear and transparent testing and approvals process for the system as a whole, these are the most likely route to improving safety and gaining public trust. We draw an analogy with clinical testing of pharmaceuticals, where new regulations and guidance requiring the disclosure of clinical trials results, whether positive or negative from the developer's perspective are being introduced. (See, for example, EU Regulation No 536/2014 on clinical trials on medicinal products for human use.[2]) Transparency in this area is seen as important both to improve public confidence in the system and to provide a more rigorous evidence base for the use of medicines.

In any case, we would question whether an ethics policy is the right approach to the development of automated driving systems. See our response to Question 1 above.

Consultation Question 45 (Paragraphs 9.76 - 9.88):

[1] https://doteveryone.org.uk/

[2] https://ec.europa.eu/health/sites/health/files/files/eudralex/vol-1/reg_2014_536/reg_2014_536_en.pdf

What other information should be made available?

As noted above, we would question whether an ethics policy should actually be at all relevant to automated driving systems. See our response to Question 1 above. As discussed under Question 44 above, we see the encouragement of transparency in the development of an ADS, to the extent that this is compatible with the protection of trade secrets, as the best approach.

Future work and next steps

Consultation Question 46 (Paragraphs 9.91 - 9.93):

Is there any other issue within our terms of reference which we should be considering in the course of this review?

Not that we are aware of other than the area highlighted in our response to Question 1 above. We note the various exclusions from the scope of reference, and look forward to reviewing the Law Commissions' further publications as part of this review.

Should you require more information on the responses above please contact Stephen Hamilton or Isabel Teare at Mills & Reeve LLP using the details below.

Stephen Hamilton
Partner
for Mills & Reeve LLP
+44(0)1223 222349
stephen.hamilton@mills-reeve.com

Isabel Teare
Senior Legal Adviser
for Mills & Reeve LLP
+44(0)1223 222402
isabel.teare@mills-reeve.com