



Law Society
of Scotland

Consultation Response

Automated Vehicles

5 February 2019



Introduction

The Law Society of Scotland is the professional body for over 11,000 Scottish solicitors. With our overarching objective of leading legal excellence, we strive to excel and to be a world-class professional body, understanding and serving the needs of our members and the public. We set and uphold standards to ensure the provision of excellent legal services and ensure the public can have confidence in Scotland's solicitor profession.

We have a statutory duty to work in the public interest, a duty which we are strongly committed to achieving through our work to promote a strong, varied and effective solicitor profession working in the interests of the public and protecting and promoting the rule of law. We seek to influence the creation of a fairer and more just society through our active engagement with the Scottish and United Kingdom Governments, Parliaments, wider stakeholders and our membership.

We welcome the opportunity to consider and respond to The Law Commission of England and Wales and the Scottish Law Commission consultation on Automated Vehicles and have the following comments to put forward for consideration.

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 that vehicles should have a user-in-charge (UIC) unless they are specifically authorised to function safely without one and that the UIC should be qualified and fit to drive. Whilst the pace of technology in this area is difficult to predict and, as the consultation paper acknowledges, it is unusual (and

difficult) to seek to formulate legal responses to factual situations which have not yet occurred, the proposed suggestion is sensible.

However, statements (2)(b) and (c) raise a number of issues which merit further consideration in the context of the extent to which a UIC is expected to monitor and react to circumstances.

In particular it is difficult to envisage a situation where a UIC would “not be driving” and yet could usefully assume responsibility of the controls to mitigate a risk of accident, unless they are performing the monitoring function and are well placed to resume control of the car with immediate effect. This would be similar to operating the “cruise control” function, which has already been in existence for a number of years. The flip-side of this is that it is difficult to see what advantage would therefore be gleaned from a “self-driving” car as it would not allow the UIC to carry out other activities.

In relation to statement 3, we agree that the UIC should not be considered to be at fault if they take control and are unable to avoid or mitigate the risk of accident. However, conceptually, we are not persuaded that the vehicle “should still be considered to be driving itself”. Rather, in terms of causation and effect, the cause is attributable to the vehicle.

Furthermore, after a particular period of time, the UIC might be expected to have assumed responsibility such that they should attract liability if in all the circumstances they should reasonably have averted the incident. An example might be a car which is clearly travelling too fast along a straight and empty road. The driver intervenes and takes control of the car but fails to take action to reduce the speed of the car and a few minutes later, the car crashes into a vehicle at a junction. Of course, if the driver attempts to take action but the car does not respond, then liability should not rest with the driver, but in the situation above, we do not consider that the fact that the initial problem was caused by the car should remove the obligation of the driver to control the car within a reasonable period of time.

Question 2 (Paragraph 3.45):

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

Subject to the other reservations expressed in our consultation response, particularly above, we are satisfied that user-in-charge conveys its intended meaning.

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.

No. On balance, for the reasons outlined, it would seem wise to exercise caution in this area. The case of criminalisation of omission in this context does not seem to be as of yet fully justified and risks having a negative impact upon manufacturing safety standards and carries significant evidential problems in practice. It seems civil liability is a more appropriate tool by which to determine and regulate liability in this situation.

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.

We consider that this question is more a technical one than a legal one. For a vehicle to be fully automated, it would, by definition, be able to operate safely and effectively in the absence of a user-in-charge.

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?

Yes.

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?

We refer back to our comments in relation to question 1. The utility of purchasing an automated vehicle will logically be constrained if it does not permit the UIC to undertake secondary activities. If an automated

driving system is engaged, this suggests that the driver should therefore be permitted to undertake some kind of activity. The nature of those activities might be circumscribed with reference to particular criteria, which correlate to the UIC's ability to take control of the vehicle as necessary. If input is still required from a driver to safely operate the vehicle then this would be more appropriately termed a semi-automated driving system.

We are aware that at present there are cars which will "park themselves" where the car steers itself and the driver operates the pedals under instruction. In this situation, ie where the driver or UIC is under instruction of the car, then it would be inappropriate for them to undertake secondary activities while carrying out these activities but it would seem reasonable to permit other activity, for example, while the car was underway and no such input was required.

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?**

See responses to questions 1 and 6 above.

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?

Automated driving systems are not and will not necessarily be unitary platforms and may rather be a range of functions and features that develops and improves over time, particularly through the use of software updates. Vehicles modified with automated driving systems may be reliant on the pre-existing functionality of the registered vehicle, for instance, driver assistance functions such as traction control that distribute braking and torque to prevent wheelspin, or on vehicle sensors for speed, temperature, parking distance or the like. Similarly, the range of automated driving functions may vary, from fully automated driving, to particular automated tasks or functions under particular conditions. Any safety assurance scheme will need to be flexible to this approach. Confidence in automated driving systems is crucial: some of this will require public education around the capability and risks of these systems and some of this will require robust regulation¹.

We believe that there is a need for a new scheme to cover modifications to vehicles and to vehicles manufactured in limited numbers. This would allow safety assurance to extend, for instance, to small-scale pilot schemes for vehicles with automated driving systems and ensure that adequate safety standards are met. By extension, this would entail that unauthorised automated driving systems should be prohibited. Similar to the current approach under the Road Traffic Act 1998, we believe that this authorisation should be limited to roads over which the public has a right of way. This would allow for driving or other testing to take place on private roads, test tracks or such other sites.

We also believe that the prohibition on automated driving systems should not extend to the functions of an automated driving system that did not control the vehicle. This would allow, for instance, for the operation of sensor equipment, collection and retention of data, which may assist in the testing process for such systems.

Question 9 (Paragraphs 4.107 - 4.109):

¹ And apprehension about automated driving systems is high: a recent MoneySupermarket survey found that 73% of people said they would not feel safe driving with fully autonomous cars on motorways (<https://www.moneysupermarket.com/car-insurance/driverless/>)

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?

We believe that an entity should take responsibility for the overall safety of the automated driving system. Because of the diverse functionality of automated driving systems and, particularly for modifications to pre-registered vehicles, there may be a degree of complexity to this responsibility, though for mass-market systems, it is likely that the manufacturer would be the ADSE.

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.

The consultation paper outlines the various approaches that could be adopted around safety assurance, either through certification by the ADSE, pre-market approval by government agency, a mixed model or other options. The significant challenge for developing such a system is that the more general the capability of the automated driving system, the greater the exposure to 'real world' conditions that may be required to ensure confidence in the safety assurance scheme. A mixed model of self-certification by the ADSE against set safety criteria, followed by 'real world' testing by an independent third party might be the most appropriate model to adopt.

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 is sensitive to local conditions.

An approach based on the variation of conditions for particular road types, as under the Road Traffic Regulation Act 1984, may be helpful. Some roads, for instance, pedestrianised roads restricted to service vehicles only, could similarly be restricted from automated vehicles because of the number of pedestrians.

There are also powers for local authorities, through establishing Low Emission Zones, to restrict categories of vehicle for environmental purposes. For instance, Glasgow will be restricting access to particular categories of diesel vehicle.

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.

We believe that there should be regulation of consumer and marketing materials, to ensure that purchasers of vehicles with automated or advanced driving systems are not misled around the capability of these systems. This regulation could be provided through existing regulatory structures, such as through the Advertising Standards Authority. There is a role for market surveillance, to ensure that advanced and automated systems are and remain safe. Though a rigorous system of testing may rectify defects in such systems, others may emerge through use in 'real world' conditions. Market surveillance will be able to identify such trends and allow for remedial action. Similarly, we believe that the inclusion of advanced and automated driving systems in roadworthiness tests is important. Even if the software comprising the functionality of these systems is verified as current and correct, hardware can degrade over time, such as mechanical failure of hard disk drive storage, or degradation of solid state drive storage.

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?

There may be potential for the UK driving test to include elements around automated driving systems as these develop. There has been recent change to include the use of satnav as part of the test process. A voluntary scheme contingent on the incentives of insurance premium discounts may prove effective, though the low uptake rate of Pass Plus, the supplementary driving course, suggests some limitations². There could also be the opportunity to provide a specific driving test that permitted use of automated vehicles solely, in the same way that a test for automatic cars only currently exists.

The introduction of new elements to the driving test would not address any perceived skills deficit for currently qualified drivers and unless regulatory requirements mandated, or sufficient insurance discount incentivised, a skills gap might emerge. Also, as driving systems become increasingly autonomous (and as we have observed above), driving skills may atrophy through lack of practice. However, passing a driving test currently allows for unrestricted driving of particular categories of vehicle until the age of 70, irrespective of any driving experience (or lack of) thereafter, so any changes around post-test training may need to be considered in a wider context.

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.

We do not believe that a dedicated accident investigation branch is required to investigate high profile accidents involving automated vehicles. Specialist expertise will undoubtedly be available to police forces, in order to be able to interrogate the large volume of data available from the vehicle in the event of an accident. Whether an automated vehicle or not, or if so, whether the automated system engaged or not, the increasing range of sensor information available from vehicles involved in accidents may allow for more sophisticated analysis of road traffic accidents on an individual and on an aggregated basis.

Question 15 (Paragraphs 5.78 - 5.85):

(1) Do you agree that the new safety agency should monitor the accident rate of

² Only 3% of new drivers, according to ALA Insurance (<https://www.ala.co.uk/connect/do-new-drivers-really-have-more-accidents/>)

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.

We believe that the new safety agency should monitor the accident rate of highly automated vehicles, compared with human drivers, though it may take significant time to develop statistically significant data to allow this. A standard of equivalence, being at least as safe as a human driver, would be easily understood by the public. We believe that some categorisation of this monitoring could also be helpful, for instance, comparison of accidents in urban or motorway traffic, to identify trends. Monitoring the accident rates of advanced driver systems would also be helpful and, as noted above, we believe that there may be benefits to analysis of the data from sensors in vehicles either without any advanced or automated driving systems or in full control of the driver at the time of accident.

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, as highlighted in our response to question 15, some challenges around data comparison. We note that the consultation paper highlights the variation in fatal accident rates across countries in Europe and elsewhere. It is not clear which factors are instrumental in this variation, though we believe that the equivalence measure should relate to the level of such accidents in the UK.

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?

(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?

(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?

We agreed to the first question: the sections on contributory negligence are sufficiently clear. Regarding the second question, we consider that the issue of causation can be left to the courts. We note that jurisprudence might develop separately in England and Wales on the one hand and Scotland on the other in this case but this would properly reflect the different legal systems in each. At the same time, we expect that reasoning from one jurisdiction would be likely to be persuasive if a case were to arise on similar points in the other. Regarding the third question, data should be retained to allow events to be investigated. A useful parallel here might be the information recorded in the black box of an aeroplane.

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?

The use of automated vehicles is an area in which there is the potential for significant risk to person and property. Should safety standards aim for at least equivalence with human drivers, or even manage to deliver safety levels significantly better than for human equivalents, accidents will still happen. It is important that there is confidence in the safety of these systems and appropriate redress should things go wrong. The current regime under the 1987 Act may not provide that for automated vehicles. As the consultation paper observes, unless damage is to property "ordinarily intended for private use, occupation

or consumption”, this is excluded from the scope of the Act. Similarly, there are challenges around over-the-air software updates. Though this may not be problematic unless the vehicle and the software update were produced by different entities, this is not beyond possibility. A division exists between hardware and software vendors for a large part of the home computer, tablet and smartphone markets. There is also the possibility of open source software, such as with home computers and many variants of Linux, or the possibility of software modding.

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?

As above, we believe that an overall review of the impact of current protections will be important in ensuring confidence in the use of automated vehicles.

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.

Yes. Such an amendment is desirable and sensible.

Question 21 (Paragraphs 7.5 - 7.11)

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

We do not have specific examples of amendments required to offences.

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. There are no compelling reasons why a human user should be criminally responsible in these circumstances for actions or omissions caused by the automated driving system. The human user lacks any culpability or liability for the *actus reus* of these offences when the automated driving system is engaged. The use of the criminal law in seeking to enhance economic or regulatory standards by assigning criminal liability to a human user in these circumstances would be inappropriate and unjustifiable.

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)).

Yes. Whilst we do not believe that the specific offence mentioned is justifiable, it makes sense for the criminal law to seek to assign liability in this context via a range of new offences which appropriately reflect culpability and accord with principles of fair labelling in the criminal law generally.

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?

(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?

(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?

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

Yes. In response to the first question, this seems sensible and uncontroversial. One implication of such an approach that may require to be borne in mind is that such individuals may require to take legal advice prior to authorisation especially if the intended prosecution is serious or relates to complicated factual matters giving rise to a question as to whether the registered keeper may himself be criminally liable. We also agree with the statements in questions (2) to (4).

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?

We agree that the user in charge should be subject to these requirements: criminalisation is clearly justifiable in these circumstances.

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?

On balance, we disagree. It is very difficult to express a concluded view on such a proposal given the level of speculation required in relation to the technology involved and the ultimate form that driverless vehicles will take. We see the merit of the provision in a broad sense given the evidential problems that may arise if no-one is occupying the driving seat but the practical and theoretical implications in creating and prosecuting such an offence seems to us troubling. The appropriate focus of the criminal law should be on the user in charge who has failed to adhere to the appropriate standards (by becoming intoxicated etc.). By extending criminal liability to all those who travel it seems to us those most deserving of sanction may be able to escape appropriate punishment and criminal sanction may be imposed on those undeserving of same. There is no easy answer but perhaps a better solution is via appropriate regulation with registered users of vehicles being presumed in law to be the user in charge (and as such those who should be occupying the driving seat) if a vehicle is stopped and they are present therein? The presumption could be rebuttable and so would allow for the appropriate assignation of criminal liability in varying situations.

Alternatively, any offence could be restricted to situations in which a passenger knowingly allows him or herself to be carried in a vehicle where there is no user-in-charge or user-in-charge lawfully able to discharge these duties (for instance, as a passenger with a user-in-charge who the passenger knows to be intoxicated).

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?

Yes.

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.

In principle this extension seems logical. One proviso would be that if the offence was to be extended in this way the criminal law would have to be cognisant of the possibility of the offence occurring in situations whereby the offending driving occurs as a result of a system malfunction or problem with software etc. The offence should accordingly have a clear *mens rea* requirement and avoid strict liability. However, there may be situations in which a person who sets the route is unaware of the fact that it is so, for instance, that the road has become pedestrianised since last visited, or is subject to temporary closure. There may need to be some latitude provided for honest mistake in situations in which the person is not in a position to intervene or is otherwise unaware.

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?

Yes.

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 refer to our answer to question 31 below.

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.

Reform of the law in these areas will inevitably be required. Rather than consider such reform as part of this review, we suggest that further consideration of reform is postponed until the point at which highly automated vehicles have completed road trials, and are ready to be put on the market. This would allow all relevant factors to be taken into account.

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.

Section 22A of the Road Traffic Act 1988 does not apply to Scotland. The equivalent offence is Section 100 of the Roads (Scotland) Act 1984 which is narrower in scope.

In Scots law, the argument that a new offence is required does not seem to us to be persuasive. Any interference with a vehicle, road or traffic equipment which led to the death of another could be prosecuted as culpable homicide (specifically, although it is not widely known by this *nomen juris* in Scots law, involuntary unlawful act culpable homicide). The requisite *mens rea* that would need to be established by the Crown being that of recklessness (See *Sutherland v HMA* 1994 JC 62 & *MacAngus v HMA* 2009 SLT 137). This seems to us to allow more culpable instances of such behaviour to be suitably punished. The theoretical criticism following *R v Meeking* of English law does not seem to us to necessarily apply to Scots law where culpable homicide has been held to apply to deaths following statutory contraventions as long as there is sufficient evidence of culpability in terms of recklessness (see *MacAngus* at para 29). In cases where the culpability of the offender is reduced, then we are not convinced that it necessarily follows that a new statutory offence is required. If the behaviour in question is not sufficiently culpable in terms of recklessness, then it is not obvious to us why an individual should carry the stigma of a homicide conviction.

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.

If the Law Commissions are considering regulatory offences of the nature suggested, then this would require creation of new corporate offences. We reserve any view on such offences until we have seen the proposals. It is worth noting that the ever-increasing use and reach of the criminal law in the regulatory sphere is not without its critics.

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?

The replication of criminal offences in general is not something that seems to us advisable.

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?

No.

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?

We do not have comments around this question.

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 on 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. It seems to us that such an extension is advisable.

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.

We believe that ongoing dialogue between regulators and developers around the creation of codable road rules is crucial. There is a long history of considering codable legislation³ and with the increased collaboration already occurring between regulators and developers through hackathon initiatives, we believe that effective dialogue can be enabled. Codified road rules, however, are only a part of the decision-making process involved in automated driving functions, establishing the parameters within which driving occurs. The 'common sense' element of driving, route selection, hazard perception and avoidance and the like, are more difficult to formulate, requiring evaluation of preferences and probability.

³ For instance, the research in 1986 into the British Nationality Act 1981 as a logic program (<http://www.doc.ic.ac.uk/~rak/papers/British%20Nationality%20Act.pdf>)

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;

(2) to allow emergency vehicles to pass;

(3) to enable traffic flow;

(4) in any other circumstances?

This is, ultimately, a matter of public policy on which we do not have comment. If the decision were that there should be no circumstances in which an automated vehicle were to mount a pavement, there may be merit in considering a way of identifying such vehicles, for instance, as in Japan through different registration plates. One benefit would be to allow emergency vehicles to seek alternate routes to pass through traffic, if aware that the automated vehicle would not mount the pavement.

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.

We refer to our response to question 39 above.

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.

The current system of acceptable tolerances may be appropriate for human drivers. An automated driving system that was continuously aware of travelling speed may not need the same tolerance that a human driver is afforded. We do not believe under normal driving conditions there should be any additional tolerance for automated systems. Whether there should be tolerance under exceptional conditions, such as the example cited in the consultation paper of overtaking a vehicle as quickly as possible to avoid an accident, is again a matter of public policy on which we do not have comment.

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?

We do not believe that an approach tending to “some chance of being injured” would be appropriate. There may be driving strategies that may incentivise a pedestrian to move, such as using horn or lights, or the vehicle moving forward at a gradual speed that had a stopping distance short of any chance of collision with a pedestrian. The drawback of this conservative approach may mean, however, that an automated vehicle might be halted by large crowds of pedestrians, for instance, in attempting to navigate roads near a stadium following a sporting or music event or making a delivery to a premise within a pedestrianised street.

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?

As the consultation paper notes, driving conditions vary significantly from place to place. Some automated systems may be limited in the driving functions that they can perform, for instance, motorway rather than urban driving. Others may have more specifically geographic limitations. One self-driving car platform was reported to require human intervention in the event of rain (though deployed in an area with little such weather) and it has also been suggested that a challenge for automated vehicles in the Netherlands is the

significant proportion of cyclists in urban areas⁴. Being able to assess and verify that the datasets used to train automated driving systems are appropriate to the conditions of use will be important.

The risk of bias has been cited as a potential drawback to automated systems, for instance, in the recent House of Lords Artificial Intelligence Committee's report. Ensuring that systems are able to operate safely around the full range of likely road users and pedestrians will be important and audit of test data will assist with this process.

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)?

The publication of ethics policies may be contentious for several reasons. Though drivers may make similar decisions in the urgent instance of accident avoidance, the calculation of risk and harm by a software programme may not inspire confidence in the marketplace. The road safety priorities of the driving software may also prove challenging, as Oliver Jeffcoat and Rose Inglis highlighted⁵:

“A recent study entitled “The Social Dilemma of Autonomous Vehicles”⁶ examined this problem through a series of surveys. The majority of the 1,928 participants agreed that, ethically, it would be better for autonomous cars to sacrifice their occupants rather than crash into pedestrians. Yet the majority also said they would not buy autonomous cars if the car prioritised pedestrian safety over their own. Manufacturers are thereby placed in the conundrum of choosing to implement an algorithm which people feel is unethical or one that people will not want to buy.”

The policies may, as described above, be complex, probabilistic and context-sensitive. For instance, different values might ascribe to an evasive manoeuvre that risked a collision from behind relative to a head-to-head collision, even though risk to human life involved in both situations. The complexity of these decision-making systems may be such that publication of ethics policies could, practically, approach equivalence to publication of elements of code and may not be of utility to the public. However, as suggested above, we believe that this information should be available to regulators or to accident investigators, in order to ascertain the causes of events harming other road users or pedestrians, as this transparency may generate confidence in the safety and scrutiny of these systems.

⁴ The Guardian, “Bikes put spanner in works of Dutch driverless car schemes”, 13 February 2019

⁵ Oliver Jeffcoat, Rose Inglis, “Driverless cars: ethical and legal dilemmas” J.P.I. Law 2017, 1, 19-25

⁶ Jean-Francois Bonnefon, Azim Shariff and Iyad Rahwan, “The Social Dilemma of Autonomous Vehicles” (2016) 352(6293) A.A.A.S 1514.

The importance of disclosure or discovery of software code was considered by Stephen Mason in the Computer and Telecommunications Law Review⁷. On the one hand, he highlights the approach articulated in the UK Government's key principles of vehicle cyber security for connected and automated vehicles⁸:

“3.4 Organisations ensure their systems are able to support data forensics and the recovery of forensically robust, uniquely identifiable data. This may be used to identify the cause of any cyber, or other, incident.”

And on the other, he observes the general reluctance of courts to order disclosure or discovery of software code. Specific statutory provision might help to ensure the availability and accessibility of forensic data.

Question 45 (Paragraphs 9.76 - 9.88):

What other information should be made available?

As described above, we believe that in addition to the driving software, regulators and accident investigators should have access to relevant sensor information relating to specific incidents, allowing for causation to be determined and to ensure that systematic and repeating errors are not occurring.

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?

No. We believe that this consultation paper articulates a comprehensive range of legal issues around the development and deployment of automated vehicles. We believe that anticipating legal challenges from emerging technologies is an area where the scrutiny of the Law Commissions can be invaluable and look forward to further engagement on these issues.

⁷ Stephen Mason, “Artificial intelligence: oh really? And why judges and lawyers are central to the way we live now - but they don't know it” C.T.L.R. 2017, 23(8), 213-225

⁸ <https://www.gov.uk/government/publications/principles-of-cyber-security-for-connected-and-automated-vehicles/the-key-principles-of-vehicle-cyber-security-for-connected-and-automated-vehicles>





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