

**Response to Law Commissions' third consultation on Automated Vehicles
(Law Commission Consultation Paper 252; Scottish Law Commission Discussion
Paper 171)**

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What is your name?

John Rainbird

What is the name of your organisation?

N/A

Are you responding to this consultation in a personal capacity or on behalf of your organisation?

Personal response

CHAPTER 4: SELF-DRIVING AND HUMAN INTERVENTION

Consultation Question 1 (Paragraph 4.114)

We provisionally propose that:

(1) a vehicle should not be classified as self-driving if, with the ADS engaged, the user-in-charge needs to monitor the driving environment, the vehicle or the way it drives;

(2) it is nevertheless compatible with self-driving to require the user-in-charge to respond to a clear and timely transition demand which:

- (a) cuts out any non-driving related screen use;
- (b) provides clear visual, audio and haptic signals; and
- (c) gives sufficient time to gain situational awareness;

(3) to be classified as self-driving, the vehicle must be safe enough even if the human user does not intervene in response to any event except a clear and timely transition demand.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Concerning (3): On a few occasions I have been able to leave a motorway or A-road after seeing a vehicle on fire, a dense snowstorm or a huge traffic jam a mile or more in the distance. I do not wish to be in an AV which can only drive up to an obstruction and stop. In my opinion this is not the same as monitoring the driving environment in the immediate

vicinity of the AV. I am aware that some experts would prefer the user-in-charge not to intervene when the AV detects an emergency situation, but - as a separate facility - I would want to be able to intervene when I detect an obstruction long before the ADS can. This would override any preset instruction to the ADS such as driving to the end of a motorway.

Consultation Question 2 (Paragraph 4.115)

We welcome views on whether self-driving features should be designed to ensure that they can be used by people with hearing loss.

I am in favour. The scope for assistance is wider than normal deafness. Other factors are normal road noises, strong winds, and the individual's power of concentration. My car radio is sometimes rendered inaudible or incomprehensible by the simultaneous noise of engines, tyres and winds.

CHAPTER 5: HOW SAFE IS SAFE ENOUGH?

Consultation Question 3 (Paragraph 5.118)

We provisionally propose that the decision whether a vehicle is sufficiently safe to "safely drive itself" should be made by the Secretary of State, as informed by advice from a specialist regulator.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

The alternative appears to be a standard low enough to satisfy 84 different jurisdictions.

Consultation Question 4 (Paragraph 5.119)

We welcome observations on which of the following standards is most appropriate when assessing the safety of automated vehicles:

- (a) as safe as a competent and careful human driver;
- (b) as safe as a human driver who does not cause a fault accident;
- (c) overall, safer than the average human driver.

[Respondents chose from the following options: as safe as a competent and careful human driver; as safe as a human driver who does not cause a fault accident; overall, safer than the average human driver; none of the above.]

As safe as a competent and careful human driver

"as safe as a competent and careful human driver" embodies all that is explicit and implicit in The Highway Code and this document covers a wide range of scenarios.

"a human driver who does not cause a fault accident" is too uncertain to serve as a standard - many miles of motoring need not encounter a potential fault accident situation.

"overall, safer than the average human driver" encompasses the whole range of driver behaviour, some of which is at a very low standard.

Consultation Question 5 (Paragraph 5.120)

We welcome observations on how automated vehicles can be made as safe as reasonably practicable.

My biggest concern for several years has been the extremely limited range of scenarios which AVs are designed to face. This AV-CP3 shows that real progress is now being made toward tackling the huge variety of situations and individual circumstances which exist in the real world.

A database of the experience of individual drivers and other road users would be invaluable. Through anecdotes or more sophisticated accounts the experience of millions of miles of motoring could be pooled. This would supplement the collection of statistics.

It could also test the relevance and scope for what appear to be textbook formulations of problems; for example, by asking how often you have really had to choose between hitting a child and hitting a group of old people: this is a favourite ethical question which is often posed in connection with a tram, where the choice is to take one of two tracks; for vehicles not physically limited to tracks the options need not be binary. Similarly, the question whether an AV should be permitted to mount the pavement to let an ambulance pass offers a binary choice; I have never needed to mount a pavement to let an emergency vehicle pass. In real life the designer of an ADS should not be limited to two options.

The database could be set up and run jointly by interested organisations. The content for the database could be collected in relation to specified scenarios, such as good and bad experiences when overtaking or being overtaken; actions taken when seeing that the motorway is blocked two miles ahead; how often the pavement has been mounted, any why; the most dangerous or terrifying scenarios in which you have been involved; unexpected causes of accidents. This content will cover far more than the scope of incidents which result in official statistics.

There is a need to design more capabilities into AVs by reducing the areas of ignorance: "We explained that we would not know the full picture until they [AVs] had been used in real world conditions." (CP3, 5.122, referring to CP1, para. 5.1. Also, "There is also a risk that situation will arise after the vehicle has been deployed which were not covered by the simulation." (CP3, 7.36) Many such situations may have already happened but have not been recorded or seen as significant by all designers of ADSs.

National publicity for the database would be essential, as would a 'Contact us' page on its website. Please see my answers to Questions 8 and 19(3).

Consultation Question 6 (Paragraph 5.121)

We welcome practical suggestions for how AV regulators can fulfil their public sector equality duty.

With regard to passengers, they could insist that a specified proportion of AVs are capable of or easily adaptable to meeting specific individual needs.

With regard to other road users, all AVs could be fitted with signals of appropriate types (audible, visual, readable) to inform other road users of their intentions when stationary (e.g. waiting to enable a pedestrian to cross the road).

Pedestrian-operated signal at intersections and crossings should be made to communicate with AVs when they are 'connected'.

CHAPTER 7: ASSESSING SAFETY PRE-DEPLOYMENT

Consultation Question 7 (Paragraph 7.99)

We provisionally propose that:

- (1) safety assessment should use a variety of techniques;
- (2) manufacturers/developers should submit a safety case to regulators showing why they believe that the automated driving system is safe;
- (3) regulators should:
 - (a) provide guidelines for what is in the safety case;
 - (b) audit the safety case;
 - (c) prepare guidance for manufacturers and developers on preferred standards; and
 - (d) carry out at least some independent tests.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Consultation Question 8 (Paragraph 7.100)

We seek views on whether an approval authority that intends to use a scenario database as part of the testing procedure should consult road user groups on the range of scenarios to be included.

The approval authority should widen the range of scenarios beyond those which are of interest to the road user groups. 'Road user groups' can refer to motor professionals, motor clubs and existing lists of people interested in being surveyed in connections with motors, and so on. But why not open participation to the general public? And, if a scenario is found to be relevant by one designer or manufacturer, why not make it available in one national database? The approval authority could have a 'Contact us' page on its website to enable anyone to contribute without hassle.

Please also see my answers to Questions 5 and 19(3).

CHAPTER 8: INITIAL APPROVALS AND CATEGORISATION – PROPOSALS

Consultation Question 9 (Paragraph 8.17)

We provisionally propose that:

- (1) unauthorised automated driving systems should be prohibited; and
- (2) this should be subject to an exemption procedure by which the Secretary of State may authorise unauthorised systems to be used in tests and trials.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Consultation Question 10 (Paragraph 8.25)

We provisionally propose that:

- (1) the Government should establish a domestic scheme to approve automated driving systems (ADSs) for use on roads in Great Britain (a “national ADS approval scheme”);
- (2) manufacturers should have a free choice to apply for approval under either the UNECE system of international type approvals or through the national scheme;
- (3) developers should be able to submit an ADS for national approval, even if they are not responsible for manufacturing the whole vehicle.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

I have a reservation concerning (3). If the expectation or requirement is that the developer is working in conjunction with a manufacturer or operator of highly automated passenger and freight vehicles the proposal is reasonable. If it includes (whether by accident or design) the supply of an ADS to independent fitters and private owners (DIYers?) the proposal is not acceptable. ADSs are far complicated than car alarms and they all need proper regulation.

Consultation Question 11 (Paragraph 8.43)

We provisionally propose that:

- (1) an ADS approval scheme should be established through regulation under the Road Traffic Act 1988, without further legislative reform;
- (2) an ADS should be defined as a combination of software, hardware and sensors, which can be installed in a “type” of vehicle;
- (3) when an ADS is approved, the approval should be accompanied by specifications for:
 - (a) the type of vehicle in which it can be installed; and
 - (b) how the ADS is installed within the vehicle;
- (4) where an ADS is installed in a pre-registered vehicle, an example vehicle should be submitted to the regulator for approval of the installation.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Consultation Question 12 (Paragraph 8.44)

We invite observations on the appeal process in regulation 19 of the Road Vehicles (Approval) Regulations 2020, including:

- (1) how it works in practice; and
- (2) how well it is suited to the proposed national ADS approval scheme.

Unable to comment.

Consultation Question 13 (Paragraph 8.71)

We provisionally propose that:

- (1) once an ADS has received type approval at either international or domestic level, an Automated Driving System Entity (ADSE) would need to submit the vehicle to the UK safety regulator for categorisation as able to safely drive itself;
- (2) the safety regulator should make a recommendation to the Secretary of State for how the vehicle should be classified;
- (3) it should be open to the safety regulator to recommend that an ADS-enabled vehicle is classified in one of three ways: as not self-driving but driver assistance; as self-driving only with a user-in-charge; or as self-driving without a user-in-charge;
- (4) the safety regulator should only recommend classification as self-driving (either with or without a user-in-charge) if it is satisfied that:
 - (a) an ADSE is registered as taking responsibility for the system;
 - (b) the ADSE was closely involved in assessing safety and creating the safety case; and
 - (c) the ADSE has sufficient funds accessible to the regulator to respond to improvement notices, to pay fines and to organise a recall.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Is it implied that the ADSE need not be based in the UK? For ease of regulation and operation and familiarity with the UK environment, it appears essential that the ADSE is based in the UK.

Consultation Question 14 (Paragraph 8.77)

We provisionally propose that a new legislative framework should provide regulation making powers to specify:

- (a) who should assess whether a vehicle is capable of self-driving;
- (b) the procedure for doing so; and
- (c) criteria for doing so.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Consultation Question 15 (Paragraph 8.78)

We seek views on whether the new legislation should include provisions for appeals against a categorisation decision. If so, should these be similar to those in regulation 19 of the Road Vehicles (Approval) Regulations 2020?

There should be such an appeals procedure.

I am unable to comment on regulation 19.

Consultation Question 16 (Paragraph 8.83)

We seek views on whether the regulator that classifies vehicles as self-driving should have power to allow their deployment in limited numbers, so as to gather further data on their safety in real world conditions.

This is a good research technique.

The data should include experience with 'ordinary' drivers (possibly in supervised tests), not just AV specialists and enthusiasts. The data should include the reactions of and the effects on other drivers and vehicles, motor cyclists, cyclists and pedestrians.

CHAPTER 10: ASSURING SAFETY IN USE

Consultation Question 17 (Paragraph 10.82)

We provisionally propose that legislation should establish a scheme to assure the safety of automated driving systems following deployment, giving scheme regulators enhanced responsibilities and powers.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

AVs involve many aspects of technology and human behaviour which do not occur elsewhere in the same concentration and with similar degrees of novelty.

Continuous regulation is essential.

Consultation Question 18 (Paragraph 10.83)

We provisionally propose that the enhanced scheme should give regulators the following responsibilities and powers:

- (1) scheme regulators should be responsible for comparing the safety of automated and conventional vehicles using a range of measures;
- (2) to do this the regulator should have power to collect information on:
 - (a) leading measures (instances of bad driving which could have led to harm) and
 - (b) lagging measures (outcomes which led to actual harm);
- (3) regulators should have power to require an ADSE:
 - (a) to update software where an update is needed to ensure safety and continued compliance with the law;
 - (b) to keep maps up-to-date, where an AV relies on maps to ensure safety and compliance with the law;
 - (c) to communicate information about an ADS to users in a clear and effective way, including where necessary through training.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

This is a good package of powers and responsibilities.

3b. is good as far as it goes, but what happens if the provider of a map does not keep it up-to-date? Presumably users of that particular map would be prohibited from going on public roads.

Please see my answer to Question 19, where I suggest that the regulator would be the natural operator of a national database of motoring scenarios.

Consultation Question 19 (Paragraph 10.84)

We welcome views on the following issues:

- (1) Should scheme regulators be empowered to approve software updates that apply only within the UK, without requiring the manufacturer to return to the original type approval authority?
- (2) Should the scheme should also deal with cybersecurity?
- (3) Are other powers needed? (Note that data is discussed in Chapter 17.)

1. No. this could make the scheme regulator solely dependent on the manufacturer's assessment of the software and its effects. As with all software, there is the risk of

unintended consequences. There could be conflicts if an ADS contained alternative sets of software for use in different countries. I would regard it as bad practice not to refer back to the original type approval authority, which might see wider implications of the software than the manufacturer. How could we rely on the scheme regulator to confirm that the update was compatible with the original type approval? How far can we rely on the manufacturer and software designer, both technically and with regard to accurate description? It is almost normal for software updates to have unintended consequences even on relatively simple computers.

2. Yes. It is already evidence that some remote locking devices and some 'connected' devices are vulnerable to cyberattack. I do not know how much AV software is shared among different systems or is at least similar. But faulty or outdated software which is insecure against attack can continue to be installed in computers and other devices, to the detriment and inconvenience of customers. As cybersecurity is essential both to safety and operational success and has to be compatible with the rest of an ADS, the scheme should include it, even if a separate regulator deals overall with cybersecurity.

3. Yes. Successful safe operation of AVs will depend very heavily on the range and quality of scenarios for which they are designed. Please see my answers to Questions 5, 8 and 18. The natural operator of my proposed national database of scenarios is the scheme regulator, for which powers would be necessary. In particular, the database should be subject to independent quality control because it will be essential for assessing whether an AV is to be classed as self-driving under the CAV Act 2018. Insurers should not be expected to pay without reimbursement for claims which could have been prevented by reference to a good database. These comments are made in the light of persistent overstatement and misstatement of the merits and capabilities of AVs. For example, some examples of Cruise Control were designed to accelerate as soon as a slow-moving vehicle in front changed lane and moved out of the way; they omitted to analyse the new next object in front, which in the case of stationary fire engines led to collisions.

Consultation Question 20 (Paragraph 10.100)

Should the authority administering the scheme to assure safety while automated vehicles are in use be kept separate from type approval authorities (as is already the case)? Alternatively, should both functions be combined in a single body?

[Respondents chose from the following options: single body; separate bodies; other.]

Separate bodies

There could be practical advantages in having a single body, but these are outweighed by the need to keep the main interests separate and intact. Also, time is needed for the scheme to assure safety in use to establish itself freely without being fitted into an existing structure.

Consultation Question 21 (Paragraph 10.101)

What formal mechanisms could be used to ensure that the regulator administering the scheme is open to external views (such as duties to consult or an advisory committee)?

I recommend a statutory advisory committee representing various interests and including independent specialists in fields other than narrowly in AVs with power to offer advice. The regulator to be under a duty to consult the advisory committee and to initiate consultation of interested parties and the public as appropriate; also a duty to respond to inputs from any source efficiently and transparently and to report on them as appropriate and also routinely.

CHAPTER 11: INVESTIGATING TRAFFIC INFRACTIONS AND COLLISIONS

Consultation Question 22 (Paragraph 11.24)

We provisionally propose that a statutory scheme to assure AVs in-use should:

- (1) investigate safety-related traffic infractions (such as exceeding the speed limit; running red lights; or careless or dangerous driving);
- (2) investigate other traffic infractions, including those subject to penalty charge notices;
- (3) if fault lies with the ADSE, apply a flexible range of regulatory sanctions.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

1. The scheme should also be entitled to receive a report from the police if they have investigated an incident.
2. Penalty charge notices can arise from failure to comply with guidance in The Highway Code as opposed to breaches of law. This supports my suggestion in answer to Question 26 that 'road rules' should include the guidance in the Highway Code.

More generally, in my answer to Question 26, I draw attention to a feature of AVs which permits users to not comply with guidance in the Highway Code. This is the facility to set a following distance at 1 second behind the vehicle in front, rather than the 2 seconds in the guidance.

Consultation Question 23 (Paragraph 11.53)

We provisionally propose that the regulator which assures the safety of AVs in-use should have powers to impose the following sanctions on ADSEs:

- (1) informal and formal warnings;
- (2) fines;
- (3) redress orders;
- (4) compliance orders;
- (5) suspension of authorisation;
- (6) withdrawal of authorisation; and
- (7) recommendation of attendance at a restorative conference.

Do you agree?

[Respondents chose from the following options: informal and formal warnings; fines; redress orders; compliance orders; suspension of authorisation; withdrawal of authorisation; recommendation of attendance at a restorative conference.]

Informal and formal warnings, Fines, Redress orders, Compliance orders, Suspension of authorisation, Withdrawal of authorisation, Recommendation of attendance at a restorative conference

I am in favour of providing regulators with all the powers they may need, even if some of them turn out to be rarely used. Regulators without sufficient powers can be rendered impotent and it seems to be very difficult to provide them with an additional power even if the need seems obvious.

Consultation Question 24 (Paragraph 11.54)

We provisionally propose that the legislation should provide the regulator with discretion over:

- (1) the amount of any monetary penalty; and
- (2) the steps which should be taken to prevent re-occurrence of a breach.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Very reasonable.

Consultation Question 25 (Paragraph 11.69)

We provisionally propose that a specialist incident investigation unit should be established:

- (1) to analyse data on collisions involving automated vehicles;
- (2) to investigate the most serious, complex or high-profile collisions; and
- (3) to make recommendations to improve safety without allocating blame.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

2. It should rely on the existing police expertise, powers and availability for establishing the sequence of events from the traces on the ground especially if manual vehicles were also involved.

3. There is an ambiguity. Even if recommendations were to be made without allocating blame, would the body of the reports provide evidence suitable for insurers to assess any blame, possibly among parties other than the AV or AVs involved in a collision? It could be difficult for insurers if they had to rely solely on reports by the police.

Consultation Question 26 (Paragraph 11.82)

We provisionally propose that the UK Government should establish a forum for collaboration on the application of road rules to self-driving vehicles.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Such a forum is urgently needed. But as the proposal is a statement of intent the meaning of the words 'road rules' should be made explicit. I have in mind a common opinion of developers and some others that only the parts of the Highway Code which are laws are relevant and that guidance is not relevant. However, the guidance is also vital to safety, and non-compliance with guidance can lead to fines, points on driving licences and attribution of legal liability. I also note the implication in Question 22 that the scheme to assure safety in use will be concerned with guidance and not just laws.

Consultation Question 27 (Paragraph 11.83)

We welcome views on:

- (1) the issues the forum should consider;
- (2) the composition of the forum; and
- (3) its processes for public engagement.

1.

CONFLICTS BETWEEN TECHNOLOGY AND GUIDANCE IN THE HIGHWAY CODE

I will provide two examples of conflicts between technology and guidance in the Highway Code. The first example is a conflict which already exists. The second example could exist already, and it is a conflict involving a possible random effect of current technology which some people assume cannot arise until AVs are controlled via 5G networks.

Both examples, as it happens, concern Adaptive Cruise Control (ACC). ACC (currently a driver-assistance technology) enables the driver to set the distance at which the vehicle with ACC will follow the vehicle in front. The distance can be set by the driver at 1 second upwards. An expert has informed me that many such drivers prefer a small gap in order to deter other vehicles from cutting in. A gap of 1 second may now be taken as the normal by many people. More generally, some people claim it is public spirited to drive close to the vehicle in front in order to fit more vehicles onto the roads. The Highway Code recommends a minimum gap of 2 seconds.

It is, of course, claimed that ACC combined with Automated Emergency Braking (AEB) can react more quickly and consistently than a human driver. But I not seen any details concerning road and weather conditions, slope of the road (e.g. downhill), distribution of load, etc., which can affect the stopping distance and which the ACC and AEB ought to take into account. A human can take these into account.

Example 1.

My first example cites, as a case study, the current trial by Highways England of specialist cameras on the M1 motorway to detect cases of tailgating. (The Times, Saturday 19th December 2020, p. 6 'Cameras fight growing danger of tailgating') The illustration in this article include the minimum 2-second gap.

The article in The Times states that during the trial of the cameras offenders are being sent warning letters. Official use of such cameras to detect tailgating (with fines etc. being imposed) has not yet been applied for.

It will be interesting to see the reaction if a driver using ACC set at 1 second receives a warning letter. Even more interesting, and relevant to the subject of this consultation, would be the reaction of someone subjected to a fine of £1,000 and 3 points on their licence because the setting on their ACC caused a collision.

It seems perverse that official approval of the ACC feature can conflict with the guidance in the Highway Code. If, as seems probable, the same technology becomes part of a fully self-driving ADS, would official approval of times down to 1 second relieve the user of all responsibility? If the manufacturer takes responsibility, are insurers expected to acquiesce in this deviation from the official guidance and not seek reimbursement for resulting claims?

The Commissions may wish to ask Highways England if they have any preliminary results involving ACCs from their trial.

Example 2.

My second example concerns a possible random occurrence in which several vehicles with ACC form a continuous line with no other vehicles in between. They could be following a vehicle which is moving more slowly than their preset speed of, say, 70 mph. If they all have a following distance of 1 second, it will not be possible for other vehicles to join their lane or move through it to gain access to another lane. It will not necessarily be obvious from in front or behind that they form a 'convoy'.

When such convoys were first discussed with reference mainly to goods vehicles, the needs of other road users were going to be taken into account. These convoys were going to be organised, and using networks based on 5G.

The random creation of convoys which ignore the needs of other road users was not intended to happen. The current permitted specification of ACC is the main cause of the problem which I highlight here. It is in conflict with the guidance in the Highway Code. And this example of inconsiderate driving may exist even if a 1-second gap is actually safe for the vehicles with ACC.

Conclusion.

If international agreements refer only to statutes or laws, the UK should seek an exemption in order to include the guidance in the Highway Code. The guidance does provide for penalties and legal liabilities, and compliance with it is not freely optional.

INTERACTIONS BETWEEN AVs AND OTHER VEHICLES AND PEDESTRIANS

AVs are unlikely to behave identically to ordinary vehicles. People will need to know what to expect of them, even if they do not use them personally.

CONNECTIVITY AND PEOPLE

The introduction of 5G and related technologies is eagerly awaited in some quarters. One scenario to bear in mind is that AVs and manual vehicles may become incompatible with each other, not least because human drivers and the ADSs will have completely different appreciations of the environment.

2.

A useful nucleus might consist of a lawyer, an engineer and a communications specialist. Beyond that up to around 20 individuals representing a range of interests (including sections of the community).

3.

Its own website with invitations to contribute. Public requests via the media for contributions on named topics. Citizen forums. It should liaise with the national database of scenarios (see my suggestions at Questions 5, 8, 18 and 19).

CHAPTER 12: THE USER-IN-CHARGE

Consultation Question 28 (Paragraph 12.24)

We provisionally propose that that the user-in-charge:

(1) should be defined as an individual in position to operate the controls of a vehicle while an ADS is engaged and who is either in the vehicle or in direct sight of the vehicle; and

(2) is not a driver while the ADS is engaged, and would not be liable for any criminal offence or civil penalty (such as a parking ticket) which arises out of dynamic driving.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Consultation Question 29 (Paragraph 12.37)

We provisionally propose that following the end of the transition demand period:

(1) the user-in-charge should re-acquire the legal obligations of a driver, whether or not they have taken control of the vehicle; and

(2) if, following a failure to respond to a transition demand, the vehicle stops in a manner which constitutes a criminal offence, the user-in-charge should be considered a driver and should therefore be liable for that offence.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Consultation Question 30 (Paragraph 12.45)

We seek views on whether a person with a provisional licence should be allowed to act as a user-in-charge, if accompanied by an approved driving instructor in a vehicle with dual controls.

Much of the awareness expected or required of the user-in-charge is derived from conventional driving. It would not be acceptable for someone with little or no driving experience to go engage an ADS. Who can predict what situation may give rise to a

transition demand? It can take up to 60 seconds for an experienced user-in-charge to fully appreciate the environment after a transition demand. An approved instructor in a car with dual controls may not be able to take over full control quickly.

The change to the law in 2018, allowing drivers with provisional licences onto motorways if accompanied by an approved instructor, extended the range of public roads available to learner drivers. An extension from ordinary vehicles to ADSs would be a much bigger change.

Things can happen much more quickly on motorways. I would not want a learner driver to engage an ADS on a motorway even if accompanied by an approved instructor and with dual controls.

On ordinary roads I would not object to a person with a provisional licence engaging an ADS if accompanied as described.

The question did not raise this particular point, but it is worth emphasising that the content of the conventional driving test should not be reduced. If an official test were to be provided for operating with an ADS this should be in addition to passing the ordinary driving test.

Consultation Question 31 (Paragraph 12.53)

We provisionally propose that legislation should create new offences of:

- (1) using an automated vehicle as an unfit or unqualified user-in-charge; and
- (2) causing or permitting the use of an automated vehicle by an unfit or unqualified user-in-charge.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Consultation Question 32 (Paragraph 12.59)

We provisionally propose that persons carried without a user-in-charge should be guilty of a criminal offence.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

But see my answer to Question 33, concerning a diligent but unsuccessful attempt to establish the true position.

Consultation Question 33 (Paragraph 12.60)

We seek views on whether the new proposed offence of being carried without a user in-charge should only apply if the person:

- (1) knew that the vehicle did not have a user-in-charge; and
- (2) knew or ought to have known that a user-in-charge was required.

If, for example, a blind person has tried to discover whether there was a user-in-charge, incorrect information may have been given that there was one. First, I do not consider that (s)he should be guilty of the offence. Second, I do not consider that (s)he has acted with contributory negligence. Third, the person(s) who gave the wrong information should be guilty of contributory negligence for any injury or damage to the blind person.

Consultation Question 34 (Paragraph 12.66)

We provisionally propose that a user-in-charge who takes over control of the vehicle:

- (1) should be considered a driver; but
- (2) should have a specific defence to a criminal offence if, given the actions of the ADS, a competent and careful driver could not have avoided the offence.

Do you agree? If not, we welcome views on alternative legal tests.

[Respondents chose from the following options: yes; no; other.]

Yes

The crucial words for me in the question are "a competent and careful driver". Any lower standard would not be acceptable.

Consultation Question 35 (Paragraph 12.94)

We provisionally propose that the user-in-charge should be liable for criminal offences which do not arise from the dynamic driving task, including those related to:

- (1) insurance;
- (2) maintaining the vehicle in a roadworthy condition (including installing safety critical software updates);
- (3) parking;
- (4) duties following accidents to provide information and report accidents to the police; and
- (5) ensuring child passengers wear seatbelts.

Do you agree?

[Respondents chose from the following options: yes, the user-in-charge should be liable for all offences not arising from the dynamic driving task; the user-in-charge should be liable for some but not all of the offences listed; no, the user-in-charge should not be liable for any offences; other.]

Yes, the user-in-charge should be liable for all offences not arising from the dynamic driving task

Complying with directions from the police or traffic officers is not mentioned in this question. Is it assumed at CP3, 12.92 and 93 that technology exists that will allow the constable or traffic officer safely to bring the AV to a stop?

Consultation Question 36 (Paragraph 12.95)

We provisionally propose that the legislation should include a regulation-making power to clarify those roadworthiness failings which are (and those which are not) the responsibility of the user-in-charge.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

This would be very practical and helpful.

CHAPTER 13: REMOTE OPERATION: NO USER-IN-CHARGE VEHICLES

Consultation Question 37 (Paragraph 13.67)

We provisionally propose that:

- (1) where an individual is exercising latitudinal and longitudinal control (steering and braking) over a vehicle remotely, that should not be regarded as a form of “self-driving”; and
- (2) where lateral and longitudinal control are exercised by an ADS, all other forms of remote operation should be regulated as “self-driving”.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

'Yes' in principle. But I am concerned that in the situations described at CP3, 13.59 the solution described at 13.60 may offer a form of words to identify responsibility but without tackling the immediate practical problem. For example, should a problem with the ADS or the connectivity allow the AV to continue its journey if the remote person is out of touch?

We welcome views on whether the current definition of when a vehicle “drives itself” under the Automated and Electric Vehicles Act 2018 should be amended to deal with some forms of remote operation which may involve a degree of “monitoring”.

I feel an amendment is probably needed, but beyond that I am unable make constructive suggestions.

Consultation Question 38 (Paragraph 13.86)

We provisionally propose that:

(4) the regulation of self-driving vehicles should distinguish between an Automated Driving System Entity (which vouches for the design of the system) and an operator (responsible for the operation of individual vehicles);

(5) all vehicles authorised for use on roads or other public places with no user-in charge should either:

(a) be operated by a licensed operator; or

(b) be covered by a contract with a licensed operator for supervision and maintenance services;

(6) it should be a criminal offence to use a NUIC vehicle on a road or other public place unless it is operated by a licensed operator or is covered by a contract with a licensed operator for supervision and maintenance services.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Essential.

Consultation Question 39 (Paragraph 13.92)

We welcome views on whether NUIC operators should be required to demonstrate professional competence through a safety management system, as set out in a safety case.

A HARPS operator will, in my view, continue to need the current management skills of a transport manager even if they become overlaid with new technical skills, as it is providing a public service with lots of face-to-face contact with the public.

In other circumstances a safety management system as set out in a safety case could be appropriate.

Consultation Question 40 (Paragraph 13.108)

We provisionally propose that, irrespective of the nature of the vehicle, a licensed operator should be under a duty to:

(1) supervise the vehicle;

(2) maintain the vehicle;

(3) insure the vehicle;

(4) install safety-critical updates and maintain cybersecurity; and

(5) report accidents and untoward events (as defined by the regulator).

Do you agree?

[Respondents chose from the following options: yes, a licensed operator should be subject to all the listed duties; a licensed operator should be subject to some but not all of the listed duties; no, a licensed operator should not be subject to any of the listed duties; other.]

Yes, a licensed operator should be subject to all the listed duties

Consultation Question 41 (Paragraph 13.109)

We provisionally propose that legislation should include a regulation-making power by which some or all of these duties could be transferred to the registered keeper or owner, if it was shown that it was appropriate to do so.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Consultation Question 42 (Paragraph 13.116)

We welcome views on how accessibility standards for Highly Automated Road Passenger Services (HARPS) might be developed.

It would be important to seek opinions from a wide range of disabled and older persons, including those who currently do not use buses or other forms of public transport.

We provisionally propose that:

(1) an accessibility advisory panel should be formed to include:

(a) the Equalities and Human Rights Commission; and

(b) representative groups for disabled and older persons;

(2) the Secretary of State should be obliged to consult with the accessibility advisory panel prior to setting any national minimum standards on HARPS;

(3) there should be a duty to periodically re-consult the accessibility advisory panel at set intervals to ensure requirements keep pace with developing evidence of technical feasibility and changing needs.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

We welcome views on what the set interval for periodically re-consulting the accessibility advisory panel should be.

I would suggest a set interval of 3 months for the re-consultations.

Consultation Question 43 (Paragraph 13.133)

We welcome views on who should administer the operator licensing scheme.

I favour collaborative structures in this matter. I would place some staff from the AV safety assurance scheme with the Traffic Commissioners for a limited period, perhaps six months, to establish a provisional arrangement to explore whether collaboration between the two bodies is viable. I would hope that the Traffic Commissioners could continue to be the 'face' of the collaborative structure (to benefit operators); and I would hope that the AV safety assurance scheme would continue to be sufficiently independent to specialise in its own field, while working seamlessly with the Traffic Commissioners in matter which concern the operators.

CHAPTER 14: CRIMINAL OFFENCES BY ADSES AND THEIR SENIOR MANAGERS

Consultation Question 44 (Paragraph 14.107)

We provisionally propose that:

- (1) it should be a criminal offence for an ADSE to omit safety-relevant information or include misleading information when putting a vehicle forward for classification as self-driving or responding to information requests from the regulator;
- (2) the offence should apply to senior managers (where it was attributable to the manager's consent, connivance or neglect);
- (3) the offence should not apply to more junior employees;
- (4) the offence should carry a higher sentence if it is associated with a death or serious injury;
- (5) the offence should be prosecuted in England and Wales by either the regulator or the Crown Prosecution Service and in Scotland by the Procurator Fiscal.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Item 2 might need careful drafting. A current working definition of a senior manager/director/etc seems sometimes to be someone who is too senior to be responsible for anything specific.

Consultation Question 45 (Paragraph 14.108)

We seek views on the following proposed offences.

Offence A: non-disclosure and misleading information in the safety case

When putting forward a vehicle for classification as self-driving, it would be a criminal offence for the ADSE to

- (1) fail to provide information to the regulator; or
- (2) provide information to the regulator that is false or misleading in a material particular where that information is relevant to the evaluation of the safety of the ADS or the vehicle.

The ADSE would have a defence if it could show that it took reasonable precautions and exercised all due diligence to prevent the wrongdoing.

The penalty would be an unlimited fine.

Offence B: non-disclosure and misleading information in responding to requests

When a regulator requests specific information from an ADSE (whether before or after deployment), it would be a criminal offence for the ADSE to

- (1) fail to provide information to the regulator; or
- (2) provide information to the regulator that is false or misleading in a material particular

where that information is relevant to the evaluation of the safety of the ADS or the vehicle.

The ADSE would have a defence if it could show that it took reasonable precautions and exercised all due diligence to prevent the wrongdoing.

The penalty would be an unlimited fine.

Offence C: offences by senior management

Where offence A and/or offence B committed by a body corporate is proved—

- (3) to have been committed with the consent or connivance of an officer of the body corporate; or
- (4) to be attributable to neglect on the part of an officer of the body corporate, then that officer is guilty of the offence.

An officer includes any director, manager, secretary or other similar officer or any person who was purporting to act in any such capacity.

We see this as equivalent to offences under the Human Medicines Regulations 2012 and General Product Safety Regulations 2005, which carry a penalty of a fine and/or a maximum two years' imprisonment.

Offence D: aggravated offences in the event of death or serious injury following non-disclosure or provision of misleading information to the AV safety regulator

Where a corporation or person commits Offences A to C, that offence is aggravated where the misrepresentation or non-disclosure:

- (5) related to an increased risk of a type of adverse incident; and
- (6) an adverse incident of that type occurred; and
- (7) the adverse incident caused a death or serious injury.

We see this as equivalent to the offence of causing death by dangerous driving, which carries a penalty of an unlimited fine and/or a maximum of 14 years' imprisonment.

In Offences A and B, the term 'due diligence' may already have a specific meaning in law. In the field of AVs the 'state of the art' defence appears to be quite popular, especially when a developer bases a comparison on 'the average driver' or just 'the human driver' (both of which are quite low standards). I hope that 'due diligence' includes evidence of thorough research to show that any deficiencies and errors really were unknown and unknowable. If it does not, perhaps the wording should be amended to deal with defences based on state of the art.

Consultation Question 46 (Paragraph 14.109)

We welcome views on whether an ADSE should be under a duty to present information in a clear and accessible form, in which safety-critical information is indexed and signposted.

This is essential and entirely reasonable.

CHAPTER 15: NEW WRONGFUL INTERFERENCE OFFENCES

Consultation Question 47 (Paragraph 15.10)

We provisionally propose that legislative amendment should clarify that the tampering offence in section 25 of the Road Traffic Act 1988 applies to anything that is physically part of a vehicle and any software installed within it.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Essential.

Consultation Question 48 (Paragraph 15.11)

We welcome views on whether the tampering offence should apply to external infrastructure required for the operation of the AV.

'External infrastructure' is a good description - everything from sensors on posts to traffic signs, cables, and even the servers for all the computing.

Consultation Question 49 (Paragraph 15.53)

We provisionally propose that there should be an aggravated offence of wrongfully interfering with an AV, the road, or traffic equipment contrary to section 22A of the Road Traffic Act 1988, where the interference results in an AV causing death or serious injury, in:

(1) England and Wales; and

(2) Scotland.

Do you agree?

[Respondents chose from the following options: yes, in both England and Wales and Scotland; in neither jurisdiction.]

Yes, in both England and Wales and Scotland

Does this include interference by malware and hacking?

Consultation Question 50 (Paragraph 15.55)

We provisionally propose that the appropriate mental element for the aggravated offence is intent to interfere with a vehicle, the road or traffic equipment.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Does this include interference with software?

Consultation Question 51 (Paragraph 15.62)

We seek views on whether an approved work defence for repair or maintenance operations authorised by a vehicle manufacturer or Automated Driving System Entity is desirable.

CP3, 15.58, concerns the installation of software intended to improve the functioning of some aspect of the vehicle but which was not absolutely necessary. What would be the position if this software modified something other than the ADS but affected it incidentally? At the purely practical level, 'lawful authority' and 'reasonable cause' seem irrelevant for avoiding undesirable unintended consequences, whereas approval of the work by the vehicle manufacturer or the ADSE seems essential. This extends the scope for requiring approval of alterations beyond the ADS itself to anything which may affect the performance of the vehicle.

For entirely practical reasons of safety and good operation, there is a strong case for approval by the manufacturer or the ADSE, independently of 'lawful authority' and 'reasonable cause' and the current lack of certainty (CP3, 15.57).

CHAPTER 16: CIVIL LIABILITY

Consultation Question 52 (Paragraph 16.24)

We provisionally propose that the way the Automated and Electric Vehicles Act 2018 deals with contributory negligence and causation is:

- (1) adequate at this stage; and
- (2) should be reviewed by the UK Government in the light of practical experience.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Other

Yes to contributory negligence.

No to causation.

The luxury of waiting for the deployment of AVs (CP3, 16.22) is not available to insurers, who will be expected to be ready to pay claims as soon as the first registration is made under the AEV Act 2018.

Is it really impossible for lawyers to produce provisional guidance and examples in advance? Can nothing be learned from the growing experience of driver-assistance systems?

The test of what the competent and careful driver might or should have done is a starting point. For example, would such a driver have seen the cyclist (CP3, 16.18) several seconds before the ADS could detect them and thus avoid any accident? Was swerving and hitting a car the only option, or might sudden braking have been the best option?

Does this question imply that the competent and careful driver may be abandoned as the standard for ADSs? Regardless of the merits of AVs, I expect lawyers might have already opinions as to whether AVs and human drivers should follow the same road rules when they share roads with each other. However, there is already deviation from the guidance in The Highway Code (as opposed to the laws) (see my answer to Question 27).

Consultation Question 53 (Paragraph 16.32)

We provisionally propose that measures should be put in place to compensate the victims of accidents caused by uninsured AVs.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Reasonable and proper.

Consultation Question 54 (Paragraph 16.47)

We provisionally propose that:

(1) product liability law should be reviewed to take account of the challenges of emerging technologies;

(2) any review should cover product liability as a whole, rather than be confined to automated vehicles;

it should not, therefore, form part of this project on automated vehicles.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

I would like to move away from the generic difficulties concerning software (CP3, 340-43) and consider the AV in a role as a consumer product: a car.

Does the AV behave like a conventional car driven by a competent and careful human driver? If it does not then it should be considered to be defective or not fit for purpose or incorrectly described. Does the insurer or the claimant need to know what was wrong with it technically?

A sale or a lease to a business is more complicated, but one difference from the consumer product is that some level of technical expertise or training may be available to cope with unpredictable effects. This is the case with much software used in business.

CHAPTER 17: ACCESS TO DATA

Consultation Question 55 (Paragraph 17.65)

We provisionally propose that:

(1) for a vehicle to be classified as self-driving, it needs to record the location as well as the time at which the ADS is activated and deactivated;

(2) the Government should work within the UNECE to ensure data storage systems for automated driving record these data; and

(3) any national system to approve an ADS should require these data to be collected, subject to safeguards.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

This is unavoidable if self-driving is to be implemented with fairness to all parties who may become involved with the AV.

Consultation Question 56 (Paragraph 17.71)

We provisionally propose that legislation should impose a duty on those controlling AV data to disclose data to insurers, where the data is necessary to decide claims fairly and accurately.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Essential.

Consultation Question 57 (Paragraph 17.81)

We provisionally propose that:

- (1) initially, DSSAD data from self-driving vehicles should be stored for three years; and
- (2) the issue should be reviewed in the light of experience.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Reasonable.

Consultation Question 58 (Paragraph 17.95)

We provisionally propose that:

(1) when an ADSE applies for categorisation of its vehicle types as self-driving, it should present the regulator with details on how data will be recorded, stored, accessed and protected;

(2) the regulator should only categorise a system as self-driving if it is satisfied that that the ADSE has systems to abide by its obligations under the GDPR.

Do you agree?

[Respondents chose from the following options: yes; no; other.]

Yes

Essential. But I would prefer a national or international code of practice to be available from the outset.