

Law Commission & Scottish Law Commission

Consultation Paper 3

A regulatory framework for automated vehicles

PACTS/TRL Response – Answers in dark red

Highlighted questions have not been answered

2. The definition of self-driving

RESPONDING TO EVENTS IN THE ABSENCE OF A TRANSITION DEMAND

Consultation Question 1.

2.35 *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?

Yes

Consultation Question 2.

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

Self-driving features should be designed to work for all people who can legally drive today, including those with hearing loss. The use of visual, audio, and haptic signals as part of the Human Machine Interface (HMI) design are commonly used features to assist drivers. Further, consideration must also be given to aftermarket driver assistance adaptations for drivers with physical impairments and their compatibility with ADS.

HOW SAFE IS SAFE ENOUGH?

Consultation Question 3.

2.65 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?

No.

To agree with the proposal that the Secretary of State, as informed by advice from a specialist regulator, should decide whether a vehicle is sufficiently safe to “safely drive itself” requires more detail regarding the approval process. Including:

- The definition of sufficiently safe to “safely drive itself”.
- The scope and terms of reference for a specialist regulator must satisfactorily ensure independence from government and industry alike and adhere to a Safe Systems approach.
- The terms of reference for the specialist regulator must provide a governance structure to facilitate appropriate working relationships, for example with the UK’s Department for Transport (DfT).
- A clear process for the adoption of international regulations (e.g. UN WG29) or other nations’ regulations through a form of mutual equivalence, and this must be dynamic and capable of responding quickly to changes as new regulations are established over time.
- The approval scheme must be robust and allow for reliable, repeatable and reproducible approval decisions ensuring the safety of operation of approved vehicles.
- The requirements need to be relevant and proportionate with regard to the necessary investment to achieve the safety outcome.

Consultation Question 4.

2.66 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.

None of the above are measurable in a way that could be used as a criterion to assess the safety of automated vehicles. A suggestion would be to seek to establish a predicted collision rate, for example one per X million miles or kilometres. This would need further clarification with respect to context because the injury-collision rate per mile travelled for human drivers is higher on rural roads and urban roads compared to motorways.

Safety of automated vehicles can be assessed using in-use safety monitoring. Initially we need to determine ‘desired behaviours’ (digital highway code) and monitor the ADS against these. We also need to identify collision precursors or ‘safety surrogates’. These are behaviours that are known to lead to collisions or we predict lead to collisions. Through monitoring and investigating these behaviours the safety of automated vehicles can be

continually approved. Through in-depth investigation, these desired behaviours and safety surrogates can be refined in line with good practice and lessons learned.

Consultation Question 5.

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

For the first generation of low volume production vehicles associated with a Licensed Fleet Operator, there must be significant testing off-road followed by iteratively more complex testing in the Operating Design Domain (ODD) before safety approval is given. This will require physical testing and can be supported by validated virtual testing. Test, test and test again to ensure reliable safe performance will be the approach.

AVs with a User-In-Charge are likely to be categorised as higher volume production vehicles and be based on, or resemble, the cars, vans, buses, and coaches that are on the road today. For these vehicles the testing requirements and associated regulations are likely to be established through UN WG29, the European Commission (Motor Vehicle Working Group and Automated Vehicle Working Group) and the UK' DfT. However, it is possible that new low production volume entrants will also play a role here too and these vehicles could require specialist testing if they are to be granted permission to be used on the road.

Increasingly it will be important to develop meaningful design indicators that predict potential conflicts and harmful collisions before they have the chance to occur. To produce AVs that are as safe as reasonably practicable will require a new and more agile continuous learning approach to vehicle approvals. Part of this will be based on using scenario databases for testing. Through continuous performance monitoring data will be captured to permit continuous safety and security improvement. All changes to the AV software and hardware must be fully tested before implementation to mitigate the risk of introducing undesirable and unintended consequences.

Finally, there is a strong case that the safety of AVs should not be a 'unique selling point', all good practice and standards must be shared in a timely fashion to make sure that no avoidable collisions occur. If one ADS provider knew how to avoid collisions and didn't share that knowledge and people were injured the public confidence and trust in all AVs would be damaged.

Consultation Question 6.

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

AV regulators should be mandated to follow a Safe System approach, ultimately aiming for zero road casualties. As part of developing standards and regulations, it must be necessary as part of the impact assessment to consider:

- Benefits considered: Monetary values of casualties prevented (fatal, serious, slight) by safety measures and material/property damage.
- Costs considered: Cost to vehicle manufacturers (OEMs) of fitment of safety measures to new vehicles (including software and hardware) and continuous vehicle performance monitoring.
- Equality duty: The safety and security benefits afforded by AVs must have the same outcome for all and not discriminate. The equity can initially be managed through the Safety Case, but over time should become part of an overarching set of regulation ethics principles. A regulation would not be fit for purpose if it did not specify a range of conditions that reflected all known pertinent scenarios (e.g. different scenarios where emergency braking must be applied) and worked for all people who would have exposure to the AV in that situation (e.g. identified all people regardless of their characteristics). Initially the focus should be to require ADS providers to:
 - Provide evidence that no road users are disadvantaged, for example, pertinent safety testing has been undertaken with all relevant road user (dependent on ODD).
 - Provide evidence that a specific safety measure is effective for all road users and does not discriminate, for example AV sensors must be able to reliably and repeatably identify all pedestrians (regardless of age, ethnicity, gender, stature, speed of movement etc.).
 - If a regulation or standard exists, provide evidence that no optimisation intended to pass it has occurred that could conceivably disadvantage certain road user groups or introduce additional risks not covered by the specific requirements. This should be initially managed through the Safety Case and associated risk assessments and over time should form a more integral part of a Safe System design approach.
- Treatment of uncertainty: Interval analysis and scenario analysis to ensure the regulations are relevant and will cost-effectively achieve the desired outcome.
- Results: Benefit-to-cost ratios (BCRs) and numbers of casualties prevented. All results must be made in comparison to the baseline scenario.
- Discounting of costs and benefits
 - A 'social discount rate' should be applied to reflect the fact that benefits and costs further ahead in the future are valued lower than present benefits and costs.
- Inflation of monetary values
- Sensitivity analysis
 - To quantify the range of uncertainty around the best estimate BCR values, sensitivity analysis techniques common in regulation cost-benefit evaluations must be applied (Bickel, et al., 2006a): Interval analysis and Scenario analysis - impact of additional safety measures on vehicle prices and sales numbers.

3. Safety assurance before deployment

METHODS FOR ASSESSING SAFETY PRE-DEPLOYMENT

Consultation Question 7.

3.11 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?

The key is to have a consistent approach. Lack of consistency between road authorities creates a barrier to testing in multiple locations and the concept of 'pop up autonomy'. The most appropriate safety assurance depends on the objective.

A Safety Case is a live document and the operational safety elements should be specific to a defined trial or service scope including test location, vehicles, use case and test objectives. If the objective of the review is to determine whether that specific trial and/or service is safe to proceed, a full review of the Safety Case may be appropriate. It is likely that this would need to be done by a team of experts including those with operational safety, systems safety, vehicle safety and cyber security expertise. The suite of BSi PAS standards can assist with this for operational safety and the ODD, but systems safety requirements are still largely undefined. It is also important to note that the review is only valid at a given point in time and for a specific trial or service – safety assurance throughout the trial or operation of the service is also important. If the trial or service changes (location, vehicle, test objectives) it cannot be assumed that the Safety Case is still sufficient. A review would need to be conducted for each trial or service.

A complimentary approach is to look at the processes used to develop a safety case, for example, the method for identifying hazards and evaluating risks, route assessments, driver training scope, safety monitoring, incident reporting and continuous improvement process. This would provide assurance the testing organisation has the appropriate management system and processes in place as well as appropriately competent people to develop a sufficient Safety Case. This could enable trialling organisations to self-certify for individual trials. The outcome from the review process could be valid for a defined period of time, in line with other safety management audits/ certification processes.

Consultation Question 8.

3.12 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.

Road user groups and specialists should be consulted. Some scenario databases are built around macro data (e.g. STATS19) rather than in-depth collision investigation study data (e.g. RAIDS), where the former does not provide enough detail to describe the events leading up to the collision or give any quantifiable data regarding the vehicle characteristics or performance during the impact. Ideally, collision precursor/ safety surrogate data should also be gathered through naturalistic driving or riding studies alongside real-world data collection from continuous vehicle monitoring of AVs.

STEP 1: A CHOICE OF INTERNATIONAL OR NATIONAL TYPE APPROVAL

Consultation Question 9.

3.17 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?

Yes

Establishing a national ADS approval scheme

Consultation Question 10.

3.22 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?

We agree in part.

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”).

The national ADS approval scheme must be explicitly linked to UN regulations where they exist under the UK’s commitment to the 1958 agreement. This means that if the UK has

signed up to a relevant UN regulation, it must, by definition, be part of the national ADS approval scheme.

Regarding manufacturers '*free choice to apply for approval under either the UNECE system of international type approvals or through the national scheme*', this should be further qualified.

At the time of writing, the only system of type approval that exists is exclusively at a European Union level (applies to 27 member states of the EU). A UN working party is developing an International Whole Vehicle Type Approval (I-WVTA) system at an UNECE level, where there are 51 contracting states (although the UK could now be the 52nd member?). However, there is no date for introduction agreed and if it came into force, it would be restricted to UN regulations only. EU type approval is comprised of EC Directives and UN regulations and would therefore always represent a higher level of minimum safety requirements. As part of a Safe System approach, where the primary goal is to prevent collisions, it would be counterintuitive to adopt approval (or certification) systems that do not represent the highest cost-effective standards.

There is also potential for a 'mutual equivalence regulation' approach, where other nations' standards are considered as equivalent to the GB national ADS approval scheme and vice versa. However, this needs to be treated carefully, especially with regard to effectiveness and equity, as other nations may have different exposure based on their road types, road user characteristics, mix of vehicles and rules of the road, which will directly influence risk and collision typologies.

Finally, developers should be able to submit an ADS for national approval, even if they are not responsible for manufacturing the whole vehicle. This will require integration with the development of the regulations required for non-ADS aspects (e.g. braking, steering, occupant restraints etc.) for the GB Automated Vehicle Approval Scheme.

Consultation Question 11.

3.23 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?

Yes. The ADS should be approved for a defined ODD so misuse of the vehicle is minimised/ eliminated. Approval also needs to consider the 'continual approval' of the ADS as it learns and is updated.

Need to consider the competency of the person fitting the ADS and have evidence of ADS reliability, safety and functionality in each of the specified and approved vehicle platforms.

Approval process needs to consider how it will promote continuous improvement as lessons are learned and technology evolves.

Consultation Question 12.

3.24 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.

No comment

STEP 2: CATEGORISING A VEHICLE AS ABLE TO DRIVE ITSELF SAFELY

Consultation Question 13.

3.35 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?

What is the intention of the classification? The key question is whether there is sufficient evidence that a vehicle can self-drive without a user in charge (what is the reliance on network communications, latency requirements, supervision etc). Where there is a user in

charge, what measures are in place to ensure competency and appropriate attention required for the driving task.

Consultation Question 14.

- 3.36 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?

Agree. However, there remain significant practicable challenges with respect to the defining procedures and criteria for determining whether a vehicle is capable of self-driving. Including, but not limited to:

- Communications – uninterrupted, data transmission, latency, road network coverage
- Video feeds to the remote ‘supervisor’ – network connectivity, situational awareness, workload
- Appropriate role of a remote operator

Capability of ADS to ‘self-drive’ will need continual approval as the system updates, learns and dependencies (e.g. communications network, WiFi are also developed and updated).

Consultation Question 15.

3.37 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?

No comment

A POWER TO ALLOW SELF-DRIVING VEHICLES IN LIMITED NUMBERS

Consultation Question 16.

3.41 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.

Yes, but this must have strict governance and a compulsory monitoring regime.

4. Assuring safety in use

Consultation Question 17.

4.22 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?

Yes

Consultation Question 18.

- 4.23 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?

Yes

Consultation Question 19.

- 4.24 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) GB would be the type approval authority as vehicles sold in NI must conform to the EU's type approval requirements (this is more complicated than UK because of the nature of the Brexit trade and customs deal with the EU). There would be no barrier or issues granting the GB approval authorities the power to approve software updates too. However, it is important to caution against diversification because international harmonisation is likely to accelerate technology developments and lower costs due to scale of production. GB must not have lower safety and security standards than other world regions (see Q10) and instead should build on GB's R&D and automotive regulation expertise to set the standards.
- (2) Yes – cybersecurity must be included

- (3) It is likely that other powers will be needed, especially regarding access to continuous monitoring data and incident/collision in-vehicle data and the authority to instruct a Road Collision Investigation Branch to investigate where necessary (see Q25).

Institutional arrangements: one body or two?

Consultation Question 20.

- 4.30 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?

There are advantages and disadvantages for each approach and this should be fully evaluated in the wider policy context, including how the UK will actively implement a Safe System approach for all road transport (AVs, driven vehicles, cycles, pedestrians, scooter riders etc.). No road deaths or injuries should be tolerated as part of a modern mobility system and Vision Zero should inform the way forward. At the time of writing, GB does not have its own type approval authority and this represents the best opportunity to design a system that will simultaneously promote new technologies, assist the wider economy, provide more accessible and reliable transport for all, and deliver meaningful road safety benefits.

Consultation Question 21.

- 4.31 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)?

There should be an independent body that analyses in use safety data and investigates as appropriate. This must be integrated with collision investigation and fed back into the approval process.

A NEW SYSTEM OF REGULATORY SANCTIONS FOR BREACH OF TRAFFIC RULES

Consultation Question 22.

- 4.38 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?

Yes. In use monitoring needs to align with behavioural rules and identify anything that goes beyond these rules. Breaches need to be categorised and investigated – in the same way as

a collision would be investigated. Learning should be fed back into the development of rules, scenarios generated for validation and safety goals

The range of regulatory sanctions

Consultation Question 23.

4.42 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?

No comment

Consultation Question 24.

4.43 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?

No comment

COLLISION INVESTIGATION

Consultation Question 25.

4.48 We provisionally propose that a specialist collision 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?

Yes. However, this should be linked with investigating unsafe behaviours identified through in use safety monitoring. The depth of investigation should be proportionate to the potential level of harm rather than the actual severity of the incident. Through the monitoring of behaviour and in-depth investigation of high severity incidents, a proactive approach to road safety can be adopted where interventions are implemented to prevent

collisions before they occur. Learnings from investigations must feed into software development, safety goals, scenarios for validation and the behaviour rules.

ADAPTING ROAD RULES

Consultation Question 26.

4.53 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?

Yes

Consultation Question 27.

4.54 We welcome views on:

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

Behaviour rules have started to be developed by software developers – where possible this existing understanding should be built upon rather than starting from the beginning. There needs to be established rules and a process for adapting and amending these to reflect developments and learning. In use safety monitoring and collision investigation should feed into the review of ‘behaviours’ to ensure they reflect good practice and will promote (and drive) continuous improvement. Acceptable ADS behaviours will vary between regions and road types and the mix of traffic on the roads (including manual vehicles and VRUs). The forum will need representation from different regions as well as different types of road user.

5. Responsibilities of the user-in-charge

THE CONCEPT OF THE USER-IN-CHARGE

Consultation Question 28.

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

- (1) should be defined as an individual in a 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?

Yes

FAILING TO RESPOND TO A TRANSITION DEMAND

Consultation Question 29.

- 5.9 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?

Broadly this is a sound suggestion. However, there are a range of potential scenarios that would need to be clearly defined for this to work in practice.

CRIMINAL LIABILITY FOR BEING UNQUALIFIED OR UNFIT TO DRIVE

Consultation Question 30.

- 5.14 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.

This raises the important question of driver training and if a holder of a provisional licence is not allowed to act as a user-in-charge, when and how would they learn how to use the system? The next question which naturally follows is, do current driver license holders need to take further training and/or additional testing to act as a user-in-charge? Does this question have different answers for different license types? For example, should coach and HGV drivers be required to undertake training and examination, but car drivers not?

Currently provisional licence holders are permitted to drive vehicles with advanced driver assistance features, and it is logical that as these systems become more automated that they should learn how to use these too whilst being supervised.

Causing or permitting

Consultation Question 31.

- 5.17 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?

No comment

A NEW OFFENCE: BEING CARRIED WITHOUT A USER-IN-CHARGE

Consultation Question 32.

- 5.21 We provisionally propose that persons carried without a user-in-charge should be guilty of a criminal offence. Do you agree?

Yes

Consultation Question 33.

5.22 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.

No comment

CRIMINAL LIABILITY FOLLOWING HANDOVER

Consultation Question 34.

5.27 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.

Yes

OFFENCES THAT DO NOT ARISE FROM THE DYNAMIC DRIVING TASK

Consultation Question 35.

5.32 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?

Yes

Consultation Question 36.

5.33 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?

Yes

6. Remote operation: no user-in-charge vehicles

THE DIFFERENT MEANINGS OF “REMOTE OPERATION”

Consultation Question 37.

6.5 We provisionally propose that:

- (1) where an individual is exercising lateral 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?

Yes, although this assumes that remote operation (where there is remote control over the lateral and longitudinal position of the vehicle) is ever appropriate. More evidence is required with regard to the efficacy of remote control and its actual safety outcome.

6.6 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”.

Yes - all AVs must have continuous monitoring and feedback

THE CHALLENGE OF REMOTE OPERATION

Consultation Question 38.

6.15 We provisionally propose that:

- (1) 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);
- (2) 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;
- (3) 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?

Yes, with the caveat that the licensing process for the licensed operator must be sufficiently robust to ensure safety and security. More research is required to ensure the desired outcome will be achieved.

Consultation Question 39.

6.18 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.

Yes. The key here is not just having a *written* safety management system, but an *implemented* safety management system and positive safety culture where safety is prioritised and embedded in all work activities.

Operator duties: Tier 1

Consultation Question 40.

6.21 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?

Yes. Also, a requirement to monitor and share in use data as required. All safety critical learnings should also be shared.

Consultation Question 41.

6.22 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?

Yes, but only requirements that are not safety critical and do not require a level of technical competency beyond that can be reasonably expected based on training and licensing requirements.

Operator duties: Tier 2

Consultation Question 42.

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

6.28 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?

Yes. Accessibility should also include 'ease of use' for all so representation of all potential users (and those who may interact with the vehicles) should be included to ensure systems are appropriately designed and implemented.

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

This should align with stages of vehicle development, feedback received, lessons learned from in-depth investigations (proactive and reactive consultation).

Who should administer the operator licensing scheme?

Consultation Question 43.

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

Administration is less critical than independence when reviewing competency of the operator and auditing the safety management system.

7. Criminal offences by ADSEs and their senior managers

Consultation Question 44.

7.19 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?

Yes

Consultation Question 45.

7.20 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

- (1) to have been committed with the consent or connivance of an officer of the body corporate; or
- (2) 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:

- (1) related to an increased risk of a type of adverse incident; and
- (2) an adverse incident of that type occurred; and
- (3) 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.

No comment

A duty to present information in a clear and accessible form

Consultation Question 46.

7.21 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.

Yes. Reporting of safety critical information should not be delayed either.

8. New wrongful interference offences

TAMPERING

Consultation Question 47.

8.5 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?

Yes

Consultation Question 48.

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

The tampering offence should apply to external infrastructure required for the operation of AVs, where the comparison would be tampering with signals on the railways.

CAUSING DEATH OR SERIOUS INJURY BY WRONGFUL INTERFERENCE

Consultation Question 49.

8.10 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?

Yes. 'Interfering' would need to be carefully defined. Another road user could intentionally interfere (e.g. stepping in front of it), unintentionally interfere with the ADS with (e.g. radar interference) or a user could interfere intentionally (sabotage) or unintentionally (vehicle or system modifications/ maintenance/ incorrect update).

Consultation Question 50.

8.11 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?

Yes

Consultation Question 51.

8.12 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.

No comment

9. Civil liability

CONTRIBUTORY NEGLIGENCE AND CAUSATION

Consultation Question 52.

9.5 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?

No comment

UNINSURED VEHICLES

Consultation Question 53.

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

Do you agree?

Yes

CLAIMS AGAINST PRODUCERS UNDER THE CONSUMER PROTECTION ACT 1987

Consultation Question 54.

9.13 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?

No comment

10. Access to data

CURRENT INITIATIVES

Consultation Question 55.

10.17 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?

Yes. Data required for in use safety monitoring and in-depth investigations should be identified initially and updated as lessons are learned. Requirements regarding collection and sharing should be mandated through regulation.

SHARING DATA WITH INSURERS

Consultation Question 56.

10.19 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?

Yes

RETAINING DATA

Consultation Question 57.

10.23 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?

Yes

PROTECTING PRIVACY

Consultation Question 58.

10.26 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?

Yes. How data is shared and with whom should also be presented.