

Safe use of Automated Lane Keeping System: Call for Evidence

Introduction

Thank you for your interest in our 'Automated Lane Keeping System' (ALKS) call for evidence. ALKS is traffic jam chauffeur technology designed to control the lateral and longitudinal movement of the vehicle for an extended period on motorways without further driver command. We are seeking views and evidence on the use of ALKS systems in Great Britain.

The closing date for the consultation is 27 October 2020.

Confidentiality and data protection

The Department for Transport (DfT) is consulting on the use of ALKS systems on GB motorways. ALKS is traffic jam chauffeur technology designed to control the lateral and longitudinal movement of the vehicle for an extended period without further driver command.

The call for evidence will close on 27 October 2020.

Your consultation response and the processing of personal data that it entails is necessary for the exercise of our functions as a government department. Any information you provide that allows individual people to be identified, including yourself, will be protected by data protection law and DfT will be the controller for this information.

[DfT's privacy policy](#) has more information about your rights in relation to your personal data, how to complain and how to contact the Data Protection Officer.

In this consultation we're asking for:

- your name and email address, in case we need to ask you follow-up questions about your responses (you do not have to give us this personal information, but if you do provide it, we will use it only for the purpose of asking follow-up questions)
- whether you are representing an organisation and, if so, the name of that organisation, for identification, the location of that organisation plus the nature of the work of that organisation in order to understand how your work relates to vehicle Automated Lane Keeping Systems

Additionally as an individual we are asking the country you live in to better understand the concerns and issues for each area.

We will not use your name or other personal details that could identify you when we report the results of the consultation. Your information will be kept securely and destroyed within 12 months after the closing date. Any information provided through the online questionnaire will be moved to our internal systems within 2 months of the end date.

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Your details

1. Your (used for contact only): Andrew Tregoning (andrew.tregoning@advocates.org.uk)

2. Are you responding: *

on behalf of an organisation? (Go to Individual details)

Organisation details

3. Your organisations name is?

Faculty of Advocates

4. Your organisations work is?

Academics

Vehicle manufacturer

Disability groups

Emergency services and police

Legal

Local government

Highway authorities

Local representative groups

Public sector

Research, consultancy and professional organisations

Safety and road user groups

Insurance

Component supplier or technology developer

Vehicle operator

Another area:

5. Your organisation is in: [After responding go to Automated Lane Keeping System call for evidence]

England

Wales

Scotland

Northern Ireland

another country:

Individual details

6. You live in:

England

Wales

Scotland

Northern Ireland

another country:

Automated Lane Keeping System call for evidence

The Automated Lane Keeping System (ALKS) is traffic jam chauffeur technology designed to control the lateral and longitudinal movement of the vehicle for an extended period without further driver command. At such times, the system is in primary control of the vehicle, and performs the driving task instead of the driver, at low speeds on motorways.

We are consulting on the use of ALKS systems on GB motorways, including:

- an overview of ALKS
- ensuring the safe use of ALKS
- questions around fair delegation and residual responsibility
- questions around the performance of other activities
- the use of ALKS up to 70mph

Our consultation questions should be answered after reading the full call for evidence document.

Data storage

The regulation requires that ALKS vehicles are equipped with a Data Storage System for Automated Driving (DSSAD). This will enable relevant authorities to inspect the status of the vehicle to assist in reviewing road traffic offences. The DSSAD is required to record the following information with a date and timestamp:

- activation of ALKS

- deactivation of ALKS along with the cause
- transition demand issued by ALKS along with the cause
- reduction or suppression of driver input
- start of emergency manoeuvre
- end of emergency manoeuvre
- Event Data Recorder trigger input
- involved in a detected collision
- Minimum Risk Manoeuvre engaged by the system
- Severe ALKS failure
- Severe vehicle failure.

Data availability is subject to the requirements of national law.

The police have the powers to access this data under [Section 19 of the Police & Criminal Evidence Act 1984](#) for incident investigation plus seize evidence from the vehicle.

7. Do you foresee any legal barriers to the police accessing data for incident investigation?

- Yes
 No (Go to Driver education)
 Don't know? (Go to Driver education)

Barriers

8. What, in your opinion, are those barriers?

It is noted that this question addresses only police powers in the context of accident investigations or potential criminal proceedings. It should, of course, be appreciated that the data stored in the DASSAD may also be important in the context of potential civil claims; for example,

in relation to personal injuries actions, and perhaps in claims for minor property damage arising from a traffic accident. In such cases there might, or might not, have been police involvement. Thus, it will be seen that there are two distinct sets of issues.

So far as police involvement is concerned, the legislation cited does not apply to Scotland. In Scotland, authority for police to seize property or access data is obtained by a warrant under common law. This process may take time giving rise to the question as to whether vehicle data can be erased by the driver immediately. There may need to be new statutory powers in Scotland, specifically relating to DSSADs to allow police to seize data without the need for a warrant, where they have reasonable cause to investigate the vehicle's data system. These statutory powers could be similar to the stop and search provisions under the Misuse of Drugs Act.

The proposed ALKS regulation requires that any ALKS-equipped vehicle should be fitted with a Data Storage System for Automated Driving ("DSSAD") which meets certain requirements specified in the regulation. The regulation states that DSSAD data "shall be available subject to requirements of national and regional law".

It is likely that any ALKS-equipped vehicle will also monitor, record and store significant amounts of data outwith the minimum specifications for the DSSAD. For instance, video data from in-vehicle cameras. Whilst the specification of DSSAD does not limit the scope of data recorded in the DSSAD, it seems likely that most, or many vehicles, will store this additional data outwith the regulation-compliant DSSAD. Most modern vehicles already record data in Journey Data Recorders ("JDRs"), Event Data Recorders ("EDRs") or Video Event Data Recorders ("VEDRs"). Generally, JDRs record parameters at a relatively low frequency but over an extended period of time. EDRs record parameters at a much higher frequency allowing a dynamic recreation of a collision or other incident but only record a short period of time before or after a specific event. As the name suggests, VEDR also record video, and sometimes audio, from vehicle cameras.

Some or all data recorded by vehicles may well be considered proprietary or commercially sensitive by vehicle manufacturers. Other data may be governed by explicit or implicit agreements between a vehicle manufacturer and the vehicle owner. Data may also be potentially incriminatory, prejudicial or otherwise highly-sensitive (for instance, if in-car video shows a driver committing a road traffic offence or records the instant and immediate aftermath of a collision in which the driver is killed).

Whilst the police have powers to compel people and organisations to hand over material for the purposes of investigating an offence, this may not cover all incidents involving ALKS-equipped vehicles which require investigation. For instance, it may be desirable for any UK or international body with involvement in the regulation or safety of ALKS to have access to incident data when reviewing the effectiveness of regulations or the compliance with regulations of individual manufacturers or systems.

Equally, vehicle data may be relevant to investigations related to establishing civil liability. Insurers are liable for any damage resulting from an accident when an automated vehicle is driving itself. However, any other party who was also liable for the damage also owes a liability to the insurer. It can be expected that insurers will seek to recover from vehicle manufacturers where they suspect that any damage was attributable to the performance of the ALKS.

In either case, it may be against a vehicle manufacturer's interests to release vehicle data to a regulator or a potential litigation opponent. There is some evidence that there is currently no clear and effective legal route to obtaining vehicle data for analysis. (See, for instance: <https://eandt.theiet.org/content/articles/2020/05/why-law-on-access-to-vehicle-black-box-data-needs-to-change/>.)

A clear legal framework should be created to ensure that vehicle data (not just data from the DSSAD in ALKS-equipped vehicles) is appropriately recorded, retained and made available (with

appropriate protections) for the investigation of incidents for the purposes of regulation, fatal accident enquiries or civil litigation.

Furthermore, in circumstances in which data is collected and stored outwith the minimum specifications of the DSSAD it is likely that at least some of the data may be personal data within the meaning of the GDPR. This gives rise to serious privacy issues, which were discussed in the European Parliament Study Technical Development and Implementation of Event Data Recording in the Road Safety Policy which can be found at:[https://www.europarl.europa.eu/RegData/etudes/STUD/2014/529071/IPOL_STU\(2014\)529071_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2014/529071/IPOL_STU(2014)529071_EN.pdf)

A full consideration of data protection issues does not appear to be comprehended within the current Consultation. We suggest that this is an aspect which will require to be addressed by means of a full data protection impact assessment.

Driver education

ALKS is designed to allow the driver to disengage from the driving task and therefore places requirements on drivers that are likely to be new to them. We are proposing that drivers are appropriately educated on:

- the abilities and limitations of the system
- their remaining responsibilities

9. How do you think the driver should be:

educated to understand the abilities and limitations of the system?

We have no comment to make on this issue.

informed to understand the abilities and limitations of the system?

We have no comment to make on this issue.

10. What role do you think manufacturers selling this system should play in providing this:

education? We have no comment to make on this issue.

information? We have no comment to make on this issue.

11. What role do you think government and its agencies should play in providing this:

education? We have no comment to make on this issue.

information? We have no comment to make on this issue.

Automated and Electric Vehicles Act 2018

The Secretary of State has to take a decision as to whether to list a vehicle as an automated vehicle under the [Automated and Electric Vehicle Act 2018](#) (AEVA). His decision is not discretionary, but will instead be a decision based on the facts and features of particular vehicles or vehicle types, when measured against the definition in AEVA. How the government interprets the terms "monitored" and "controlled", which are used in section 8 of AEVA, will inform the decisions to be made as to whether to list a vehicle or vehicle type. We wish to hear views on the proposed monitoring and control tests as the basis for deciding whether vehicle types that satisfy the ALKS regulation are within the definition of an automated vehicle under AEVA.

One option being considered is the proposal that the Secretary of State's list reference particular UNECE regulations, and that if the ALKS regulation was included then this would mean that any vehicle approved to the ALKS Regulation would be considered an AV.

12. Subject to the outcome of this call for evidence and subsequent consultation, would you have concerns about a scenario where any vehicle approved to the ALKS regulation would be automatically considered to be an automated vehicle under AEVA?

Yes

No (Go to Monitoring and control tests)

Don't know? (Go to Monitoring and control tests)

Automatic consideration

13. Why?

Monitoring and control tests

In order to decide if a vehicle meets the definition of automation under AEVA we have developed the monitoring and control tests.

The suggest criteria for these tests are:

- monitoring test:
 - an individual does not need to monitor the vehicle if the vehicle can safely achieve the

following without human monitoring:

- comply with relevant road traffic rules
- avoid collisions which a competent and careful driver could avoid
- treat other road users with reasonable consideration
- avoid putting itself in a position where it would be the cause of a collision
- recognise when it is operating outside of its operational design domain

- control test:
 - a vehicle is not being 'controlled' by an individual if the individual controls none of the following
 - longitudinal dynamics (speed, acceleration, braking, gear selection)
 - lateral dynamics (steering)

14. Do you agree that the criteria in the monitoring and control tests provide a reasonable framework for testing compliance with the AEVA definition of automation?

- Yes
 No
Don't know?

Why?

As to the monitoring test, it seems to us that the touchstone ought to be whether the system is capable of meeting the standard of driving legally to be expected of a human driver. Some modifications to the test might therefore require to be made. In particular it would be appropriate to insert 'exercising reasonable care' in factor 2 after 'careful driver'. Conversely, though we defer to scientific evidence on the point, the requirement of 'consideration' for other road users appears to us unhelpfully to anthropomorphize the system; and it seems particularly inapposite where the other road user is itself an automated system.

We agree as to the control test except that we would add, however obvious, that control should also extend to the ignition state of the engine.

15. Do you agree with our preliminary assessment of how ALKS meets the criteria set out in Annex A?

- Yes
 No
Don't know?

Why?

Annex A does not appear to be such an assessment: it appears to tabulate the draft test criteria against certain 'requirements' which are pre-filtered by their understood relevance to those requirements. In our view, as explained above, the former are imperfect. At any rate it would be preferable, leaving less room for error, for the assessment to be effected by setting out the

proposed and/or existing legal and technical requirements for systems systematically, rather than selectively, and then to indicate which criteria will ensure compliance with those requirements.

In the absence of such an approach it is all but impossible to say comprehensively whether the proposed approach is good or bad. But we note with concern that the 'requirements' are extremely detailed whereas the 'criteria' are extremely vague. If the intention is still for the detailed requirements to be met in full, then we therefore doubt whether the proposed exercise of mapping them to the criteria is a useful one.

Separately, we are concerned by the uncertain definition given to 'rules'. It seems to us, in line with our answers above and below, that the legal requirements as to the way in which a vehicle is driven are, with appropriate modifications, the statutory and common-law requirements of drivers. The Highway Code is neither, though it appears throughout the call for evidence to be referred to as a source of relevant 'rules'. It may be surprising if the manufacturer of a system were (perhaps even strictly) liable for its non-compliance with the Highway Code where a human driver would not be; if that is the intention it should be spelled out.

Compliance with road traffic rules: detection of enforcement authorities

The ALKS regulation requires vehicles to comply with all relevant road traffic rules for the dynamic driving task (DDT) in the country of operation. In England, Wales and Scotland, road traffic rules are compiled as part of the Highway Code and in Northern Ireland as part of the Highway Code for Northern Ireland.

Vehicle A is ALKS-capable. It is proceeding along its lane in traffic. The automated mode is engaged and so the driver is not paying attention to the environment outside the vehicle. A police officer in a nearby vehicle has noticed that Vehicle A has a faulty brake light. The police officer pulls in behind Vehicle A and switches on his flashing blue lights.

Whilst an ALKS-capable vehicle will not be able to pull over if requested by the police officer, it may be able to issue a transition demand to the driver. If listed under AEVA (as an automated vehicle), the driver would not be responsible for responding to the signalling of the police vehicle, only to a transition demand.

However, there is no explicit requirement in the ALKS Regulation for the vehicle to possess rear-facing sensors. The vehicle may therefore struggle to 'know' to make a transition demand if it is being requested to stop by the police.

ALKS must also be able to respond to other signals from Police / Driver and Vehicle Standards Agency / Traffic Officers, which may include flashing amber lights, flashing red lights, or flashing headlamps.

ALKS gives the driver 10 seconds to respond to a transition demand, after which it will slow to a stop in lane.

A transition demand is a procedure to transfer the control of the vehicle from the automated system to the human driver.

16. How do you think ALKS will detect and respond to a police or other enforcement vehicle approaching from behind signalling for the vehicle to pull over?

We would defer to the technical evidence on this question. This question does, however,

highlight the issue of the ability of an ALKS to sense what is happening behind the vehicle, a matter to which we return in our response to question 36.

17. Do you think that 10 seconds is fast enough in the foreseeable circumstances to comply with the rules on responding to enforcement vehicles?

Yes (Go to Compliance with road traffic rules: stopping after collisions)

No

Don't know? (Go to Compliance with road traffic rules: stopping after collisions)

10 seconds insufficient

18. Why?

We have not checked any of the above boxes for the reason that we believe the question to be fundamentally misconceived and incapable of a binary answer. This is an illustration of the fundamental problem underlying the consultation to which we referred in our answer to question 15, namely the premise that the Highway Code lays down normative rules, as opposed to guidance which falls to be applied in appropriate circumstances.

We are concerned, therefore, that the call for evidence frames the issue as being whether the ALKS Regulation is compatible with the Highway Code. That is, with respect, a fundamentally misguided approach to our legal order. The appropriate question is whether it is compatible with the requirement of section 163 (1) of the Road Traffic Act 1988 that, "A person driving a mechanically propelled vehicle on a road must stop the vehicle on being required to do so by a constable in uniform or a traffic officer." Subsection (3) provides for liability if a person 'fails to comply with this section'. In our view compliance within even as long a period as 10 seconds cannot properly be characterized as non-compliance; consequently, the requirement is compatible with section 163.

Compliance with road traffic rules: stopping after collisions

The ALKS regulation requires vehicles to comply with all relevant road traffic rules for the dynamic driving task (DDT) in the country of operation. In England, Wales and Scotland, road traffic rules are compiled as part of the Highway Code and in Northern Ireland as part of the Highway Code for Northern Ireland.

Vehicle B is ALKS-capable. It is proceeding along in its lane in heavy traffic at low speed. Motorcyclist C is filtering between the lanes of traffic. As the traffic flow speeds up, Motorcyclist C is involved in a minor collision with Vehicle B, which, nevertheless, causes her to lose balance and be knocked from her bike onto the road.

Rule 286 requires a driver to stop if the driver is involved in an incident. It says:

If you are involved in a collision which causes damage or injury to any other person, vehicle, animal or property, you MUST:

- stop
- give your own and the vehicle owner's name and address, and the registration number of the vehicle, to anyone having reasonable grounds for requiring them
- if you do not give your name and address at the time of the collision, report it to the police as soon as reasonably practicable, and in any case within 24 hours.

The ALKS regulation requires a vehicle to stop if a collision is detected. Where a vehicle is involved in "a detectable collision", the vehicle shall be brought to a standstill. However, the regulation sets no standards for collision detection systems. It is therefore not clear if the vehicle will stop after Motorcyclist C has been knocked from her bike.

As per The Highway Code, we are proposing it is necessary to stop after a collision, even if the collision is low-energy.

19. How will ALKS detect a minor or low-energy collision, in order to come to a stop and alert the driver?

This is a technical, rather than a legal question. From a legal perspective, we should comment that, for a driver to be held liable in the event of a collision, that driver should know that a collision has taken place. Where the collision is minor and there is not a requirement for the driver to concentrate on the road, if the vehicle does not notify the driver of a collision, the driver has no realistic way of knowing that it has taken place, unless the driver actually senses something directly. In that situation, it will be difficult to prove what the driver did or did not know. In these circumstances, it is clearly desirable that the sensitivity of ALKS should be such as to enable it to detect minor or low energy collisions and to alert the driver.

20. Do you foresee any risks should ALKS vehicles not stop for low-energy impacts?

Yes

No (Go to Compliance with road traffic rules: reading GB road signage)

Don't know? (Go to Compliance with road traffic rules: reading GB road signage)

Risks

21. What are these risks?

The risks are the obvious ones adverted to in paragraph 3.29 of the call for evidence: the total energy of the impact is only a proxy for the damage that may be done to property or, more importantly, the injury that may be done to a person, particularly a vulnerable one such as a child. It would be plainly wrong to allow systems to drive away from impacts that may have caused significant injury to children or other vulnerable people.

Compliance with road traffic rules: reading GB road

signage

The ALKS regulation requires vehicles to comply with all relevant road traffic rules for the dynamic driving task (DDT) in the country of operation. In England, Wales and Scotland, road traffic rules are compiled as part of the Highway Code and in Northern Ireland as part of the Highway Code for Northern Ireland.

Vehicle D is ALKS-capable. It is proceeding along its lane at low speed in heavy traffic. There has been an accident ahead. To manage traffic flow, a temporary speed limit has been set at 30 mph in Vehicle D's lane. This is communicated on a gantry sign above the road with the new speed limit inside a red ring.

Rule 261 requires drivers to obey temporary speed limits. It says:

You **MUST NOT** exceed 70 mph (112 km/h), or the maximum speed limit permitted for your vehicle. If a lower speed limit is in force, either permanently or temporarily, at road works for example, you **MUST NOT** exceed the lower limit. On some motorways, mandatory motorway signals (which display the speed within a red ring) are used to vary the maximum speed limit to improve traffic flow.

You **MUST NOT** exceed this speed limit.

The ALKS regulation sets detailed requirements that the vehicle shall be verified to have a forward detection range of 46 meters and a lateral detection range of the full width of the lanes immediately to the left and right of the vehicle. The technical service is required to verify these detection ranges. However, there is no requirement to verify the vehicle's ability to sense upwards, so as to detect information on a gantry.

The ALKS regulation requires that the activated system "shall comply with traffic rules relating to the DDT in the country of operation."

22. How will manufacturers ensure that ALKS vehicles deployed in the UK are able to recognise signage located above the road that may be unique to GB?

We would defer to the technical evidence on this question.

Registration of automated vehicles

On first vehicle registration in the DVLA database, subject to the compliance with AEVA, the vehicle will be registered as an automated vehicle, but the vehicle's ability to comply with the ALKS Regulation may change over its lifetime.

However, we understand that manufacturers may offer automation as a subscription or as an option for a customer to choose at the point of purchase. If a vehicle were registered as an AV on the DVLA database - because it is listed on the Secretary of State's list - but the registered keeper had chosen not to purchase the 'AV package', it would nonetheless appear on the DVLA database as an AV.

23. Do manufacturers intend to offer automation as an optional package for customers at the point of purchase?

- Yes
- No
- Don't know?

Comments:

Registration of any vehicle in any given category of vehicles has implications for taxation and insurance. For reasons of functionality, an AV may have to communicate with other similar vehicles or the system might not be able to operate, or, at any rate, deliver full functionality. Such communication will, of necessity, be in real time. Accordingly, at any moment it should be technically possible, if not indeed necessary, to identify whether a vehicle is in fact at that instant an AV. Those having responsibility for taxing and insuring the vehicle will need to know the consequences of that status for road use of the vehicle. These consequences will be a matter of policy in relation to taxation and largely a matter of commerce in relation to insurance.

24. Do you have concerns about vehicles that are registered as AVs on the DVLA database but the keeper has chosen to have the functionality disabled so they are not capable of operating as an AV?

- Yes
- No (Go to Coming to a stop in lane)
- Don't know? (Go to Coming to a stop in lane)

Registration of AVs

25. What are they?

Here we should make only the obvious point that the critical factor in any driving situation, including any accident, is the mode in which the vehicle is actually being driven at the material time. It is self-evident that registration status should not be determinative of the answer to this question. The fact that a vehicle is capable of being operated as an AV, and is registered as such, does not mean that it is actually driving in AV mode. That will always be an issue whether the driver has disabled the AV function, or merely has not disabled it, but the vehicle is operating outside its AV domain.

Coming to a stop in lane

A vehicle may come to a stop in lane due to perceiving a danger which requires an emergency manoeuvre of this nature. However, another potential reason for such behaviour is where the vehicle is performing a Minimum Risk Manoeuvre.

As discussed in Part 2 of the call for evidence, ALKS performs the Minimum Risk Manoeuvre (MRM) under the following circumstances:

- the driver fails to respond to a transition demand

- in the event of a severe vehicle/system failure

The MRM causes the vehicle to stop in a 'live' lane of traffic on the motorway. This is currently unlawful under Regulation 7 of the Motorway Traffic (England & Wales) Regulations 1982, and Regulation 6 of the Motorway Traffic (Scotland) Regulations 1995. Regulation 7 states that is an offence for a driver of a vehicle to "stop or remain at rest on a carriageway". It provides for various exceptions to the offence, including "where it is necessary for a vehicle" to be "stopped on a motorway...

- a. by reason of a breakdown or mechanical defect or lack of fuel, oil or water, required for the vehicle; or
- b. by reason of any accident, illness or other emergency..."

Regulation 6 of the Motorway Traffic (Scotland) Regulations 1995 makes a similar statement.

If the vehicle comes to an unjustified stop in lane where no emergency or genuine mechanical defect was present, it seems unfair to hold the driver criminally responsible where the apparent cause of the problem has not prompted any transition demand.

Government therefore proposes an amendment to both of the Motorway Traffic Regulations, adding a further exception where ALKS has come to an unexpected stop in lane.

It would be for the courts to decide how long would be unacceptable for a driver to allow the vehicle to remain at rest if they had allowed the vehicle to come to a stop and were not incapacitated.

26. Do you agree that it is appropriate to exempt the driver from prosecution – if the vehicle comes to an unjustified stop when ALKS is engaged – by creating a further exception in the Motorway Traffic Regulations?

Yes (Go to Relying on the system)

No

Don't know? (Go to Relying on the system)

Against amending the Motorway Traffic Regulations

27. Why?

Relying on the system

Currently, drivers are responsible for maintaining sufficient attention on the driving task to ensure safety. Indeed, Rule 150 of the Highway Code warns the driver of distraction and to not rely on driver assistance systems. It says:

"There is a danger of driver distraction being caused by in-vehicle systems such as satellite navigation systems, congestion warning systems, PCs, multi-media, etc. You MUST exercise

proper control of your vehicle at all times. Do not rely on driver assistance systems such as motorway assist, lane departure warnings, or remote control parking. They are available to assist but you should not reduce your concentration levels. Do not be distracted by maps or screen-based information (such as navigation or vehicle management systems) while driving or riding. If necessary find a safe place to stop.

As the driver, you are still responsible for the vehicle if you use a driver assistance system (like motorway assist). This is also the case if you use a hand-held remote control parking app or device. You MUST have full control over these systems at all times."

Should ALKS comply with the definition of automation under AEVA, it will be the first automated driving system which is not classified as a driver assistance system. The expectation will be that the driver can rely on ALKS to carry out the driving task in certain circumstances. Similarly, ALKS or an infotainment system would not distract from the driving task, as this is being performed by ALKS, and may actually maintain the driver's attention. See Part 5 for a further discussion.

Government therefore proposes a change to Rule 150 to enable a driver to rely on ALKS as an automated vehicle.

28. Do you agree that amending Rule 150 is sufficient to clarify that the driver may rely on the ALKS?

Yes (Go to Responding to a transition demand)

No

Don't know? (Go to Responding to a transition demand)

Disagree amending rule 150 sufficient

29. Why?

This is a further manifestation of the premise underlying the consultation that many of the issues are simply about what is stated in the Highway Code. Though the Code does have powerful persuasive force as to what is expected of the reasonable driver, it is not determinative of legal duties. Underlying the code is a hierarchy of duties arising under statute, regulations, and common law.

The issue of the extent of the duties of a "user in charge" was canvassed in the Part 1 Consultation – the Joint Law Commissions' Consultation Paper, to which the Faculty responded. We note further that the present Consultation document refers to input from the Law Commissions but makes no reference to the Commissions' work on development of the concept of a "user in charge".

We suggest that any review of Rule 150 of the Highway Code (or, indeed, any other provision of the Highway Code) should proceed only in tandem with the work in progress of the Joint Law Commissions in reviewing the underlying regulatory regime.

Responding to a transition demand

Whilst it is important that drivers are able to safely and fairly delegate the dynamic driving task (DDT) to the system when it is engaged, this does not mean that they delegate all responsibility.

In fact, where the system is not designed to deal with a situation it encounters (e.g., exiting its ODD), or where the driver is found to be unavailable, the vehicle will issue a transition demand, and if the driver fails to take control in response, it will perform a minimum risk manoeuvre involving a stop in lane according to the ALKS Regulation.

Government is concerned that without some rules on use, the ALKS Minimum Risk Manoeuvre (MRM) may not allow a vehicle to avoid being the cause of a collision. For example, as a result of the driver failing to resume control on request by the vehicle, the vehicle comes to a stop in a live lane (an unexpected behaviour for other drivers), and is rear-ended by another vehicle. To mitigate against this concern, the driver should be incentivised to resume control in response to a transition demand. Should the driver fail to respond to the transition demand – and is not incapacitated – the Motorway Traffic Regulations would still apply, with the driver being potentially guilty of this offence. We propose to limit the scope of the exemption from the Motorway Traffic Regulations so that it covers only unjustified stops while the system is activated. This approach ensures that the MRM becomes a fail-safe which brings the vehicle to a stop only in rare cases where a driver is genuinely unable to take over the driving task, or in case of severe system failure.

Subject to the outcome of this consultation, the government proposes to limit the scope of the exemption from the Motorway Traffic Regulations to cover only unjustified stops while the system is activated, so that the driver is incentivised to resume control in response to a transition demand.

30. Do you agree that not changing the Motorway Traffic Regulations, except for unjustified stops, ensures the driver is suitably incentivised to take back control when requested?

Yes (Go to Responding to a transition demand)

No

Don't know? (Go to Responding to a transition demand)

Driver is not suitably incentivised

31. Why?

We should observe that a driver who fails to observe a transition demand will be likely to allow the vehicle to come to a stop in a live lane. Stopping in a live lane carries a real risk of death or serious injury, perhaps to multiple victims. High level risks such as this demand strong incentives to avoid occurrence. The proposed course, leaving an exemption only where there is real justification for the stop, imposes the onus on the driver to justify any stop. Drivers will realise that they will commit an offence if they fail to heed the Transition Demand, which will sharpen their attention to it.

Responding to a transition demand

Government also proposes a change to The Highway Code to further clarify the driver's residual responsibility to respond to a transition demand.

32. Do you agree that The Highway Code should be changed so that drivers of ALKS must be alert to a transition demand?

Yes (Go to Stopping in lane)

No

Don't know? (Go to Stopping in lane)

Against changing The Highway Code

33. Why?

We should observe that, consistently with our answer to question 31, changing the highway code is clearly necessary and desirable, but this requires to be done in conjunction with the ongoing work in putting in place a regulatory regime relating to “users in charge”.

Stopping in lane

34. Do you think that amending The Highway Code is sufficient to communicate to drivers their responsibility?

Yes

No

Don't know?

Why?

The Highway Code is the standard reference source both for good driver conduct and for culpable failures. Amending it clearly indicates to road users the need for effective observation of Transition Demands. However, should a regulatory regime be introduced governing users in charge this would be a substantial change to the existing legal regulatory framework and may require additional special publicity in order to educate drivers about the change.

Performing other activities

If compliant with the definition of automation under AEVA, ALKS might present the opportunity, for the first time ever in the UK, to enable the driver to perform activities other than driving when the ADS is engaged.

It is important however, that the performance of any activities other than driving do not preclude the driver's ability to respond to a transition demand – and take over the dynamic driving task within ten seconds as required by the system.

Due to the reduced demand on driver attention, there is a risk that the driver will become so distracted as to be unable to respond to a transition request. ALKS includes driver availability and attentiveness monitoring to assist in managing this risk, and it can be argued that allowing the driver to perform other activities may help manage alertness by avoiding higher risk outcomes such as the driver falling asleep.

However, it is not clear to what degree performing other activities may hamper the driver's ability to respond to a transition demand. We seek views on whether ALKS can still be used safely if the driver performs other activities, and what these activities might be.

35. Do you think the driver should be allowed to perform other activities when ALKS is activated if they must only be ready to respond to a transition demand?

- Yes (Go to Safe activities)
- No
- Don't know? (Go to Performing other activities)

Against other activities

36. Why? [After completion go to Performing other activities]

We would answer in the affirmative, but only if there were accepted the premise upon which the question is based.

That premise appears to be that the ALKS will generate a transition demand in all of the circumstances (or, at any rate, the likely circumstances) in which a need to transfer control back to the driver could occur whilst the system is engaged. That may well be the case with respect to a fully automated vehicle, but, in the case of a vehicle under the control of an ALKS, we can conceive of a danger which might, entirely predictably, arise but in which a transition demand would not be generated.

In that regard, we note that the parameters of an ALKS as set out in section 5 of the proposed UN Regulation require the system to monitor and respond to dangers which present themselves both ahead and laterally (see, for example, §§ 5.2.2; 5.2.3.3 and 5.2.5) *but not from behind*. This may not matter if the vehicle behind were equipped with ALKS, which, would of course, monitor vehicles in front; but a real problem could arise if (as is very likely) the vehicle behind were not equipped with ALKS, or if it were so equipped but the ALKS were not activated. We can easily posit a situation in which the driver of the car behind is dangerously riding on the bumper of the car in front of him. If the vehicle in front were being driven manually, one would expect the driver in front to be monitoring his rear view mirror and being alive to the danger caused by an aggressive tailgater, and therefore, to take appropriate risk-avoiding action should he judge that to be necessary. However, were the front vehicle to be driving in ALKS mode and the driver permitted to undertake other activities, then he may not detect the danger, and the ALKS (lacking a requirement for rear sensors) would not detect the danger and issue a transition demand. If the driver were not permitted to undertake other activities and be expected to be aware of road conditions at all times, then he would be expected to detect the danger and choose to take manual control if he judged it appropriate.

In short, the answer to this question is “yes” if the ALKS has rear sensors, but “no” if it does not.

Safe activities

37. What other activities do you think are safe when ALKS is activated?

The answer to this will depend on the format of the transition demand alert. For example, if the transition demand is a loud alarm type alert, then that might be enough to divert the driver's attention from the other activity being performed, regardless of what that activity is.

Writing an exhaustive list of safe or unsafe activities is not practical. Instead, perhaps characteristics of activities should be listed to give an indication of the activities in which it is likely to be safe to participate. The core question is: Is this an activity which can be paused or stopped for the driver to be able to respond to the transition demand within a reasonable timeframe? If the answer to this is 'no', then the activity is not a safe activity. If the activity produces obstacles to the transition demand being seen or heard, such as loud music, having earphones in, or being involved in something that cannot be stopped immediately, then this would not be a safe activity.

For the activity to be stopped, the transition demand alert needs to be such that it can get the driver's attention. Perhaps the only way to guarantee this is by only permitting activity through the vehicle's own inbuilt entertainment system. That can be programmed to stop and alert the driver when there is a transition demand. Unless of course the driver is in a deep sleep.

Performing other activities

It is possible that ALKS may not be found compliant with the definition of an automated vehicle under AEVA following legislative and The Highway Code changes. This may be because the driver is still required to monitor the vehicle for some specific circumstances.

38. Do you think that the driver should be allowed to undertake other activities if ALKS is not listed under AEVA?

Yes (Go to Activities)

No

Don't know? (Go to The infotainment system)

Against activities

39. Why? [After completion go to The infotainment system)

We refer to our answer to question 36. This is a practical example of the sort of monitoring which may be required. The need for such monitoring arises from the technical characteristics of the ALKS (the lack of rear sensors). This would mean that the vehicle would not be operating fully automatically within its operating domain. If this is the case, therefore, the vehicle would plainly not be an automatic vehicle, any more than a vehicle equipped with cruise control is an automatic vehicle (albeit that ALKS without rear sensors would have a higher degree of automation). Plainly, if a vehicle requires ongoing human monitoring, it would be wholly inappropriate to allow the driver to engage in any other activity which might interfere with that monitoring task.

We believe that greater clarity in this matter can be achieved by referring to the Law Commissions' proposals regarding users in charge. If the person in the driving seat is a driver, his attention should be fully on the road, even if ALKS is engaged; but if he is a "user in charge", then it may be appropriate to allow him to undertake other activities.

Activities

40. What activities could they safely perform?

We refer to answer to question 37 in relation to types of activities that can safely be performed. If the vehicle is not listed under AEVA, then the consequence is that the occupant of the driver's seat is a driver, and not a user in charge, and there would therefore be no basis for safely letting the occupant engage in any activities in which a driver could not lawfully and safely engage.

The infotainment system

One example of an activity other than driving that may be desirable for drivers to perform, is the use of a vehicle's in-built infotainment system.

This system is already present in many vehicles today, usually taking the form of a central display panel on the dashboard through which the driver can check information relevant to the driving task, such as satellite navigation and system performance.

Government understands that manufacturers wish to enable the driver to perform activities other than driving through the infotainment system.

This could include activities like watching a film, checking emails or SMS, or accessing other audio, video or written content. A driver would also be able to tether their mobile phone to the system as is possible today.

Importantly, the system is required to cut out in the event of a transition demand. In this way, activities performed through the infotainment system should not preclude responding to a transition demand.

Regulation 109 of the Construction & Use Regulations 1986 prohibits a person from driving, or causing or permitting a vehicle to be driven on the road:

"if the driver is in such a position as to be able to see, whether directly or by reflection, a television receiving apparatus or other cinematographic apparatus used to display anything other than information—

- (a) about the state of the vehicle or its equipment;
- (b) about the location of the vehicle and the road on which it is located;
- (c) to assist the driver to see the road adjacent to the vehicle; or
- (d) to assist the driver to reach his destination."

For a driver of an ALKS vehicle to be able to use the infotainment system as anticipated – for activities other than driving – it would be necessary to add an exception to Regulation 109.

41. Do you agree that an exception should be added to enable the use of the infotainment system for activities other than driving?

- X Yes (Go to The infotainment system)
No

Don't know? (Go to The infotainment system)

Against on-board infotainment system activities

42. Why?

The infotainment system

43. Are there any activities you consider unsafe to perform through the infotainment system?

Yes

X No (Go to Use of ALKS up to 70mph)

Don't know? (Go to Use of ALKS up to 70mph)

Other unsafe activities

44. What are they?

The unspoken assumption is that the infotainment system will be used to deliver infotainment, and, on that basis, we do not consider that there are any unsafe activities.

However, it is worth being explicit about that assumption. To take a fanciful example, an infotainment system is in essence a computer, and one might posit a situation where a driver has adapted and programmed his infotainment system to provide power to an electric kettle for the purposes of boiling water to make tea, and thereby requiring the driver to unplug the kettle and pour boiling water into a teapot. Such an activity would be pregnant with danger.

We acknowledge that this is a fanciful example, but we give it simply to underline the need to be specific about the assumptions which underlie the questions.

Use of ALKS up to 70mph

The primary purpose of this call for evidence is to seek views on how government intends to ensure the safe use of vehicles with automated systems that meet the requirements of the ALKS regulation.

We will have new flexibilities next year having left the European Union transition period and becoming an independent nation at the UNECE. This includes flexibilities in determining what we require for new vehicles in Great Britain. The ALKS Regulation defines requirements for operation up to 60 km/h (37mph) and we understand that some manufacturers may already have capability for higher speed operation.

The UK may set additional requirements on ALKS that operate up to 70 mph, but these must not conflict with the existing requirements in the ALKS Regulation.

The government is considering allowing ALKS to operate at speeds up to 70 mph, provided the manufacturer declares that the system has the capability to do so safely and in compliance with other technical requirements of the ALKS Regulation not affected by this higher maximum speed.

45. Do you agree with this approach?

Yes

No

Don't know?

Why?

The explanation of the approach is not clear enough for us to say. We are concerned, however, by the apparent intention to allow self-certification of safety in some of the most dangerous situations in which the systems might be used.

We suggest that the 'approach' to be adopted be explained in much greater detail before further action is taken. Such consideration should give due weight to the extent to which there are inherent technical limitations in ALKS systems, for example, the lack of a requirement for rear sensors or an inability to detect overhead speed limit signs on UK roads.

Final comments

46. Any other comments?

From the above discussion, it will be seen that we have some reservations concerning the effectiveness of the above consultation document.

First, it takes the form of a series of closed options which fall to be answered "yes", "no" or "don't know". This tends to close off examination of the assumptions which underlie the options, and may generate questions which cannot be answered "yes", "no" or "don't know" - the equivalent in a courtroom setting would be "have you stopped beating your wife?"

We encountered this issue particularly in the assumption that an ALKS equipped vehicle would be capable of generating a transition request whenever the vehicle was at risk, an assumption which would not be correct if the ALKS were not able to sense what is happening behind the vehicle. Another example is the apparent assumption that it would be only the police who might have need to access ALKS data. A further and more trivial example is the assumption that an Infotainment system would only ever provide infotainment. Other instances of this issue are made manifest in our answers. It is for this reason that, even when responding in the affirmative to some of the questions, we have nonetheless commented even when instructed to "proceed to question x".

A further issue which concerned us about the questionnaire was that, although sometimes there was appropriate reference to primary legislation and/or regulations and sometimes to the Highway Code, there appeared in some instances to be an undue emphasis on the Highway Code, or, at least, a tendency to look at the Code in isolation rather than taking a holistic view of the complex regulatory landscape. This was at its most obvious in the Consultation Paper where reference was made to the Part 1 consultation and to input from the Law Commissions, but no reference to the proposals of the Law Commissions in relation to "users in charge". If these

proposals are added to the mix, this helps greatly in considering the questions.

A further concern is that there are areas other than those focussed in the Consultation paper in which issues clearly arise in relation to the deployment of ALKS, for example the issue which we introduce and discuss in relation to recovery of ALKS data for the purposes of insurance claims and civil litigation, as well also as the GDPR implications.

Notwithstanding these limitations, we have sought to respond as fully as we can; but we stand ready to comment further should that be required.