

## **SMMT response to the Law Commission of England and Wales and the Scottish Law Commission joint consultation on a regulatory framework for automated vehicles**

### **INTRODUCTION**

1. The Society of Motor Manufacturers and Traders (SMMT) is one of the largest trade associations in the UK, supporting the interests of the UK automotive industry at home and abroad. SMMT represents more than 800 member companies, including all major vehicle manufacturers, component and system suppliers, the aftermarket, services and engineering firms, technology companies and mobility start-ups. The automotive industry is a vital part of the UK economy accounting for £79 billion turnover and more than £15 billion value added. With some 180,000 people employed directly in manufacturing and 864,000 across the wider automotive sector, it accounts for 13% of total UK exports to over 150 countries, and invests £3.72 billion each year in research and development. More than 30 manufacturers build in excess of 70 vehicle models in the UK, supported by around 2,500 component providers and some of the world's most skilled engineers.
2. A [study](#) commissioned by SMMT suggests the overall economic benefits of Connected and Automated Vehicles are expected to be in the region of £62 billion per year by 2030, with up to 420,000 new jobs being created in the UK, 20,000 of which are directly in automotive. Given that human error is a factor in 94% of traffic accidents, significant social benefits are expected to be realised in increased safety that comes with automation, which could see 3,900 lives saved and 47,000 serious accidents prevented in the UK between 2019 and 2030. If the UK is to unlock the full economic and social benefits of automated vehicles it is essential that it becomes the best place in the world to develop, test and deploy this new technology. This includes creating the right regulatory framework and market conditions as key enablers towards achieving this ambition.
3. The significant economic and social benefits that could come with the development and deployment of automated vehicles are motivating many countries to try to position themselves as world leaders. While the UK is already one of the leading locations in the world for testing and trialling automated vehicles, government and industry must now work closely and expend every effort to ensure the UK also becomes a leading location for the **deployment** of automated vehicles.
4. Regulatory reform is key to paving the way for the deployment of automated vehicles. A comprehensive regulatory review such as this three-year project carried out by the Law Commission of England and Wales and the Scottish Law Commission is an important step towards identifying the required reforms. It is of paramount importance to ensure that the outcome of this consultation **does not make it more onerous** to deploy automated vehicles in the UK. The UK is already behind Germany in regulatory terms, as amendments to the Straßenverkehrsgesetz in 2017 means conditional and highly automated driving are, in theory, already possible. The eventual recommendations arising from this consultation must not impose disproportionate

requirements such that may delay the opportunity to deploy this technology, both with and without user-in-charge, in the UK. In addition, we would urge the Government to seek alignment with international regulation instead of create divergent, UK-specific regulation.

5. SMMT welcomes the opportunity to respond to this consultation on behalf of the UK automotive industry. We set out below the consolidated and harmonised views of our members. We welcome further engagement with the Law Commission of England and Wales on this subject.

## RESPONSE TO CONSULTATION QUESTIONS

### CHAPTER 4: SELF-DRIVING AND HUMAN INTERVENTION

#### Consultation Question 1

*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?*

6. As regards proposal (1), we believe Object and Event Detection and Response (OEDR), as set out in SAE J3016, is a key differentiator between assisted and automated driving. When the automated driving system (ADS) is activated, OEDR is performed by the system. As such, insofar as the automated vehicle is within its Operational Design Domain (ODD) and the ADS is activated, the user-in-charge does not need to monitor the driving environment and react to other road users and the conditions of the road.
7. The user-in-charge, however, needs to remain receptive to a transition demand. We agree with the features of a transition demand described proposals (2)(a), (b) and (c).
8. We agree in principle with (3). The ADS is responsible for the Dynamic Driving Task (DDT) when it is safely activated within its ODD. The DDT comprises the sustained lateral and longitudinal motion-control of the vehicle and OEDR. The ADS must therefore be able to safely perform the DDT within its ODD without human intervention. However, to suggest the **vehicle** must be safe enough even if the human user does not intervene in response to **any event** except a transition

demand may be stretching expectations to unrealistic levels. Despite the doubts expressed in the consultation paper about the “evident failures” described by SAE (referenced in paragraphs 4.42-4.44 in the consultation paper) and the “obvious circumstances” described in Section 1(b) of Article 1 of the German Straßenverkehrsgesetz (paragraphs 4.107-4.109), there could still be **rare events** that do not affect the safe DDT performance of the ADS but may call into question whether the **vehicle** remains safe enough if there is no human intervention.

9. For example, a small fire inside the vehicle cabin may be very rare but entirely possible. In such situation, the ADS may not be affected (at least in the first instance) and as such there may not be a transition demand, but the vehicle itself may not necessarily be deemed safe enough to carry on in its journey. It is also imperative for the user-in-charge to immediately prevent the small fire from escalating. Despite there being no transition demand, with the presence of smoke and a burning smell it is reasonable to expect the user-in-charge to be aware of this obvious circumstance and the potential risks it may bring, and therefore retake control of the vehicle, pull up on the emergency lane and deal with the issue or seek assistance. Therefore, we think “any event” is an unhelpful sweeping term. The spirit of proposal (3) is well understood, but we suggest its description needs to be clearer and more nuanced.

## Consultation Question 2

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

10. We support the idea that automated driving features should be designed to ensure they can be used by people with hearing loss. A key principle of inclusive design is designing for disabled people including those with hearing loss and is an integral part of “designing for all”. In essence, this should not be any different to the use of manually driven vehicles by people with hearing loss. Automated driving should include both audible and visual human-machine interface (HMI) features, as well as haptic alerts where appropriate.
11. However, for passenger cars, it would be helpful if there was clear and authoritative guidance on the methods that can be utilised across a range of situations and applicable internationally. For example, guidance that demonstrates the most effective methods for engaging people with hearing loss based on conclusive evidence from extensive and representative HMI studies. For Highly Automated Road Passenger Services, the Government should issue guidance on the specific UK disability laws and regulations that apply to road passenger services.

## CHAPTER 5: HOW SAFE IS SAFE ENOUGH?

### Consultation Question 3

***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?***

12. While we agree with this proposal, we do not see a need for the decision by the Secretary of State to be necessarily “political” as suggested in paragraphs 5.7 and 5.109-5.115 in the consultation paper, as long as the acceptable level of safety is based on robust advice from a specialist regulator. There is a difference between a “political decision”, which somewhat implies political judgement that is not necessarily based on objective evidence and advice, and a decision by a member of the Executive branch of government as a matter of formality based on objective advice by officials to fulfil the requirements set out in a specific legislation.
13. In the same way, the decision on whether a vehicle is deemed sufficiently safe to be classified as an automated vehicle and listed under the Automated and Electric Vehicles Act 2018 need not be based on political judgement but on the objective outcome of the approval and classification process proposed in Chapter 8 of the consultation paper. The Secretary of State’s “decision” is a mere formality in the light of the objective outcome of the process. Aggrieved person(s) should have the right of appeal, similar to those in Regulation 19 of the Road Vehicles (Approval) Regulations 2020.

### Consultation Question 4

***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.***
14. The primary aim of automated driving is to improve road safety. [Modelling](#) that we commissioned suggests, assuming automated vehicles were already in deployment in 2019, the technology could save 3,900 lives and prevent 47,000 serious accidents between then and 2030. In an ideal world, automated vehicles should be as safe as a competent and careful human driver or a human driver who does not cause a fault accident. The former notion is particularly attractive as it implies the automated driving system should be capable of safely adapting to vastly different, or foreign, environments. However, these two thresholds are extremely hard to objectively quantify. Furthermore, the competence of a driver is in part a function of how well the driver complies with road traffic rules. As road traffic rules change and evolve, what “competence” implies will change accordingly. The more often road traffic rules change, the more often this goalpost will shift.

15. We support the view set out in an industry-wide standard, ISO/TR 4804:2020, which suggests a meaningful threshold should be a **positive risk balance while avoiding unreasonable risks**. The acceptance criteria in determining a positive risk balance should be based on traffic accident statistics that are representative of relevant traffic types and scenarios.
16. As the history of automotive has shown, continuous improvement and innovation in safety is a hallmark of the industry. Aided by data from in-use monitoring, it is expected that continuous improvement and innovation will result in automated vehicles that are even safer in the future. As such, we think achieving a positive risk balance while avoiding unreasonable risks should be the **starting point**. When progress is evident, a major review in the future may raise the bar, culminating in a revision to industry-wide standards to higher thresholds. As acknowledged in paragraphs 5.37 and 5.64 in the consultation paper, setting an unrealistically high threshold from the beginning may deprive society of the overall safety benefits for many years and result in needless casualties. We agree with the authors quoted in paragraph 5.37 that we should not allow “perfect to be the enemy of good”.

#### Consultation Question 5

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

17. As we set out in paragraph 16 above, evolutionary improvements to the technology should warrant the review of reasonable thresholds over time. At any point in time, it is imperative for regulators to define clear and quantifiable metrics of reasonability and practicability based on the state of the art. In addition, industry, government and stakeholders should educate the public on the technology, its boundaries and limitations and its safe use.

#### Consultation Question 6

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

18. The redistribution of risk from one social group to another could be an ethical issue where the role of the regulator is crucial. The regulator could potentially require the automated driving system entity to document evidence of how inequalities/biases have been identified and addressed in the automated driving system test data and how steps, if necessary, have been taken to minimise bias. This could include assessing if disabled users have been considered in the design of the automated vehicle or the automated driving features.

## CHAPTER 7: ASSESSING SAFETY PRE-DEPLOYMENT

### Consultation Question 7

*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?*

19. We agree in principle with the above proposals. As regards proposal (2), rather than requiring automated driving system entities (ADSEs) to submit a safety case that shows why they believe that their automated driving system (ADS) is safe, ADSEs should be required to submit evidence and documentation to show that their safety case meets specific requirements set by the regulator. As such, we wish to point out that proposals (3)(a) and (c) are particularly important in order to provide clarity on the specifications required in a safety case. Unless the specifications are clearly and comprehensively listed, ADSEs should not be penalised for the missing information or alleged to have deliberately withheld information. We also urge harmonisation with the New Assessment/Test Methods (NATM) currently being discussed by the GRVA at the UNECE for the validation and certification of ADSs. NATM adopts a comprehensive multi-pillar approach that combines the use of a scenario catalogue with four validation methodologies (simulation/virtual testing, track testing, real-world testing, audit/assessment) and in-service monitoring and reporting.

### Consultation Question 8

*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.*

20. We agree in principle. In the first place, the scenario database itself should be robust and comprehensive. The developer of the scenario database should ensure that all road user groups are addressed in its development. It is equally important that the database is kept up to date, with additional scenarios and refinement of existing scenarios captured over time. It is also important that the database is accessible by the relevant parties, particularly automated driving system entities, to improve the safety and performance of their own automated driving systems (ADS).

However, the most important aspect the approval authority must be mindful of when consulting road user groups on the range of scenarios to be included is to ensure the proposed scenarios are ultimately **relevant** for the testing that is being carried out. The relevance of the scenarios should also be assessed in the light of their alignment with the desired safety threshold, which, as we suggested in paragraph 15 above, should achieve a positive risk balance while avoiding unreasonable risks. However, we also wish to point out that while using a range of scenarios could be useful in the assessment process, ultimately the safe operation of the ADS is what matters most and should therefore be prioritised ahead of potentially limitless scenario-based testing per se.

## CHAPTER 8: INITIAL APPROVALS AND CATEGORISATION – PROPOSALS

### Consultation Question 9

*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?***

21. We agree that, insofar as it concerns deployment, unauthorised automated driving systems (ADSs) should not be allowed on the road. However, an exemption procedure should be put in place for unauthorised ADSs used in tests and trials. In addition, we think, for the sole purpose of testing or trialling, the exemption should apply to the automated driving system entity (ADSE) rather than the ADS. This is because the prototype ADS may evolve and mature considerably during the trial, thus altering its performance compared to its original state which was assessed for the granting of an exemption. In order to afford the ADSE the required flexibility to improve and evolve the ADS throughout the duration of the trial, which could be as long as three years, the exemption should be given to the ADSE instead.

### Consultation Question 10

*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?**

22. We agree with proposals (1) and (2). Manufacturers or automated driving system entities (ADSEs) should have a free choice to apply for approval under either scheme depending on the envisaged use case.
23. ADSEs apart from manufacturers should be able to submit an automated driving system (ADS) for national approval even if they are not responsible for manufacturing the whole vehicle. However, we think proposal (3) needs to be further thought through and clarified. This is because in practice the performance of the ADS cannot be separated from the whole vehicle. The ADS outputs, given certain pre-defined inputs, cannot be contextualised without evaluating the vehicle performance. For example, the actuator and certain control units within the vehicle will be affected by the ADS – and the outcome in one vehicle brand may be slightly different to another. Given the complexity of the New Assessment/Test Methods currently being discussed at the GRVA in Geneva and the fact that the assessment is performance/outcome-based, the approval authority would have to develop a robust approval process that does not require taking the whole vehicle into consideration.

**Consultation Question 11**

**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?**

24. We agree in principle with the above proposals. As regards proposal (2), the proposed definition broadly aligns with the Government’s Code of Practice for Automated Vehicle Trialling, which defines an automated driving system (ADS) as “a vehicle system that uses both hardware and software to perform all of the Dynamic Driving Tasks needed to undertake a journey”. Additionally, in terms of functional safety, we also wish to draw attention to the technical definition of a “system” as per ISO 26262:2018, wherein Part 1, 3.613, the ADS is defined as “a set of components that relates at least a sensor, a controller and an actuator with one another”.
25. As regards proposals (3) and (4), we wish to reiterate our concern in paragraph 23 above. Installation of an ADS in a vehicle is a very complex task, as it necessitates the fulfilment of all the requirements of other systems in a given vehicle.



## Consultation Question 12

*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 is it suited to the proposed national ADS approval scheme.*

## Consultation Question 13

*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?*

26. We agree with the two-step process of type approval and classification as set out in Chapter 8 and illustrated in Figure 8.1 in the consultation paper.
27. Concerning proposals (3) and (4), this second step of the process, i.e. classification, must not replicate the checks that have already been carried out in the first step, i.e. type approval. As described in paragraph 8.58 in the consultation paper, however, new documentation and tests for issues that are not covered by the type approval process may be required. We agree with proposal (3) if the additional assessment criteria (via either audit of documentation or additional tests) for the purpose of classification are **clearly defined, measurable and proportionate** to the level of automation being assessed and do not contravene international technical regulations adopted by contracting parties at the UNECE.
28. A criterion that we think is acceptable is the requirement for the automated driving system (ADS) to be **compliant with national traffic laws**, as mentioned in numerous places in Chapter 8 but especially paragraphs 8.59 and 8.60 in the consultation paper. The specific traffic laws against which an ADS will be assessed for compliance can be clearly defined, and any tests carried out

will almost certainly produce an objective result. However, they must also be proportionate. For example, requiring the current iteration of the Automated Lane Keeping System (ALKS) to perform a lane-change Minimal Risk Manoeuvre and achieve a Minimal Risk Condition (MRC) of stopping in the emergency lane in order to be deemed compliant with traffic laws is disproportionate, as that is not what ALKS, which UN Regulation 157 accepts as an ADS, has been designed for. Moreover, the risks of changing lanes need to be taken into account when assessing what constitutes a suitable MRC. For example, in congested traffic, bringing the vehicle to a safe stop in the lane of travel is generally less risky than manoeuvring it through the gaps between other vehicles to reach the hard shoulder.

29. While we agree with the criteria proposed in (4), we suggest (4)(c) needs to be more clearly defined. For example, should the adequacy of its funds be proportionate to the automated driving system entity's (ADSE) market volume, size and maturity, or dependent on whether the ADSE is merely an ADS developer or also a vehicle manufacturer? Or would it be sufficient for the ADSE to have adequate insurance? Paragraph 8.60 in the consultation paper suggests there could also be other criteria. These, too, must be clearly defined, measurable and proportionate. For example, what are the metrics by which the approval authority can determine if users' responsibilities are clearly communicated? This must not be left to subjective judgement.
30. One potential complexity that this proposed classification framework, i.e. step two, may have missed is an ADS that may be capable of different automated driving features. As set out in proposal (3), this framework classifies a system in only one of three ways: as driver assistance, as an ADS with a user-in-charge, or as an ADS without a user-in-charge. However, it is not inconceivable that in the future a vehicle could be equipped with an ADS that, within the respective ODDs, is capable of Motorway Pilot with a user-in-charge (SAE Level 3 or 4) and Automated Valet Parking (AVP) without a user-in-charge (SAE Level 4). In fact, paragraphs 12.14-12.16 in the consultation paper describes the user-in-charge who is outside the vehicle as someone who is "in direct sight" of the vehicle, supposedly controlling the parking function using a smartphone. This feature, called Remote Control Parking, is already available as a driver assistance system that is allowed to be used in the UK thanks to changes to the Highway Code and relevant regulations in 2018. By contrast, AVP does not require the user to be in direct sight of the vehicle, in which case the ADS operates without a user-in-charge.

#### Consultation Question 14

***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?***

31. We agree with the above proposals insofar as they concern the classification process, i.e. step two. This would provide much needed clarity, especially on (b) and (c), issues which we raised in our response to Question 13 above.
32. As regards (a), we suggest, as we did in our response to the first consultation in 2019, the safety assurance agency that should assess whether a vehicle is capable of self-driving must be a government body with appropriate technical expertise. We strongly believe the Vehicle Certification Agency (VCA) should be given an expanded remit and additional resources to perform this role, in addition to its role as the national type approval authority. It is a long established, wholly appropriate and well respected body. In order to retain the confidence of industry, consumers and stakeholders, experts involved in the assessment must be entirely staff members of the VCA, and not individuals associated with any particular industry or consultants with potentially conflicted interests.

#### Consultation Question 15

***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?***

33. We believe there should be an appeal process which should be broadly similar to the provisions in Regulation 19 of the Road Vehicles (Approval) Regulations 2020, except that the period in subparagraph 19(2) should be increased from 14 to 28 days. This is because, as this is a new technology, appellants may face new challenges in collating and preparing the supporting documents required by the appeal.

#### Consultation Question 16

***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.***

34. We **do not agree** that automated vehicles, once they are classified as such, should be subjected to the possibility of deployment in limited numbers pending confirmation of their safety in real world conditions. This proposal, which is akin to a probation period, defeats the purpose of a robust two-step approval and classification process. If the regulator is not convinced of the safety of the automated driving system (ADS), the ADS should not have been approved and classified as self-driving in the first place. The regulator should include reasonable real world testing as part of the assessment procedure for type approval and, if in doubt, also for classification prior to deployment. In any case, manufacturers and/or automated driving system entities (ADSEs)

subject their ADS to extensive and rigorous validation testing in real world conditions prior to applying for type approval.

35. Adding another hurdle to full deployment unnecessarily delays the realisation of the benefits automated driving can bring to society, as we alluded to in paragraph 16 above. The introduction of Automatic Emergency Braking (AEB) is a good example. Although AEB was available from around 2003, its cumulative safety benefits only became clear when they were introduced in significant numbers from 2010 onwards. Furthermore, this proposal is likely to disincentivise manufacturers/ADSEs from becoming first-movers.

## CHAPTER 10: ASSURING SAFETY IN USE

### Consultation Question 17

*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?*

36. We agree in principle with this proposal, subject to further details on the in-use safety assurance scheme and how the scheme will be implemented. Data from a large number of deployed automated vehicles will be the most realistic way to assess the safety performance of an automated driving system (ADS) over a wide range of real world conditions, which is why we disagree with the proposal to allow their deployment only in limited numbers in the first instance, as set out in our response to Question 16.
37. A feedback loop through in-use monitoring is a useful mechanism to confirm the safety by design concept and the validation carried out by the automated driving system entity before market introduction. However, we urge **alignment** with similar proposals under the multi-pillar approach to New Assessment/Test Methods currently discussed at VMAD at the UNECE. Divergence, for example in terms of the data elements that should be collected through in-use monitoring, is highly undesirable and makes compliance very costly.
38. The main purpose of in-service monitoring and reporting under VMAD is to foster **continuous improvement of both technology and legislation**. Specifically, it is to achieve the following objectives:
  - Safety confirmation, that is to demonstrate that the initial safety assessment in the audit phase before market introduction is confirmed in the field over time;
  - Scenario generation, that is to further enrich the common scenario database with important new scenarios that may occur with automated vehicles in the field; and

- Safety recommendations, that is to derive safety recommendations for the whole community by sharing learnings from key accidents/incidents in order to learn from operational feedback.
39. Although we hope the proposed in-use monitoring scheme in the consultation paper would share the same purpose as VMAD's in-service monitoring and reporting, we observe the **spirit** by which Chapters 10 and 11 of the consultation paper are written seems to suggest in-use monitoring's main purpose is to catch under-performing ADSs with a view to imposing punitive sanctions. The extensive discussions on leading measures in Chapter 10, described broadly as instances of "bad driving" in paragraph 10.67 and repeated in Question 18(2)(a) below, and the suggestion of a range of potential data elements that go far beyond VMAD's, are indicative of this.

### Consultation Question 18

***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?***

40. We agree in principle with the above proposals.
41. As regards proposal (1). Comparing the safety of automated and conventional vehicles using a range of measures is integral to the principle of a positive risk balance that we support, as set out in paragraph 15 above. However, the range of measures and their metrics must be clearly defined and agreed with industry and stakeholders.
42. As regards proposal (2), we urge alignment with the data elements currently being discussed at VMAD. Data on lagging measures is better understood and can be more easily obtained as it depends on actual outcomes, e.g. accidents. However, data on leading measures, as well as "bad driving", must be properly defined, the process for recording and accessing it clearly specified, and the handling and processing of the data compliant with data protection laws. We observe three concerning examples:

- Paragraph 10.70 in the consultation paper suggests disengagement as one potential leading measure. Disengagement is often recorded as part of trials to better understand the context within which either the automated driving system (ADS) hands back control or the safety driver unilaterally decides to retake control. If recorded in deployed automated vehicles, it could unfairly penalise a perfectly-operating ADS but where the user is extremely risk averse and often unnecessarily retakes control.
  - Near-misses, as suggested in paragraph 10.67 in the consultation paper, to the extent that it is reasonable and feasible to collect such data, will also need to be contextualised. A well-performing ADS in an urban setting may have recorded an usually high number of near-misses but no accidents because it has successfully avoided swerving cyclists and pedestrians carelessly stepping out into the road. Data on near-misses must also not be transferred to any entity outside the regulator to prevent misuse; for example, as a basis for insurers to increase insurance premiums.
  - Depending on how it is implemented, “placing unobtrusive sensors on conventional vehicles”, as suggested in paragraph 10.71 in the consultation paper, may not be entirely compatible with privacy laws and may only exacerbate society’s resentment against surveillance by authorities.
43. As regards proposals (3)(a) and (b), where there has been a change in national traffic laws, it is reasonable to expect the automated driving system entity (ADSE) to issue a software update, which may include an update to its maps, where it is necessary to do so to ensure safety and continued compliance with the law. However, rather than the regulator requiring the ADSE to issue the necessary software and/or map updates, the regulator should ensure that the change in the law is **properly communicated to the ADSE**, who will in turn dispatch the necessary software and/or map updates. The penalties, or sanctions, associated with non-compliance with the law should be sufficient motivation for the ADSE to do the needful to remain compliant. This approach also upholds the principle of technology neutrality, as ADSEs may use a variety of technical solutions to ensure safety and compliance with the law – although most of these involve software, they do not necessarily involve maps all the time. Flexibility should be given to the ADSE to decide whether a map update is relevant to safety, as frequent map updates that introduce immaterial changes are not necessary. It should also be determined whether the update is a national or international requirement. Insofar as it concerns the latter, harmonisation with international regulations is always more desirable than a patchwork of national specifications.
44. As regards proposal (3)(c), insofar as automated vehicles with a user-in-charge are concerned, industry believes user education and information should be holistic and cover various touchpoints throughout the customer journey. At the pre-purchase stage where prospective customers begin researching the products available, vehicle manufacturers make marketing and informative materials, including tutorials or explainer and demonstration videos on automated driving, widely available online. At the next touchpoint for the customer – a visit to dealers or retail outlets – properly trained retail staff provide comprehensive information and physical demonstration of automated driving. In any case, this should be encouraged before vehicle handover and first-use of the system. This should cover all aspects of the ADS including appropriate use, the system’s limitations and the driver’s role and responsibilities. Retail staff at dealerships should ask customers for confirmation that they have understood these.

45. These instructions and information should also be clearly and comprehensively documented in the user's manual of the specific vehicle model. In addition, the content of the user's manual, as well as explainer videos or animations, could be accessible via the infotainment system of the vehicle, giving the user direct access to the necessary information. Given an individual's preferred learning approach varies according to personal preferences, age, gender, education and experience, vehicle manufacturers often adopt a multi-channel approach to delivering information and education to satisfy individual needs. In addition to the above measures, other channels include:
- Compact "Getting Started" guides in both printed or digital format, to explain important vehicle features and functions and automated driving in a brief and easy-to-understand way;
  - On-board intelligent personal assistant, which is usually voice-controlled;
  - Smartphone app, which may include video tutorials and a digital user's manual; and
  - Experiential driving sessions and clinics at dealerships or retail outlets.
46. However, as it is impossible to know whether every eventual driver of the vehicle has read the user's manual or sat through tutorials and demonstrations, vehicle manufacturers design the ADS to be as intuitive as possible to the user. This is particularly relevant for rental vehicles and car clubs, or where the vehicle is shared among family members. The human-machine interface of the vehicle provides the user with information related to automated driving and is designed with human factors in mind such that it is self-explanatory as well as easy and safe to use.
47. However, by insisting the ADSE should communicate the information, proposal (3)(c) misses an important point on rental vehicles and car clubs, whose operators are not necessarily ADSEs or vehicle manufacturers. Just as vehicle manufacturers' dealerships and retail outlets invest in ensuring staff are well trained to educate customers on automated driving, it is important for rental businesses and car club operators to likewise ensure their customers are well informed and educated through a variety of channels before they hire or use a vehicle with automated driving functionality.
48. Ultimately, user education and information should be a collective responsibility of all stakeholders. Future driver training should include the ability to understand and interact with new vehicle technologies including automated driving. The Government and its agencies should mount a public education campaign via multiple press and media channels to raise general public awareness on automated driving.
49. The Committee on Advertising Practice and the Advertising Standards Authority should continue to oversee the prevention of false or misleading advertising on ADS in general by engaging with SMMT in the drafting and launching of sector guidance.

## Consultation Question 19

*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.)*

50. In general terms, regulation on software updates should follow internationally harmonised regulation at the UNECE. In relation to (1), if the software update **involves changes to the vehicle type and requires an extension of type approval**, the automated driving system entity (ADSE) must return to the original type approval authority. Any software update that applies **only** within the UK and that should involve the regulator implies an update that follows a change or amendment to national laws or traffic laws. In this case, and if the update does **not** affect the vehicle type, we wish to reiterate our response in paragraph 43 above. The regulator's role is to ensure that **the change in the law is properly communicated to the ADSE**, who will in turn dispatch the necessary software updates. This effectively "requires" the ADSE to perform a software update. The ADSE will be motivated to ensure its automated driving system (ADS) remains compliant with the law by the prospect of sanctions for non-compliance. Empowering the regulator to approve software updates adds an unnecessary layer of bureaucracy to the process.
51. In relation to (2), we **do not** think the scheme should also deal with cybersecurity. We strongly believe UN Regulation 155 on Cyber Security and Cyber Security Management System adequately covers cybersecurity and applies not just to vehicles with ADS but also conventional vehicles. The Regulation clearly requires the vehicle manufacturer to protect the vehicle type, including implementing proportionate mitigations, against risks identified in the vehicle manufacturer's risk assessment. This includes detecting and preventing cyber-attacks against vehicles of the vehicle type; monitoring for threats, vulnerabilities and cyber-attacks relevant to the vehicle type; and providing data forensic capability to enable analysis of attempted or successful cyber-attacks. The Regulation also requires regular reporting to the type approval authority or the technical service, which shall verify the provided information and, if necessary, require the vehicle manufacturer to remedy any detected ineffectiveness. The UK should fully apply UN Regulation 155 instead of considering a scheme that at best duplicates, or at worst undermines, it.

## Consultation Question 20

*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?*



52. We would prefer keeping the in-use monitoring, or market surveillance, authority separate from the type approval authority as is the case today. This would allow for independent pre-deployment and in-use analysis without adversely affecting the collaboration between both authorities. As such, in relation to automated vehicles, we believe the Driver and Vehicle Standards Agency should continue to be responsible for market surveillance while the Vehicle Certification Agency, as we stated in our response to the first consultation and again in paragraph 32 above, should remain responsible for type approval and be assigned as the safety assurance agency responsible for classifying an automated driving system. We also believe advertising should continue to be regulated by the Advertising Standards Authority. Duplication of roles and responsibilities in different bodies is highly undesirable as it creates complexity, confusion and economic inefficiencies.

#### **Consultation Question 21**

***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)?***

53. Besides consulting road user groups on the range of scenarios to be included in testing, as we set out in our response to Question 8, we think both the Vehicle Certification Agency (VCA) and the Driver and Vehicle Standards Agency (DVSA) already work collaboratively today with relevant stakeholders. As such, we believe existing mechanisms, including checks and balances, are adequate and would be effective.

## **CHAPTER 11: INVESTIGATING TRAFFIC INFRACTIONS AND COLLISIONS**

#### **Consultation Question 22**

***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?***

54. We agree in principle with the above proposals.
55. There are clearly benefits to proposals (1) and (2), mainly the information on traffic infractions can be utilised for safety recommendations. However, the proposals are imprecise as to who has the investigatory power (e.g. the agency performing in-use assurance itself, the police), what data

they have access to, whether the automated driving system entity (ADSE) would have the opportunity or an obligation to support the investigation, whether there would be an opportunity for the ADSE to see the data, and whether the ADSE could make submissions before facing a regulatory sanction.

56. In relation to leading measures, on which we have raised some concerns in paragraph 42 above, certain technical complexities with in-use monitoring data capture by the automated driving system (ADS) must first be resolved. For example, unless it results in an accident (a lagging measure) or is reported by road users, an ADS that ran a red light would not “know” it has committed a traffic offence if it could not recognise the light was red in the first instance.
57. As such, we suggest investigations on safety-related traffic infractions should adopt a collaborative approach involving national and/or local enforcement bodies. The in-use safety assurance agency, or the police, should inform the ADSE of the traffic infractions, present the supporting evidence and request the identified problems to be resolved. This does not mean the ADSE could avoid being issued a penalty charge notice if the traffic offence is proven to be the fault of the ADS. Failure, or continuous failure, to resolve the identified problems should result in appropriate, or escalating, sanctions.
58. As regards proposal (3), it is important that the sanctions are proportionate to the risks associated with the traffic infractions and escalate appropriately, as they do for current regulatory sanctions within the industry. Withdrawal of ADS approval should be reserved for cases of gross negligence or for serial offenders.

### Consultation Question 23

***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?***

59. We agree with the above proposed sanctions so long as:
  - The automated driving system entity must first be informed of the offence(s) and be shown the evidence;
  - Provision has been made for self-reporting, collaborative investigation, resolution of the identified issues and, if necessary, product recall; and

- The sanction is proportionate to the offence and its consequences, and escalated appropriately, with the severest, i.e. (5) and (6), reserved for cases of gross negligence or for serial offenders.

#### Consultation Question 24

***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?***

60. As regards (1), we believe the amount of any monetary penalty must be within a reasonable range or has a maximum amount stated in legislation. For example, the UK Data Protection Act 2018 sets a maximum fine of £17.5 million or 4% of annual global turnover, whichever is greater, for infringements, while the maximum civil penalty under the Housing and Planning Act 2016 is £30,000 per offence. Otherwise, affording the regulator complete discretion on the amount of monetary penalty could result in the regulator imposing disproportionately high fines, such as those imposed by the National Highway Traffic Safety Administration in the US. This may deter innovation in automated driving technology and discourage reasonable and proportionate risk-taking by automated driving system entities (ADSEs).
61. As to (2), we suggest the regulator should adopt a collaborative approach with ADSEs, as mentioned in paragraphs 57 and 59 above, to ensure the identified issues are resolved through proportionate and effective actions.

#### Consultation Question 25

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

***(1) to analyse data on collisions involving automated vehicles;***

***(2) to investigate the most serious, complex or high-profile collisions; and***

***(3) to make recommendations to improve safety without allocating blame.***

***Do you agree?***

62. We agree with the above proposals as long as the special incident investigation unit investigates only the most serious, complex or high-profile collisions and focuses on learning the lessons from incidents to make recommendations for safety improvements rather than determining where liability should lie. This will ensure there is no overlap with the police, who will continue to investigate day-to-day incidents, and with the in-use safety assurance scheme that will monitor how automated vehicles perform in real world traffic. However, it must be clarified whether the special incident investigation unit, while not allocating blame, has the power to advise the in-use

assurance regulator to reduce or increase any regulatory sanctions already imposed. There should also be greater clarity on how the special incident investigation unit will work with local authorities, particularly in the context of Highly Automated Road Passenger Services.

### Consultation Question 26

***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?***

63. We agree in principle with this proposal. Major ambiguities and scenarios of concern in the interpretation of road rules will only become apparent through increased testing. As such, they should be dealt with by the industry through clarification of the gaps between the language of the road rules and the actual driving practice with the help of regulators. Developers, vehicle manufacturers and regulators should conduct ongoing dialogue about how road rules are being interpreted and conflicts that emerge between automated driving system compliance with road rules and human drivers' social norms that don't necessarily comply. These should progress to finding some common ground to mitigate any safety risks that such conflicts may entail.
64. However, while it is understandable that such a forum may wish to consider the application of specific road rules in Great Britain to automated vehicles, we suggest such forum must not be detached from the wider discussions and conventions adopted internationally at WP.1 of the UNECE.

### Consultation Question 27

***We welcome views on:***

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

65. As regards (1), the forum should initially focus on clarifying rules that apply within particular Operational Design Domains in which first-generation automated driving systems (ADSs) are most likely to operate. They must also account for both major differences in road rules and nuances that exist in different geolocations. The interplay between ADS behaviour and road rules will evolve over time. For instance, it is common for developers and testers to begin by taking a more conservative approach, which causes the ADS to operate in a cautious manner and interpret road rules more strictly than typical human drivers.

66. As major ambiguities and scenarios of concern in the interpretation of road rules emerge through increased testing, the forum should then focus on clarifying the gaps between the language of the road rules and the actual driving practice or human drivers' social norms. These should progress to finding some common ground to mitigate any safety risks that such conflicts may entail.
67. As regards (2), SMMT and the automotive industry must be involved in such forum. SMMT represents the interests of a large number of automated driving system entities, including vehicle manufacturers and developers, as well as potential operators of Highly Automated Road Passenger Services.

## CHAPTER 12: THE USER-IN-CHARGE

### Consultation Question 28

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

- (1) should be defined as an individual in position to operate the controls of a vehicle while an ADS is engaged and who is either in the vehicle or in direct sight of the vehicle; and*
- (2) is not a driver while the ADS is engaged, and would not be liable for any criminal offence or civil penalty (such as a parking ticket) which arises out of dynamic driving.*

*Do you agree?*

68. We partially agree with the definition of user-in-charge as suggested in (1) and more fully explained in paragraphs 12.8-12.23 in the consultation paper. This distinguishes driving-related responsibilities – specifically the Dynamic Driving Task (DDT) – from other responsibilities associated with operating a vehicle. To that extent, it is helpful to be clear that when an automated driving system (ADS) is activated the human in the driver's seat will no longer have any driving-related responsibilities, but will still be considered "in charge" for the purposes of other responsibilities associated with operating a vehicle referred to in road traffic legislation. The user-in-charge should also be receptive to a transition demand to retake control and resume the DDT. We support the concept of user-in-charge as we believe it is applicable to SAE Levels 3 and 4.
69. However, the insistence on "**in direct sight of the vehicle**" is unhelpful and makes the concept too narrow and restrictive. As we alluded to in paragraph 30, the concept as proposed in this consultation paper has somehow left out Automated Valet Parking (AVP), which industry considers an SAE Level 4 high automation feature **without** a user-in-charge.
70. Paragraphs 12.14-12.16 in the consultation paper suggest a parking feature that involves a user-in-charge outside the vehicle, but is nonetheless "in direct sight" of the vehicle, supposedly controlling the parking feature using a smartphone. We wish to point out this feature is not automated driving, but driver assistance. It is generically called Remote Control Parking (RCP) and can already be used legally as a driver assistance system in the UK thanks to changes to the Highway Code and relevant regulations in 2018. The user of an RCP feature is fully responsible

for the operation of the vehicle, i.e. the DDT, and is liable for any civil or criminal offence arising from the operation. As such, the concept of user-in-charge is **incompatible** with the use of RCP. The only known and foreseeable application of automated driving that **does not require the user to be in the vehicle and is not remote operation** is AVP. AVP **does not** require the user to be in direct sight of the vehicle, in which case the ADS operates **without** a user-in-charge. However, this should not preclude the possibility of other future applications that may similarly not require the user to be in the vehicle or in direct sight of the vehicle, and is not remote operation either.

71. We suggest the concept of user-in-charge should be redefined as an individual who is not driving because the ADS is activated, but is physically present in the vehicle and in a position to operate the controls of the vehicle, and who must be qualified and fit to drive. Correspondingly, this means the concept of no-user-in-charge (NUIC), too, should be redefined and expanded to include a category besides remote operation – an automated vehicle classified as nominally requiring a user-in-charge but that is **performing the DDT for a function without user-in-charge**, such as AVP. As such, the user-in-charge, as well as the user of AVP, would not be liable for any criminal offence or civil penalty which arises out of the DDT when the ADS is activated.
72. We agree in principle with proposal (2) subject to satisfactory clarification of civil offences related to parking. The proposal above implies that parking, and hence the incurring of a parking ticket, is an activity that **arises out of the DDT**, for which the user-in-charge is not responsible when the ADS is activated. However, proposal (3) in Question 35 below implies parking is an activity that **does not arise from the DDT**, for which the user-in-charge is responsible. In any case, apart from the use of AVP where the user may not have any knowledge of whether the vehicle has parked itself legally, we struggle to see how the user-in-charge can be absolved of parking offences. Just as the user-in-charge should be legally deemed a “user” for the purposes of insurance and roadworthiness offences, the same should apply to parking. If a user-in-charge should be responsible for removing vehicles that are stopped in prohibited places, the user-in-charge should likewise be responsible for removing vehicles parked illegally or in prohibited places.
73. However, this must be distinguished from the **act, or operation, of parking**. The operation of parking using RCP or Park Assist, both of which are driver assistance features, is the responsibility of the user, who is liable for an at-fault accident. Should there be a future automated parking feature that is fully responsible for the DDT with the **user-in-charge in the vehicle**, and an at-fault accident is caused by the ADS when manoeuvring to park, the user-in-charge should not be liable.

## Consultation Question 29

***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?**

74. We agree with the above proposals. The user-in-charge should reacquire the legal obligations of a driver, whether or not he/she has taken control of the vehicle, following the end of the transition demand period. Where the user-in-charge retakes control, the deactivation of the automated driving system (ADS) will only be complete when the system has verified that the driver has taken over vehicle control. Until then the ADS will continue to perform the Dynamic Driving Task. This verification shall include at least a criterion on lateral control, except if the vehicle has already come to a stop.
75. If the ADS operates according to its design intent, meets all the requirements and standards, and there is no mechanical, software or system failure, the user-in-charge should nominally be responsible for failing to respond to a transition demand and allowing the vehicle to stop in a manner which constitutes a criminal offence. For example, should the Automated Lane Keeping System (SAE Level 3 conditional automation) issue a transition demand which the user-in-charge ignores, resulting in a Minimal Risk Manoeuvre (MRM) that is followed by a Minimal Risk Condition (MRC), he/she should be held responsible for stopping in a live lane of traffic on the motorway under Regulation 7 of the Motorway Traffic (England & Wales) Regulations 1982 and Regulation 6 of the Motorway Traffic (Scotland) Regulations 1995.
76. However, in the event the system performs an MRM that leads to an MRC due to either a severe mechanical, software or system failure or if the user-in-charge fails to respond to a transition demand as a result of genuine illness or emergency, it is only right that the user-in-charge should be exempt from prosecution if the vehicle stops in a manner which constitutes a criminal offence. The Motorway Traffic Regulations and other relevant traffic laws should be amended to clarify this.
77. The user-in-charge must be made aware of his/her responsibilities. The law must explicitly and unequivocally require the user-in-charge to respond to a transition demand to retake control of the vehicle and clearly state the only conditions under which the user-in-charge could avoid prosecution if the vehicle comes to a stop in a manner which constitutes a criminal offence.

### **Consultation Question 30**

***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.***

78. As is the case today, an approved driving instructor supervising a driver with provisional licence in a vehicle with dual controls could have a positive impact on driver success. As such, we think

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.

### Consultation Question 31

***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?***

79. We agree with the above proposals. As regards proposal (1), a user-in-charge has certain responsibilities whilst in an automated vehicle. These responsibilities include responding to a transition demand from the system when prompted. In order to retake control and resume the Dynamic Driving Task, the user-in-charge needs to be fit and qualified to drive as per the existing requirements for a conventional driver. It should therefore be a criminal offence for the user-in-charge not to hold a valid driving licence for the vehicle, to be disqualified from driving, to have eyesight which fails to comply with the prescribed requirements for driving, to hold a licence where the application included a declaration regarding a disability which the user knew to be false, and to be unfit to drive through drink or drugs or to have alcohol levels over the prescribed limits.
80. As regards proposal (2), clarity, however, is needed on the extent of blame that can be put on someone who has not committed the offence themselves, particularly if the he/she has incomplete knowledge of, or been misled on, the user-in-charge's fitness and qualification to drive.

### Consultation Question 32

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

81. We agree with this proposal based on the understanding that a person being "carried" in a vehicle cannot be technically considered as the user-in-charge, who must be in a position with access to vehicle controls in order to resume the Dynamic Driving Task (DDT) in the event of a transition demand. This proposal is important to prevent the misuse, or abuse, of the automated driving system (ADS), such as the user-in-charge vacating the driver's seat after activating the ADS. Another example is the common misguided belief that automated vehicles will enable people to consume alcohol beyond the prescribed limits. Unless they reside within the ADS's Operational Design Domain, or use Highly Automated Road Passenger Services (HARPS), or the ADS technology matures to SAE Level 5 full automation, it is likely they will still have to perform the



DDT for parts of the journey while being intoxicated with alcohol. This proposal should not apply to passengers in a no-user-in-charge type of vehicle such as HARPS.

82. Although technical solutions such as driver availability and monitoring systems should be able to prevent such abuses, they must not be seen as a substitute for legislation that clearly forbids being carried without a user-in-charge, as long as the vehicle is not a no-user-in-charge type. However, there should be exceptions, as we discuss in our response to Question 33 below.

### Consultation Question 33

***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.***

83. We believe the new proposed offence of being carried without a user-in-charge should only apply if the person knew that the vehicle did not have a user-in-charge and knew or ought to have known that a user-in-charge was required. This ensures that young children and people with certain hidden disabilities are not unfairly criminalised. Nonetheless, with the exception of those vulnerable groups, the burden of proof should be on the person alleged to have committed the new proposed offence.

### Consultation Question 34

***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.***

84. We agree in principle with the above proposals. As we set out in our response to the first consultation two years ago, these alleged offences must be investigated on a case-by-case basis, as they are subjective and situation-dependent. For example, to suggest that a user-in-charge could take control in what he/she perceives as a potential accident scenario may leave room for misguided interventions which may result in an accident that could have otherwise been avoided by the automated driving system (ADS) itself, if only the user-in-charge had more faith in it. Furthermore, the actions of a user-in-charge attempting to mitigate a perceived collision might result in a more severe accident than would otherwise have been caused had the ADS remained in control.

85. Any attempted emergency intervention or evasive action by the user-in-charge would require the human to know that the ADS is not itself going to carry out that evasive action. The user-in-charge must not be given legal carte blanche, as described in paragraph 12.63 in the consultation paper, to effectively guess or second-guess whether the ADS would be able to avoid an accident or commit a criminal offence. Allowing the user-in-charge to somehow intervene risks creating situations where no party is fully responsible for the offence or accident. Worse still, the automated driving system entity might be unfairly blamed.
86. We suggest widening the legal test to a general defence which is available if in all of the circumstances, including but not limited to the actions of the ADS and other road users, even a competent and careful driver could not have avoided the offence.

### Consultation Question 35

***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?***

87. We agree with the above proposals.
88. As regards proposals (1) and (2), we believe the user-in-charge should be responsible for ensuring the automated vehicle is insured and roadworthy. As is expected of the driver of a conventional vehicle today, the user-in-charge should ensure that standard vehicle checks (e.g. tyre condition or pressures, lighting) are completed prior to use and should respond appropriately to any warning prompts on the vehicle instrument cluster or infotainment screen (e.g. tyre pressure running low).
89. As regards proposal (3), we believe parking is the responsibility of the user-in-charge. Our views are set out in paragraphs 72 and 73 above. However, we observe the proposal related to this question is about **criminal** offences, whereas most, if not all, parking offences are **civil** ones. Unfortunately, the corresponding section in the consultation paper, i.e. paragraphs 12.72-12.93, does not elaborate on what this means. We seek clarification on criminal offences related to parking that do not arise from the Dynamic Driving Task. We think the only instance where the user (note: not user-in-charge) should **not** be held liable for parking offences is when the automated driving system is activated to perform Automated Valet Parking.

90. As regards proposals (4) and (5), we believe these responsibilities are no different to those involving the driver of a conventional vehicle today.

### Consultation Question 36

***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?***

91. As we set out in paragraph 88 above, we believe roadworthiness is generally the responsibility of the user-in-charge. However, we agree with this proposal on the basis of it would be helpful if there is greater clarity in certain areas, such as installing software updates. As suggested in Chapter 10 in the consultation paper, it is the responsibility of the automated driving system entity to keep software and maps up to date. However, it is less clear whose responsibility it is to ensure safety-critical software updates are **successfully and completely installed**. UN Regulation 156 on Software Update and Software Updates Management System requires the manufacturer to ensure that vehicles can install updates safely, including coping with failed or interrupted updates. It would be helpful to clarify if the user-in-charge should have a responsibility to ensure the installation process is not continuously interrupted for a prolonged period and to not deliberately frustrate the installation process, for example, by turning off the vehicle's mobile data and WiFi connectivity.

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

### Consultation Question 37

***We provisionally propose that:***

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

***Do you agree?***

***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".***

92. We agree with the above proposals. However, as discussions on remote driving and remote operations are currently at a nascent stage at the UNECE, it would be preferable for this position to be developed in parallel and in alignment with international consensus.
93. Our understanding of the Automated and Electric Vehicles Act (AEVA) 2018 is that it extends conventional motor insurance to cover automated driving, thereby providing a single insurance framework for vehicles that are capable of safely driving themselves in at least some circumstances or situations. This implies automated vehicles with a user-in-charge. As such, we do not think the definition of when a vehicle “drives itself” under AEVA 2018 should be amended to account for remote operation. Instead, an amendment to AEVA 2018 should be considered to include an additional part, i.e. Part 3, that deals exclusively with remote operations, or automated vehicles without a user-in-charge.

### Consultation Question 38

***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?***

94. We agree with proposal (1). However, regulation must also provide for the possibility of the automated driving system entity and the operator being one and the same entity.
95. We agree in principle with proposals (2) and (3), subject to clarification on the status of Automated Valet Parking (AVP). As we explained in our response to Questions 13 and 28, the industry considers AVP to be an SAE Level 4 high automation feature without a user-in-charge. AVP does not require the user to be in direct sight of the vehicle, in which case the automated driving system operates without a user-in-charge. However, in their current form, proposals (2) and (3) are not applicable to AVP. Therefore, we suggest the concept of no-user-in-charge should be reviewed and potentially expanded to include a category besides remote operation – an automated vehicle classified as nominally requiring a user-in-charge but that is performing AVP.

### Consultation Question 39

***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.***

96. We agree that no-user-in-charge (NUIC) automated vehicle operators should be required to demonstrate professional competence through a safety management **system**, instead of merely a safety **manager**, as a prerequisite for obtaining a licence. Professional competence ought to be demonstrated at a system level, where outcome-based requirements should be set. This is to avoid stifling innovation and encourage organisations to find the best solutions in the early years of deploying NUIC automated vehicles. NUIC operators should prove that they meet the outcome requirements by providing a robust safety case, documentation and demonstration of their safety management system.

### Consultation Question 40

***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?***

97. We agree with the above proposals insofar as these duties have not been contractually transferred to or shared with another entity such as the automated driving system entity (ADSE) and/or the vehicle manufacturer. While it is expected of the licensed operator to supervise and insure the vehicle, the responsibility to maintain the vehicle, install safety-critical updates and maintain cybersecurity may be shared between the licensed operator and the ADSE and/or the vehicle manufacturer based on a contractual agreement.
98. The regulator should define accident reporting requirements in a clear and precise manner that facilitates legal certainty while not hindering technological advancement or service innovation by creating overly onerous obligations. Complying with such requirements must be technically feasible, and should consider intellectual property rights, data protection and anti-trust laws.

## Consultation Question 41

***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?***

99. In reality, we struggle to see how the registered keeper or owner could supervise the remote operation of a no-user-in-charge (NUIC) automated vehicle. An example of this is likely to be privately-owned passenger-only NUIC automated vehicles, as described in the second consultation. In practice, the registered keeper or owner is likely to have in place a contract for supervision and maintenance services with a licensed provider. This is particularly the case with vehicles offered as a subscription service. As regards maintenance, the contracts should be specific, such as whether they cover only tyres and running gears, or also software. Unlike supervision contracts, which are likely to be offered by one entity at a time, there should be flexibility to choose from multiple maintenance providers, just as registered keepers of private passenger cars today have the right to access services provided by franchised dealers or the independent aftermarket. However, the registered keeper or owner has a responsibility to ensure the vehicle is roadworthy.
100. The responsibility to insure the vehicle will depend on the model of “ownership”. If the registered keeper or owner owns the vehicle outright, or has the vehicle on a long-term lease, it is sensible for the keeper or owner to be responsible for insuring the vehicle. However, if the vehicle is held on a subscription basis, or a short-term lease of six months or less, it might be more efficient for the keeper or owner to pay a fee to the subscription service provider, or lessor, towards insurance. In any case, most subscription-based models involving conventional cars today already include insurance. Subscription-based passenger-only highly automated vehicles for exclusive use are expected to follow a similar arrangement.
101. The automated driving system entity (ADSE) should determine what is a safety-critical software update, not the registered keeper, the licensed operator or any third parties for that matter. The responsibility for installing safety-critical software updates should therefore be split between the ADSE and the registered keeper or owner. In systems where safety-critical software updates are programmed to be automatically downloaded and installed when suitable and adequate connectivity is detected, the keeper or owner has virtually no responsibility for download or installation. In other systems, the keeper or owner could be made responsible for triggering the update, for example by authorising the update process to begin. This assumes it is not an onerous process, but sufficiently simple and intelligible to be executed by the keeper or owner. The ADSE should then be responsible for ensuring that the update has been correctly installed, otherwise the ADSE will prompt the keeper or owner to begin the process again until installation is successful.
102. Insofar as the vehicle is not operated by a licensed operator and is authorised for exclusive private use without a user-in-charge, we agree that the registered keeper or owner should be responsible for reporting accidents.

## Consultation Question 42

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

***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?***

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

103. We agree with the above proposals. Accessibility is of major importance and is one of the potential key benefits of Highly Automated Road Passenger Services (HARPS). An SMMT-commissioned [report](#) in 2017 found that automated vehicles have the potential to reduce social exclusion significantly. Almost half of all people with mobility-related disabilities in the study said automated vehicles would allow them to pursue hobbies outside of home, while two-fifths said they would benefit from having better access to healthcare. 47% of older people surveyed said automated vehicles would make it easier for them to fulfil basic day-to-day tasks such as grocery shopping.
104. Regulation should not impose inappropriate technical and operational requirements that could hinder the introduction of HARPS. For example, instead of requiring all HARPS to have staff on board with non-driving responsibilities to focus on providing customer care, regulation should be flexible enough to account for the deployment of a mixed fleet where some vehicles will have staff on board to cater for special customer access needs. HARPS offerings could be personalised – a special disability access option could be available on the vehicle configurator app at the ordering stage. Furthermore, not unlike the Motability Operations model, some emerging HARPS propositions may exclusively serve the special access needs segment of the market.
105. Regulation, where necessary, could focus on improving accessibility for the most relevant HARPS use cases (e.g. access to healthcare, workplace, transport hubs) and making these operationally attractive for HARPS operators to address. For example, not unlike taxi regulation in London, some HARPS in a mixed fleet could be specially designed for ease of getting in and out of the vehicle and seating comfort for people with wheelchairs.

### Consultation Question 43

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

106. The operator licensing scheme should be administered by an independent organisation whose standing must not be compromised by close association with any operators.

## CHAPTER 14: CRIMINAL OFFENCES BY ADSES AND THEIR SENIOR MANAGERS

### Consultation Question 44

*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?*

107. Public safety is at the heart of the development of automated vehicles and we support proportionate measures that support this objective. We note the proposal to introduce the new offences above is to complement the safety assurance scheme. Our general view is that, regardless of use case, all automated driving systems must meet basic safety standards, and should be assessed using a common national safety assurance scheme.
108. The consultation paper notes that Sections 3, 33 and 37 of the Health and Safety at Work etc Act 1974, and Sections 2 and 3 of the Fraud Act 2006, could apply where there is wrongful behaviour by an automated driving system entity (ADSE). In addition, section 1(1) to (3) of the Corporate Manslaughter and Corporate Homicide Act 2007 and the offences of unlawful act manslaughter, gross negligence manslaughter and culpable homicide potentially apply where death results from wrongdoing. The consultation paper notes some difficulties in relation to the existing offences, such as the lack of mechanisms to hold senior management accountable. The proposed Law Commission project on Corporate Criminal Liability would be an appropriate forum to address these broader issues than the current consultation, as it will be able to consider the question broadly and recommend a consistent approach across all sectors.



109. The right incentives and penalties to support ADSEs to engage fully with the safety assurance scheme and regulator will help to drive safety. However, while we accept that criminal offences may need to be introduced as a part of the overall scheme of safety assurance, we would advise caution in introducing onerous criminal sanctions that could be imposed on individual employees. This could bring with it the risk of encouraging the covering-up of potential problems where an employee is concerned that open discussion could lead to blame for them or their colleagues. Instead, the focus should be on how best to tailor enforcement regimes in order to incentivise transparency and compliance by participating organisations, and to encourage transparency and full cooperation with the regulator.
110. Attaching criminal liability to wrongdoing by ADSEs brings with it serious risks, including stifling innovation, unfairly penalising inevitable problems arising from development, treating the automated vehicle sector more harshly than other industries and incentivising cover-up rather than transparency. These risks are real, and an overemphasis on criminal liability could endanger the substantial safety gains that are expected from the introduction of automated vehicles.
111. As regards proposals (1) and (4), we agree in principle with the approach of introducing specific offences that are closely aligned with the safety assurance scheme, and similar to the systems of penalties for failure to comply with safety assurance schemes in other potentially high-risk industries. Making the most egregious behaviour the subject of criminal penalties could be used to give teeth to the safety assurance system. If it transpires that prosecutions are infrequently brought, this can be seen as a success in that culpable behaviour is being effectively dissuaded.
112. The approach of penalising lack of transparency rather than negligence is a sensible one in the context of a fast-moving, innovative industry. However, we would recommend an approach that **prioritises encouraging cooperation with the regulator** and reserves criminal liability for extreme behaviour only. Honest and diligent efforts to comply with the law should not lead to criminal penalties. A **due diligence defence** can be a way of achieving this, provided that sufficient information and guidance is available to enable an ADSE to understand the requirements fully. Another approach is the inclusion of a mental element in criminal offences, such as an intent to deceive, as with some of the aviation offences.
113. We query the argument that offences should be tailored to avoid “radical asymmetry” with the treatment of human drivers, as described in paragraphs 14.16 and 14.89 in the consultation paper. The context is very different: the need to discourage careless and dangerous driving by a human driver is not the same as the need to incentivise responsible and transparent systems development. Any form of negative finding applied to an ADSE will have a series of other adverse effects, such as loss of public reputation and confidence, as well as loss of trust with regulators and commercial partners. Therefore, the consequences of any finding of criminal liability in this context will extend far beyond the sentence itself and will act as a powerful incentive to comply.
114. As regards proposals (2) and (3), the key driver must always be **incentivising appropriate behaviours at all levels within an organisation**. We query whether separate offences for different levels of staff such as senior management would achieve this objective. It may have the effect of encouraging distortions in behaviour, such as secrecy within parts of an organisation.

115. Finally, as regards proposal (5), we recommend that enforcement should rest with the specialist regulator rather than being a matter for general prosecution authorities. A specialist regulator is more likely to be able to assess whether particular behaviour is culpable in the context of developing technology, and this approach is consistent with that taken in relation to the other high-risk industries discussed in the consultation paper.

#### **Consultation Question 45**

*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.***

116. As stated in our response to Question 44, great care is needed in designing any offences to align them with incentivising appropriate behaviour at all levels of automated driving system entity (ADSE) organisations, in particular, transparency and cooperation with regulators. The overall objective of improving safety should be paramount, and the careful development of automated driving systems (ADSs) in a transparent and collaborative manner promises to achieve this.
117. In relation to suggested Offences A and B, we would point out that the pharmaceutical industry, on which these offences are modelled, provides established and extensive guidance to market participants to enable them to understand their obligations. Clearly, this would not be available in the early stages of development of automated vehicles. Until a substantial body of practice and guidance has been built up, ADSEs would not be able to tell whether the information package that they are presenting in fact meets all of the requirements to satisfy the “relevant to the evaluation of the safety of the ADS or the vehicle” test. It may therefore be appropriate to introduce this kind of test once the industry has developed further. We have concerns that at this stage it could act to deter innovators, especially smaller players, from entering the market. This point is also relevant to the due diligence defence, discussed further below. In addition, unlimited fines are rarely justifiable and can be counterproductive, as they may encourage non-disclosures, leading to cover-ups and silos, instead of encouraging a culture of transparency.
118. We suggest that it may be more appropriate to follow the model of the aviation industry rather than the pharmaceutical industry, as a closer parallel. As with the aviation sector, an ADS comprises a sophisticated, mechanically-propelled assembly of components that may, through malfunction, cause personal injury and damage to property. We note that the primary approach taken in the aviation sector relies on notices served by the regulator requiring the provision of information, with enforcement through civil proceedings and potentially substantial financial penalties. The Civil Aviation Authority's stated policy objective in enforcement is to use enforcement to secure the behaviours that it wants to encourage and monitor (Civil Aviation Authority Regulatory Enforcement Policy). It does this through a spectrum of enforcement beginning with collaboration and facilitation, moving through advisory processes such as guidance and verbal warnings, and then to formal enforcement tools of increasing seriousness.

119. Two offences relating to the provision of false information are discussed in paragraph 14.69 in the consultation paper. We note that the “false representations” offence set out in the Air Navigation Order 2016 Article 256(1)(c) is qualified with a mental element of “having an intent to deceive”. This is a more stringent test than is currently envisaged in proposed Offence A. The second aviation based offence identified involves furnishing false information in response to a notice issued by the regulator. We note that this involves the licence holder responding to an information request rather than itself identifying the necessary information.
120. Neither of these offences corresponds with the proposed failure to provide relevant information offence (Offence A). This, we suggest, sets too exacting a standard for ADSEs to reach, especially in the early stages of this new technology, where full guidance will not be available. Offence B corresponds somewhat to the second aviation offence, although importantly it lacks the “intent to deceive” element.
121. Offence C ascribes blame to senior employees of an ADSE in situations involving their consent, connivance or neglect. However, we have concerns that this could drive inappropriate behaviour within an organisation. A situation could arise in which decision-making is driven to junior levels, or development is compartmentalised into smaller business units, in order to separate senior managers from any wrongdoing. In addition, we consider that it will be difficult to ascribe blame to particular individuals in a way that is fair and does not single out a person who is, in reality, working in a team context. In any case, directors and senior managers already face potential criminal liability in well-defined circumstances. We do not see any justification for introducing an extra series of criminal offences for effectively the same transgressions.
122. We note that the offence on which this is based (Civil Aviation Act 1982 (s. 99(1)) would apply in relation to the aviation offences discussed in paragraph 14.69 in the consultation paper. As noted above, these involve either the “intent to deceive” or responding to notices issued by the regulator.
123. In relation to Offence D, we consider that the issue of causation is problematic. As is discussed in Chapter 16 of the consultation paper, causation is difficult in the context of this evolving and interconnected technology. The three-step test for aggravation is uncertain and potentially exposes employees working within an ADSE to very substantial penalties, without a sufficient degree of clarity and certainty.
124. In addition, the proposed maximum term of imprisonment for Offence D is out of line with the penalties applicable to offences in relation to other high-risk industries. We consider that a maximum penalty in line with that in the aviation sector legislation and the Human Medicines Regulations 2012 (two years’ imprisonment) is sufficient in the context of a person fulfilling their occupational role. The comparison with the maximum penalties that can be imposed upon human drivers is not appropriate, because individuals working within an ADSE are unlikely to be solely responsible for an incident in the way that a driver often is, and the attribution of blame to an individual is not appropriate in the same way. For an ADSE, the reputational impact of a conviction where a serious incident has occurred is likely to act as a strong deterrent without the need for long sentences and will drive organisational compliance in the same way that it does in the aviation or pharmaceutical industry.

125. The proposed inclusion of the due diligence defence is helpful. However, at this early stage of development, it will be difficult for an ADSE to understand exactly what is required to fulfil this standard. Those innovators who are early to market should not be made an example of by criminal enforcement when the standard expected of them is not fully understood. Regularly updated guidance issued by a safety regulator, under statutory authority, would be a sensible way to inform ADSEs what standard is expected of them. Until this is developed, an ADSE could not easily make use of the defence. We note also that the Human Medicines Regulations 2012, on which this defence is based, require a court or jury to accept the due diligence unless the prosecution can demonstrate beyond reasonable doubt that they should not. This provision should be included along with any due diligence defence.
126. Overall, the proposed offences as currently drafted need improvement in a number of respects. They would be better based on the aviation model, in our view, as a closer parallel to automated driving technology. Important elements such as the intent to deceive, or the provision of information in response to specific notices, should not be omitted. Where imprisonment is included as a potential penalty, it should only be included for the most serious kinds of behaviour involving a punishable mental element. A maximum two-year term would be a sufficient deterrent, and including a potential 14-year term is obviously excessive in this context. Finally, the risk of committing an offence by failing to set out information in a way that later turns out to have been misleading in some way is an impossibly high hurdle to set, especially in the absence of full and up-to-date guidance. This should not lead to criminal liability without some additional mental element such as an intent to deceive. What is important, especially at this early stage of development, is to tailor enforcement to promote transparency, responsiveness to information requests and cooperation between the regulator and an ADSE.

#### **Consultation Question 46**

***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.***

127. While it is clearly desirable to incentivise automated driving system entities (ADSEs) to present information in a clear and accessible form, as we explained in our answer to Question 45, there is a problem here in the provision of adequate guidance for ADSEs. At the current stage of development, it will be very difficult for ADSEs to know exactly how the information should be presented to enable the safety regulator to understand it appropriately, and to signpost the elements that, perhaps only later, prove to be most relevant.
128. A situation could arise, for example, in which a minor part of the overall operation of the automated driving system turns out, in practice, to introduce a dangerous state in particular circumstances (e.g. the presence of an unexpected road user, or very unusual weather conditions). This could lead to an accident. It would be unfair to expect developers to be able to foresee this as being potentially significant when presenting their information for approval, and they could later be criticised for not highlighting relevant information.

129. It would be better, in our view, to focus on transparency and cooperation with the safety regulator, and the development of guidance in how best to organise and present supporting information and data. The duty of presentation of information might be introduced at a later stage, when standards for presentation and organisation of information has become more standardised and detailed guidance has been developed.

## CHAPTER 15: NEW WRONGFUL INTERFERENCE OFFENCES

### Consultation Question 47

***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?***

130. Although we think “other mechanism” in Section 25 of the Road Traffic Act 1988 provides for a sufficiently broad construct that includes safety-critical physical parts of a vehicle, we agree with this proposal and support the inclusion of software. Due to the potential gravity of tampering with safety-critical physical parts and software of the vehicle, a legislative amendment would be helpful to ensure dangerous behaviour is appropriately criminalised and public awareness of the consequences of such offences is raised.

### Consultation Question 48

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

131. We support the proposal that the tampering offence should apply to external infrastructure required for the operation of automated vehicles. The tampering offence in Section 25 of the Road Traffic Act (RTA) 1988 refers to interference with “the brake or other part of its mechanism”. However, as the consultation paper suggests, an automated vehicle’s ability to operate safely may depend on external infrastructure such as networks and beacons that support vehicle-to-everything (V2X) communications. Interfering with these equipment, particularly with the intention to deliberately transmit spoof messages, can be potentially detrimental to the performance of the automated driving system, leading to potential death or serious injury. We agree, therefore, that the offence should be amended to apply to external infrastructure required for an automated vehicle’s operation. In addition, “traffic equipment” in 1(c) of Section 22A of the RTA 1988 should

be clarified to include external infrastructure required for an automated vehicle's operation, while "wrongful interference" should be clarified to include tampering.

132. We are concerned, however, that the penalties for tampering may be inadequate to deal with a more serious degree of tampering with infrastructure. This could affect the operation of several vehicles at once, with consequently serious effects, and would therefore merit a more serious penalty. We suggest that consideration be given to creating a new offence that reflects this more serious and dangerous type of activity.

#### Consultation Question 49

***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?***

133. We do not disagree with this proposal although we think existing legislation in relation to Section 22A of the Road Traffic Act 1988 adequately covers offences of causing death or serious injury, i.e. aggravated offences, by wrongful interference with vehicles (not just automated vehicles), roads or traffic equipment. However, as we suggested in paragraph 131 above, what is more important is to clarify that "traffic equipment" includes external infrastructure required for an automated vehicle's operation and that "wrongful interference" includes tampering.
134. We fully agree, however, that this proposal should apply to both England and Wales, and Scotland. We support the need for a clear and consistent offence in both jurisdictions.

#### Consultation Question 50

***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?***

135. We agree with this proposal.

## Consultation Question 51

***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.***

136. We do not disagree with the inclusion of the approved work defence. We consider it to be important that repair and maintenance operations that have been authorised by a vehicle manufacturer or automated driving system entity (ADSE) are not at risk of being criminalised.
137. However, in practice not all independent service, repair and maintenance providers necessarily seek vehicle manufacturer or ADSE authorisation, especially since only qualified providers should be in a position to offer such repair or maintenance services. In the event an **unnecessary** operation or software installation is performed leading to injury or death, such providers should not have recourse to approved work defence even though the operation or software is manufacturer- or ADSE-approved. It may also be beneficial to separately look into the pre-requisites for a service, repair and maintenance provider to be suitably qualified, or recognised for upholding a code of conduct, for carrying out the repair or maintenance of complex automated vehicles.
138. In the light of the concerns set out in paragraph 15.61 in the consultation paper, we suggest that a clarification of Section 22A of the Road Traffic Act 1988 be considered, to make clear that “lawful authority” and “reasonable cause” are separate restrictions on the scope of the offence.

## CHAPTER 16: CIVIL LIABILITY

### Consultation Question 52

***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?***

139. We agree in principle with this proposal. The way the Automated and Electric Vehicles Act (AEVA) 2018 deals with contributory negligence is convoluted and will need clarification either now or in the future. The consultation paper proposes leaving this until more experience has been gathered through the use of automated vehicles. The courts are familiar with applying the principles of contributory negligence in existing cases and will presumably be able to extend these to a scenario involving an automated vehicle. The rather complex formulation of this test flows from the way AEVA 2018 imposes liability on the insurer. As such, we agree that the law in this area is adequate at this stage, but the wording of Section 3 should be reviewed after a set period of time,



for example two years. On causation, we agree that it would be difficult at this stage to set out how this will work in detail.

140. For both contributory negligence and causation, we propose that guidance be developed as soon as real world situations begin to arise and are dealt with by the in-use assurance regulator or the courts. Non-statutory guidance, falling within the statutory remit of the regulator, could be issued and updated on a regular basis in response to experience and developing technology. It would be sensible to provide for this in primary legislation.

### Consultation Question 53

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

***Do you agree?***

141. We agree that measures to compensate victims of accidents caused by uninsured automated vehicles are necessary. We firmly believe the Motor Insurers' Bureau provisions should be extended for this purpose.

### Consultation Question 54

***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?***

142. We agree that any review of product liability law should not be confined to automated vehicles. We note the ongoing EU project to review the Product Liability Directive and bring it into alignment with new technologies. It is uncertain at this stage what approach the UK will take to developing the law in this area. However, in our view, it would not be appropriate to review the application of the Consumer Protection Act (CPA) 1987 specifically in the context of automated vehicles. The issues raised in relation to software updates, the definition of defect and proof of a defect having occurred, and establishment of causation merit substantial consideration for innovative technologies more broadly.

143. Under the current system, we would expect the manufacturer to have responsibility for software forming part of the overall "product". Although this means they would be liable under the CPA

1987 for any defects arising from software provided by third parties, we would expect them to manage this liability contractually between them. Manufacturers could seek an indemnity from software providers if the software provided renders the product defective under the CPA 1987. The parties would normally only accept liability that they were able to insure.

## CHAPTER 17: ACCESS TO DATA

### Consultation Question 55

***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?***

144. Location and time stamps when an automated driving system is activated and deactivated could be important for civil, criminal and regulatory investigations. However, the considerable detail in the consultation paper setting out a proposal for the collection of location data in paragraphs 17.27-17.64 is in itself indicative of its sensitivity, particularly from the perspective of data privacy. It is for this reason that the UNECE has decided to omit location stamp from among the data elements required under the Data Storage System for Automated Driving (DSSAD) in UN Regulation 157 on Automated Lane Keeping System. It is for the same reason the European Data Protection Board Guidelines on Processing Personal Data in the Context of Connected Vehicles and Mobility Related Applications and the EU ePrivacy Directive contain specific safeguards for location data.
145. We understand that it is technically possible for the DSSAD to include a location stamp among its data elements and that there is a precedent in requiring the recording of location stamp in the form of Section 63(a)1 of the German Straßenverkehrsgesetz. Partly on those bases and partly because location data could better facilitate civil, criminal and regulatory investigations, we agree in principle with the proposals above subject to satisfactory safeguards and compliance with the Data Protection Act 2018, the UK General Data Protection Regulation and the EU ePrivacy Directive. When it comes to sharing this data or providing access to it, this should be underpinned by a clear identification of specific categories of data required for specific use cases. Where the data is later accessed for accident investigation, legal certainty must be provided as to who the data controller and data processor are, and how data protection obligations are upheld.

### Consultation Question 56

***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?***

146. Industry cannot agree to caveats that challenge consumer trust, and therefore any obligations to share data must only occur on the basis of the registered keeper of the vehicle providing consent to sharing the data. Post this, disclosure should be in line with requirements of the Data Protection Act (DPA) 2018 and the UK General Data Protection Regulation (GDPR) as mentioned in our answer above.
147. We also **strongly disagree** with the notion of “where the data is necessary” to decide claims fairly and accurately, as we regard this as far too broad, imprecise and risks giving a carte blanche for insurers to demand a disproportionate and unreasonable amount of data under the pretext of necessity. Legislation must go further and provide legal certainty by **clearly specifying the data elements** that must be disclosed to insurers for the fair and accurate processing of claims. For example, under Article 32 “Access to vehicle data” of the French Mobility Law (LOM), clause 5 of Article L1514-6 clearly stipulates that “only the data strictly necessary to determine whether driving delegation of the vehicle is activated or not, or the conditions of take-back, for the purposes of compensating the victims ..... shall be transmitted”. Legislation must also spell out the data protection obligations of insurers under the DPA 2018 and the UK GDPR once the data has been disclosed to them.

### Consultation Question 57

***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?***

148. We understand the reasons behind proposal (1) above. If it can be proven beyond reasonable doubt that it is technically possible and economically feasible for the DSSAD to store data for three years, we think this could be reasonable owing to the limitation period for personal injury claims in the UK.
149. However, current regulation on Data Storage System for Automated Driving (DSSAD) and Section 63(a)4 of the German Straßenverkehrsgesetz require data to be stored for six months for a reason. In addition to upholding the storage limitation and data minimisation principles of both the EU and the UK General Data Protection Regulations, there are likely to be physical and technical limitations to the amount of data that can be stored by the DSSAD. Increasing the physical storage capacity of the DSSAD could be one option to address the limitations. Another, as suggested in

paragraph 17.72 in the consultation paper, is to upload the data onto an offboard server for longer-term storage. Either measure will result in the automated driving system entity (ADSE) incurring huge additional costs solely for its automated driving system to operate in the UK, whereas currently there is no other jurisdiction known to have mandated this disproportionate storage requirement.

150. We submit that it is neither fair nor proportionate to impose this huge additional cost on the ADSE to achieve an outcome that solely benefits another sector. Should a third party offer to assume the responsibilities and bear the costs for offboard storage, this introduces new complexities in data protection obligations and the challenge to justify storing someone's personal data for three years, especially if there is no accident. The data controller, too, may find it challenging to justify transferring personal data to a third party for storing over such a lengthy period.
151. The fact that proposal (2) entertains the possibility of a review suggests the three-year limitation period could be amended within reason. We suggest the Government should not merely consider tailoring the DSSAD data storage requirements to fit into the existing limitation period for personal injury claims, but should likewise consider amending the limitation period to better align with data storage requirements set out in internationally harmonised regulation on DSSAD.
152. Furthermore, specifically in the context of Automated Lane Keeping System, initial deployment includes a very limited functionality within a specific speed limit (i.e. below 37mph) and Operational Design Domain (i.e. motorways, no pedestrians). As such, the expected range of disputes arising from this limited level of deployment is not proportionate with the extremely long period of data storage, i.e. three years, that is being proposed.

### Consultation Question 58

***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?***

153. We agree in principle with proposal (1). This requirement will only add value at the classification stage if the details requested are in addition to those already verified as part of the type approval process. Some technical regulations, for example GSR 2 on Intelligent Speed Assistance and Driver Drowsiness Attention Warning, have requirements pertaining to privacy and data protection. In addition, the details requested must account for the fact that the automated driving system entity (ADSE) cannot breach commercial confidentiality of its own data, for example, by offering an explanation that may reveal an algorithm or that could otherwise put at risk the security of its platform and systems.

154. We disagree with proposal (2). UK General Data Protection Regulation (GDPR) compliance is mandated by the Data Protection Act (DPA) 2018, and as such must be independent of the classification of an automated driving system (ADS). It is rather confusing and slightly preposterous if we were to have an ADS categorised as not self-driving just because it did not satisfy the regulator regarding GDPR obligations. In our view, the ADS should not have progressed to the classification stage if this were the case. We also wish to point out that an ADSE that strictly complies with its obligations under the DPA 2018 and the UK GDPR would uphold its storage limitation and data minimisation principles in relation to the Data Storage System for Automated Driving, which may not be compatible with proposal (1) in Question 57.

## CONTACT

David Wong  
Senior Technology and Innovation Manager



18 March 2021