



Centre for Connected  
& Autonomous Vehicles

# Pathway to Driverless Cars: Proposals to support advanced driver assistance systems and automated vehicle technologies



July 2016

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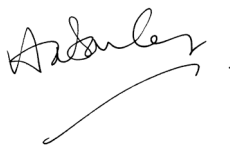
# Foreword

Over the next few years advances in connected and automated vehicle technologies will have a profound impact on our transport system, with the potential to deliver major benefits; fewer crashes on our roads; freedom to travel for those who currently find that difficult; more efficient transport networks that are safer, smoother, and swifter; and, new high value jobs in the technology and automotive sectors.

These are big prizes. This Government is acting to shape the way the technology emerges to ensure people and businesses in the UK are among the first to benefit. It means support for research and development to help drive. It means investing in UK capabilities to ensure we can compete on the world stage. And, it means a regulatory framework that can adapt to developments in the market quickly to ensure the technology can be rolled out safely.

Our legal and regulatory system is already one of the most welcoming for the development of this technology, and has attracted global businesses to develop and test their technology on our shores. The next step is to consider what needs to be done to enable the safe sale and use of more advanced driver assistance systems, and automated vehicle technologies, as they emerge. This consultation represents a major step on the pathway to driverless cars. It starts a rolling programme of reform that will keep our regulations up to date, ensuring we can safely take advantage of what automated vehicles can offer, tailored to near-to-market technologies.

The UK has always shown itself able to lead the charge on new transport technology: British engineers pioneered the railways; British towns and cities were among the first to see motor vehicles replace horses; and, British electronics can be found in telecommunications systems all around the world. As a nation of innovators, engineers, and entrepreneurs, we are well placed to repeat that success as the next wave of automotive technology arrives.



**Rt Hon Anna Soubry MP**  
Minister of State for Business and Enterprise



**Andrew Jones MP**  
Parliamentary Under Secretary of State for Transport



# Executive summary

Automated vehicle technology will profoundly change the way we travel, making road transport safer, smoother, and smarter. We are on the pathway to driverless cars, where fully automated vehicles will transport people and goods to their destination without any need for a driver. The Government wants to secure the UK's position at the forefront of this change for the development, construction, and use of automated vehicle technologies.

Organisations are taking notably different approaches in developing this technology. Some are taking an evolutionary approach in developing new advanced driver assistance systems (ADAS) – with incremental developments on existing technology such as automated braking systems. Others are taking a revolutionary approach in developing fully automated cars from the ground up, which can drive themselves for the entire journey.

It is not clear when either approach will deliver a truly driverless car that people can purchase, or use. Experts think this could be any time from the mid-2020s onwards. What is clear is that vehicles, which can be parked within line of sight by remote control, or pilot themselves with human oversight on high speed roads such as motorways, will be available for sale in the next two to four years.

Whichever path development takes, the safe and efficient movement of people and goods is key to our economic prosperity. Automated vehicles will facilitate this, delivering social, environmental, and economic benefits to the UK by:

- improving road safety - with over 90% of road traffic collisions caused by human error, automated vehicles could help to reduce death and injuries on our roads;
- enabling better use of road space - leading to improved traffic flow, with associated fuel savings; and
- enhancing mobility - giving access to those who currently cannot drive.

As a Government, we are excited by the potential for automated vehicle technologies to improve the way we travel and move goods - not just when vehicles are fully automated and totally connected to the rest of the world, but also as technologies come to market step-by-step. These technologies could lead improved productivity, and increased trade as British industries capture part of a wider global market for Intelligent Mobility estimated by the Transport Systems Catapult to be worth £900bn by 2025<sup>1</sup>.

The UK already has one the best regulatory regimes for testing automated vehicles in the world. We are also one of the first countries in the world to commit to making changes to their domestic regulatory regime to adapt to the introduction of automated vehicle technology (AVT). This consultation seeks your views on the latest of these proposals to facilitate the use of ADAS and AVT across the UK.

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<sup>1</sup> <https://ts.catapult.org.uk/wp-content/uploads/2016/04/Modelling-Intelligent-Mobility-Feb-2015.pdf>

## Our proposals: preparing the way for automated vehicles

Our first step on the pathway to driverless cars was to carry out a regulatory review, which concluded in February 2015 and demonstrated that testing AVT in the UK is already possible. Unlike other countries, our ‘test anywhere’ advantage means you can test automated vehicles on any road in the UK without needing to seek permission from a network operator, report any data to a central authority, or put up a surety bond.

The second step was to publish a Code of Practice<sup>2</sup> to help testers understand how to comply with our laws. It clearly and simply sets out that testers must obey all relevant road traffic laws; test vehicles must be roadworthy; a suitably trained driver or operator must be ready, able, and willing to take control if necessary; and appropriate insurance must be in place. It has now become the point of reference for governments and regulators around the world

We are also helping to fund research, development, demonstration, and deployment activities. In February this year we announced the winners of the first £20m competition from the £100m Intelligent Mobility Fund<sup>3</sup>, which is being match-funded by industry to help facilitate the development of new connected and automated vehicle technologies. We will be launching the next competition, worth up to £30m, in August. In May we issued a Call for Evidence on how we can improve the UK’s testing environment for connected and automated vehicles<sup>4</sup>. In particular, it asks whether there is a case for a new flagship test bed to provide a focus for automated vehicle testing activity. At the same time we are preparing our infrastructure for the vehicles of the future. This includes creating a ‘Connected Corridor’ from London to Dover to enable vehicles to communicate wirelessly with infrastructure and potentially other vehicles.

And, at an international level, we are actively shaping international vehicle standards to ensure that automated vehicle technologies are safe to come to market.

### Regulation: how the UK government is dealing with the domestic framework

Our next major step on the pathway is to start tackling the domestic regulatory issues that could prevent British citizens and businesses from taking advantage of safe and approved ADAS and AVT as they come to market.

It is difficult to predict the future course of development for AVT. Therefore, it is a challenge to identify the right solutions for unknown future technologies. Indeed, because there will be a transitional period - where we will have a mixture of conventional cars, cars with increasingly sophisticated ADAS and ultimately, fully automated vehicles - the solutions for the distant future might not work now. Too much regulation or deregulation at an early stage could also stifle progress. This doesn’t mean that we should wait and see what the rest of the world is doing, or until fully driverless cars are here before deciding how to act. This would put British citizens and businesses at a disadvantage. Where we can foresee issues, we plan to implement solutions.

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<sup>2</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/446316/pathway-driverless-cars.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/446316/pathway-driverless-cars.pdf)

<sup>3</sup> <https://www.gov.uk/government/news/driverless-cars-technology-receives-20-million-boost>

<sup>4</sup> <https://www.gov.uk/government/consultations/driverless-vehicle-testing-facilities-call-for-evidence>



We want to take a pragmatic and proportionate approach, with a rolling programme of regulatory reform. And, we are engaging with industry and international partners to identify technologies and vehicle systems likely to come to the market within the next few years. With this information, we can begin to identify potential barriers and possible solutions, as well as any safeguards we may want to put in place. We plan to keep this area under constant review, and to act quickly so that we can all make use of the opportunities offered to us by ADAS and AVT.

The only immediate change that we have identified primary legislation that is required now is to update our insurance framework. This will give insurers and manufacturers time to consider what insurance products can come to market in time for when this technology arrives.

In addition, in this first round of regulatory reform, we have identified the following new ADAS technologies as being likely to come to market within the next two to four years:

- Motorway assist systems for travel on high speed roads (ie motorways and major trunk roads); and
- Remote control parking.

In addition, the government will be running a series of trials for vehicle platooning in the same timeframe. So we must also consider how regulations might impact in these other applications of automated vehicle technologies.

In response to these technologies, we propose to amend specific aspects of the current regulatory framework for driving. The proposals we are making fall into three related but distinct areas:

- **Insurance:** making amendments to primary legislation to ensure insurance products will be available for automated vehicles;
- **Regulation:** clarifying provisions for the construction and use of near to market technologies (largely remote control parking) through changes to regulations; and
- **Highway Code:** providing guidance for drivers about the safe and appropriate use of new ADAS technologies, as well as specific advice in the Highway Code about separation distances for vehicles driving as platoons.

## A step-by-step approach

It is important to note that we are not proposing fundamental revisions at this stage; our goal is to enable the safe use of these technologies in line with their capabilities. It will be a while before a fully driverless car will be available that can carry out a door-to-door journey. So, as the driver will need to remain responsible throughout the journey at this stage, most current prohibitions (such as those for careless driving, as well as drug and drink driving) will remain in place.

By taking a step-by-step approach, and regulating in waves of reform, we will be able to learn important lessons from real-life experiences of driving of increasingly automated vehicles. We can then apply these lessons when considering what further changes will be required and are appropriate to allow the safe use of technology that is yet to be developed. This will complement the lessons learnt from testing fully-automated vehicles both on test tracks and public roads, providing the government with the evidence on which to support future policy decisions. Figure A sets out how this first wave fits within our longer term plans.

Following this consultation, should we choose to proceed with our proposals to amend statutory instruments or guidance, we plan to run a second consultation to



test the detailed implementation options for ADAS. Future waves of reform will be evidence based and influenced by the ongoing development of new technologies.

Figure A: Waves of regulatory reform



## Geographical scope

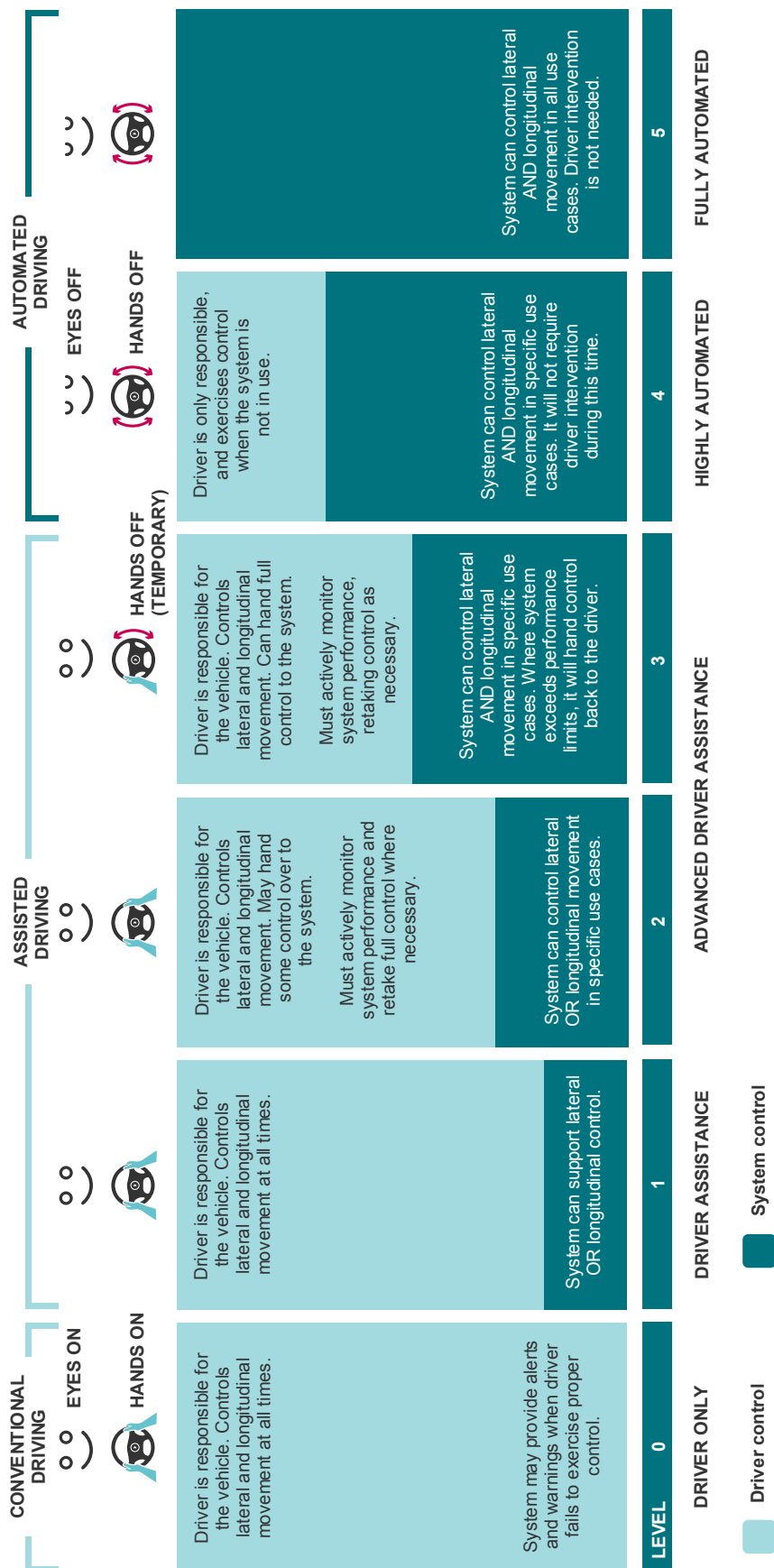
This is a UK-wide consultation document and relevant legislation for Northern Ireland is referenced where appropriate.

## Diagrams: levels of assistance and automation

Figure B on the following page details the different levels of assistance and automation - and the role of the driver in each of them. This aims to clarify what is meant in this document by the terms conventional driving, assisted driving and fully automated driving.

Figure C, on page 16, builds on Figure B by detailing the specific proposals we are making in this consultation document, in relation to the different levels of assistance and automation.

Figure B: Levels of assistance and automation



The levels of assistance and automation are adapted from the Society of America Engineers J3016 Standard "Taxonomy and Definitions for Terms Related to On-Road Motor Vehicle Automated Driving Systems" ([http://standards.sae.org/J3016\\_201401/](http://standards.sae.org/J3016_201401/)). While these are not formally recognised by the UK Government or the United Nations World Forum for Harmonisation of Vehicle Standards, they are seen as a helpful guide to the technology.

# How to respond

The consultation period began on 11 July 2016 and will run until 9 September 2016. Please ensure that your response reaches us before the closing date. Please contact us if you need alternative formats (Braille, audio CD, etc.).

It would be helpful if you would respond online at:

<http://www.smartsurvey.co.uk/s/cavconsultation/>

Alternatively, you can send complete the response pro-forma at Annex A and send your response to:

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Zone 1/33 Great Minster House  
33 Horseferry Road  
London SW1P 4DR  
Email: [consultation@ccav.gov.uk](mailto:consultation@ccav.gov.uk)

When responding, please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of a larger organisation, please make it clear whom the organisation represents and, where applicable, how the views of members were assembled.

## Freedom of Information

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the Freedom of Information Act 2000 (FOIA) or the Environmental Information Regulations 2004.

If you want information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department or CCAV.

The Department and CCAV will process your personal data in accordance with the Data Protection Act (DPA) and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

# 1. Introduction: supporting the sale and use of connected and automated vehicles

## Overview of consultation proposals

- 1.1 In chapter two of this consultation, the legislative changes we are proposing regarding automated vehicles relate to insurance. This will provide sufficient time for insurers and manufacturers to consider what insurance products can come to market in time for when it is safe for other road traffic legislation to be amended to allow the driver to come out-of-the-loop.
- 1.2 The second half of the consultation, covering the Highway Code and Construction and Use Regulations, makes amendment proposals for new types of ADAS. Drivers using ADAS remain in-the-loop and responsible for the driving task. Depending on responses to this consultation, we would run a second consultation with precise proposals on how we would amend the specific wording of each regulation or piece of guidance under discussion. Chapter three provides more information.

## Insurance

- 1.3 The introduction of automated vehicles, ie those that can drive themselves for some or all of the journey without human intervention, raises issues about how motor vehicle insurance and liability is handled. Managing this correctly will be important in ensuring a successful market for automated vehicles. Our proposal is to extend compulsory motor insurance to cover product liability to give motorists cover when they have handed full control over to the vehicle (ie they are out-of-the-loop). And, that motorists (or their insurers) rely on courts to apply the existing rules of product liability - under the Consumer Protection Act, and negligence - under the common law, to determine who should be responsible.

## How automotive technologies come to market

- 1.4 The automotive sector is continually evolving and innovating, and new technologies are regularly coming to market. Driver Assistance systems and ADAS have been developing for decades and, more recently, collision avoidance technologies such as Electronic Stability Control (ESC) and Autonomous Emergency Braking Systems (AEBS) have shown a more than 20% benefit in collision reduction.
- 1.5 The most recent advancements allow a vehicle to take charge of both longitudinal (speed and separation distances) and lateral (steering ie side-to-side) control. We have seen them emerge in features like Adaptive Cruise Control (ACC) and AEBS that are becoming more commonplace, making driving safer and easier.
- 1.6 Regulation of the automobile industry takes place primarily at international level, and generally cars sold in the UK must comply with a number of regulations set globally by the United Nations World Forum for Harmonisation of Vehicle Standards. These

regulations are constantly being developed to enhance safety and permit the introduction of new technology in a carefully controlled fashion.

- 1.7 A number of these United Nations Regulations form the baseline performance criteria for our vehicle type approval process. Once a manufacturer successfully receives type-approval for a new vehicle, they are free to sell it on the basis that it has been certified to have met the minimum safety and environmental criteria.

## Overview of near to market technologies and their regulatory context

- 1.8 All vehicle technology can be sold and used in the UK providing that the vehicle and driver comply with our road traffic laws and have received type approval. To ensure that certain ADAS and automated vehicle technologies can be used in compliance with the law, we propose to amend certain provisions within our national regulatory framework for driving.
- 1.9 The regulatory framework ranges from primary legislation like the Road Traffic Act 1988, and statutory instruments such as the Road Vehicles (Construction and Use) Regulations 1986, as amended, to guidance like the Highway Code<sup>5</sup>. The ADAS technologies that we are taking into account, and their implication on current regulatory frameworks, are detailed below.

### Motorway assist

- 1.10 This technology builds on existing systems such as ACC, AEBS, and Lane Keeping Assist Systems (LKAS) to maintain a vehicle's position in its lane when clear lane markings are present, and maintain a constant speed or constant headway to the vehicle in front. Currently, this technology is being designed to work only on high speed dual carriageways where pedestrians and cyclists are prohibited (ie motorways), and drivers are required to maintain alertness, stay in-the-loop and to remain responsible for the driving task.
- 1.11 This technology is seen as an incremental step on the road to highly automated vehicles. The next step is likely to consist of similar technology, but without the need for constant supervision by the driver.
- 1.12 ADAS are designed to help the driver by reducing the burden of driving, but not to replace the driver. While offering potentially greater benefits, motorway assist is an evolution of existing driver assist features, and, as such, the driver is still expected to maintain alertness and retains responsibility for safe control of the vehicle, particularly in case of unexpected events.
- 1.13 Though we believe that our regulatory framework supports the use of these technologies, we also propose to provide additional guidance for the appropriate and safe use of ADAS in the Highway Code - discussed further in chapter three.
- 1.14 It is expected that the next stage of technological development will result in systems which are sufficiently advanced to enable the driver to come out-of-the-loop and delegate responsibility for part of the journey to the vehicle.

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<sup>5</sup> The Northern Ireland equivalents are: the Road Traffic (Northern Ireland) Order 1981; the Motor Vehicles (Construction and Use) Regulations (Northern Ireland) 1999, as amended; and the Highway Code For Northern Ireland

- 1.15 At that stage we will aim to amend road traffic legislation to retain or relax driver prohibitions and responsibilities as appropriate, so that drivers of these vehicles have clarity about how to safely and appropriately benefit from their features.

### **Remote control parking**

- 1.16 This system enables the driver to get out of the vehicle and, using a mobile device (eg a dedicated remote control, a smart phone, or even a smart watch), command it to automatically drive itself into, or out of, a parking space. While the control button on the device is activated, the vehicle will manoeuvre automatically at very low speed while monitoring its surroundings for pedestrians, other road users or any other hazards. If a person or hazard is detected, or if the remote control button is accidentally or intentionally deactivated, the vehicle will come to an immediate stop. Equally, to ensure that the driver can exert control at all times, the system will not function outside a certain range.
- 1.17 The regulatory framework is unclear with regards to remote controlled parking manoeuvres, particularly when using a smart phone as the controlling device; driving when using a hand-held mobile phone is illegal. Therefore we propose amending regulations and guidance to provide greater clarity in this area. As a consequence of the existing lack of clarity, manufacturers are currently advertising the systems as intended for use on private land (eg driveways) only.
- 1.18 Subsequent iterations of this regulatory programme will likely take into account future remote control systems, where it is expected that the vehicle could be out of the driver's sight while the parking manoeuvre is completed. This will dovetail with international type approval regulations, which are currently being amended to ensure remote parking systems are safe.

### **HGV platooning**

- 1.19 Platooning involves two or more vehicles connected with Vehicle-to-Vehicle (V2V) communication, allowing them to effectively operate as a single unit - accelerating and braking simultaneously. While operating in this mode, because there is no delay between vehicles when braking, the headway between each vehicle can be reduced to a few metres, allowing the vehicles to benefit from reduced aerodynamic drag and therefore increased fuel efficiency. Platooning could also free more road space and improve traffic flow.
- 1.20 While in a platoon, the vehicle's position and speed are controlled using AEB, LKAS, and ACC, which are linked to the lead vehicle, operated by a driver. This allows the driver of any trailing vehicle to temporarily delegate control to the driver of the lead vehicle. The platoon would operate over long distance journeys, and would need to separate when the system reached its performance limits (for example, if the road gradient was too severe). Depending on the sophistication of the system, drivers in the trailing vehicles may be in-the-loop (controlling steering and/or monitoring the system), or out-of-the-loop entirely.
- 1.21 Initial tests around the world have proven the functionality and safety of these systems as well as the fuel saving potential. A number of companies are working on platooning, and we are investing in a platooning trial later this year to assess the benefits that could be obtained when operating platoons on our roads.

- 1.22 We believe that platooning trials will require no additional changes to domestic regulations, as long as the driver of each vehicle in the platoon remains alert and ready to take control in the event of platoon separation, or to avoid an incident. Changes to the Highway Code may be appropriate to support the commercial use of platoons and these are described in chapter three below.

## What we are proposing

- 1.23 In the Pathway to Driverless Cars Regulatory Review, we set out our ambitions to make the UK a great place to test and use automated vehicle technologies. Having now established the UK as a foremost location for the testing of automated vehicle technology, we want to address the next step in the pathway: sale and use.
- 1.24 We want the UK's regulatory framework to support motorway assist, remote control parking systems, and potentially platooning systems when they come to the market - rather than acting as a barrier - and believe that changes to enable this are justified by the potential benefits.
- 1.25 We want people and businesses to use these technologies, and take full advantage of the opportunities that they present. We see these new technologies as stepping stones to the next wave of technologies such as automated vehicles. And, we want the insurance framework to be ready for the future deployment of AVT.
- 1.26 Therefore, we want to know if you agree with our proposals for the UK domestic regulations, and the restrictions that we are placing at this stage.

**Question 1A:** Do you agree with the proposal to review the regulatory framework to enable the use of advanced driver assistance systems and advanced vehicle technologies as they come to market in the UK? (Y/N) Why? (free text)

**Question 1B:** Do you agree that we should follow a rolling programme of regulatory reviews? (Y/N) Why? (free text)

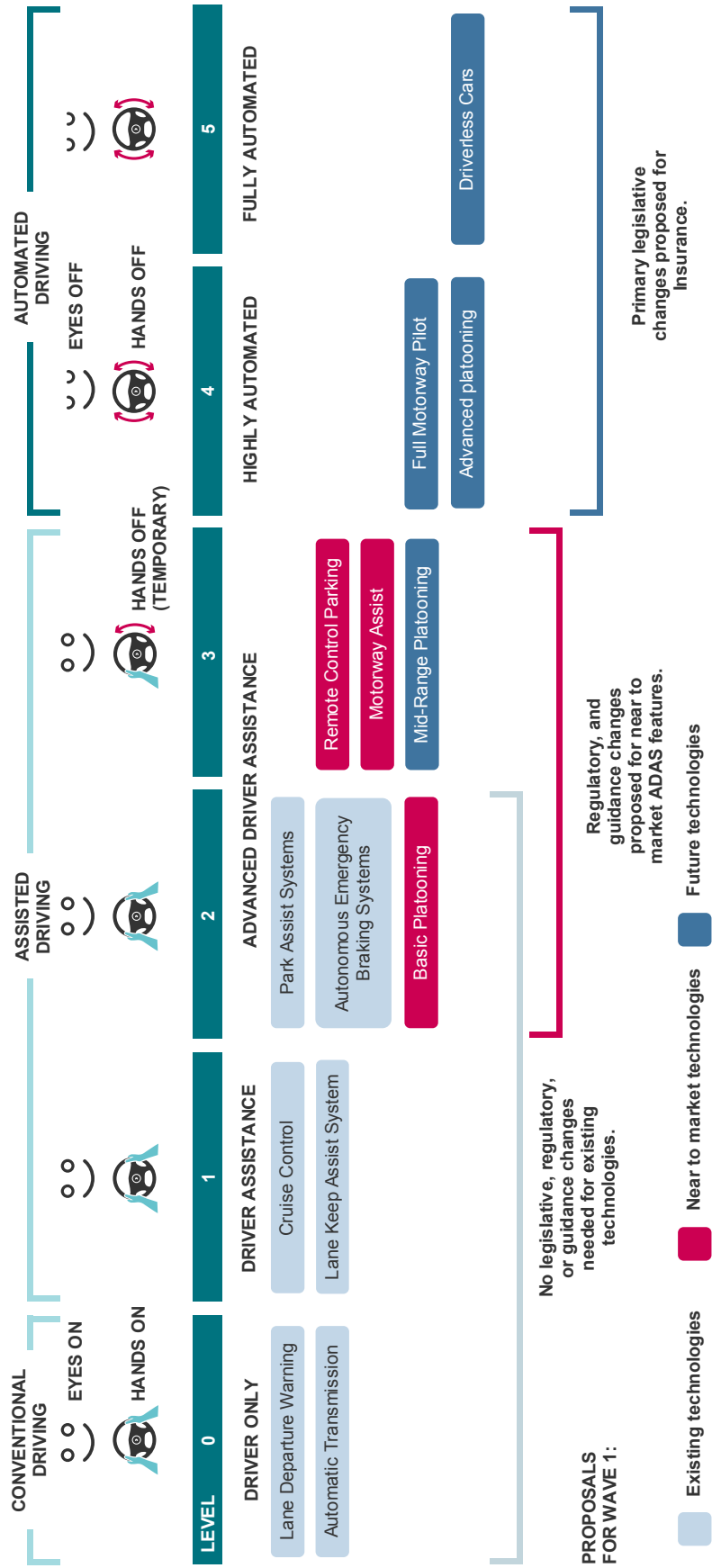
**Question 1C:** In the first tranche of regulatory change, with the exception of insurance, should we only consider those advanced driver assistance systems or automated vehicle technologies that are likely to come to the UK market in the next 2-4 years? (Y/N) Why? (free text)

**Question 1D:** Are you aware of any upcoming advanced driver assistance systems or automated vehicle technologies which this document does not cover? What are these systems? (free text)

- 1.27 Based on feedback we receive during the consultation, we will consider making specific proposals to amend guidance and statutory instruments in a future consultation, before implementation.



Figure C: Regulating for new technologies



The levels of assistance and automation are adapted from the Society of America Engineers J3016 Standard "Taxonomy and Definitions for Terms Related to On-Road Motor Vehicle Automated Driving Systems" ([http://standards.sae.org/J3016\\_201401/](http://standards.sae.org/J3016_201401/)). While these are not formally recognised by the UK Government or the United Nations World Forum for Harmonisation of Vehicle Standards, they are seen as a helpful guide to the technology.

## 2. Insurance: enabling the evolution

### Overview of insurance proposals

- 2.1 The introduction of vehicles that can drive themselves for some or all of the journey without human intervention raises issues about how motor vehicle insurance and liability is handled. Doing this correctly will be important in ensuring a successful market for automated vehicles.
- 2.2 Our current motor vehicle insurance system works on the basis of motorists holding compulsory third party insurance to compensate victims of any collision, regardless of who is at fault; and when victims are injured by uninsured or untraced drivers, the Motor Insurers' Bureau (MIB) steps in as insurer of last resort. The system is designed to ensure as far as possible that victims of road traffic accidents are compensated fairly and quickly.
- 2.3 In a world where all vehicles are fully automated, and require no human input at all, it would be easy to place liability on the manufacturer (ie product liability) and let them deal with claims arising from a collision. Collisions should be rarer than they are today because the vehicles will be programmed to drive more safely than humans tend to. As noted in the introduction, it is likely to take a significant amount of time before these vehicles come to market.
- 2.4 The transitional world of mixed fleets, made up of both conventional and automated vehicles, is the more complex and difficult one to handle. Determining liability in the event of a collision where the driver has activated the AVT to come out-of-the-loop to a degree, and has disengaged from the driving task, could prove to be complex and time consuming.
- 2.5 It is possible that the fault could rest with the driver (eg if they have failed to retake control when the system exceeds its performance limits), or with the manufacturer (eg product failure, which would be covered by product liability). This means there is a significant chance of potential increased friction between the different parties over who and what caused the collision, resulting in delays in compensation to victims. In addition, claiming against product liability has the potential to be more difficult as it could be more complicated to determine issues such as when the technology failed and whether the user was asked to take control.
- 2.6 Furthermore, a vehicle owner who is 'driving' the highly automated vehicle might have legitimately disengaged from the driving task, with the vehicle having taken over control. If the technology fails and injures the 'driver', the current legislation only requires insurance to cover third parties and not the driver. It is up to the policy owner to seek additional insurance to cover any injury they do to themselves as a result of their own actions or negligence. If the AVT fails then the driver, in effect, becomes a victim as their injuries are not as a result of their own actions or negligence. We therefore need to protect the driver as a potential victim.
- 2.7 While some manufacturers have offered to self-insure their automated vehicles while they operate in an automated mode, not all have. Without certainty of how claims will be handled, there is a risk of customer confusion, which could reduce the sale and use of automated vehicles.

- 2.8 Therefore, we believe there is sufficient justification to make a change to the insurance system before the first wave of automated vehicles come to market. We propose to make the minimum changes required to ensure clarity, to give victims easy access to compensation, and to give the market certainty without influencing or preventing different models being developed in the future.

## A proportionate response

- 2.9 Our policy objectives are to ensure that the use of vehicles continues to be covered by insurance, and that insurance claims continue to be handled quickly. So, instead of making wholesale changes that would affect every driver in the country, we are proposing to make a set of smaller changes that would only apply to those buying automated vehicles, including:
- Extending the compulsory insurance requirements for automated vehicles so that the owner must also ensure that there is an insurance policy in place that covers the manufacturers' and any other entities' product liability.
  - Requiring this additional compulsory product liability insurance for automated vehicles to also cover injuries to the 'not at fault' automated vehicle driver as well as passengers and third parties.
  - To develop a system to classify an automated vehicle so that manufacturers, insurers and consumers know which vehicles this particular insurance requirement applies to.
- 2.10 This ensures that any other road user who has a collision with an automated vehicle, particularly when it is claimed that the technology was being used, will still be able to pursue any claim through the user's insurer. This is in line with current practice and a framework every motorist is familiar with.
- 2.11 We have considered whether a different definition of 'user' is needed in the Road Traffic Act for automated vehicles for the purposes of insurance obligation. For the first generation of AVT (where the driver is only 'hands-off' and 'eyes-off' for parts of the journey) we think that the driver falls under the current definition of a 'user'. Once fully automated vehicles are available – which would drive themselves for the entire journey – it might be more appropriate to put the insurance obligation solely on the registered keeper.
- 2.12 The existing insurer of last resort role for the MIB would also be extended to cover the new mandatory product liability insurance requirements for automated vehicles and the Uninsured Driver's Agreement<sup>6</sup> and Untraced Drivers Agreement<sup>7</sup> would be updated accordingly<sup>8</sup>. This would ensure that victims would be put in a no worse position if they were injured by an uninsured or untraced automated vehicle than if they were hit by a conventional vehicle.
- 2.13 We are not proposing to create a security or court deposit exemption from the requirements to have insurance that covers product liability for automated vehicles. This means that the options in section 144(1) and 146 of the Road Traffic Act 1988 to deposit £500,000 or a section 146 compliant security with the Accountant General of the Senior Courts instead of obtaining insurance will not be available for automated vehicles<sup>9</sup>.

<sup>6</sup> <https://www.mib.org.uk/making-a-claim/claiming-against-an-uninsured-driver/uninsured-drivers-agreements/>

<sup>7</sup> <https://www.mib.org.uk/making-a-claim/claiming-against-an-untraced-driver/untraced-drivers-agreements/>

<sup>8</sup> Separate NI agreements exist between the MIB and the Department for both the Uninsured and Untraced Drivers' Agreements

<sup>9</sup> NI equivalents are Article 90(2)(b) and Article 93 respectively of the Road Traffic (Northern Ireland) Order 1981

- 2.14 While we are not mandating any particular model of insurance product we would anticipate that in practice manufacturers will make arrangements with insurers to develop insurance products that share the economic risk to support the sales of their automated vehicles. In the absence of a risk sharing arrangement between the manufacturer and the insurer, the insurer would be entitled to claim the product liability damages paid out from the manufacturer. Insurance products will therefore be developed and be available to consumers when they purchase an automated vehicle.
- 2.15 We believe these changes would support the introduction of automated vehicles, and help reassure those who wish to buy and use such vehicles, as well as the wider public. It would provide an opportunity for the insurance industry to innovate and learn from the experience of the small percentage of automated vehicles that would initially be available, and it would give us the evidence that would be needed to support future changes to the insurance framework that may be necessary as automated technology becomes increasingly sophisticated and more common.
- 2.16 The above insurance issues will need to be accommodated in the legislative framework so insurance products are readily available in order for manufacturers to market automated vehicles in the UK.
- 2.17 We propose amending road vehicle compulsory insurance primary legislation in Part 6 of the Road Traffic Act 1988 as described above. This aims to ensure that if a vehicle that is operating in an automated mode is involved in a collision, the victim of any collision is no worse off than they would if hit by a conventional vehicle<sup>10</sup>. This covers vehicle user as well as people outside the vehicle. We will also consider if there is any secondary legislation that may be required and consult on these in a further consultation next year.

**Question 2A:** Do you agree with the proposition to amend road vehicle compulsory insurance primary legislation in Part 6 of the Road Traffic Act 1988 to include product liability for automated vehicles? (Y/N) Why? (free text)

**Question 2B:** What, if any, other changes to the insurance framework should be considered to support use of automated vehicle technologies, and why? (free text);

## The benefits and impacts of changing insurance for automated vehicles

- 2.18 We would also like to use this opportunity to build our evidence base in advance of taking proposals forward after the conclusion of this consultation. For example, we think that the costs are likely to be low, and will, in any case, enable automated vehicles to be sold and used (thus generating benefits). Examples of costs may include time to familiarise with and disseminate the changes, operational or organisational changes, changes to IT or systems, training, etc. The costs should be over and above what you would be spending anyway. The questions below cover those areas in which we would be interested to gain your views.

**Question 2C:** If you are an insurer or vehicle manufacturer or other organisation directly affected by these changes, what costs do you estimate your organisation will incur as a direct result of these changes? (free text)

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<sup>10</sup> NI equivalent is Part 8 of the Road Traffic (Northern Ireland) Order 1981

**Question 2D:** Do you anticipate the cost of insurance products for automated vehicles to be higher than for conventional vehicles? (Y/N); By how much and why? (free text)

**Question 2E:** Do you anticipate that the introduction of automated vehicles will increase insurance premiums for conventional vehicles? (Y/N) Why? (free text)

**Question 2F:** What do you estimate will be the costs to insurers, vehicle manufacturers, or other parties of providing product liability cover for automated vehicles, and why? (free text)

**Question 2G:** Do you anticipate that this cost will be passed on to the consumer? (Y/N) Why, and by how much? (free text)

- 2.19 In addition to the overarching arguments, we have also considered specific risks, detailed below.

## Liability and automated vehicles

- 2.20 We are not currently proposing any significant change in our rules on liability in road traffic accidents to reflect the introduction of automated cars. We still think a fault based approach combined with existing product liability law, rather than a new strict liability regime, is the best approach for our legal system. We think that the existing common law on negligence should largely be able to adapt to this new technology.
- 2.21 In order to protect third parties and enable the product liability insurance proposals to function properly, there are certain areas where we will need to consider creating new rights of action directly against an insurer when there would not necessarily be a claim in negligence against the driver who purchased that insurance policy.
- 2.22 For example, if an accident occurred as a result of a defect with the vehicle we are proposing that both the driver and injured third parties will be given a right to pursue a claim directly against the driver's insurer (even though the manufacturer rather than the driver was at fault). Similarly we are proposing that injured third parties will be given a direct right of action against the insurer where an accident results from a vehicle being hacked. In these circumstances the insurer would be able to then pursue the party at fault, or otherwise liable, to recover the costs of compensating the injured parties.

## Data recording and sharing accident data

- 2.23 Data will clearly be required to determine whether the driver or the vehicle was responsible for any collision, such as establishing who was in control at the time of the incident. This is likely to come from in-vehicle data recorders. Many vehicles already have data recorders fitted, although the data collected is not accessible without special equipment.
- 2.24 We expect that the out-of-the-loop motorway driving vehicles that are coming to market soon will have an event data recorder fitted. There are inevitably different views as to what data is essential and of course data protection and privacy considerations are important. It seems likely that data recorders would be regulated on an international basis, like most vehicle technologies. We will participate fully in this debate, equipped with views from the UK manufacturing and insurance

industries, evidence from the various trials taking place and the first automated technologies that are coming to market.

## Failure to maintain automated vehicle technology, inappropriate use, and circumventing automated vehicle technology

- 2.25 We do not think an insurer should be able to avoid paying damages to a third party victim where an automated vehicle owner fails to properly maintain and update the AVT or attempts to circumvent the AVT in breach of their insurance policy. Nor do we think that an insurer should be able to avoid paying damages to a third party victim if the vehicle owner or the named drivers on the policy attempt to use the vehicle inappropriately.
- 2.26 We expect that users will not be able to use out-of-the-loop motorway technology on roads not designed for the technology, but there may be other areas that the technology could potentially be used inappropriately so we should ensure that third parties are adequately protected.
- 2.27 We do think that the insurer should be able to seek to recover damages paid out to the third party victim from the automated vehicle owner. This would ensure that the victim could still recover damages easily and is essentially the same approach that we take now to matters such as overloading vehicles and failures to properly maintain vehicles.

**Question 2H:** Do you agree that where a driver attempts to circumvent the automated vehicle technology, or fails to maintain the automated vehicle technology, the insurer should be able to exclude liability to the driver but not to any third parties who are injured as a result? (Y/N) Why? (free text)

## Third party hacking

- 2.28 If an accident occurred as a result of an automated vehicle being hacked then we think it should be treated, for insurance purposes, in the same way as an accident caused by a stolen vehicle. This would mean that the insurer of the vehicle would have to compensate a collision victim, which could include the 'not at fault driver' for damage caused by hacking but, where the hacker could be traced, the insurer could recover the damages from the hacker.

**Question 2I:** Do you agree that in the event of 3rd party hacking of an automated vehicle, an insurer should not be able to exclude liability, as set out in the Consultation Document? (Y/N) Why? (free text)

## Product liability and automated vehicles

- 2.29 Currently, the Consumer Protection Act 1987 only applies to property damage where the damaged property is owned by private individuals for personal use – not where it is owned by companies. Where a company's property is damaged by a defective product they currently have to prove that the producer was negligent (rather than just prove that there was a defect in the product). In the context of automated vehicles, is it appropriate to maintain these two different tests depending on whether company or



private property was damaged. Alternatively it could be better to allow the Consumer Protection Act to apply to company property where the case involves automated vehicles.

- 2.30 Currently the state of the art defence (section 4(1)(e) of the Consumer Protection Act 1987) provides a defence to product liability if, at the time the product was in the manufacturer's control, the state of scientific and technical knowledge was not such that a manufacturer could have been expected to discover the defect<sup>11</sup>. We could either leave manufacturers' liability and product liability as it currently is or, instead, extend the insurance obligation to cover these circumstances so that the driver's insurance would have to cover these claims.

**Question 2J:** Do you agree that the product liability and insurance requirements for automated vehicles should

- follow the normal rules on product liability with different rules depending on whether the injured party was an individual or a company? (Y/N)
- be limited by the 'state of the art' defence? (Y/N)

Why? (free text)

**Question 2K:** Alternatively, should we extend insurance/liability rules specifically for automated vehicles? (Y/N) Why? (free text)

## Public sector vehicles

- 2.31 Currently, some vehicles used by the crown and public sector (central and local government and the police and ambulance services) are exempt from the requirement to have an insurance policy in place because they 'self-insure'. Where these exemption are used it results in overall lower costs to the public purse. We intend to apply the same exemptions that currently exist in relation to the third party insurance obligation to the new automated vehicle product liability insurance obligation.
- 2.32 We would want to ensure that a victim is no worse off if injured by a public sector owned automated vehicle than a privately owned automated vehicle. So, where the public sector body chooses not to obtain product liability insurance, they would step into the insurer's position to pay any product liability damages awarded where (for reasons such as bankruptcy) these damages could not be obtained from the manufacturer.

**Question 2L:** Do you agree with the proposal that, with respect to automated vehicles, the public sector can continue to self-insure but, where they choose to self-insure, they would then be required to step into the insurer's position in respect of product liability damages? (Y/N) Why? (free text)

## Enforcement

- 2.33 We expect enforcement of the new insurance requirement for compulsory product liability to rely on existing regimes. We will explore how best we can achieve this through discussion with the MIB, police and DVLA.

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<sup>11</sup> NI equivalent is Article 7(1)(e) of the Consumer Protection (Northern Ireland) Order 1987



## An alternative option: a first party insurance model

- 2.34 While we take the view that the preferred option is to make a requirement for compulsory product liability insurance for automated vehicles, some commentators have suggested we could replace our existing motor insurance model with a first party insurance model that might also enable claims to be handled quickly and efficiently.
- 2.35 Under the first party insurance model, the victim of a collision would claim directly from the insurers of the vehicle they are travelling in, regardless of liability. Liability would eventually be determined at a later point, and the party deemed to be 'at fault' would then meet the cost of the claim.
- 2.36 This would, however, represent a significant change to the current insurance practice, and we think this could lead to higher premiums. Firstly, to begin with, it would be difficult for insurers to cost the risk of collisions, though they would learn from experience over time. Secondly, some insurers have informed us that those insurers who are most likely to meet the claim would also want to control costs early on; the more complex this proves to be, the more likely it is to result in higher premiums, should they be unable to do so. We do note that it is not clear that determining liability where an automated vehicle is involved will be more complex and/or take longer than it would with conventional vehicles as this cannot be evidenced until the vehicles come to market.
- 2.37 Under the first party model, an insurer who has to meet a claim once liability is determined would not have the opportunity to control costs early on, as each vehicle would initially be claiming directly from the insurance of the vehicle they are in.
- 2.38 Under our proposal we imagine that the insurers and manufacturers are likely to enter into commercial relationships to provide insurance products that cover both the manufacturer and policy holders' risks. In these cases there would be a single insurer who would meet the costs of the claim whether it was the driver or the vehicle that caused the collision and this single insurer would be able to control costs from the outset.
- 2.39 In addition, the administrative costs of introducing first party insurance – a change that would affect all road users – would not be proportionate to the relatively small number of automated vehicles that are likely to be marketed in the coming years. There may come a time where there is a much higher level of market penetration of automated vehicles where the first-party model can be re-considered as proportionate.

**Question 2M:** Do you agree that an alternative first party model option would not be proportionate while automated vehicles represent a small proportion of the fleet? (Y/N); please explain your answer (free text)

**Question 2N:** What do you anticipate the cost of implementing a first party insurance model would be? (free text/upload)

## Next steps

- 2.40 If you have any data that supports your answers to the questions and issues raised in this section, it would be helpful if you could share this.

**Question 20:** Do you have data to support your answers on insurance for automated vehicles?

2.41 Following analysis of the contributions we receive during this consultation, we plan to introduce insurance proposals to Parliament as a part of the Modern Transport Bill, as announced in the 2016 Queen's Speech.

### 3. Providing the right guidance: changing the Highway Code, and Construction and Use Regulations

#### Overview of proposals

- 3.1 In this section of the document, we cover a range of proposals in relation to the Highway Code and Construction and Use Regulations. While we are not proposing amendments for all of the items detailed below at the moment, we would like your opinions on the suggestions we make below. Each item is relevant and has implications for the safe deployment of ADAS and AVT. In future stages of regulatory reform, we may look to make further proposals based on the analysis of responses received during this consultation.

#### Highway Code

- 3.2 The Highway Code is an essential piece of information for all road users, summarising key road traffic law and providing further guidance about desirable and appropriate behaviours for drivers and other road users<sup>12</sup>. Therefore, it is important that as well as reflecting legislative changes, the guidance in the Code reflects any implications of new technologies for drivers, their behaviour and other road users.

#### ADAS guidance

- 3.3 The Highway Code currently addresses the use of driver assist technology in the context of driver distraction in Rule 150<sup>13</sup>.

##### **The Highway Code Rule 150**

There is a danger of driver distraction being caused by in-vehicle systems such as satellite navigation systems, congestion warning systems, PCs, multi-media, etc. You **MUST** exercise proper control of your vehicle at all times. Do not rely on driver assistance systems such as cruise control or lane departure warnings. They are available to assist but you should not reduce your concentration levels. Do not be distracted by maps or screen-based information (such as navigation or vehicle management systems) while driving or riding. If necessary find a safe place to stop.

- 3.4 Some of this advice is still current but we propose updating it to explain ADAS motorway assist and remote control parking, and how they are used appropriately. It is important that drivers use these systems responsibly, and that they do not attempt

<sup>12</sup> Northern Ireland has its own Highway Code For Northern Ireland

<sup>13</sup> The Northern Ireland equivalent is Rule 150 of the Highway Code For Northern Ireland

to use assist technology beyond what it is designed for, so that they can contribute to improving road safety.

- 3.5 When more advanced automated systems are approved and available, which allow the driver to be out-of-the-loop and divert their attention away from driving and actively monitoring for parts of the journey, we will aim to expand on this and provide fuller advice for drivers of automated cars and other road users.

### ***Driving with both hands on the wheel where possible***

- 3.6 We are seeking views on whether to change Rule 160 of the Highway Code which states 'drive with both hands on the wheel where possible', to clarify the position for those using in-the-loop motorway assist and remote control or automated parking<sup>14</sup>.
- 3.7 All of these technologies facilitate the driver to release their hold on the steering wheel for short periods while remaining alert and in-the-loop. Clearly, for remote parking, it would be impossible to have one's hands on the wheel when outside the vehicle. It would be possible to add clarifying text to cater for these situations, but arguably this is unnecessary due to the 'where possible' caveat.
- 3.8 The case of 'hands-off' driving using motorway assist systems is more difficult. Manufacturers are planning to offer systems where there is no monitoring as to whether the driver is holding the steering wheel, for short periods of time, but instead their attention is monitored. The technology would enable the driver to drive without their hands on the steering wheel for substantial periods of time, but arguably this Rule would prohibit this.

#### **Highway Code Rule 160**

Once moving, you should drive with both hands on the wheel where possible.  
This will help you to remain in full control of the vehicle at all times

- 3.9 Because the systems require the driver to be in-the-loop, we are not proposing any change to the requirement that the driver must be in proper control of the vehicle (as set out in regulation 104 of the Construction and Use Regulations)<sup>15</sup> at this stage.
- 3.10 So while the driver could take their hands off the wheel where technology permits, the driver should not undertake non-driving tasks that could distract them from being able to properly control the vehicle.

**Question 3A:** What are your views on amending the text of the Highway Code in a way that would clarify:

- rule 150, related to use of driver assistance systems and distraction? (free text); and
- rule 160, relating to driving with both hands on the wheel? (free text)

<sup>14</sup> The Northern Ireland equivalent is Rule 160 of the Highway Code For Northern Ireland

<sup>15</sup> The Northern Ireland equivalent is regulation 120 of the Motor Vehicles (Construction and Use) Regulations (Northern Ireland) 1999.

### ***Enabling platooning in the UK***

- 3.11 The Highway Code defines and describes how the stopping distance of a typical vehicle is a combination of 'thinking distance' and 'braking distance'. By employing a system which can brake simultaneously with the vehicle in front, such as in a platoon, the thinking distance is reduced if not removed completely. As such, there is an opportunity to reduce the separation distance required between these vehicles, and hence to maximise the efficiency gains through reduced aerodynamic drag.

#### **Highway Code Rule 126**

You must drive at a speed that will allow you to stop well within the distance you can see to be clear. You should allow at least a two-second gap between you and the vehicle in front on roads carrying faster moving traffic and in tunnels where visibility is reduced.

- 3.12 Therefore, we propose relaxing rule 126 where a vehicle is fitted with technology that automatically maintains a safe headway, equipped with an active V2V communication system and is part of a platoon of similarly equipped vehicles. Amending the guidance to reduce the recommended vehicle separation in the Highway Code should therefore permit vehicle platoons to operate in the most efficient configuration on our roads<sup>16</sup>.

**Question 3B:** Do you agree with the proposition to allow platooning by relaxing Highway Code rule 126 (which recommends a 2 second gap between vehicles)? (Y/N) Why? (free text)

**Question 3C:** What, if any, other restrictions should be considered regarding use of platooning technologies, and why? (free text)

### ***Freeing the driver to make best use of their automated vehicle***

- 3.13 At present we are not proposing to relax any of the existing specific or implied driver distraction restrictions, such as the prohibitions on using hand-held mobile phones, watching TV or eating and drinking at the wheel.
- 3.14 This will be considered when vehicles are designed such that the driver no longer needs to remain alert and in-the-loop.
- 3.15 Such vehicles are likely to be fitted with technology that asks the driver to take back control when the vehicle is no longer able to control the driving task. Importantly, they will also have a safeguard built in for cases where the driver does not or cannot take back control, with the vehicle programmed to carry out a minimum risk manoeuvre such as pulling over to a safe parking place.
- 3.16 Our intention is therefore to monitor the development of technology in this field, and to respond accordingly as and when systems come to the market. This would be achieved by considering appropriate amendments to the regulatory framework in future phases of this regulatory programme.

**Question 3D:** Do you agree with the proposition that specific and implied driver distraction restrictions are not relaxed at this time? (Y/N) Why? (free text)

<sup>16</sup> The Northern Ireland equivalent is Rule 126 of the Highway Code for Northern Ireland

## Changes to Construction and Use Regulations

- 3.17 The main domestic regulations affecting the design and operation of near to market technologies, such as remote control parking and motorway assist, are the Road Vehicle (Construction and Use) Regulations<sup>17</sup>.
- 3.18 We are not aware of any regulation prohibiting the use of motorway assist systems as they are designed as a driver assistance function with the driver remaining in-the-loop throughout.
- 3.19 As AVT become available and enable drivers to safely be out-of-the-loop for parts of the journey, we will reconsider these regulations. We ensure that regulations do not unduly restrict activities the driver may safely engage in when out-of-the-loop.

### Remote control parking

- 3.20 We believe that these regulations do not prevent the use of remote control parking systems. We want to clarify the regulations to make it clearer how drivers can safely and legally use these systems. This clarity will aid both the manufacturers of these systems and their customers. We have identified a number of the Construction and Use Regulations that could be amended to clarify matters and these are listed below.

### *Position of the driver*

- 3.21 Regulation 104 requires that a driver must always be in a position to have full control of the vehicle and full view of the road and traffic ahead<sup>18</sup>.
- 3.22 We propose to clarify this regulation by adding a statement that a driver meets this requirement even if he is not in the driving seat, as long as he has the ability to control the vehicle through a hand-held device.
- 3.23 This amendment would cater both for remote parking via a hand held device, as well as very large vehicles or mobile transporters that are operated by remote control to aid manoeuvrability.

### *Requirement to switch off the engine when the vehicle is not attended*

- 3.24 Regulation 107 requires that a driver must switch off the engine when not attending a vehicle<sup>19</sup>.
- 3.25 We propose to clarify this by adding a statement that an individual, though not in the driving seat, is deemed to be attending the vehicle when they are driving it, or are about to drive it, using a hand-held device.
- 3.26 We would also welcome comments on whether this regulation should be relaxed to allow drivers to use remote devices to turn on the engine on a cold morning a few minutes prior to driving off, in order to defrost the windows of the vehicle.

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<sup>17</sup> The Road Vehicles (Construction and Use) Regulations 1986 (SI 1986/1078), as amended, and The Northern Ireland equivalent is the Motor Vehicles (Construction and Use) Regulations (Northern Ireland) 1999 (SR 1999/454), as amended

<sup>18</sup> The Northern Ireland equivalent is regulation 120 of the Motor Vehicles (Construction and Use) Regulations (Northern Ireland) 1999

<sup>19</sup> The Northern Ireland equivalent is regulation 123 of the Motor Vehicles (Construction and Use) Regulations (Northern Ireland) 1999

### ***Requirement not to use hand-held mobile device when driving***

- 3.27 Regulation 110 prohibits the use of a hand-held mobile communications device (such as a phone, tablet etc.) while driving<sup>20</sup>.
- 3.28 While this is an important piece of road safety regulation, we propose to clarify this regulation for the purposes of remote control parking. We propose to add a statement that this prohibition does not apply to remotely controlled vehicles, where the driver is outside the vehicle and has the ability to control the vehicle through a hand-held device.
- 3.29 This amendment would cater both for remote parking via a hand-held device, as well as very large vehicles or mobile transporters that are operated by remote control to aid manoeuvrability.

**Question 3E:** Do you agree with the proposed approach to enable remote control parking by clarifying:

- Regulation 104 (the driver should be in a position to be able to control the vehicle)? (Y/N)
- Regulation 107 (switching off the engine when the vehicle is not attended)? (Y/N)
- Regulation 110 (not using hand-held mobile phones while driving)? (Y/N)

Why? (free text)

### **Motorway assist**

#### ***Requirement that a TV/display screen is not visible to the driver unless it is showing information related to the driving task***

- 3.30 Regulation 109 says the driver must not be in a position to see (directly or by reflection) a television set or similar screen showing moving images, in order to prevent driver distraction.<sup>21</sup>
- 3.31 This regulation prohibits screens that are not showing information related to the driving task: four specific criteria are set out which would permit screens which are, for example, displaying maps for satellite navigation systems, showing oil and fuel levels or showing the view from cameras mounted on the vehicle.
- 3.32 At this stage we are seeking comments as to whether any other information should be permitted to be displayed. We understand that the emergency services have some devices necessary to their operational capabilities and are continuing discussions with them. We are interested to hear from any other individuals or bodies who believe that they have a legitimate need for information to be displayed to the driver or in their field of view.
- 3.33 In due course, when vehicles achieve a high level of automation it may be possible to relax this regulation further. However, we do not believe that a relaxation would not currently be advisable.

**Question 3F:** What are your views on amending Regulation 109 to allow drivers to view TV/display screens displaying information that is not related to the driving task, while driving? (free text)

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<sup>20</sup> The Northern Ireland equivalent is regulation 125A of the Motor Vehicles (Construction and Use) Regulations (Northern Ireland) 1999

<sup>21</sup> The Northern Ireland equivalent is regulation 125 of the Motor Vehicles (Construction and Use) Regulations (Northern Ireland) 1999



## The benefits and impacts of ADAS

- 3.34 We would also like to use this consultation as an opportunity to gather further information on new ADAS technologies, so that we have as robust an evidence base as possible in advance of making future proposals.

**Question 3G:** Do you have any new data or evidence of the safety benefits of these advanced driver assistance systems? (free text)

**Question 3H:** Are there any other, non-safety, impacts (including costs) of advanced driver assistance systems which you are aware of which we have not covered in this consultation document? (free text)

**Question 3I:** Please supply any data to support your answers.

## Next steps

- 3.35 Based on responses we receive during this consultation, we will subsequently look to make specific proposals to amend the text of guidance and statutory instruments to facilitate the sale and use of ADAS in a future consultation, before implementation.
- 3.36 In addition, we will continue to work closely with industry to identify technologies and vehicle systems likely to come to the market within the next few years - and act in a pragmatic, proportionate, and flexible manner to address relevant regulatory barriers as they do.

# Annex A - Response pro-forma

It would be helpful if you would respond online at:

<http://www.smartsurvey.co.uk/s/cavconsultation/>

In the event that you wish to respond in writing, please use this response pro-forma and send the completed version to:

Tom MacHugh  
Department for Transport  
Zone 1/33 Great Minster House  
33 Horseferry Road  
London SW1P 4DR  
Email: [consultation@ccav.gov.uk](mailto:consultation@ccav.gov.uk)

## Personal details

Do you live in:

- ☐ England?
- ☐ Scotland?
- ☐ Wales?
- ☐ Other? Where?

Your email

Are you responding on behalf of:

- ☐ Yourself?
- ☐ An organisation?

What is the name of your organisation?

How large is your organisation?

## What we are proposing

**Question 1A:** Do you agree with the proposal to review the regulatory framework to enable the use of advanced driver assistance systems and advanced vehicle technologies as they come to market in the UK?

☐ Yes

☐ No

Why?

**Question 1B:** Do you agree that we should follow a rolling programme of regulatory reviews?

☐ Yes

☐ No

Why?

**Question 1C:** In the first wave of regulatory change, with the exception of insurance, should we only consider those advanced driver assistance systems or automated vehicle technologies that are likely to come to the UK market in the next 2-4 years?

☐ Yes

☐ No

Why?

**Question 1D:** Are you aware of any upcoming advanced driver assistance systems or automated vehicle technologies which this document does not cover?

☐ Yes

☐ No

Which systems?

## Insurance

### A proportionate response

**Question 2A:** Do you agree with the proposition to amend road vehicle compulsory insurance primary legislation in Part 6 of the Road Traffic Act 1988 to include product liability for automated vehicles?

☐ Yes

☐ No

Why?

**Question 2B:** What, if any, other changes to the insurance framework should be considered to support use of AVT? Why?

### The benefits and impacts of changing insurance for automated vehicles

**Question 2C:** If you are an insurer, vehicle manufacturer or other organisation directly affected by these changes, what costs do you estimate your organisation will incur as a direct result of these changes?

**Question 2D:** Do you anticipate the cost of insurance products for vehicles with AVT to be higher than for conventional vehicles?

☐ Yes

☐ No

By how much and why?

**Question 2E:** Do you anticipate the introduction of vehicles with AVT to increase insurance premiums for conventional vehicles?

☐ Yes

☐ No

Why?

**Question 2F:** What do you estimate the costs will be to insurers, vehicle manufacturers, or other parties of providing product liability cover for automated vehicles, and why?

**Question 2G:** Do you anticipate that this cost will be passed on to the consumer

☐ Yes

☐ No

Why, and by how much?

### **Failure to maintain automated vehicle technology, inappropriate use, and circumventing automated vehicle technology**

**Question 2H:** Do you agree that where a driver attempts to circumvent the automated vehicle technology, or fails to maintain the automated vehicle technology, the insurer should be able to exclude liability to the driver but not to any third parties who are injured as a result?

☐ Yes

☐ No

Why?

### Third party hacking

**Question 2I:** Do you agree that in the event of 3rd party hacking of an automated vehicle, an insurer should not be able to exclude liability, as set out in the Consultation Document?

☐ Yes

☐ No

Why?

### Product liability and automated vehicles

**Question 2J:** Do you agree that the product liability and insurance requirements for automated vehicles should:

- follow the normal rules on product liability with different rules depending on whether the injured party was an individual or a company?

☐ Yes

☐ No

- be limited by the 'state of the art' defence, as set out in the Consultation Document?

☐ Yes

☐ No

Why?

**Question 2K:** Alternatively, should we extend insurance/liability rules specifically for automated vehicles?

☐ Yes

☐ No

Why?

## Public sector vehicles

**Question 2L:** Do you agree with the proposal that, with respect to automated vehicles, the public sector can continue to self-insure but, where they choose to self-insure, they would then be required to step into the insurer's position in respect of product liability damages?

☐ Yes

☐ No

Why?

## An alternative option: a first party insurance model

**Question 2M:** Do you agree that an alternative first party model option would not be proportionate while automated vehicles represent a small proportion of the fleet?

☐ Yes

☐ No

Why?

**Question 2N:** What do you anticipate the cost of implementing a first party insurance model would be?

## Next steps

**Question 2O:** Do you have data to support your answers on insurance for automated vehicles?



# Highway Code and Construction and Use Regulations

## Highway Code

### *ADAS guidance*

**Question 3A:** What are your views on amending the text of the Highway Code in a way that would clarify rule:

- 150, related to use of driver assistance systems and distraction?

- 160, relating to driving with both hands on the wheel?

### *Enabling platooning*

**Question 3B:** Do you agree with the proposition to allow platooning by relaxing Highway Code rule 126 (which recommends a 2 second gap between vehicles)?

☐ Yes

☐ No

Why?

**Question 3C:** What, if any, other restrictions should be considered regarding use of platooning technologies, and why?

### *Freeing the driver to make use of the automated vehicle*

**Question 3D:** Do you agree with the proposition that specific and implied driver distraction restrictions are not relaxed at this time?

☐ Yes

☐ No

Why?

## Construction and Use Regulations

### *Remote control parking*

**Question 3E:** Do you agree with the proposed approach to enable remote control parking by clarifying:

- Regulation 104 (the driver should be in a position to be able to control the vehicle)?

☐ Yes

☐ No

- Regulation 107 (switching off the engine when the vehicle is not attended)?

☐ Yes

☐ No

- Regulation 110 (not using hand-held mobile phones while driving)?

☐ Yes

☐ No

Why?

### *Motorway assist*

**Question 3F:** What are your views on amending Regulation 109 to allow drivers to view TV/display screens displaying information that is not related to the driving task, while driving?

## The benefits and impacts of ADAS

**Question 3G:** Do you have any data or evidence of the safety benefits of these advanced driver assistance systems?

**Question 3H:** Are there any other, non-safety, impacts (including costs) of ADAS, which we have not covered in this consultation document?

**Question 3I:** Please supply any data to support your answers.

# Annex B - Consultation principles

The consultation is being conducted in line with the Government's key consultation principles which are listed below. Further information is available at:

<https://www.gov.uk/government/publications/consultation-principles-guidance>

If you have any comments about the consultation process please contact:

Consultation Co-ordinator  
Department for Transport  
Zone 1/29 Great Minster House  
London SW1P 4DR  
Email [consultation@dft.gsi.gov.uk](mailto:consultation@dft.gsi.gov.uk)

## Annex C - Glossary

Term	Meaning
<b>ACC</b>	Advanced Cruise Control
<b>ADAS</b>	Advanced Driver Assistance System
<b>AEBS</b>	Automated Emergency Braking Systems
<b>Automated Vehicle</b>	An automated vehicle means any vehicle equipped with technology that has the capability of operating or driving the vehicle for all or part of the journey without the active physical control or monitoring of a natural person, whether or not the technology is engaged.
<b>AVT</b>	Automated Vehicle Technology
<b>ESC</b>	Electronic Stability Control
<b>In-the-loop driving</b>	Where the driver retains responsibility for the monitoring and execution of the overall driving task, even if they are assisted by ADAS so that they might not be in direct physical control of specific, defined aspects.
<b>LKAS</b>	Lane Keep Assist System
<b>MIB</b>	Motor Insurers' Bureau
<b>Out-of-the-loop driving</b>	Where the driver physically and mentally disengages from the driving task, handing over control and responsibility for its execution to the automated vehicle.
<b>V2V</b>	Vehicle to Vehicle