

THE AUTOMATED VEHICLE DRIVER RESPONSIBILITY IN VEHICLE EDUCATION GROUP (AV-DRIVE)

Self-driving vehicle
communications toolkit

Version 2

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ABOUT THIS TOOLKIT

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This toolkit will provide you with a set of clear definitions, terminologies and explanations, using plain language for you to consider for use in your own self-driving vehicle marketing. It contains specific guidance on how the first commercially available self-driving feature – **AUTOMATED LANE KEEPING SYSTEM** technology – operates, and will be updated as other features become available.

Developed by the Centre for Connected and Autonomous Vehicles' AV-DRiVE Group, the toolkit will provide you with messages, guidance and material that can be embedded within your marketing and communications strategies. AV-DRiVE includes the Society of Motor Manufacturers and Traders (SMMT) and representatives from the insurance industry, advertising sector, law enforcement, road safety organisations and other government departments.

By working together to communicate clearly and consistently about self-driving vehicle technology, we will build market confidence, avoid confusion and harness the full benefits of this technology.

OBJECTIVE

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WE'RE PREPARING TO DELIVER A SAFETY REVOLUTION to the UK's roads with the introduction of **AUTOMATED LANE KEEPING SYSTEMS (ALKS)**, potentially from 2023, subject to approval by the Vehicle Certification Agency. This is likely to be the first ever self-driving vehicle technology to be made available to buy.

We want to help you to help your customers and audiences understand this exciting new technology, be clear about what it can and can't do, how it differs from assisted driving technology, and how they can use it to make their journeys safer and smoother.

By advocating the use of clear and consistent messages and language when talking about self-driving vehicle systems, we aim to inspire confidence in this technology, avoid confusion and help make our roads safer than ever before.

GUIDANCE

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GUIDING PRINCIPLES

for marketing self-driving vehicles and vehicle technology

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IN 2021, THE UK AUTOMOTIVE INDUSTRY COMMITTED TO A NEW SET OF GUIDING PRINCIPLES TO HELP ENSURE MARKETING OF SELF-DRIVING VEHICLES IS CLEAR AND COMPREHENSIBLE.

These principles, developed by manufacturers and government and supported by the Advertising Standards Authority, provide an outline for responsible advertising and communication relating to self-driving vehicles and their capabilities:

- 1 A self-driving feature must be described sufficiently clearly so as not to mislead, including setting out the circumstances in which that feature can function.**
- 2 A self-driving feature must be described sufficiently clearly so that it is distinguished from an assisted driving feature.**
- 3 Where both self-driving and assisted driving features are described, they must be clearly distinguished from each other.**
- 4 An assisted driving feature should not be described in a way that could convey the impression that it is a self-driving feature.**
- 5 The name of a self-driving or assisted driving feature must not mislead by conveying that it is the other – ancillary words may be necessary to avoid confusion – for example for an assisted driving feature, by making it clear that the driver must be in control at all times.**

LANGUAGE

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Our use of language is important because of the need to build public understanding and ensure clarity of associated responsibilities. Although often used interchangeably, we are using the terms **SELF-DRIVING** and **AUTOMATED** in distinct ways.

A **SELF-DRIVING** vehicle is one that has at least one self-driving feature, delivering sufficiently high levels of automation that it meets a legally defined threshold and is capable of safely driving itself with no human input. Such features could provide self-driving capability for all or part of a journey. While the term 'automated' vehicle will continue to be used by the sector and in legislation, 'self-driving' is a better term to support public understanding and will become a protected term for the purposes of marketing products to the public.

TERMINOLOGY SELF-DRIVING VEHICLE TECHNOLOGY

When describing a self-driving system, it is critical to use clear, consistent language

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You should avoid using words and phrases such as these to describe a self-driving technology including Automated Lane Keeping System technology, as these may confuse, or potentially mislead, the driver:

- Assist/Assistance/Assisted
- Automatic
- Autonomous
- Driverless
- Robot/ robotic

It is better to use words such as these to describe self-driving technology such as Automated Lane Keeping System:

- Self-driving vehicle technology
- Self-driving vehicle feature
- Vehicle with self-driving features

If in doubt, refer to the SMMT guiding principles on Slide 6 for marketing self-driving vehicles.

TERMINOLOGY SELF-DRIVING VEHICLE TECHNOLOGY

Keep it simple

While you may not always be able to avoid using technical terms when describing and explaining self-driving vehicle technology, we recommend trying to keep language as simple and clear as possible, avoiding acronyms. For example:

TECHNICAL TERM	CONSIDER REPLACING WITH
ALKS	Automated Lane Keeping System
Transition demand	Request to retake control
Operational Design Domain	Operating conditions
Latitudinal / lateral control	Steering/ lane keeping
Longitudinal control	Speed/ distance/ braking

You should try to use worked examples, ideally supported by visuals, such as the infographics developed alongside this toolkit, and appropriate wording wherever possible.

TERMINOLOGY SELF-DRIVING VEHICLE TECHNOLOGY

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WHAT ARE THE **SAE** LEVELS OF DRIVING AUTOMATION?

These are the most used definitions to outline different stages of driving automation, from Level 0 (no driving automation) to Level 5 (full driving automation), in the context of motor vehicles and their use on public roads.

Whilst SAE Levels might be commonly used in the automotive industry, we recommend not using these when engaging with the public. Instead please refer to the Terminology Guidance section that provides alternative ways of referring to self-driving technology.

TERMINOLOGY ASSISTED DRIVING TECHNOLOGY

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WHAT IS ASSISTED DRIVING TECHNOLOGY?

Driver Assistance systems support the driver, for example, with steering support, keeping speed and distance, parking and braking, but they do not perform the driving task. The driver remains responsible for driving the vehicle, must be in control of the vehicle at all times and fully engaged with the driving task.

Driver assistance systems are already common on many vehicles in the UK. Examples include:

- adaptive cruise control
- **blind spot monitoring**
- advanced emergency braking system / automatic emergency braking / emergency brake assist
- **collision warning**
- lane departure warning
- **lane keeping assistant**
- parking assist / remote control parking.

None of these systems are self-driving technologies. They cannot drive a vehicle by themselves and the driver must, by law, remain in control at all times.

TERMINOLOGY ASSISTED DRIVING TECHNOLOGY

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It is critical not to confuse Driver Assistance systems such as the ones described in the 'What is assisted driving technology' section (see page 11) with self-driving systems because their capabilities are vastly different. This is important, not just from a safety perspective, but a legal one. New regulation is proposed by the Law Commission to make it a criminal offence to mislead by failing to make the distinction between 'driver assistance' and 'self-driving'.

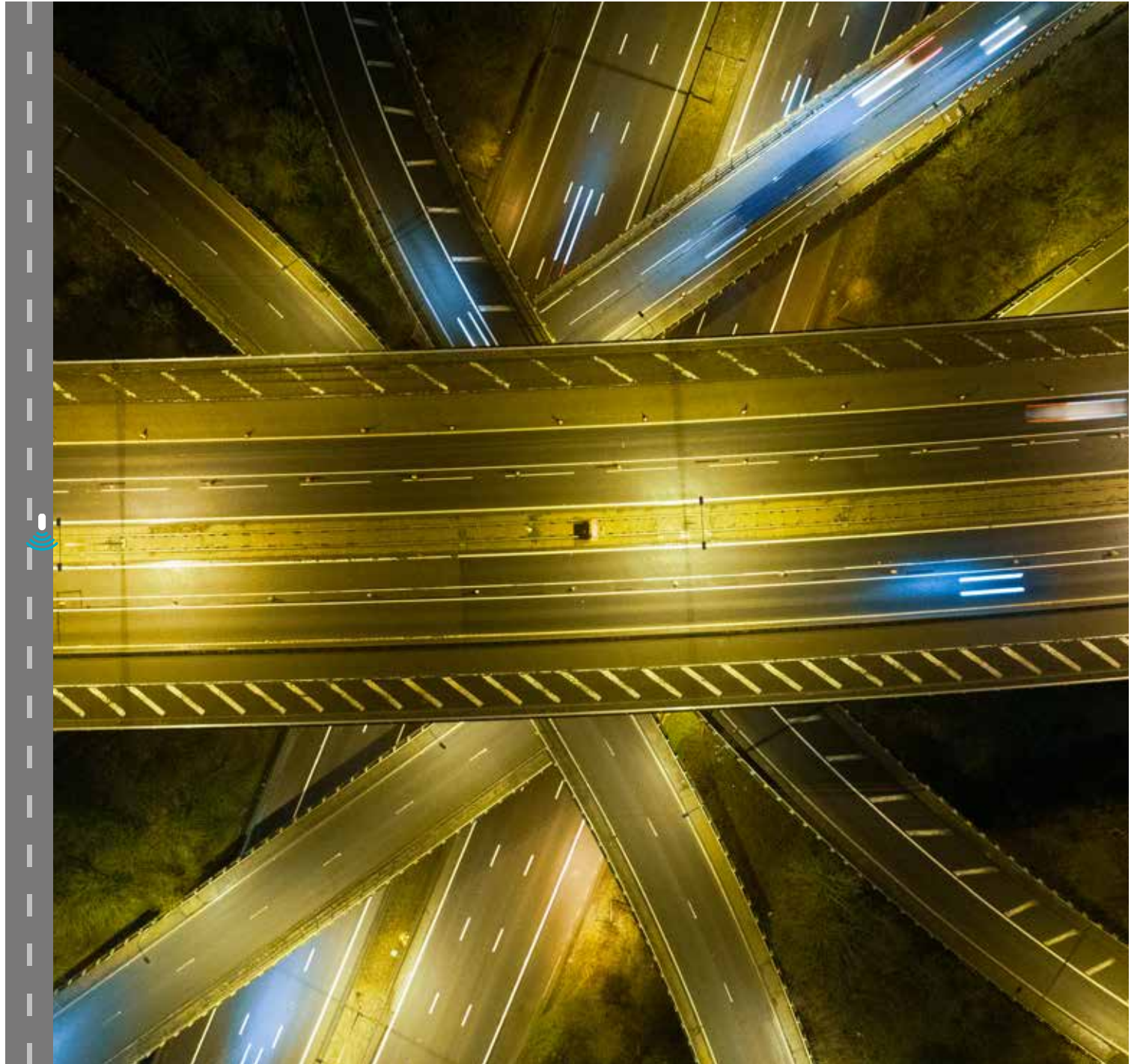
You should therefore not be using the following words or phrases to describe Assisted Driving technology:

- Automated
- Autonomous
- Driverless
- Intelligent/ intelligence
- Robot/ robotic
- Self-driving
- Driving itself

Some assistive technologies allow drivers to take their hands off the steering wheel. These are assistive features and not self-driving. As with other assistive features they cannot drive a vehicle by themselves and the driver must continue to monitor the road and, by law, remains responsible for the vehicle at all times.

TOOLKIT ASSETS

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KEY MESSAGES

Guidance for users:

The ALKS messages only apply to vehicles that have been listed as self-driving

- 1** Safety is the number one priority for all stakeholders including government, the automotive and insurance industries. Each generation of new vehicles comes with more advanced features to protect drivers and other road users from harm.
- 2** **Vehicles equipped with self-driving features can drive themselves without human intervention, but only in certain circumstances. They are not the same as 'assisted' driving features – which can help the driver to brake, park, keep to a certain speed, stay centered in their lane, or avoid collisions through alerts. Assisted features do not offer any self-driving capability and require the driver to pay attention at all times.**
- 3** Vehicles with Automated Lane Keeping System technology (ALKS) that are listed as self-driving can take full control of speed and steering without the need for a human monitoring the road. ALKS is expected to be the first self-driving technology to be introduced on UK roads. ALKS technology can only be used on motorway-type roads. The technology will initially be limited to self-driving at low speeds (up to 37mph) e.g. in heavy traffic. From 2023, car makers could bring forward ALKS technology that can be self-driving at up to 70mph and can change lane. Drivers using ALKS technology must always be able and ready to take back control of the driving task when prompted by the vehicle, for example when leaving the motorway.

KEY MESSAGES

- 4 ALKS technology is only designed for use on motorway-type roads, so it can't be used for whole journeys.**
- 5** ALKS technology that has been listed as self-driving works; it is safe and legal – it must comply with strict international and UK legislation which require rigorous and comprehensive testing. The Highway Code has been updated to accommodate for self-driving technologies.
- 6 Self-driving vehicle technology has the potential to transform our roads and journeys – reducing the risk of driver error and improving safety, as well as helping to reduce congestion and emissions by making driving more efficient.**
- 7** To help clarify which vehicles on the market are equipped with self-driving technology, the Secretary of State for Transport will publish a list of vehicles deemed as self-driving, This can be found at www.gov.uk/guidance/self-driving-vehicles-listed-for-use-in-great-britain

SELF-DRIVING VEHICLE TECHNOLOGY OVERVIEW

Self-driving vehicles are capable of safely and legally driving themselves in at least some circumstances or situations.

A vehicle is 'driving itself' if it is operating in a mode where it is not being controlled, and does not need to be monitored, by an individual. When the self-driving mode is turned on, the driver does not need to monitor the road ahead and is not responsible for how the vehicle drives, as this is performed by the system. The driver, however, must be able and ready to take back control of driving (i.e., they must remain awake, in the driving seat and must be within the drink-drive legal limit) when prompted by the system and will have sufficient time to do so safely. The time will be clearly communicated to the driver.

The first self-driving vehicle technology expected to be approved for use on UK roads is **AUTOMATED LANE KEEPING SYSTEM TECHNOLOGY (ALKS)**, which is expected to be introduced from 2023.

AUTOMATED LANE KEEPING SYSTEM EXPLAINER

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LOW SPEED **ALKS**

AUTOMATED LANE KEEPING SYSTEM TECHNOLOGY technology is a self-driving vehicle feature which can take over full control of a vehicle's speed and steering from the driver at low speeds. It will be offered to the driver only when certain road conditions are met. If the system detects slow-moving traffic (under 37mph) on a motorway it may offer the driver the option to turn on the self-driving feature, subject to all other circumstances allowing (for example weather).

HIGH SPEED **ALKS**

AUTOMATED LANE KEEPING SYSTEM TECHNOLOGY is a self-driving vehicle feature which can take over full control of a vehicle's speed and steering from the driver. It will be offered to the driver only when certain road conditions are met. If the system detects that the vehicle is on a motorway it may offer the driver the option to turn on the self-driving feature, subject to all other circumstances allowing (for example, weather). The vehicle will then be able to operate at normal motorway speeds (up to 70mph) and, depending on the system, may be able to change lanes.

AUTOMATED LANE KEEPING SYSTEM EXPLAINER

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1: SELF-DRIVING MODE

ALKS technology will only be available to the driver when the right conditions are met. The vehicle will detect when these conditions are met and will offer the driver the option to turn on the self-driving features. It will not be possible for the driver to activate the self-driving technology at other times.

The option to activate will be communicated to the driver via the vehicle's information and entertainment system and the driver can then choose to accept, or to decline and keep driving themselves.

If the driver chooses to accept, they are no longer responsible for how the vehicle drives. The system will perform the driving task and monitor the road and surrounding environment. However, the driver must be able and ready to take back control of driving when prompted by the system.

AUTOMATED LANE KEEPING SYSTEM EXPLAINER

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2: RETAKING CONTROL

When the self-driving mode is engaged, the driver can perform limited activities, for example, browsing the internet or watching a movie via the vehicle's built-in entertainment and information systems. These will switch off automatically when the driver is prompted to take back control of driving. The driver must however remain in the driving seat with the seatbelt on, and cannot use a hand-held mobile phone or other hand-held devices (e.g. tablets). This ensures the driver is facing the road and ready to resume control of the driving when needed.

The driver will be prompted to take control of the vehicle when the circumstances in which the system could be activated (e.g. suitable speeds; motorway-type road) are no longer present.

If the driver fails to engage and retake control of the driving task within 10 seconds of a request to take control, the system will bring the vehicle to a stop automatically and turn on hazard lights. In all likelihood, this will only happen if the driver has lost consciousness, as warnings are loud and tactile.

AUTOMATED LANE KEEPING SYSTEM EXPLAINER

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3: STOP

Automated Lane Keeping System technology will detect if the driver is not in a driving position (e.g. not in the driving seat), their safety belt is unfastened or if they are unavailable to take over the driving task (e.g. asleep). This will be determined by at least two different criteria which could include responding, or failing to respond, to vehicle controls, eye, head or body movement. If the driver is not using the technology as intended, the system will issue escalating sound and visual warnings to prompt the driver to take over and will bring the vehicle to a stop automatically and turn on hazard lights.

4: EMERGENCY MANOEUVRE

When engaged, if the self-driving system detects a risk of imminent collision, it will carry out an emergency manoeuvre. An emergency manoeuvre will aim to minimise the risk to all road users, both those in and around the vehicle. This can include applying the brakes, taking evasive action, turning on hazard warning lights and bringing the vehicle to a standstill.

5: DO'S AND DON'TS

DO have a MOT certificate, ensure the vehicle is roadworthy, taxed and insured.

DON'T use handheld devices such as a smartphone, tablet or gaming system.

DON'T fall asleep – you may be required to retake control.

DON'T drink alcohol – normal drink-driving laws apply, even if the vehicle is in self-driving mode.

DON'T leave the driver's seat - you must remain in position to retake control whenever the self-driving mode is active.

VISUAL AIDS

Downloadable graphics

SELF-DRIVING MODE | How the vehicle indicates that self-driving mode is available to the driver

- Vehicle detects
- Driver can ignore or press button to activate
- If activated, vehicle will take control

The only applies to vehicles with self-driving features, not all cars with assisted features.

DOWNLOAD

PNG

RETAKE CONTROL | How the vehicle requests the user to retake control and what the visual and audible cues are

Reasons to take control:

- Warning will escalate until you retake control, starting with audible and visual cues and then tactile cues
- Content on screen will either be stopped or frozen when you need to retake control

The only applies to vehicles with self-driving features, not all cars with assisted features.

DOWNLOAD

PNG

STOP | What happens if the driver fails to retake control

You must retake control within 10 secs or the vehicle will come to a stop automatically

- Remember it is an offence to stop in a live lane of motorway traffic except for genuine emergencies or vehicle breakdown

The only applies to vehicles with self-driving features, not all cars with assisted features.

DOWNLOAD

PNG

EMERGENCY MANOEUVRE | How the vehicle reacts to unexpected objects

- Where possible, the vehicle will steer within its lane to avoid unexpected obstacles
- Or if the object is too large the vehicle will slow down and stop

The only applies to vehicles with self-driving features, not all cars with assisted features.

DOWNLOAD

PNG

DOS AND DON'TS | What you may do in self-driving mode

You must not...

- ...use handheld electronic devices
- ...fall asleep
- ...drink alcohol
- ...leave the driver's seat

On this system screen you may:

- watch a movie

The only applies to vehicles with self-driving features, not all cars with assisted features.

DOWNLOAD

PNG

INSURANCE EXPLAINER

Guidance for users: the specific requirements from users may vary across insurance policies. Insurers must ensure that wording is amended in line with specific policies.

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If you own a vehicle with self-driving features, you must by law insure it as a self-driving vehicle. A vehicle with self-driving features does not need two different insurance policies. Specialist self-driving vehicle insurance policies will cover the vehicle both when the self-driving mode is on, and when you are in control of driving it. If you are operating a vehicle with self-driving features, you must ensure that it has the appropriate insurance in place. You should always carefully review your policy to ensure that the coverage is right for you.

While a vehicle might be listed as a self-driving vehicle (check here: www.gov.uk/guidance/self-driving-vehicles-listed-for-use-in-great-britain), its self-driving capabilities (such as ALKS) may not yet have been enabled, for example if the owner hasn't purchased the self-driving feature as an optional add-on. It is important that as the owner, or the person responsible for the insurance, you understand what features are available, how to use your vehicle and what insurance you require.

For your insurance to be valid, you may need to meet certain conditions. These could include ensuring that safety critical updates, including software updates, are maintained. A safety critical update is an update that is designed to address any issues that could affect the safe performance of a vehicle (e.g. a change to the vehicle's braking or steering). These will be detailed in your insurance policy.

INSURANCE EXPLAINER

The owner of the vehicle, or the person responsible for the insurance, may need to inform their insurance provider of any modifications, including software upgrades, that have a material impact on the vehicle's capabilities. This could include performance upgrades or upgrades to the self-driving system. A material impact refers to any significant changes that affect the capabilities of the vehicle (e.g. a software update that means that self-driving technology is now offered for speeds up to 70mph on the motorway as opposed to up to 37mph). Failing to do so could invalidate your insurance and any insurance claims.

Anyone using a self-driving vehicle must adhere to the Highway Code. If the technology is not used appropriately (e.g. sleeping, being in the passenger seat, being over the drink-drive legal limit) then an insurance claim could be denied.

In the event of a claim, your policy insurance may require you to share data that may be relevant to processing a claim with your insurer, including data from the vehicle's driver monitoring system. This data will also enable insurers to determine whether the technology was misused.

USEFUL INFORMATION

GOVERNMENT REGULATION

www.gov.uk/government/publications/connected-and-automated-mobility-2025-realising-the-benefits-of-self-driving-vehicles

www.gov.uk/government/consultations/safe-use-rules-for-automated-vehicles-av/rules-on-safe-use-of-automated-vehicles-on-gb-roads

HIGHWAY CODE www.gov.uk/guidance/the-highway-code

CCAV www.gov.uk/government/organisations/centre-for-connected-and-autonomous-vehicles

AV DRIVE MEMBERS

AA www.theaa.com/

ABI www.abi.org.uk/

ASA www.asa.org.uk/

BIBA www.biba.org.uk/

BVRLA www.bvrla.co.uk/

DFT www.gov.uk/government/organisations/department-for-transport

DVSA www.gov.uk/government/organisations/driver-and-vehicle-standards-agency

DVLA www.gov.uk/government/organisations/driver-and-vehicle-licensing-agency

LAW COMMISSION www.lawcom.gov.uk/

NATIONAL HIGHWAYS nationalhighways.co.uk/

RAC www.rac.co.uk/

RAC FOUNDATION www.racfoundation.org

REED MOBILITY www.reed-mobility.co.uk/

RMIF www.rmif.co.uk/

ROAD SAFE www.roadsafe.com/

ROSPA www.rospa.com/

SMTT www.smtt.co.uk/

SUSSEX POLICE www.sussex.police.uk/

TESLA www.tesla.com/en_gb

THATCHAM www.thatcham.org/

TMO www.themotorombudsman.org/

VCA www.vehicle-certification-agency.gov.uk/

PARTNERS

