



Centre for Connected
& Autonomous Vehicles

Invitation to Comment: Code of Practice: Automated vehicle trialling



February 2019

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1. Summary

- 1.1 The Government published *The Pathway to Driverless Cars: A Code of Practice for Testing in 2015*.¹ The Code was published to help establish the UK as a global leader for trials of automated vehicle technologies. The Government recognises and welcomes the industry's growing appetite to trial automated vehicle technologies and services in the UK. This technology has the potential to challenge traditional mobility business models and change the landscape of the passenger and freight services markets. As part of the Industrial Strategy, the Government has set a grand challenge for the Future of Mobility. Automated road vehicle technologies and services have the potential to offer benefits to the travelling public and UK industry. The Government therefore wishes to support and facilitate the safe development and introduction of these technologies to UK roads.
- 1.2 The Department has engaged with industry, academics, and members of the public to ensure that testing is supported to enable safe and responsible development of this new technology. The update is based on learning and development since 2015, but also introduces guidance on a number of issues which stakeholders and individuals have identified as needing greater clarity. Such issues include guidance on data collection and management and engaging with local authorities and the public.
- 1.3 **With this update, the new Code will replace the version released in 2015.** Those conducting trials should use the new Code as the most up to date guidance from the Department on testing on public roads and other public places.
- 1.4 This document is an opportunity to provide feedback on the update to the Code. Any substantial issues identified through this invitation to comment will be reflected in a revised version. The Department would like to gather views and feedback on the latest version of the Code. We are taking views from 6 February 2019, to 6 May 2019.

¹ <https://www.gov.uk/government/publications/automated-vehicle-technologies-testing-code-of-practice>

2. How to respond

- 2.1 You will be able to provide comments on this update of the Code from 6 February to 6 May 2019. 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 can send your response to:

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- 2.2 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

- 2.3 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.
- 2.4 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.
- 2.5 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.
- 2.6 The Department 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.

3. Update to the Code

- 3.1 This chapter sets out the updates that have been made to the Code. While this chapter should not be read as an exhaustive list of changes, it nevertheless gathers together the major updates and the rationale for the changes. This chapter sets out the main focus of the update, such as improving safety guidance, transparency, and engagement, and also provides information on the changes made to each chapter.

Background

- 3.2 The Code is a guidance document which provides information and advice for those carrying out public trials of AV technologies or services. While the Code is not statutory or binding, it has served as a useful guide for those looking to conduct safe and responsible trials.
- 3.3 Since the Code's publication in 2015, the Department has engaged widely with users of the Code, such as those carrying out trials, as well as members of the public and special interest groups. The Government, through the Centre for Connected and Autonomous Vehicles (CCAV) is investing £150m in research and development of AV technologies, match-funded by industry across more than 70 collaborative projects. It is also investing a further £100m in testbed ecosystem facilities coordinated by Meridian. Feedback has been gathered through the wide range of activity that the Department has undertaken. It is important that this feedback is now reflected in the Code.
- 3.4 **Any trial activity that was possible under the 2015 Code remains possible with this new Code.** New guidance has been added to improve clarity and ensure safe and responsible trials, and all previously issued guidance remains valid.
- 3.5 The changes to the Code can be described in four categories, which are:
- Structural changes to improve clarity;
 - Improving safety guidance;
 - Increasing levels of stakeholder engagement; and
 - Ensuring a greater level of transparency of trials.
- 3.6 Structural changes have been made to make the Code more accessible and easier to use, and to ensure that recommendations and guidance are as clear as possible. Changes have also been made throughout the document to provide improved recommendations on safety. The language in the document has been made clearer; with the expectation that trials will be conducted in line with the recommendations within the Code. Those carrying out trials are now expected to gather more comprehensive data, as well as reaching agreements on data access with emergency services and enforcement agencies.
- 3.7 Improving engagement between those carrying out AV trials and relevant authorities and the public is a priority for the update. Trialling organisations are now expected to inform, educate, and update the relevant authorities, emergency services, and

anyone who might be affected by trial activity. The Code attempts to facilitate such engagement by providing relevant contact details but is clear that the trialling organisation has responsibility for making sure sufficient engagement takes place.

- 3.8 To improve transparency and ensure the public are informed of any trial activity, the Code recommends that a public version of the safety case for the trial is published. Other data sharing is also encouraged, such as trial performance and information related to any incidents or disengagements.
- 3.9 The combination of these changes aims to clarify expectations of those carrying out trials, and to ensure that safety considerations are central to any activity. This document sets out the major changes to the Code on a chapter-by-chapter basis, outlining changes that have been made to the original Code published in 2015.

Chapter one - Introduction

- 3.10 The first chapter of the updated Code is a combination of the first two chapters of the 2015 Code (*Introduction*, and *Aim, scope and definitions*). This chapter builds on the previously issued guidance within the original Code, as well as setting out the benefits of automated vehicle technologies and services. The revised introduction reflects the developments since the existing Code's launch in 2015 and provides a general overview of the proposed updates to the Code.
- 3.11 The introduction also sets an expectation that any trials on UK roads are conducted safely, with the responsibility for such trials resting squarely with the developer. Failure to abide by the Code may be relevant to liability in any legal proceedings; similarly, compliance with the Code does not grant immunity from any liability. This chapter sets out what is currently possible under UK legislation, and the minimum requirements which must be met to conduct a trial on public roads. The Code also acknowledges the growing desire of industry to conduct trials which may not be possible under current legislation. The Code sets out the Department's plans to introduce a process through its Agencies to support such advanced trials.
- 3.12 The aim of the update to this chapter is to improve the accessibility of the document with clearer language and a more streamlined approach. These changes are largely structural, combining the original chapters one and two into a single chapter shortens the document and provides a clearer, easier experience for the user.

Chapter two – General Requirements

- 3.13 The second chapter of the updated Code expands on the General Requirements set by the 2015 Code. In this first substantive chapter, the legal requirements for AVs trials are outlined. The previous guidance is retained in the Code, though some is now contained in chapter three (Engagement). The updated chapter now provides recommendations on safety cases for trials, as well as guidance for those looking to develop passenger or freight services. Recommendations and guidance on how trialling organisations are expected manage requests for access to data is included, as well as new guidance on contingency planning in the event of an incident involving an AV.
- 3.14 The aim of the update to this chapter is to ensure legal requirements are clear, and that the minimum expectations of responsible trialling organisations are met. This chapter is intended to set the tone for public trials, to ensure safety is core to any

activity. This chapter now also provides information on the future of advanced trials in the UK.

Chapter three – Engagement

- 3.15 The third chapter of the Code is new and sets out the guidance and recommendations for stakeholder engagement. It builds on guidance previously contained in the General Requirements of the 2015 Code. The chapter sets a number of expectations and recommendations for those planning trials. This includes early and proactive engagement with local authorities, emergency services, and any other individuals or bodies that may be affected by trial activity. The chapter also sets out several activities that trialling organisations should consider, including: their public communications strategy to inform and educate the public on any trial activity; and, publishing a version of their safety case, including data highlighting the safety of the trial and steps the trialling organisations has taken to ensure safety.
- 3.16 The proposed changes are intended to improve engagement, transparency, and to improve public awareness and knowledge of trial activity. Many of the new recommendations emphasise the importance of educating the public, and of proactive engagement with those affected by any trial activity.

Chapter four – Safety Driver and Safety Operator Requirements

- 3.17 The fourth chapter of the Code has had minor adjustments to language and terminology. The chapter now provides clearer information on remote-controlled trials.
- 3.18 The proposed changes are intended to streamline the chapter, as well as providing greater clarity for readers.

Chapter five – Vehicle Requirements

- 3.19 The fifth and final chapter of the Code has new recommendations regarding data, and some minor adjustments to its structure. The previous guidance on data recording has been expanded substantially. While test vehicles are anticipated to generate vast amounts of data, the guidance in the Code sets a minimum expectation for information that should be recorded.
- 3.20 The chapter now provides guidance on the capability of an event data recorder in the event of an incident, including the frequency of the data and how trialling organisations should develop plans to ensure data is being gathered appropriately. The chapter also recommends the use of the UK Government's *Key Principles on Cyber Security for Connected and Autonomous Vehicles*. References to the General Data Protection Regulations have also been added to the Code.

Annex A – Contact Points

- 3.21 The first annex to the Code provides a list of organisations that should be contacted before conducting a public trial. This list includes highways authorities, regional transport bodies, and organisations such as the Police, Highways England, and the DVLA.

3.22 While this list provides useful contact points within organisations, it is not intended to be exhaustive. Those conducting trials are expected to contact any organisation, body, or individuals that might be affected or have interest in the trial activity.

Annex B – Definitions

3.23 The second annex to the Code provides a glossary of terms used within the Code, with definitions alongside each. These terms are repeated in the Glossary in this Invitation to Comment document.

Annex C – Relevant Areas of Road Traffic Law and the Highway Code

3.24 The third annex to the Code provides a list of relevant areas of laws and regulations that may potentially apply to public testing. This annex has been developed to provide a useful, though not exhaustive, resource for those preparing to conduct a trial.

Commenting on the update

3.25 The Centre for Connected and Autonomous Vehicles welcomes comments and feedback on any element of the updated Code. Please see chapter 2 of this document for information on how to respond.

4. Glossary

- 4.1 This document uses some terms which might not be readily understood by every reader. This glossary below is intended to assist any reader who is new to the broader issues associated with automated vehicles or how government works.

Term	Meaning
Automated driving system (ADS)	An automated driving system (ADS) is the combination of hardware and software needed to perform all of the dynamic driving tasks (all the activities associated with moving a vehicle, other than strategic tasks like journey scheduling) needed to undertake a journey. When activated, the vehicle enters automated mode (“self-driving mode”), and the driver does not need to monitor the road traffic environment, or the ADS. The ADS may work within specific driving situations (sometimes referred to as an operational design domain), or in any driving situation. Outside of these situations, a driver is needed to control the vehicle.
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.
Construction and Use Regulations	Construction and Use Regulations refers to regulations for Great Britain, namely the Road Vehicles (Construction and Use) Regulations 1986 and, for Northern Ireland, the Motor Vehicles (Construction and Use) Regulations (Northern Ireland) 1999, both as amended.
Conditionally automated vehicle	A vehicle fitted with an ADS that requires a safety driver to act as a fall-back for the system to assure safety while the vehicle is in automated mode. The safety driver must respond to a system takeover demand.
DVLA	The agency responsible for licensing and registering motor vehicles which are used in the road.
DVSA	The agency responsible for vehicle standards, ensuring vehicles are safe to driver, and monitoring vehicle recalls.
Driver-assistance system	Driver-assistance systems support but do not replace the driver. Such systems include automated lighting, cruise control, lane departure warnings and traction control. These systems are not designed to perform all of the dynamic driving tasks, though some driver-assistance system features may be adapted to perform some of the task, such as lane changing.

Minimal risk condition	<p>A minimal risk condition is where a vehicle performs a manoeuvre or emergency stop to bring itself out of potential hazards or dangers. The specific action taken to achieve a minimal risk condition may vary depending on the operational domain, and could for example include slowing down, coming to a complete stop, or moving to a safe harbour. The manoeuvre or stop should ideally ensure that the vehicle is safely positioned and removes as far as possible any risk or hazards to other road users.</p>
Safety/test driver or operator	<p>A driver, test driver, or safety driver is normally interpreted as the person who is able to control the vehicle's speed and direction. This person may be referred to as the driver even when the vehicle is operating in an automated mode. At all times those undertaking the test must be able to identify the driver who is able to exercise proper control of the vehicle, whether seated in the vehicle or remotely.</p>
Prototype vehicles	<p>A vehicle which has been constructed for use on the road for the purpose of performing a specific test programme. A prototype vehicle may not meet the requirements set out in the Construction and Use Regulations.</p>
In-the-loop driving	<p>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</p>
Type approval	<p>Official confirmation from a government or other body that a manufactured item meets required specifications.</p>