Code of Practice: Automated vehicle trialling

RoSPA's Response to the Department for Transport's Invitation to Comment

Date: April 2019

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Introduction

The Government published 'The Pathway to Driverless Cars: A Code of Practice for Testing' in 2015. Automated vehicles have the potential to challenge traditional mobility models, leading to shifts in the way that vehicles are used and owned. The Department for Transport (DfT) 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.

Our response to the consultation for the original document can be found:
https://www.rospa.com/rospaweb/docs/advice-services/road-safety/consultations/2016/pathway-to-driverless-cars.pdf

Based on lessons learned from trials in the UK, the automated vehicle trialling code of practice has been updated and introduces guidance on a number of issues, which stakeholders and individuals have identified as needing greater clarity. It does not introduce any new legal requirements. The new Code will replace the version published in 2015. DfT are offering the opportunity for organisations and members of the public to provide feedback on the update to the Code.

Updates include:

- Detail on engagement strategies, including safety cases and ways of working with the relevant bodies and the public
- Improved understanding of technical developments, such as the need to access vehicle data and
- Development of a process to support advanced trials on a public road.

This is the response of the Royal Society for the Prevention of Accidents (RoSPA) to the DfT invitation to comment on the Code of Practice for Automated Vehicle Trialling. It has been produced following consultation with RoSPA's National Road Safety Committee.

RoSPA have no objection to this response being reproduced or attributed.

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RoSPA's comments on the update of the Code

The automation of vehicles is set to become widespread, with the emergence of advanced sensing devices and new on-board processing capabilities. This will mean that less and less input is needed from the 'human driver' during the driving task. This could also lead to shifts in the way that cars and other vehicles are used and owned. In fact, the results of some advanced trials suggest that some automated vehicles are already able to operate reliably in some contexts, but variable performance in other conditions means that these technologies will need to be further developed before autonomous vehicles become a common site on Britain's roads.

We are already seeing the benefits from driver assistance technology such as electronic stability control, autonomous emergency braking and lane departure warning systems. RoSPA believes that the further development of autonomous vehicles could offer enormous benefits by:

- Reducing road crashes significantly by reducing or eliminating human error by drivers that contributes to a significant proportion of road crashes and casualties.
- Improving mobility for people unable to drive conventional cars, enhancing their mobility, independence and quality of life.
- Improving the use of road space, and reducing congestion, fuel consumption and emissions.
- Reducing insurance premiums, especially for younger drivers, due to the lower crash risk.

The Code of Practice for automated vehicle trialling provides information and advice for those carrying out public trials of automated vehicle technologies or services. RoSPA welcome the structural changes that have been made to make the Code easier to use. The Department's guidance on vehicle trialling is clearly set out in the updated document. Trialling any level of automated vehicle technology is possible on any road if carried out in line with UK law. Trialling organisations will need to have:

- A driver or operator, in or out of the vehicle, who is ready, able, and willing to take over control of the vehicle.
- A roadworthy vehicle; and
- Appropriate insurance in place.

RoSPA strongly agree with the emphasis on the expectation that any trials on UK roads are conducted safely, with the responsibility for such trials resting with the developer. We agree that although the Code is not statutory or binding, failure to abide by the Code may be relevant to liability in any legal proceedings, and that compliance with the Code should not grant immunity from any liability. Compliance with the Code is one of the many possible steps that trialling organisations should take to minimise risk.

The guide now provides recommendations on safety cases for trials. RoSPA agrees that trialling organisations should be expected to develop a detailed safety case before conducting any trials. This must demonstrate that the trial activity can be conducted safely. The safety case should include information on the specific trial activity, processes for managing the trial, how the trial aligns with regulation and legislation, evidence of engagement with relevant bodies and updates on trial activity. Vitally, it should also contain evidence that the trial can be performed safely and information about safety driver or operator training. RoSPA also believe that these safety cases should be made available to the public. This is because publishing a safety case for the public can help to educate other road users, as well as reassuring the public about the safety aspect of the trial. It will also provide those affected by the trial with useful information and contact points.

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It is likely that passenger and freight services will become more autonomous over time. RoSPA therefore welcomes the guidance that the updated Code offers for those looking to develop passenger or freight services. We agree that organisations seeking to trial the use of automated vehicle technologies for passenger and freight services must comply with current regulatory regimes and that they should engage with the DfT and Centre for Connected and Autonomous vehicles at the earliest possible opportunity.

Recommendations and guidance on how trialling organisations are expected to manage requests for access to data is included in the updated Code. RoSPA agree that plans must be developed for Police and other relevant organisations to readily and immediately access data relating to an incident. This data must be intelligible and should not require complex analysis.

The Code provides new guidance on contingency planning in the event of an incident involving an autonomous vehicle. As the Code outlines, there will need to be plans for public communications, plans for scaling down, pausing or terminating activities during investigations following an incident, identifying single points of contact in relevant organisations, internal planning and rehearsing of contingency measures and service level agreements for facilitation of any investigations. RoSPA agrees with this guidance, but safety and preventing the incident in the first place must be core to any trialling activity.

Recommendations for stakeholder engagement are also included in the updated Code. This includes early engagement with local authorities, emergency services and any other individuals or bodies that may be affected by trial activity. These changes are intended to improve engagement, transparency and to improve public awareness of trials. Engaging with the right people and organisations before and during the trial is likely to have benefits for organisations conducting trials. RoSPA agree that those planning a trial should engage with all relevant organisations with responsibility for the trial area at the earliest opportunity. Engagement will be necessary throughout the duration of the trial and in some cases, beyond. For example, infrastructure requirements may be needed to support a trial, which will need to be agreed with the authority responsible for the road and any trials must be discussed with the relevant Highway Authority to ensure that trials meet requirements. Reportable incidents should also be conveyed to the Police.

As the guide highlights, RoSPA also agree that trials should be communicated with the public, to educate the public regarding the potential benefits of the technology, to explain the nature of the trial, understand and explain implications for the public and develop mitigating measures in response to this and to consider how to provide special consideration to vulnerable road users. RoSPA agree that this can be aided by trialling organisations publishing a public-facing version of their safety case. These safety cases should be updated as and when required and should be sent to the Centre for Connected and Autonomous Vehicles.

RoSPA also agree that the trialling organisation should keep and publish reports on the progress of the trial vehicle, such as reporting regularly on trial outcomes and any incidents or issues encountered.

RoSPA welcome the clearer information on remote controlled trials. For remote controlled tests, safety drivers should understand any risks associated with remote access. The safety driver should supervise the vehicle at all times, ensuring that the vehicle is observing traffic laws, and should be ready and able to over-ride the automated operation if necessary. RoSPA agree that on locations other than public roads, and where the vehicle's maximum speed is limited to 15mph, trials should be overseen by a safety driver or operator who can, as a minimum, apply an emergency stop control.

In terms of licence requirements, RoSPA agree that the safety driver or operator must hold the appropriate category of driving licence for the vehicle under trial if on a public road. RoSPA also believe that for trials conducted in any place other than on a public road, the safety driver should still hold the appropriate category of licence for the vehicle. The Code also suggests that the licence holder should have several years' experience of driving the relevant category of vehicle, which RoSPA agrees with. RoSPA strongly agree that the trialling organisation should not use safety drivers or operators whose driving history indicates that they may present a risk to public safety.

Safety drivers supervising public road trials should understand the capabilities and limitations of the technologies under trial. They should also be familiar with the characteristics of the vehicle, through extensive experience of trials conducted on closed roads or test tracks. Those who control the vehicle remotely must be trained to safely respond to any connectivity or control issues. Therefore, RoSPA believe that all safety drivers must receive the appropriate training. This responsibility should lie with the trialling organisation.

One of the challenges faced during the development of automated vehicles is that until vehicles are fully autonomous, safety drivers are required to remain alert and ready to intervene if needed. RoSPA are concerned that drivers could become fatigued. The Code makes a recommendation of setting limits for the maximum amount of time that safety drivers perform their role per day. RoSPA agrees that this could be based on driver's hours guidelines.

RoSPA also agree that trialling organisations should have in place clear rules regarding safety driver behaviour and ensure that these are known and understood. All existing laws should be complied with, such as complying with the speed limit, exchanging insurance details in the event of a collision, restrictions on alcohol and drugs and driver distraction. These laws must continue to apply even when the vehicle is autonomous mode.

Automated vehicles are expected to generate a huge amount of data. RoSPA welcome the guidance in the Code setting a minimum expectation for how that data should be recorded. Automated vehicles under trial or deployment should be fitted with a data recording device or series of devices capable of capturing data from sensors and control systems associated with the automated features of the vehicle, as well as other information concerning vehicle movement. RoSPA agree that data recorders should record at a minimum:

- Details of the automated system
- Whether the vehicle is operating in automated or manual mode
- Longitudinal acceleration in the vehicle's direction of travel
- Lateral acceleration when the vehicle moves sideways
- Vertical acceleration when a vehicle mounts an object that causes the vehicle to rise
- Vehicle speed
- Steering command and activation
- Braking command and activation
- Operation of the vehicle's lights and indicators
- Operation of the vehicle's ignition
- Geo-location
- Connectivity, network access and latency
- Use of the vehicle's audible warning system
- Sensor data concerning the presence of other road users
- Remote commands which influence the vehicle's movement
- Any intervention made by the safety driver, including the time.

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RoSPA agree that video and audio recording should also be considered. In the event of an incident, RoSPA agree that an event data recorder must be able to capture at minimum a period of 30 seconds before the incident and 15 seconds after.

RoSPA welcome the updates to the Code, and have no further comments to make on the consultation process, other than to thank the Department for Transport for the opportunity to comment on the code of practice. We have no objection to our response being reproduced or attributed.

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