
Introducing driverless cars to UK roads



Background

In July 2014, the Department for Transport and the Department for Business, Innovation and Skills announced that they would be investing £10m in 'research and development projects to research how driverless cars can be integrated into everyday life'. Three projects were awarded, with a view to eventual trials of different types of driverless vehicles within the public realm in Milton Keynes, Coventry, Greenwich and Bristol.

The Centre for Transport & Society (CTS) is a partner in the Bristol-focussed trial which involves configuring and testing the BAE Systems' Wildcat autonomous vehicle, pictured above. The project will also trial a pod-type vehicle for use in a pedestrian environment and will instrument a public bus, the latter for data-collection purposes only.

The project is grant funded by Innovate UK and brings together a consortium led by Atkins, and including AXA UK, BAE Systems, Bristol City Council, South Gloucestershire Council, First Bus, Fusion Processing, Williams Advanced Engineering, Burges Salmon, University of Bristol and UWE. UWE is involved both through CTS and through the Bristol Robotics Laboratory, which is collaborative with the University of Bristol. The study started in July 2015 and will run for three years.

Project scope

The project has wide-ranging technical and social research objectives and is being conducted by a multi-disciplinary team of social scientists, legal experts and technologists. It includes the following four research work packages:

- i. **Technology:** to prepare the vehicle and associated technology for trials
- ii. **Simulation:** to develop a simulator to examine driver responses to automation technology
- iii. **Legal:** to examine the legal and insurance frameworks required to enable driverless operation on UK roads, and
- iv. **Social context:** to explore the public perceptions of and potential societal impacts of autonomous vehicles (AVs).

The second part of this briefing sheet considers the social context research only.

Social context: Objectives

CTS are leading on the 'social context' work package. This has three objectives:

1. To understand **market opportunities** for, and expectations about AV

- deployment from user and non-user perspectives;
2. To examine how users of AVs respond to the **driver handover** task in scenarios where vehicles switch between full and partial automation; and
 3. To examine **on-road interactions** between other road users (pedestrians, cyclists, motorcyclists, motorists, emergency vehicles) and different forms of AV systems.

Methods

The **market opportunities** objective will be addressed through:

- Undertaking a literature review to identify market potential and niches of AVs.
- Designing and publishing a web portal to capture and stimulate online public debate on the implications of AVs. Alternative 'market penetration' scenarios for AVs will be presented online to stimulate discussion.
- Conducting and analysing stakeholder interviews to assess commercial opportunities for and issues relating to the operation of AVs in urban areas.
- Designing, conducting and analysing a survey of public perception of different forms of automation in road public transport.

The **driver handover** objective will be addressed through:

- Undertaking a literature review on driver responses to existing and prototype automation technologies.
- Designing, undertaking and analysing simulator experiments on traveller attention and the driver handover task. These experiments will be supplemented with real trials of the Wildcat vehicle.

The **on-road interactions** objective will be addressed through:

- Undertaking a literature review on the traffic psychology of road user interactions.

- Designing, conducting and analysing focus groups on AV interaction issues (including with cyclists, pedestrians and motorists).
- Designing, conducting and analysing simulator experiments on road user interactions, and supplementing these with real trials of the Wildcat vehicle.

Contact details

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