IAM RoadSmart welcomes this inquiry and shares the Committees view that connected and autonomous vehicle technology will have a profound effect on our transport system in the years ahead. IAM RoadSmart and its members positively embrace technology and are genuinely excited by the potential to reduce road casualties that this technology can bring. Managing the transition to full autonomy in the decades ahead will however be a challenge as our roads play host to a wide variety of vehicles with differing levels of ability to assist or indeed replace the driver. Our responses below are shaped by our expert knowledge of what makes a good human driver, our research into issues such as driver distraction and a driver survey.

Impacts and benefits

1. What are the potential applications for autonomous vehicles?

The applications for mobility challenged groups such as the elderly, disabled, non-drivers and the young are very exciting. However a large core of IAM RoadSmart members and other drivers do wish to retain the right to drive or maintain some manual control over their vehicles in the future.

2. What are the potential user benefits and disadvantages from the deployment of autonomous vehicles?

IAM RoadSmart are concerned that just because 95% of crashes have a human factor involved it is axiomatic that driverless cars can remove 95% of all crashes. Removing mundane and boring motorway driving is often seen as the first area to be addressed by driverless cars. However motorways are our safest roads and the full road safety benefits can only be realised with the use of new technology to assist drivers on rural single carriageways where most die.

IAM RoadSmart are part of a consortium of road safety bodies that is working to accelerate the take up of existing technology such as Autonomous Emergency Braking (AEB). In our view a modern car driven by a well-trained driver is a win-win scenario combining the best a human can deliver with back up in the event of distraction, inattention or lapses.

3. How much is known about the potential impact of deploying autonomous vehicles in different sectors?
Very little is known about the impact of deploying these vehicles in the real world esp in the UK environment. Fatal crashes are incredibly rare and it may be that driverless cars should focus more on delivering improvements in journey time, emissions, reliability and reducing congestion than in hard to prove claims on road safety.

Loughborough University have stated that there is currently 1 death per 173 million vehicle miles driven in GB, 1 serious injury for every 12 million miles driven and 1 minor crash every one million miles driven.

Google driverless cars have driven over a million miles in the USA but in California alone experienced 272 failures and would have crashed at least 13 times if their human test drivers had not intervened.

It would therefore seem that driverless car are currently struggling to deliver what humans can do with minimal training. Over half of our members believe that the government should still be focused on improving driving standards as the best way to reduce KSI’s.

The driverless car as part of a new car sharing model is likely to have a huge impact on our congested urban areas. Outside such areas however people should still have the choice to drive themselves.

4. How much is known about public attitudes to autonomous vehicles?

In April 2015 IAM RoadSmart conducted a poll of over 1000 drivers

The key findings were;

A fifth (20%) of motorists think that driverless cars are a good idea, with another fifth (22%) saying that they can see driverless cars becoming the norm on the UK’s roads.

However, a third (34%) think driverless cars are a bad idea, with under half (45%) being unsure. Half (52%) say that they cannot see driverless cars becoming the norm. Following this, a sixth (16%) of motorists think that driverless cars will be exciting and the norm within years.

When asked when motorists think driverless cars will become the norm, the median time is “more than a decade away” – of which under half (45%) said this.

Interestingly, when told the statement “the driverless car has completed almost a million miles without an accident. With 95% of crashes put down to ‘human error’ there is a strong argument that taking driver control out of the equation could benefit road safety positively”, a quarter (24%) said they agree, a sixth (15%) said that they don’t, and three fifths (60%) said that we’ll have to wait and see.

A third (32%) admit that they would actually consider using a driverless car – although nearly two fifths (38%) would not and three in ten (29%) are unsure.
A quarter (26%) think that – like electric cars – driverless cars should be subsidised by the government in the same way. However, there is a mixture of views, as two fifths (41%) disagree, and a third (33%) are unsure.

Of driverless cars, half (53%) think that we should be concentrating on making drivers safer – not just cars. A third (35%), on the other hand, think that driverless cars are a good initiative for the future, and a fifth (20%) think they will help assist everyone to travel and work, in such, helping our busy lifestyles. However, a tenth (12%) brand the idea as irresponsible.

The best liked aspects of driverless cars are the following:
- Drivers behind not able to drive too closely to you (90%)
- You as a driver not being able to drive too close to the vehicle in front (82%)
- Overtaking only allowed when it is safe (81%)
- Parallel and reverse parking done automatically and accurately for you (81%).

When asked to talk about their opinion on driverless cars, a good proportion of the comments were based around the potential dangers of the idea and how alien it seems, for example:

“Why would anyone not want to be in control of their car?”

“Would be worried how the car would react in a non-programmed situation.”

Once driverless cars become readily available, only 6% of motorists think that driving a car (that isn’t driverless) should be banned by law.

In line with this, two thirds (65%) think that human beings should always be in control of a vehicle, and were the ability of driving a car abolished, the key thing that motorists would miss is being in control.

The final two points are perhaps the strongest – in the other questions many simply have not made their mind up yet.

5. What is the scale of the market opportunity for autonomous vehicles?

IAM RoadSmart has no detailed knowledge but our surveys suggest a third of driver would at least consider it – that equates to around 10 million licence holders!

Creating an enabling environment

Research and development
6. Is the scale of current and planned demonstration facilities for autonomous vehicles sufficiently broad and ambitious?

IAM RoadSmart are part of the Greenwich Driverless cars pilot study and are keen to be involved in more projects. We believe that our knowledge of what makes a good driver can be translated into a benchmark for driverless cars. Progress has been slow however and
CCAV and Transport Catapult should be applying more pressure for early results. Most of the projects involving off road driverless pods do not appear to help in moving forward the debate about the transition to driverless cars on public roads. IAM RoadSmart has concerns but is supportive of pilot studies to help answer the many questions being posed.

7. Is the Government doing enough to fund research and development on autonomous vehicles, and to stimulate others to do so? Should it be doing more to coordinate UK actions?

There should give more encouragement to include road user groups in funded projects and more focus on managing the transition between human and vehicle control.

8. How effective are Innovate UK and the CCAV in this area?

IAM RoadSmart strongly supports the continued funding and support of CCAV as an expert monitoring and project facilitation department. There should be a clear role for CCAV in maintaining its knowledge of new systems and providing a mechanism for organisations to flag up new technology as it comes on-line or is in development.

9. Is the environment for small and medium-sized enterprises (SMEs) working in this sector sufficiently enabling?

No comment

Real world operation

10. Will successful deployment of autonomous vehicles require changes to digital or physical infrastructure?

In the long term yes, but in the short term driverless cars must be designed to match the real world of potholes, congestion, broken and missing signs and temporary traffic lights at roadworks.

11. How might a move from current levels of highly automated vehicles to their extensive deployment best be managed? What do you see as the key milestones?

Ultimately the big changes will only come if incentives or bans are put in place. These may take the form of insurance discounts or even the removal of insurance for human controlled cars. Incentives to purchase new driverless cars must have a clear timescale as the lessons of electric vehicle subsidies show that reducing them too early stops growth. Incentive such as access to urban areas, certain lanes on the motorway or bus lanes must be carefully managed. In Norway allowing electric vehicles in bus lanes has added to congestion. IAM RoadSmart would not support a two tier level of access where the poorest drivers in older cars are denied access to the safest infrastructure eg motorways. Car owners must not be placed at a loss if sudden changes in legislation were to make their vehicles lose value. Traditional cars will still be on sale for at least another decade and will last a further ten years beyond that. Protecting the consumer must be a key part in any decision making.
12. Does the Government have an effective approach on data and cybersecurity in this sector?

Protection from hacking was a key issue for over 70% of our members when they responded to a poll on the recent government consultation.

IAM RoadSmart support the FIA ‘My Car My Data’ campaign to ensure more transparency in data sharing and security.

13. Are further revisions needed to insurance, regulation and legislation in the UK to create an enabling environment for autonomous vehicles?

IAM RoadSmart supported the proportional approach to insurance laid out in the government’s recent consultation on “A Pathway to driverless cars”

14. What, if any, ethical issues need to be addressed in the substitution of human judgement in the control of vehicles by algorithms and Artificial Intelligence?

The debate on the moral issues around driverless cars has only just started and needs to be much wider and more transparent. The impact on vulnerable road users and the moral choices that a driverless car may have to make require a far reaching debate before they appear on our streets. Is it right that a car should be programmed to protect itself and its occupants at all costs? Should a driverless car be allowed to choose what it hits if a crash cannot be avoided?

Such questions require wide consultation before the technology makes the decision for us. We are also aware of the potential for driverless cars to become useful to criminals and terrorists if there is no driver present to be disarmed. Although these issues are still many years away they are of intense interest to the media and to drivers. By addressing them now this will help to ensure a more positive background for the growth of the industry in the UK.

Wider governance
15. What does the proposed Modern Transport Bill need to deliver?

The modern transport bill must deliver a clear framework for driverless car trials and the insurance approach that will be adopted following the recent consultation.

16. How effective is the UK’s education system in delivering people with the right skills to support the autonomous vehicles sector?

No Comment

17. Is the Government’s strategy and work in this area sufficiently wide-reaching? Does it take into account the opportunities that autonomous vehicles offer in a wide range of areas, not just on the road?
As mentioned above IAM RoadSmart would like to see a sharper focus on transition to driverless cars issues such as maintaining driver attention levels.

18. What are the implications of exit from the European Union for research and development and the autonomous vehicle industry in the UK? Are specific actions from the Government needed to support or protect the autonomous vehicles sector in the short term or after the terms of Brexit have been negotiated?

IAM RoadSmart support European wide crash testing programmes such as EuroNCAP and these should continue and apply to driverless cars. European Statements of Principle (ESOPs) exist on the levels of distraction allowed when designing in car equipment and the human machine interface (often referred to as HMI). Currently these documents are little discussed out with a small group of car designers and academic experts on ergonomics. This must change no matter what happens after brexit with more transparency on the guidelines for HMI.

25 October 2016