

Autonomous HGVs

With the government committing to carrying out trials of truck platooning on the strategic road network Ian Patey, head of profession at Mouchel Consulting, considers the implications and puts forward a suggestion for a trial location

According to George Osborne, driverless vehicles could represent 'the most fundamental change to transport since the invention of the internal combustion engine'. And he is not merely stating supportive sentiment; in last month's budget the government committed to carrying out a trial of autonomous HGV platooning.

But for those not close to this new ground-breaking technology what does it really mean for Britain's roads of the future?

Research by the Society of Motor Manufacturers and Traders (SMMT), claims that driverless vehicle technology has the potential to generate around £51 billion for the UK economy, save 2,500 lives and generate 320,000 jobs.

And with the potential to deliver significant capacity and environmental benefits, it is logical that we are progressing from headline grabbing initiatives like the Google car, to more broadly applicable concepts like HGV platooning.

As a foundation member of Intelligent Transport Systems (ITS) UK, the team at Mouchel Consulting have been closely involved in the development of the technology for several years. We are playing key roles in driverless vehicle trials, and from those direct experiences we believe automated transport could play a vital role in our highways infrastructure of the future, if we can deliver commercially viable and safe, practically workable real life scenarios. We developed the iterations of smart motorways, with Highways England and inherently understand the challenges of adopting new technology and their impacts on operations. This stands us in good stead for the next generation of connected and autonomous vehicles.

For freight companies using vehicles of a similar size and weight, HGV platooning where one 'lead' lorry is electronically connected to a group of up to five 'followers', is the next logical step. The practical exception being vehicles handling hazardous material, or those of various heights and weights, would need to be managed differently to maximise efficiency and safety.



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Technology matters

As the distribution landscape becomes more complex, with the rise of e-commerce and expanding supply chains placing pressure on road freight, technology could help the sector to work more efficiently and productively; drivers in follower vehicles need no longer add lengthy motorway stretches to their driving day, leaving them to focus on the more complicated sections of the onward journey.

Previous tests have suggested companies could expect fuel savings of up to 15 per cent due to the first lorry creating a slipstream to reduce drag. Platooning will also lead to enhanced safety and reduced carbon emissions. Meanwhile, the rest of us could benefit from improved delivery times as well as the noise and congestion reductions it offers.

The Department for Transport supports the trial, as it has the scope to 'offer the industry evidence that the system works'. Importantly not only will the trial prove the technology is sound, it will also allow stakeholders to monitor the behaviour of other road users when they come into contact with platoons.

This is going to be as critical as testing the technology itself. HGV platooning is a completely different use case to anything we've seen on any roads before, and observing how automated and personal vehicles interact will be vital if platoons are to be successfully integrated onto our motorway networks in the future.

For example at motorway entrances the platoon would have to move into the middle lane to allow entering

vehicles to join, but what about when a driver wants to leave the motorway? Instead of overtaking one lorry, they could be overtaking six, meaning early preparation is key and educating road users will be vital. Given that the UK has more junctions than many other European countries, we are ideally placed to monitor how HGV platooning works in practice.

Also worth considering is the human tendency to imitate others' behaviour; while driving, should we expect other road users to reduce the distance between them and the vehicle in front, to mirror the platoon? If so what impact does this have on safe braking distances? A concern for some vehicles, but as semi-autonomous mechanisms like automatic braking are already starting to spread through new vehicles, this may be an addressable issue if it presents during the trial. Other mitigations are also likely to be tested including a wide range of signage and communications to alert road users to the active platoon in train.

Although a trial location for the platooning hasn't been confirmed as yet, the M6 in Cumbria could provide an interesting trial location, with more widely-spaced junctions and lighter traffic volumes than some of the other suggested trial routes.

Putting quirky headlines to one side, autonomous vehicles provide very interesting scope to change and improve our highways network, as part of a wider menu of measures ranging from intelligent signage to the smart motorways programme. So you may find yourself passing an autonomous vehicle sooner than you may have imagined. 🚗