

When Will there be Autonomous Vehicles on Scotland's Roads?

All of the major vehicle manufacturers have been setting out their planned timescales for launching sales of driverless vehicles. Many people are surprised at the pace of change under which increasing numbers of cars are operating on our roads with less control by the driver. The UK Department for Transport (DfT) roadmap to encourage autonomous vehicles (AVs) on our roads envisages that the UK can be a world leader in AVs.

In May a Tesla car in Florida was the first high profile example of a fatal accident involving a car in autopilot mode, but in reality most of the current generation of cars still require a driver to override the car in case the automated controls don't get things right. Many people already drive long distances without touching the pedals using adaptive cruise control, and it may not be long before more of us are willing to let our cars do some of the steering too – not just when parking.

The potential advantages of vehicles driving themselves are huge. Most road accidents are due to driver error. Although one fatal crash with over 100 million miles of Autopilot experience is a better record than with human error, much better safety than this is needed before we can rely fully on these technologies.

For the manufacturers making huge investment in AVs there are strong pressures not to fall behind their competitors. Although, there does not seem to be much demand yet from the public, the potential benefits are so great that few doubt that self-driving cars are here to stay. The manufacturers don't know yet what types of AV will become popular first, but they are all expecting mass markets to emerge quickly.

Automation allows much better use of road capacity since vehicles can travel in road trains. This is particularly attractive for lorries where huge improvements in fuel economy are possible. Some freight operators are already participating in trials on the country's motorways. Google's AVs have been designed with an autonomous taxi style transport service in mind and nuTonomy are already piloting autonomous taxis in Singapore. These fully automated vehicles provide a completely new type of transport system, automating the fast growing ride hailing services such as Uber and Lyft.

AVs are coming fast, so CILT as a professional institute needs to ensure that standards and training help professionals to adapt. This means going back to the core values and basic principles of mobility and access which were used when designing the current standards. Who should get priority? How do we accommodate human error within increasingly automated systems? How should liability be managed?

CILT has published its vision of the future of transport to 2030 and seeks to facilitate debate within the industry and with the travelling public about our transport future. Many of the myths that create the greatest concern have already been thought through, and the future is not nearly as scary as it might seem.

AVs will not replace public transport. Particularly with high capacity systems such as rail and tram it would be very difficult to put all these people into individual vehicles, even with the better allocation of vehicle space that would come with AVs. The issue is not replacing high capacity vehicles but using AVs to connect people with the public transport services. AVs could expand the coverage of public transport

to rural areas and places with dispersed populations, which could be a particular advantage for older people and low mobility groups.

Some of the early plans for AVs allow for more signs and road markings, but as the technologies develop, the roadmaps envisage no lanes, no signs, and no need for traffic control at all, helping to make places more attractive.

One of the greatest challenges relates to security. The most serious issue relates to people's privacy as they can be tracked wherever they go. However, this is already a challenge with existing technologies. People are being tracked through mobile devices such as phones, watches, and navigation systems. Urgency is needed to resolve these security problems, and the approaches taken to data ownership and management will then work for AVs as well.

Changes in liability laws will be driven by the insurance industry who will be keen to see clearer presumed liability for AVs as a means of lowering accident risk, reducing their greatest costs.

Vehicles with AV capabilities are already on Scotland's roads with drivers checking and overriding as needed. Over the next 20 to 30 years the need for driving skills will increasingly be replaced with a need for better customer service and social skills. CILT is helping to set the standards for training the next generation of transport employees to encourage more social behaviour when travelling.

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