

Future highways

We speak to Dr Joanna White at Highways England about the launch of their Innovation Strategy and their plans for the future of England's motorways and major A-roads

So why has Highways England published an Innovation Strategy and what's in it?

The government's Road Investment Strategy set out possible opportunities for innovation. Our Innovation Strategy, with a £150 million budget over five years, is our response and commits us to a range of projects including autonomous vehicle trials by the end of 2017 as well as connected corridor and platooning trials over the next five years.

We will also trial technology to improve breakdown detection; look at improving the signalling of junctions on motorways to increase traffic flows and investigate the use of sensors that could provide better information about the condition of roads, bridges and tunnels on the network.

This all builds on our successful track record of innovation from the introduction of smart motorways to pioneering the use of more efficient and effective pavement technologies.

You mentioned autonomous vehicle trials. Could you tell us more about that?

Autonomous vehicles, also called 'driverless vehicles', use a range of advanced vehicle system technologies, enabling them to operate for periods of time with little driver intervention and, in time we anticipate this technology evolving to operate a vehicle with no driver control input.

We need to carry out controlled 'real world' testing to understand the implications these technologies will have for safety, operations and our infrastructure, so we can plan ahead to prepare our roads for the introduction of, and long-term transition to, future vehicle technologies.

We are working on the development of the trials which we expect will allow us to better understand what will be needed on road as well as how we support the introduction of autonomous vehicles in the longer-term.

Highways England will trial acoustic detection systems in the Hindhead Tunnel

The other trials you mention in your strategy are related to connected corridors and platooning. How will they work?

Put simply, roads with technology to enable connectivity will allow vehicles to connect to the internet, and communicate with other vehicles and infrastructure, providing valuable information for the driver, including on road, traffic and weather conditions.

Platooning is when two or more vehicles are connected and in the trials we are planning, this will be limited to up to five vehicles. While operating in this mode, the separation distance between each vehicle is reduced to between six and ten metres, allowing the drivers in the trailing vehicles to hand some or all control to the driver of the lead vehicle.

What are the benefits and safety implications of using this type of technology?

Platooning leads to improved aerodynamics which increases fuel efficiency and reduces emissions for the vehicles. This could also free more road space, and potentially improve traffic flow. Further to this, the initial tests around the world have proven the safety of these systems.

We expect connected corridors to enable improvements in safety, mobility and environmental performance, as well as present opportunities for economic growth. The corridor trials will seek to demonstrate how connected vehicles could benefit road users and society. This includes examining the potential to improve safety by alerting drivers to roadworks, oncoming emergency vehicles and braking of vehicles ahead.

What else is in the strategy?

Our strategy is very project-orientated and we are looking at a number of different innovative trials that could benefit drivers in the coming years. These include the installation of new electronic signs displaying real-time petrol and diesel prices, trialling radar detection systems on motorways and acoustic detection systems in the Hindhead Tunnel, testing sensors that could provide accurate information about the conditions of our roads and structures, installing a network of charging points, and exploring how we can place greater emphasis on innovation with our supplier chain and within our procurements. ➔

M25 smart motorway with all lane running

