Stagecoach to operate self-driving buses from next week

Buses which are driven automatically by a system of sensors and computers on board are the next big step in technology, and Stagecoach now have five in their fleet, in a world first.

The Alexander Dennis Enviro200AV vehicles running on diesel, will be used from Monday 15 May on a 14 mile route from Ferrytoll Park and Ride in Fife to Edinburgh Park. We were told that Stagecoach plans to phase in electric buses later.

The buses will travel at speeds of up to 50mph in mixed traffic and the operators are convinced it will be safer and more environmentally friendly. The driving pattern should mean less wear and tear on tyres and brakes meaning that the vehicles require less maintenance and fuel consumption should be reduced. Stagecoach expect around 10,000 passenger journeys to be taken on the new route.

There will be two fully qualified drivers on board – one in the driving seat ready to take control if needed, while the other will check tickets and answer passengers' questions. There will probably be many of those in the early days, but a great deal of testing has been done as the safety of passengers is paramount. This is a project which has taken seven years to get to this point.

CAVForth is part funded by the UK Government's Centre for Connected and Autonomous Vehicles and is a partnership among Stagecoach, Fusion Processing Ltd, Alexander Dennis, Transport Scotland, Edinburgh Napier University, Bristol Robotics Lab & the University of the West of England.

Minister for Transport, Kevin Stewart MSP was on board for the trip across to Fife and back this morning. He said it was exciting to see the pioneering and ambitious CavForth project take to the roads after all of the hard work of the partner organisations involved. He relies on public transport all the time, and admitted that there is a real need for it to improve but most of all to get more people onto buses and trains.

He said he felt very comfortable aboard the bus and had every confidence in the system. He said: “I’m excited to see how this technology can help to support our vision for a sustainable, inclusive, safe and accessible transport system. This is a great day for Scotland, this historic moment with all of this going on. And I want Scotland to continue to be at the forefront of technological advances.”

Transport Scotland has received £1 million of funding from the UK Government’s Centre for Connected and Autonomous Vehicles. But the government has also taken action. Mr Stewart continued: “We have put in place bus priority measures which were required anyway. So this is good spend as far as I’m concerned. This project has come in at a very low cost compared to some of the other autonomous vehicle projects that have been going on across the globe.”

Minister for Transport Kevin Stewart in a stationary bus with driver Stuart Doidge looking on. PHOTO ©2023 The Edinburgh Reporter

Driver Stuart Doidge shows Minister for Transport, Kevin

Stewart the controls in the cab. PHOTO ©2023 The Edinburgh Reporter

Jim Fleming Director of Marketing at Fusion Processing Ltd said: “This is what we call an autonomous Level 4 vehicle. Cars such as Volvo and Tesla are only Level 3 and that is why they are continually reminding the driver to take over the steering wheel. This is the next stage up and is autonomous. To get to that level we need what we call redundancy in the in all of the sensors and the control modules in the vehicle. Essentially, they are our backup systems, so if one goes wrong, another one takes over.

“The system has three big elements. The first chunk is all the sensors you see around the vehicle, which are allowing the vehicle to decide where it is what it should do next. The second chunk is taking all that information in making a decision. So we have two big control modules in each half to reach the same conclusion. And then we have a third module, that is making sure that those two have reached the same conclusion.

“And then the last bit is that we send digital signals to the manoeuvre systems – the steering, the brakes and the engine which make those moves.”

Sam Greer Regional Director Stagecoach Scotland said it was seven years since he sat in a meeting room with Jim Fleming from Fusion (the technology provider for this project). He said: “We were actually discussing coach aerodynamics, and when we left that meeting an hour later we were hatching a client to create this world first autonomous bus.”

We also asked Mr Greer about the liability issues surrounding these vehicles. He explained: “Well, we still have a driver that sits in a seat, so that liability still sits with the driver who is still responsible for the vehicle. when the vehicle’s in service. There are a number of pieces of work going on in the background with the Law Commission looking at

liability on autonomous vehicles,but as it stands at the moment the driver is still liable.”

All drivers have volunteered, and we were told that they are already trained to a very high standard in any case, but this project has involved them undergoing even more tuition. The drivers have been put through intensive training with classroom based work, as well as driving on the test track. They have also experienced what happens if there is a failure more and they have been driving these buses for three weeks further training on the road.

The ab sign on the side of the buses indicates the type of bus passengers are boarding. This sign will be used for all self-driving buses as they are added to the fleet, and may become a universal sign in future.