**A testing time ahead for autonomous vehicles**

Dik Vos, CEO at SQS

With Apple recently announcing it will be developing self-driving cars - joining the likes of Tesla, Google and BMW - the future of autonomous vehicles is closer than you may think. During the UK’s Autumn Statement Chancellor Philip Hammond announced £390 million will be invested into the development of autonomous vehicles by the end of the current parliament. Though plans to test autonomous lorries in Britain have been stalled, trials of such vehicles are already in place in other European countries. For instance, in Germany, testing for lorries electronically linked together in a convoy, with a lead vehicle manned by a human setting the pace and route, has already begun. Such technology has the capability to revolutionise industries, including logistics and automotive manufacturing. However, security and safety implications must be addressed before driverless vehicles become the norm on our roads.

**Human Error?**

Tragic incidents such as the first reported death in a Tesla Model S on ‘Autopilot’ back in May, raise considerable questions on the safety of autonomous vehicles. Similarly, Uber’s self-driving vehicles have been seen running through red lights, narrowly avoiding pedestrians crossing the road.

Incidents such as this highlight the need for quality assurance throughout the product development, starting at the point of concept, right through to the vehicle leaving the production line. Though both companies have blamed human error for these incidents, they serve as stark reminders. Manufacturers must take responsibility for safety and ensure safety critical software systems are performing as they should prior to being unleashed onto public roads.

A target for cyber criminals

Another well-publicised issue is the problem of ‘hackable’ vehicles. Concerns have been raised regarding cyber security as vehicles become more connected, particularly from the FBI. The threat of ‘over-the-internet’ attacks on cars and trucks is now very real. While the integration of technologies reliant on internet connectivity provides many benefits, it is crucial such innovations do not become an entry point for cybercriminals with malicious intent.

**Quality, quality, quality**

Retaining consumer trust in the concept of autonomous vehicles is imperative. To do so, continuous quality assurance and software testing to prioritise public safety is essential. It is the responsibility of manufacturers to have well trained, expert staff, testing every element of an autonomous vehicle and adapting a software-first approach. Software is integral to the running of driverless vehicles, failure to prioritise software quality could see autonomous vehicle consigned to the scrap heap of automotive history.