CAN Newsletter Online

Drive me: Volvo's autonomous driving project

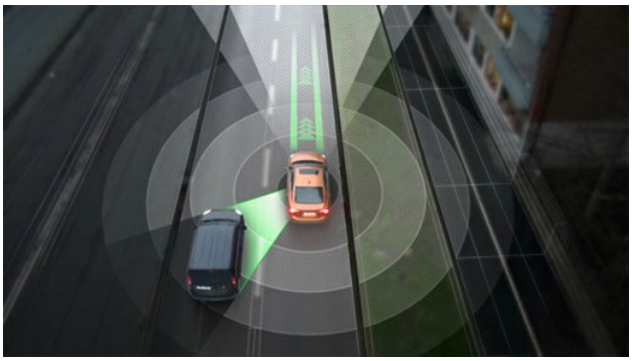
Volvo Car Group has initiated a pilot project with 100 self-driving cars on public roads around the Swedish city of Gothenburg. The cars make extensive use of the information in CAN-based in-vehicle networks.

THE SWEDISH GOVERNMENT HAS ENDORSED the 'Drive Me' project. "Autonomous vehicles are an integrated part of Volvo Cars' as well as the Swedish government's vision of zero traffic fatalities. This public pilot represents an important step towards this goal," said Håkan Samuelsson, President and CEO of Volvo Car Group. "It will give us an insight into the technological challenges at the same time as we get valuable feedback from real customers driving on public roads."
The pilot will involve self-driving cars using approximately 50 km of selected roads in and around Gothenburg. These roads are typical commuter arteries and include motorway conditions and frequent queues. "Our aim is for the car to be able to handle all possible traffic scenarios by itself, including leaving the traffic flow and finding a safe 'harbor' if the driver for any reason is unable to regain control," explained Erik Coelingh, Technical Specialist at Volvo Car Group.

In Gothenburg (Sweden), 100 autonomous driving cars will be used in public traffic (Photo: Volvo Car Group)

The project will commence in 2014 with customer research and technology development, as well as the development of user-interfaces and cloud functionality. The first cars are expected to be on the roads of Gothenburg by 2017. Of course, the autonomous driving system also needs information from the CAN-based in-vehicle networks. But there are also other technologies required. One of them is sensor fusion. This means that sensor values are combined and processed, and new information is generated. This requires for example precise time-stamping in the CAN networks, which will be supported by the introduced CAN FD protocol.

"Sweden has developed unique co-operation between the authorities, the industry and the academic community. This has resulted in a world-leading position in traffic safety. Autonomous vehicles and a smarter infrastructure will bring us another step towards even safer traffic and an improved environment. It will also contribute to new jobs and new opportunities in Sweden," says Catharina Elmsäter-Svärd, the Swedish Minister for Infrastructure.
"The self-driving technology used in the pilot allows you to hand over the driving to the car when the circumstances are appropriate," said Håkan Samuelsson. The 100 cars driven by customers will be new models developed on the company's upcoming Scalable Product Architecture (SPA). The architecture is prepared for the continuous introduction of new support and safety systems all the way to technologies that enable highly autonomous drive. The first SPA model will be the Volvo XC90, which will be introduced in 2014.



In Gothenburg (Sweden), 100 autonomous driving cars will be used in public traffic (Photo: Volvo Car Group)

The project also includes fully automated parking, without a driver in the car. This allows the driver to walk away from the car at the parking entrance while the vehicle finds a vacant spot and parks by itself.