

Seamless cross-border 5G connectivity achieved in autonomous cars

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Swedish luxury automobile manufacturer Volvo Cars and leading ICT provider Ericsson have taken an important step towards achieving seamless cross-border 5G connectivity in vehicles. Partners in the EU-

backed 5GCroCo project, the two companies successfully tested the handover of connected cars between two national mobile 5G networks.

The trial took place at the AstaZero test site in Sweden. The track has testing capabilities for different traffic environments, making it possible to assess advanced safety systems for all kinds of traffic situations. It features a 5.7 km rural road, a city area, a high-speed area and a multi-lane road.

The AstaZero track test proved that seamless 5G connectivity can be delivered across borders. During the test, Volvo [autonomous cars](#) were successfully handed off between two Ericsson 5G networks, remaining connected to one of the two networks throughout. The networks are part of the 5G cross-border corridor connecting the cities of Merzig in Germany, Metz in France and Luxembourg.

Providing up-to-date route information

Ericsson deployed a 5G mobile radio [network](#) and the two Volvo test vehicles received a [high-definition](#) (HD) map of the route. An HD map determines the vehicle's position on the road and provides information about speed limits, road closures or areas under construction. To be reliable, it needs to be constantly updated by as many contributing cars as possible with information collected from the cars' on-board sensors. The cars also send real-time updates to the Mobile Edge Cloud that allows vehicles driving behind them to get relevant updates from the Cloud. The HD map provided by Volvo made it possible for cars to recognize different situations by capturing information about the boundaries of straight and turning lanes. As noted in a news item posted on the "Ericsson" website, "[t]his functionality was made possible by the Cooperative, Connected, and Automated Mobility (CCAM) ecosystem, enabling autonomous and connected cars to behave like smart clusters rather than individual units."

Speaking about the track test and its challenges, Ericsson's Research Area Networks director Mikael Prytz stated: "Sharing an updated map with other cars is a latency-sensitive task and requires high network performance within and across multiple networks. During the [test](#) at the AstaZero track, we could tackle this challenge with promising results. We are excited to continue our cooperation with Volvo Cars to expand the network mobility of autonomous and connected cars."

Ericsson and Volvo Cars began working together in 2012 to create safer, more efficient and more entertaining connected vehicles. The 5GCroCo (Fifth Generation Cross-Border Control) project they are currently part of has brought together 24 partners from Europe's automotive and mobile communications industries to advance the provision of CCAM services along cross-border corridors and minimize the uncertainties of a real 5G cross-border deployment.

More information: 5GCroCo project website: www.5gcroco.eu/

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