



## C-V2X demos incorporate motorcycles, vehicles and infrastructure, communications between carmakers



Two demonstrations have been carried out marking advances in C-V2X (cellular vehicle-to-everything) technology.

The ConVex Consortium, a collaboration between Audi, Ducati, Qualcomm, SWARCO and Technical University Kaiserslautern, has shown Europe's first demonstration of C-V2X communications between motorcycles, vehicles and infrastructure. The ConVex (Connected Vehicle to Everything of Tomorrow) trial in Ingolstadt, Germany, featured Audi Q7 and A4 cars and a Ducati Multistrada 1200 Enduro motorbike fitted with the Qualcomm 9150 C-V2X chipset solution, and showed how C-V2X can aid road safety in common scenarios involving motorcycles and cars. Intersection warning and across traffic turn collision risk warning are part of a set of applications using Ericsson's 4G/5G cellular network and SWARCO roadside infrastructure units.

Another recent demo [pictured] involving the 5GAA (5G Automotive Association), BMW Group, Ford and Groupe PSA, along with Qualcomm and wireless sensor technology provider Savari, has marked a different European 'first': direct C-V2X interoperability between multiple manufacturers. This test included cars from Ford, Groupe PSA and BMW, plus BMW e-scooters, and builds on the C-V2X showcase 5GAA organised in Washington DC earlier this year.

Vehicles were equipped again with the Qualcomm 9150 C-V2X chipset, plus V2X software stack,



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application software plus roadside infrastructure by Savari, and the demo showed emergency electronic brake lights, intersection collision warning, across traffic turn collision risk warning, slow vehicle warning, stationary vehicle warning, signal phase and timing/signal violation warning, and vulnerable road user (pedestrian) warning.

“With its ability to safely and securely connect vehicles, along with its evolution into 5G, C-V2X is integral to Ford’s vision for future transportation in which all cars and infrastructure talk to each other,” said Thomas Lukaszewicz, manager of automated driving, Ford of Europe, in a statement. “We are very encouraged by preliminary test results in Europe and elsewhere which support our belief that C-V2X direct communications has superior V2X communication capabilities.”

“This demonstration of interoperability between multiple automakers is not only another milestone achieved towards C-V2X deployment, but also further validates the commercial viability and global compatibility of C-V2X direct communications for connected vehicles,” added Enrico Salvatori, senior vice president & president, Qualcomm Europe and MEA.

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