

Real-Time BroadR-Reach—Ethernet on the Highway

For the majority of automotive developers it is perfectly clear that Ethernet has to be the next evolutionary step in vehicle networking. However, for the development of many of upcoming data-intensive Ethernet applications, real-time capability has turned out to be the missing link when it comes to accurately testing such systems.

With BroadR-Reach, one of the most promising automotive Ethernet standards is supported by Kithara RealTime Suite. PC-based real-time properties for this standard enable automotive engineers to directly control and test physical Ethernet networks in vehicles. This way, by utilizing guaranteed reaction times with the Kithara real-time system, data can be precisely captured and embedded into sophisticated testing processes via this Ethernet transport layer, for example on test stands.

The advantages of Ethernet in automotive networking are primarily the particularly increased transmission speeds compared to previous automotive bus systems, high scalability as well as cost efficiency due to lighter wiring and easier programming. Via the open BroadR-Reach standard, multiple vehicle systems are able to exchange information very fast, thus also making it suitable to act as a central backbone network.

The support of BroadR-Reach is based on the widely used Kithara network drivers. For this matter, Kithara can draw on its decades-long expertise surrounding real-time Ethernet. Many other real-time functions of Kithara RealTime Suite are also applied during the development of cutting-edge automotive technologies. For instance, they can be found in the field of hardware-in-the-loop such as for the capturing and reproducing of simulation data.

