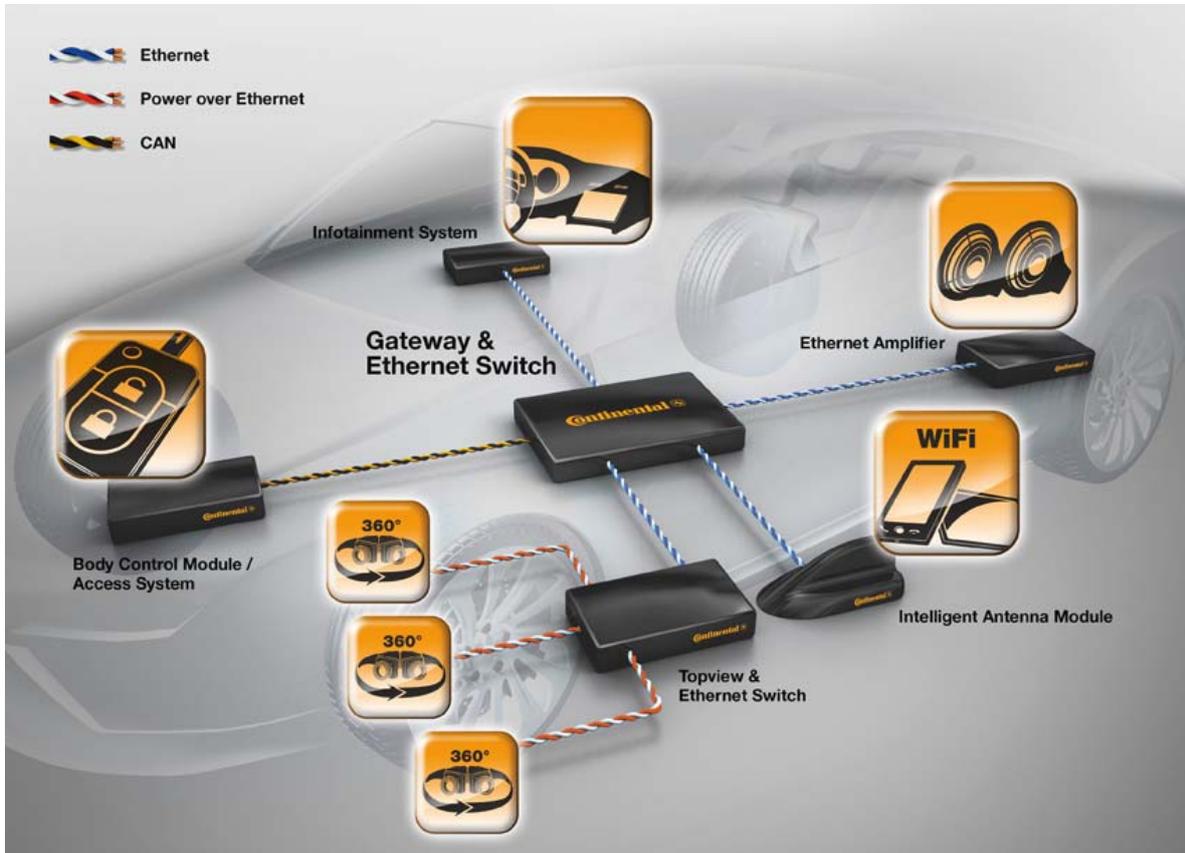


Continental Shows Ethernet Test Setup

Continental joins the OPEN Alliance Ethernet consortium, and demonstrated the power of Ethernet in the field of infotainment and driver assistance with a test setup at the Consumer Electronics Show 2012 in Las Vegas.

Regensburg (Germany), January 31, 2012. Continental, the international automotive supplier, is a new member of the OPEN Alliance SIG (*One Pair Ether-Net Alliance Special Interest Group*). The OPEN Alliance is dedicated to spreading the use of Ethernet networks as the standard solution for in-vehicle applications. "We regard Ethernet as the ideal solution for system integration in vehicle electronics. In the OPEN Alliance SIG, we can define standards across the industry, and thus minimize development costs. This means we are on the right road for quickly going into production with Ethernet," says Helmut Matschi, Member of the Continental Executive Board and Head of the Interior Division, regarding the company's joining the OPEN Alliance.

Spurred on by the huge success and high performance of Ethernet networking in other areas of industry (particularly the Internet), Continental started investigating opportunities to use Ethernet in the automotive environment as far back as 2007. In line with this, fundamental research regarding the use of Ethernet and Internet Protocol (IP) in cars was conducted as part of the SEIS (**S**afety in **E**MBEDDED **I**P-based **S**ystems) project sponsored by the German Federal Ministry of Education and Research. In the combination of IP and Ethernet, the individual network nodes exchange data at speeds of 100 Mbit per second in the current technical setup. In addition to the data transfer rate, the Ethernet derivative used in the OPEN Alliance cannot fail to impress with its particularly uncomplicated and cost-effective cabling. Nothing more than a two-wire, drilled – and unshielded! – copper cable connects the network nodes.



The opportunities for rapid data transfer and the advantages for cable weight and installation compared to the MOST data bus (*Media Oriented Systems Transport*, a standard solution for transmitting multimedia data) make Ethernet ideal for use in the field of infotainment in combination with IP used in multimedia applications. However, Continental is also working on using Ethernet in all vehicle domains, and even addressing areas that used to be networked using FlexRay and/or CAN (**C**ontroller **A**rea **N**etwork). Continental expects to start series production of the first Ethernet-capable control units in the Interior and Chassis & Safety vehicle domains in 2015. By 2020, the company will be able to present initial pre-development projects in all vehicle domains.

Diversity and proximity to consumer electronics: Ethernet is the network of the future

Continental presented the diverse opportunities for using Ethernet in vehicles at the Consumer Electronics Show 2012 in Las Vegas with a test setup of a vehicle data network. The central node in the setup is formed by an Ethernet switch in combination with a gateway. As a communication tool, it administers the network's data transfer. Several applications

make the power and diversity of an Ethernet network clear. Not only of interest for electric vehicles: When the individual Ethernet components are not being used, they can be switched off to save energy. Using modules to detect electrical activity (energy detect modules), the gateway controls system energy distribution and activates or deactivates other nodes in the network if they are not required. This partial network operation (partitioning) helps to save electrical energy. Conventional network technologies such as LIN (**L**ocal **I**nterconnected **N**etwork) and FlexRay are connected via the central gateway in combination with Ethernet, or the signals from a remote control key are received via the CAN bus. The large bandwidth of Ethernet is illustrated through the use of driver assistance cameras. The all-round control unit (topview) sends the video signal of a complete all-round view to the infotainment system via the Ethernet network in real time. The image is compiled using the signals received from several cameras. The power is supplied via the Ethernet cable (Power over Ethernet).

The intelligent antenna module developed by Continental and Kathrein also demonstrates the roots of Ethernet and IP-based communication in the computer industry. Within the Ethernet network, all nodes can be addressed via the Internet Protocol. Using IP-based Universal Plug and Play (UPnP), drivers and passengers can insert devices such as smartphones, tablet PCs or laptops into the network without the need for wires via the Bluetooth or WLAN antennas of the antenna module. Music from the smartphone can then be played via the vehicle's amplifier. Conversely, the vehicle can send information to the driver's and passengers' mobile devices. "When it comes to networking data in cars, we believe that Ethernet is the technology of the future. In this way, we can further harmonize the car with the world of consumer electronics in a safe manner. After all, Ethernet offers a high-class, scalable infrastructure in the vehicle," says Matschi.

With sales of €26 billion in 2010, **Continental** is among the leading automotive suppliers worldwide. As a supplier of brake systems, systems and components for powertrains and chassis, instrumentation, infotainment solutions, vehicle electronics, tires and technical elastomers, Continental contributes to enhanced driving safety and global climate protection. Continental is also an expert partner in networked automobile communication. Continental currently has approximately 164,000 employees in 45 countries.

The **Automotive Group** with its three divisions Chassis & Safety (sales of approximately €5.8 billion in 2010, 30,000 employees), Powertrain (sales of approximately €4.7 billion in 2010, 27,000 employees) and Interior (sales of approximately €5.5 billion in 2010, 30,000 employees) achieved sales of approximately €16 billion in 2010. The Automotive Group is present in more than 170

locations worldwide. As a partner of the automotive and commercial vehicle industry, it develops and produces innovative products and systems for a modern automotive future, in which cars provide individual mobility and driving pleasure consistent with driving safety, environmental responsibility and cost-efficiency.

The **Chassis & Safety** Division develops and produces electronic and hydraulic brake and chassis control systems, sensors, driver assistance systems, airbag electronics and -sensorics, washer systems and electronic air suspension systems. Its core competence is the integration of active and passive driving safety into ContiGuard®. The **Powertrain** Division integrates innovative and efficient system solutions for vehicle powertrains. The comprehensive range of products includes gasoline and diesel injection systems, engine management, transmission control, including sensors and actuators, as well as fuel-supply systems and components and systems for hybrid and electric drives. Information management is at the very heart of the **Interior** Division, which provides a range of products that includes instrument clusters and multifunctional displays, control units, electronic car-entry systems, tire-monitoring systems, radios, multimedia and navigation systems, climate control systems, telematics solutions and cockpit modules and systems.

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