

TTCN-3 Toolbox — Automotive Applications

MOST, CAN, ... - Testing of Modern and Traditional Car Multimedia Communication Bus Components and their Interworking

As the new standard for **high-speed multimedia buses in vehicles**, the **MOST technology (Media Oriented Systems Transport)** has found broad acceptance in the automotive industry. It allows the cost-efficient communication between functional blocks of an **infotainment system**, such as CD-changer, display, navigation platform, phone etc. with all advantages of the optical fiber technology.

MOST is a serial high-speed synchronous communication system for audio, video, speech and data signals. It is developed and continuously enhanced by the MOST cooperation: BMW, DC, Audi, Harman-Becker, Oasis and numerous other associated members.

The MOST technology includes the software interfaces that allow applications running on different devices to communicate and exchange information. It defines a transport mechanism that sets up to 60 physical channels between devices with a total capacity of nearly 23 Mbit/s.

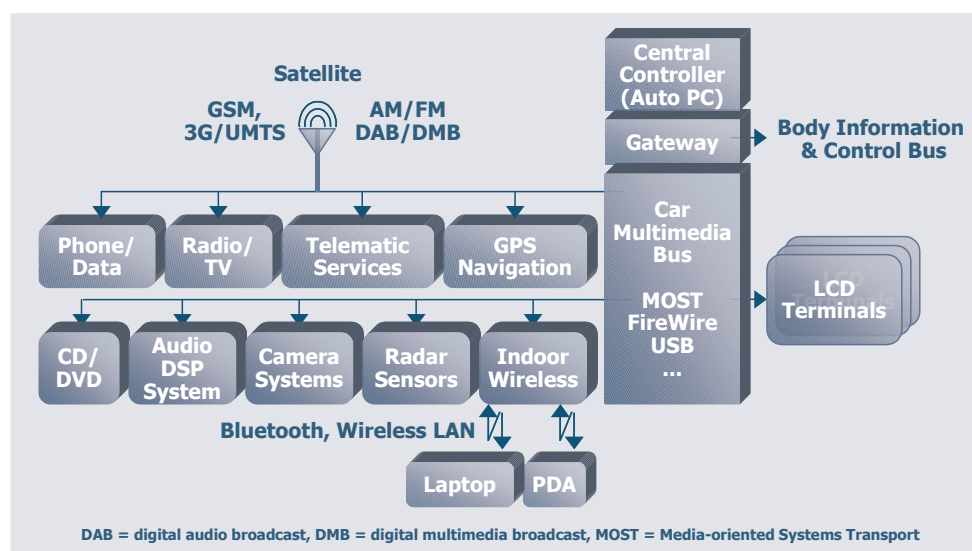


Figure 1: Next-Generation Car Network

MOST-based multi-media networks are a significant step towards in-car networks that fulfil the reliability and robustness requirements of the automotive industry as well as the requirements of modern multi-media networks. Techniques applied by MOST are well known in the telecommunication field since years and even technologies for future in-car networks are well understood in the Telecom and Datacom area today.

Therefore it is a **strategic decision** not only to use these network techniques but also to use test technologies that have proven their value for many years in Telecommunications.

TTCN, the **Testing and Test Control Notation**, is the standardized and commonly accepted language for specifying test system as well as vendor independent test cases for all kinds of communicating systems. TTCN is the basis for sharing test case development between companies of the telecommunications/ automotive industry segments and beyond. TTCN has proven its capabilities in the complex world of mobile networks and has kept its simplicity especially in TTCN-3, the latest language version. Furthermore using TTCN to test e.g. broadband ATM networks, 3G and Internet networks has shown that TTCN is future proof for next-generation in-car networks. Next-generation in-car networks need to fulfil not only automotive requirements but also those for mobile office and mobile internet technologies.

Danet's **TTCN-3 Toolbox** is designed to meet all these challenges. With more than 15 years experience in TTCN and testing, Danet is your first choice test technology partner.

How TTCN-3 test cases can be connected to car networks is shown in Figure 2.

The TTCN-3 Toolbox test platform supports the standardized, open TRI (TTCN-3 Runtime Interface) technology, that eases the connection of test cases to the tested components/devices. Simply one or more controllers for your in-car network and a TRI adapter implementation are needed. Then your test platform is ready for development and execution of test cases for the components/devices in your in-car network. TTCN-3 test cases can handle multiple communication links even to different in-car networks in parallel, provided that all kinds of TRI adapters and controllers are implemented and available.

Through TRI technology and the TTCN-3 specific port abstraction for communication links, your test cases are independent from real test systems and vendor specific TTCN-3 tools used.

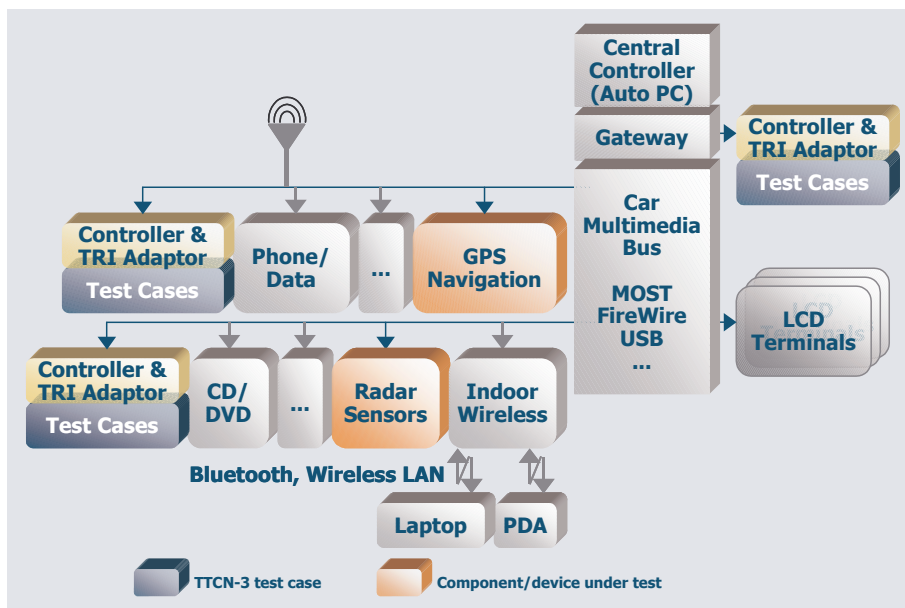


Figure 2: Testing Car Networks

Our **TTCN-3 Toolbox** supports major industry HW platforms, it is flexible enough to be tailored to your needs, and its efficiency and openness makes it a preferred TTCN-based industry test platform not only for MOST but also for other network / bus technologies like CAN, TTCAN, LIN, FireWire (IDB 1394) and USB.

Our **Test Services** help you to setup, develop and run your TTCN test environment fast and properly. In particular, we normally set-up the required TRI adapters for your test environment.

ATM: Asynchronous Transfer Mode, CAN: Controller Area Network, TTCAN: time-triggered CAN, LIN: Local Interconnect Network, USB: Universal Serial Bus, 3G: Third generation mobile networks



Danet knows how testing works

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