A software tool for testing individual bus interfaces of electronic control units (ECUs) according to the test specifications of Daimler AG

All electronic control units of an AUTOSAR network running in a Mercedes Benz car have to be tested according to the latest released Networking Performance Specifications of the Daimler AG. With the GT-NTS, AKKA offers you an extensive software tool solution and ensures a complete test coverage for various bus systems.

After successful testing, an export of a detailed test report is available. Additionally, with GT-NTS open issues can be detected in an early phase of the electronic control units development. To set up a complete test environment, only a few additional network hardware components of the company Vector Informatik GmbH are required in combination with the Vector Software CANoe.

Features of GT-NTS for various bus systems

The following bus systems and Daimler architectures are supported by GT-NTS:

- STAR2-Topology: LIN, CAN 2.0, FlexRay
- STAR3-Topology: LIN, CAN 2.0, CAN FD, FlexRay, Ethernet (100Base-T1)

All bus interfaces are connected separately to the test hardware and do not influence each other. Main procedure focus of the testing phase is: testing of the basic networking implementation and proper startup- and shutdown-behaviour as well as reaction on disturbances and compliance of defined cycle times.

The software tool GT-NTS ...
- handles all bus systems in one tool
- delivers a very high degree of automation
- remains up-to-date due to the software service contract
- tests against newest Daimler AG networking test specifications
- shortens release-cycle-times by testing during development phases
- creates meaningful test reports and bus-traces
- delivers a complete test report within approx. 30 minutes per bus interface
The tests are based on the following Daimler Networking Performance Specifications:

- MBN 10415 (LIN 2.1 Networking Requirements)
- MSS 10416 (CAN Networking Performance Specification)
- MSS 10417 (FlexRay Networking Performance Specification)
- MSS 10796 (Standard Security Specification)
- MSS 10815 (Standard Security Architecture – Implementation Specification)
- MSS 20200 (General Networking Performance Specification)
- MSS 20202 (CAN Networking Performance Specification)
- MSS 20204 (LIN Networking Performance Specification)
- MSS 20206 (FlexRay Networking Performance Specification)
- MSS 20208 (Ethernet Networking Performance Specification)
- MSS 20222 (CAN Networking Test Suite Specification)
- MSS 20224 (LIN Networking Test Suite Specification)
- MSS 20226 (FlexRay Networking Test Suite Specification)
- MSS 20228 (Ethernet Networking Test Suite Specification)

These specifications can be retrieved from Daimler AG.

**DETAILED REPORT OF TEST RESULTS**

Each test step is reported with a meaningful message and the corresponding timestamp within the test report. Thanks to powerful GT-NTS, an individual trace file is generated for every test case, thus there is no need to search within a huge amount of data of bus traffic to find a single frame.

Due to the gained test results, GT-NTS locates errors very quickly and simplifies fixing. Therefore, long-term cycles of development, repeated shipping of ECUs to Daimler AG, potential refusals and the need for redevelopement will be omitted in the future.

**TEST EXECUTION AS A SERVICE**

Instead of purchasing GT-NTS, AKKA also performs tests as a special service for you. Therefore, the electronic control unit flashed with the latest software-version and a wiring harness only needs to be delivered to AKKA. After successful testing, a detailed test report including a trace file for each executed test case based on the latest version of the GT-NTS is delivered to you.