

## Systematic and automatic software testing of ECUs

For the systematic testing of an electronic control unit (ECU) in all development phases, a multiplicity of software tools is required. In addition to high investment costs for these tools, questions arise about an optimal test methodology:

*How can these tools be used together for one test?*

*How can existing tests be reused?*

*How can test tools be exchanged and already existing test scripts be preserved?*

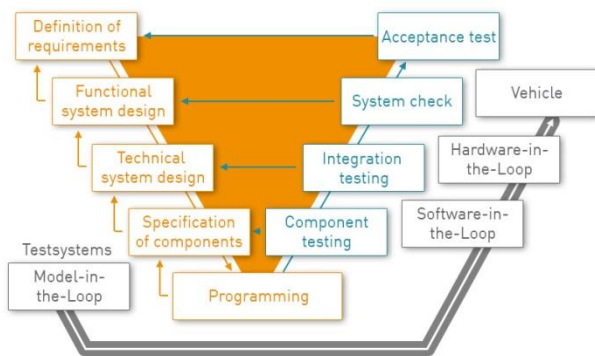
### Key features

ECU-TEST is a test automation software for the validation of embedded systems in automotive environments.

- Supports a broad range of test tools and test environments (SiL – MiL – HiL – vehicle)
- Standardized access to test tools
- Automation of distributed test environments
- Intuitive graphic user interface
- Generic test case description
- Interface to test management (HP Quality Center)

### Area of application

ECU-TEST is used in the design, realization, execution and evaluation of test cases, which includes the generation of intuitive test reports. For full coverage of the right branch in the V-Model, a broad spectrum of standard interfaces (ODX, FIBEX, ...) is integrated:



### Benefits

#### Usability

The user-friendly graphic interface allows efficient testing of both ECU hardware and ECU software with a minimal effort in training.

#### Reusability

Test cases can be parameterized and structured with the help of projects. Due to a generic test description the created test cases are as far as possible independent of specific hardware and software in test environments and are therefore reusable to a great extent.

#### Modularity

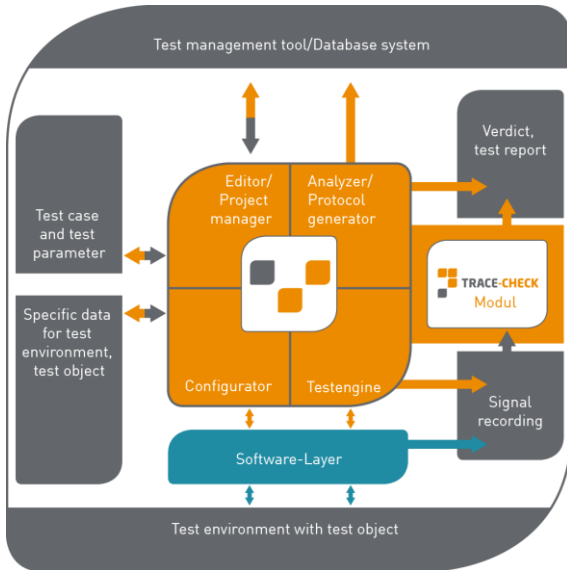
A trouble-free adaption and extension as well as integration in existing coverage and testing processes is achieved by a distinct concept and the modular architecture of ECU-TEST. The integrated client/server solution enables the user to access interfaces and software tools on several test bench PCs within a cross-linked test environment.

#### Expandability

In addition to the multitude of already supported test environments for hardware and software, it is possible to embed further interfaces for automation via plug-ins and Python scripts. In ECU-TEST a COM interface is embedded in order to connect to test management systems like Mercury Quality Center.

## ECU-TEST 7.2 with TRACE-CHECK Specifications

Configuration and parameterization of test cases is conducted in a dialog-based approach with the help of the editor. The configurator contributes to the selection of desired options and data for the test object and test environment. A multistage runtime engine executes the tests, and the collected test data forms a basis for the test report generation by the test report generator.



## Service and support

In addition to phone and email support, TraceTronic offers training courses for test engineers. We are pleased to help you with the integration of ECU-TEST in established process chains, the assembly of new test environments and in the application of ECU-TEST to verify new ECU features. On a project basis, TraceTronic implements special adaptations and integrates further software tools (simulation, application, measurement, evaluation and test management etc.) in ECU-TEST.

## Supported software and hardware

- ASAM XiL API (MA, EES)
- ATI VISION
- AVL PUMA
- Beckhoff TwinCAT
- CANWAY CW-FIU
- Digitalwerk ADTF
- dSPACE ControlDesk (DS1006/1007, Scalexio, VEOS)
- dSPACE ModelDesk
- D2T MORPHEE
- EA UTA12
- ETAS FIU ES4440
- ETAS INCA
- ETAS LABCAR Operator
- Ethernet (SOME/IP-SD, TCP, UDP, PCAP)

- Gigatronik flex-i
- Hard&Soft fault simulation
- HP ALM (QualityCenter)
- IBM Rational Quality Manager
- IPG CarMaker
- ITI SimulationX
- IXXAT FlexRay CCM
- Kristl Seibt & Co. Tornado
- Lauterbach Trace32
- MAGNA Telemotive blue PiraT
- Mathworks MATLAB/Simulink
- Mathworks Simulink Realtime Kernel
- Mechanical Simulation CarSim
- MicroNova NovaSim
- Multimedia (Webcam, Video, ...)
- National Instruments LabVIEW
- National Instruments VeriStand
- National Instruments VISA-Interfaces
- OPAL-RT RT-LAB
- PEAK CAN/LIN-Interfaces
- PLS UDE Debugger
- QTronic Silver
- QUANCOM Relays-, Optocoupler-, A/D- and D/A-converter cards
- RA Consulting DiagRA
- SAE J2534 PassThru API
- Serial Interface
- Scienlab Charging Discovery System
- Scienlab EnergyStorageDiscover II
- Softing CAN-Interfaces
- Softing Diagnostic Tool Set
- Softing EDIABAS
- SSH Interface
- Synopsys Virtualizer
- TraceTronic cTestBed
- TraceTronic REMOTE-COMMAND
- TTTech TTX Connexion
- Vector CAN/LIN/FlexRay-Interfaces
- Vector CANape
- Vector CANoe/CANalyzer
- Vector CANoe via XiL-API
- ViGEM Car Communication Analyzer
- Vires Virtual Test Drive
- VW ODIS
- X2E Xoraya Data Logger

On request we will realize the linkage of your specific hardware or software.