What is CANoe?
CANoe is the comprehensive software tool for development, test and analysis of individual ECUs and entire ECU networks. It supports network designers, development and test engineers at OEMs and suppliers throughout the entire development process – from planning to system-level test. Versatile variants and functions provide the appropriate project support. Therefore, its versatile functions and configuration options are used worldwide by OEMs and suppliers.

Overview of Advantages
> Only one tool for all development and testing tasks
> Easy automated testing
> Simulate and test ECU diagnostics
> Detect and correct error situations early in the development process
> User-friendly graphic and text-based evaluation of results
This means savings in time and effort while enhancing the quality of ECU development at the same time.

CANoe user interface with new communication structure for service-oriented communication, analysis windows and panels.
Stimulation
CANoe offers many different ways to stimulate ECUs in the network: the bandwidth ranges from predefined user interfaces to different programming options.

Diagnostics/Diagnostic Tester
The Diagnostic Feature Set included with CANoe supports you in analyzing diagnostic communication via the KWP2000 and UDS standards. CANoe may be used both as a diagnostic tester and to simulate ECU diagnostics. In addition a complete OBD-II Tester is integrated.

CANoe Variants
CANoe pro
The full range of functional features. Simulation models are created with CAPL; test cases are easy to model with the Test Feature Set. This variant is intended for users who want to use CANoe’s full functionality.

CANoe run
As a ‘Runtime’ variant with unchangeable configurations, full analysis functions and simple connection and disconnection of network nodes. This variant is intended for users who need to test their ECU quickly and easily in interaction with a prescribed remaining bus simulation.

CANoe pex
As a ‘Project Execution’ variant with an exclusively graphic user interface. Simulation, test cases and results are easy to control without requiring special evaluation of the underlying messages.

Supported Network Systems, Protocols and Options
> Network systems:
   CAN, CAN FD, LIN, MOST, FlexRay, Ethernet, WLAN, Car2x ITS G5, DIN 70121, ISO/IEC 15118, GB/T 27930, J1708, AFDX® and ARINC-429
> Protocols:
> CANoe Options:
   AMD/XCP, DiVa, For EtherCAT®, Scope, Sensor and SmartCharging

More information: www.vector.com/canoe

AFDX® is an Airbus’ registered trademark

Highlight of Version 14
Service-Oriented Architectures (SOA)
> First OEM-specific model generation available
> Support of AUTOSAR Type Length Value (TLV)
> Extended support in vCDL for model descriptions

Security
> Improved analysis for Transport Layer Security (TLS/DTLS)
> Support for IPSec authentication and Internet Key Exchange (IKEv2)
> Connection to application protocols DoIP, SOME/IP, and HTTP

Diagnostics
> New Variant Coding Window
> Encrypted diagnostics via DoIP with TLS

CANoe Connectivity Features Service
> Extended functionality for connecting to a back end for testing and simulating IoT devices

General Features
> Browser-based HTML5 help with optimized search
> Optimized column filters for analysis in the Trace Window

Application Areas
Analysis
Analysis of the multi-bus communication of ECUs and entire systems at the developer’s desk as well as directly in the vehicle.

Simulation
Manually or automatically simulation from the underlying communication database. This remaining bus simulation of communication behavior is the basis for the subsequent analysis and testing phases.
Via specific OEM Packages the CANoe simulation can be adjusted to the requirements of the respective OEM. In combination with the hardware CANoe RT Rack you execute real-time relevant simulation and test functions on a dedicated platform, i.e. separate from the graphic user interface.

Testing
CANoe represents the state-of-the-art test environment. It is the ideal testing tool as well for the entire system as for individual ECU testing:
> ECU tests
> Module tests
> Integration tests
> Conformance tests
> Regression tests
> Testing of ECU prototypes
With increased real time requirements, you may also operate CANoe as a HIL (Hardware-in-the-Loop) system.

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