Feature Matrix
CANoe 11.0 and CANalyzer 11.0

General data on the number of channels and supported bus systems as well as their network description formats
CANoe and CANalyzer are multibus tools, which mean that several different bus systems can be analyzed and stimulated simultaneously with one configuration. The specific network description files are supported directly.

	CANalyzer			CANoe		
	fun	exp	pro	pex	run	full version
Number of configurable CAN channels[1]	32	32	32	32r	32	32
Number of configurable LIN channels[1]	64	64	64	64r	64	64
Number of configurable MOST channels[1]	16	16	16	16r	16	16
Number of configurable FlexRay channels (clusters)[1]	32	32	32	32r	32	32
Number of configurable Ethernet channels[1]	32	32	32	32r	32	32
Number of configurable WLAN channels IEEE 802.11p (Car2x)[1]	8	8	8	8r	8	8
Number of configurable AFDX® channels[1]	4	4	4	4r	4	4
Number of configurable ARINC 429 channels[1]	64	64	64	64	64	64
Number of configurable K-Line channels	-	32	32	32r	32	32
Number of configurable J1708 channels (J1587)[1]	32	32	32	32r	32	32
DBC databases (A429, AFDX®, CAN, CAN FD, CANaero, CANopen, ISO11783, J1708/J1587, J1939) [1]	✓	✓	✓	✓r	✓	✓
LDF databases (LIN)[1]	✓	✓	✓	✓r	✓	✓
XML databases function catalog (MOST)[1]	✓	✓	✓	✓r	✓	✓
FIBEX databases (CAN, CAN FD, Ethernet, FlexRay)[1] Supported format versions: 2.0, 3.x (CAN, FlexRay), 4.0 (Ethernet)	✓	✓	✓	✓r	✓	✓
AUTOSAR System Descriptions (CAN, Ethernet, FlexRay)[1] Supported format versions: 3.x, 4.x	✓	✓	✓	✓r	✓	✓
AUTOSAR System Descriptions (J1939)[1] Supported format version: 4.2.2	✓	✓	✓	✓r	✓r	✓
Car2x databases[1]	✓	✓	✓	✓r	✓	✓
CANdb++ Editor (A429, AFDX®, CAN, CAN FD) Create and display DBC files	✓	✓	✓	✓r	✓r	✓
LIN File Editor[1] Create and display LDF and NCF files with a text-based editor	✓	✓	✓	✓	✓	✓
LDF Explorer Pro (LIN)[1] Create and display LDF and NCF files	-	✓	✓	-	✓	✓
LDF Explorer View (LIN)[1] Display LDF and NCF files	✓	-	-	✓	-	-
FIBEX Explorer Pro (FlexRay)[1] Create and display FIBEX files	-	✓	✓	-	✓	✓
FIBEX Explorer View (FlexRay)[1] Display FIBEX files	✓	-	-	✓	-	-

CANalyzer Variants

CANalyzer fun: The Fundamental variant is suitable for simple analyses, and it provides all interactive standard functions for this purpose. However, it does not offer programmability, diagnostic functions or user control panels.

CANalyzer exp: The Expert variant is ideal for all standard applications, and it provides all functions and extensions without limitation. However, this variant does not support creating and executing CAPL programs.

CANalyzer pro: The Professional variant offers unlimited access to all functions and extensions. This variant supports all applications from simple observation of bus traffic to complex analysis and stimulation of heterogeneous systems.

	CANalyzer			CANoe		
	fun	exp	pro	pex	run	full version
AUTOSAR System Description Network Explorer Pro[1] Display and modify AUTOSAR files for CAN and FlexRay	-	✓	✓	-	✓	✓
AUTOSAR System Description Network Explorer View[1] Display of AUTOSAR files for CAN and FlexRay	✓	-	-	✓ r	-	-
Import of ASN.1 descriptions into Car2x databases[1]	✓	✓	✓	-	-	✓
Car2x Network Explorer[1] Display and configuration of Car2x databases	✓	✓	✓	✓	✓	✓
Car2x Certificate Manager[1] Configuration, import, and export of certificates and private keys	-	✓	✓	-	-	✓
Car2x Certificate Generator[1] Generation of certificates and private keys	-	-	-	-	-	✓
Vector Aerospace Message Editor (AFDX, A429, CANaero)[1] Conversion of Interface Control Document (ICD) files into DBC files. Create and edit AFDX messages, ARINC words and CAN messages according to ARINC 825. Library with standardized ARINC-429 words for selection and export into DBC format.	✓	✓	✓	✓ r	✓	✓

Functions for bus analysis and monitoring

CANalyzer and CANoe are universal analysis tools for individual ECUs and distributed systems. Their extensive functions support online analysis. In addition is also possible to perform offline post-analysis of recorded log files.

	CANalyzer			CANoe		
	fun	exp	pro	pex	run	full version
Variable Measurement Setup Central configuration of analysis windows and logging	✓	✓	✓	-	✓	✓
Measurement Setup Import Reuse of measurement setups from other CANalyzer or CANoe configurations (complete or individual branches)	✓	✓	✓	-	✓	✓
Trace Window Detail, Difference and Statistics views for displaying the time flow of events	✓	✓	✓	-	✓	✓
Statistic Window Display bus statistics at the node or frame level (AFDX®, CAN, FlexRay, LIN)[1]	✓	✓	✓	-	✓	✓
Bus Statistic Window Display bus statistics on channel level	✓	✓	✓	✓	✓	✓
Frame Histogram Display bus statistics in histogram representation and statistics report (A429, CAN, FlexRay, ISO11783, J1939, LIN)[1]	✓	✓	✓	✓	✓	✓

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CANoe Variants

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.

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 wish to test their ECU quickly and easily in interaction with a prescribed remaining bus simulation.

CANoe full version: 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.

	CANalyzer			CANoe		
	fun	exp	pro	pex	run	full version
Statistic protocol (A429, CAN)	✓	✓	✓	✓	✓	✓
Trigger block Control data logging (A429, AFDX®, CAN, FlexRay, ISO11783, J1939, LIN)[1]	✓	✓	✓	-	✓	✓
Symbol mapping To link system variables/environment variables/signals	-/-/-	✓/-/✓*	✓/-/✓*	✓r/✓r/✓r	✓/✓/✓	✓/✓/✓
Data Window Momentary display of bus signals, environment and system variables	✓	✓	✓	-	✓	✓
Graphics Window Graphic display of signal responses	✓	✓	✓	-	✓	✓
Video Window Record and play of video files	-	-	-	✓r	✓	✓
Oscilloscope Window (.Scope)[2] Display of physical bus level and logical interpretation (CAN, FlexRay, LIN)	✓	✓	✓	-	✓	✓
State Tracker Window Display of system states, discrete values and CAN frames/ bursts	-	-	-	-	✓	✓
LIN Analysis Feature Set[1] Special CAPL functions for LIN-specific bus analysis	-	✓	✓	✓r	✓r	✓
Cluster Monitor (FlexRay)[1] Display of statistics and bus activities of a FlexRay cluster	✓	✓	✓	-	✓	✓
Filter in Measurement Setup Filtering of data in a branch of the Measurement Setup	✓	✓	✓	-	✓	✓
Analysis Filter in Trace Window Temporarily reduce the displayed data	✓	✓	✓	-	✓	✓
Channel Filter Reduction of the displayed data	✓	✓	✓	✓r	✓	✓
Variables Filter Reduction of the displayed data	-	✓	✓	✓r	✓	✓
MOST Application Filter[1] Reduction of the displayed data	✓	✓	✓	✓r	✓	✓
Offline Mode Replay a logged measurement	✓	✓	✓	-	✓	✓
Data Export Use the logged data in other programs: *.csv, *.mat (MATLAB), *.mdf, *.pcap, *.pcapng	✓	✓	✓	✓	✓	✓
MOST Functions[1] Special functions for analysis of the asynchronous channel and control channel (MOST) as well as display of the allocation table, bus registry, system structure and system state	✓	✓	✓	✓	✓	✓

	CANalyzer			CANoe		
	fun	exp	pro	pex	run	full version
Parameter Monitor (J1708/J1587)[1] Display of all sent parameters in a J1587 network	✓	✓	✓	✓r	✓	✓
Scanner (CANopen, ISO11783, J1939)[1] Display details of network nodes	✓	✓	✓	✓r	✓	✓
GNSS Monitor (ISO11783, J1939)[1] Display of position data, additionally a third dimension may be indicated by means of color. The GNSS Monitor can be synchronized with other analysis windows.	✓	✓	✓	✓r	✓	✓
Car2x Station Manager (Car2x)[1] Central unit to manage ITS Stations, especially for the assignment of received messages to ITS stations	✓	✓	✓	✓r	✓	✓
Car2x Protocol Analyzer (Car2x)[1] Checks protocol-specific contents and displays results in the Trace Window	✓	✓	✓	-	✓	✓
Map Window (Car2x)[1] Display of multiple objects in a map	-	✓	✓	-	✓	✓
Certificate Explorer (Car2x)[1] Display and export of received and configured certificates	-	✓	✓	-	✓	✓

* Only as source

Functions for stimulation, simulation and modeling

Extensive functions are available for stimulating and simulating networks. Interactive generators make it possible to spontaneously stimulating, for example. OEM-specific auxiliary packets also let you automatically generate complete remaining bus simulations. For more in-depth information on available OEM support, please contact your Vector sales.

	CANalyzer			CANoe		
	fun	exp	pro	pex	run	full version
Interactive Generator (A429, AFDX®, CAN, CANopen, ISO11783, J1708/J1587, J1939, LIN, MOST)[1]	✓	✓	✓	✓r	✓	✓
Interactive Generator (Ethernet)[1]	-	-	-	✓r	✓	✓
Signal Generator (A429, CAN, Ethernet (AUTOSAR PDUs), FlexRay, LIN, MOST)[1] Configuration of signal curves	-	-	-	✓r	✓	✓
Visual Sequencer Graphically create command sequences for stimulation and testing	-	✓	✓	✓r	✓	✓
Visual Sequencer Generate messages for sending (A429, CAN, LIN)[1]	-	✓	✓	✓r	✓	✓
Macros Tool automation	-	✓	✓	✓r	✓	✓
Start Value Window Predefined values for system variables/environment variables/signals, which are used for measurement start	-/-/-	✓/-/-	✓/-/-	✓r/✓r/✓r	✓/✓/✓	✓/✓/✓
.NET Snippets Tool automation	-	-	-	✓r	✓	✓
LIN Interactive Master (LIN)[1] Intervene in the send sequence of a Master	-	1	1	✓r	✓r	✓
LIN Node Simulation (Master/Slave)[1]	-	1	1	✓r	✓r	✓

	CANalyzer			CANoe		
	fun	exp	pro	pex	run	full version
LIN Network Management Window (LIN)[1]	-	✓	✓	✓	✓	✓
Replay[1] Replay a logged measurement in parallel to a running simulation	✓	✓	✓	✓r	✓	✓
FlexRay Frame and PDU Panel[1] Offers an easy way to send out frames	✓	✓	✓	✓ r	✓	✓
MOST[1] Sending on the asynchronous channel and control channel	✓	✓	✓	✓	✓	✓
System Variables Variables with global validity, can be applied to all analysis windows and logging	-	✓	✓	✓r	✓r	✓
Simulation Setup Symbolic display of the network	-	-	-	✓r	✓r	✓
Simulation Setup: Filters Filters for messages and channels, dependent on bus systems (A429, CAN, Ethernet (channel filter), FlexRay, MOST)	-	-	-	✓r	✓r	✓
Define/access Environment Variables	-/-	-/-	-/-	-/✓	-/✓	✓/✓
Model design/generation/execution out of the network description (CAN, FlexRay, ISO11783, J1939, LIN, MOST)[1]	-/-/-	-/-/-	-/-/-	-/-/✓	-/-/✓	✓/✓/✓
Execute simulation models	-	-	-	✓	✓	✓
Modeling libraries (e.g. transport protocol, interaction layer, network management), OEM-specific extensions	-	-	-	✓r	✓r	✓
Modeling library for node simulation (ISO11783)[1] Simulate the Virtual Terminal Server/Client, Task Controller Server/Client, File Server Server/Client, Tractor ECU, Aux, TIM Server/Client	-	-	-	✓r	✓r	✓
Modeling library for GNSS simulation (ISO11783, J1939)[1]	-	-	-	✓r	✓r	✓
Modeling library for J1939 node simulation with interaction layer (ISO11783, J1939)[1]	-	-	-	✓r	✓r	✓
Modeling library for node simulation (CANopen)[1] Simulate the object directory, SDO Servers/Clients, network management, PDO communication	-	-	-	✓r	✓r	✓
Modeling library for node simulation (Car2x)[1] Simulation of ITS Stations	-	-	-	✓r	✓r	✓
Function library for transmission and reception of packets (AFDX®, Car2x, Ethernet)[1]	-	-	-	✓r	✓ r	✓
Packet Builder (Car2x, Ethernet,)[1] Create and send packets	✓	✓	✓	✓r	✓	✓
Virtual Terminal Dialog (ISO11783)[1] Simulate a Virtual Terminal	-	-	-	✓r	✓	✓
Interactive Task Controller (ISO11783)[1] Access the process data	-	-	-	✓r	✓	✓
AVB node simulation (Ethernet)[1] Simulation of Stream Talker and Listener including AVTP, gPTP, clock master and slave.	✓	✓	✓	✓	✓	✓
GNSS Simulator (ISO11783, J1939)[1] Simulation of position data	✓	✓	✓	✓r	✓	✓

Extending the range of functions for analysis, simulation and testing by integrated or external programming capabilities

CAPL as an internal programming language offers flexible options for extending the range of functionality of CANoe and CANalyzer for extensive analysis and stimulation tasks. Furthermore, the Visual Sequencer is used to graphically create command sequences.

	CANalyzer			CANoe		
	fun	exp	pro	pex	run	full version
CAPL programming/execution/debugging	-/-/-	-/-/-	✓/✓/-	-/✓/-	-/✓/-	✓/✓/✓
CAPL functions for bus access (A429, AFDX, CAN, FlexRay, ISO11783, J1708/J1587, J1939, LIN, MOST)[1]	-	-	✓	✓	✓	✓
Create/execute graphic command sequences with the Visual Sequencer	-/-	✓/✓	✓/✓	-/✓	-/✓	✓/✓
Bus access with Visual Sequencer (A429, CAN, LIN)[1]	-	✓	✓	✓r	✓	✓
C-API for developing application-specific code	-	✓	✓	✓r	✓r	✓
.NET programming (C#) for implementing simulated network nodes, test modules or Snippets	-	-	-	✓r	✓r	✓
Ethernet TCP/IP stack support (Ethernet)[1]	1	1	1	✓	✓	✓

Panels for extending the graphic user interface

In CANoe and CANalyzer, it is possible to create your own graphic panels that can be used for display, control or stimulation.

	CANalyzer			CANoe		
	fun	exp	pro	pex	run	full version
Create/execute display panel elements	✓/✓	✓/✓	✓/✓	-/✓	✓/✓	✓/✓
Create/execute control panel elements	-/-	✓/✓	✓/✓	-/✓	-/✓	✓/✓
ActiveX panel elements (OCX, .NET)	-	✓	✓	✓	✓	✓
AVB Video Panel	✓	✓	✓	✓	✓	✓

Test Support – Test Feature Set

CANoe is a universal tool for executing automated tests, which are always reproducible. The individual test modules are created with CAPL, XML or .NET. Besides automated report generation, integration of special test hardware is also supported.

	CANalyzer			CANoe		
	fun	exp	pro	pex	run	full version
Visual Sequencer Graphically create test sequences	-	✓	✓	-	✓	✓
Bus access with Visual Sequencer (A429, CAN, LIN)[1]	-	✓	✓	✓r	✓	✓
LIN Stress Interactive Generator[1] Send frames and errors	-	-	-	-	✓	✓
LIN Disturbance Block[1] Disturb the LIN bus traffic	-	-	-	-	✓	✓
LIN Stress Feature Set (CAPL)[1] Stimulation with different protocol errors	-	-	-	✓	✓	✓

	CANalyzer			CANoe		
	fun	exp	pro	pex	run	full version
Integrated LIN Slave Conformance Tests[1]	-	-	-	✓r	✓r	✓
Stress Generation (MOST)[1] Generate bus load and Light/Lock errors	✓	✓	✓	✓	✓	✓
Test Setup for Test Units Organize and configure test modules and test units	-	-	-	✓r	✓r	✓
Test Trace Window Observe and analyze tests during the test run	-	-	-	✓r	✓r	✓
Test Setup for Test Modules Organize and configure test modules	-	-	-	✓r	✓r	✓
Test Feature Set, Test Service Library Reproducibly execute (semi-) automated tests	-	-	-	✓r	✓r	✓
XML Test report Visualize test results with navigation options	-	-	-	✓r	✓r	✓
J1939 XML Test Module Manager (J1939)[1] Automatically create and run J1939 conformance tests defined in J1939-82 (2008) in tables 3 to 10	-	-	-	✓r	✓ r	✓
J1939 Compliance Test Unit Automatically create and run J1939 conformance tests defined in J1939-82 (2015) in tables 3 to 7	-	-	-	✓r	✓ r	✓
DOORS Integration Interface to the requirements system	-	-	-	✓r	✓r	✓
VT System support	-	-	-	✓	✓	✓

Diagnostic support, supported protocols - Diagnostic Feature Set (CAN, LIN, FlexRay, Ethernet)

CANoe and CANalyzer can be used in all phases of development and diagnostic use in ECUs. Basic diagnostics lets you exchange diagnostic information with the ECU without a description file (CDD/ODX/MDX).

	CANalyzer			CANoe		
	fun	exp	pro	pex	run	full version
TP Observer (CAN, FlexRay, J1939, ISO11783)[1]	✓	✓	✓	-	✓	✓
TP Observer (Ethernet) [1] TP observer supporting IP (incl. fragmentation) and TCP.	✓	✓	✓	-	✓	✓
AVTP Observer (Ethernet) [1] In conjunction with the Media Stream Control for audio and video output, currently supporting AAF and CVF protocols.	✓	✓	✓	-	✓	✓
Diagnostic Observer Symbolically interpret diagnostic messages	-	✓	✓	-	✓	✓
Diagnostic Tester Consists of Diagnostic Console and Fault Memory Window	-	✓	✓	-	✓	✓
Diagnostics Parameters Window [3]	-	✓	✓	✓	✓	✓
UDS/KWP2000 support	-	✓	✓	✓r	✓r	✓
Integrated OBD II tester	-	✓	✓	-	✓	✓
DoIP (Diagnostics over IP) and HSFZ (High-Speed-Fahrzeug-Zugang) support	-	✓	✓	✓r	✓r	✓
K-Line support Support with Vector hardware VN1611/1630/1640	-	✓	✓	✓r	✓	✓

	CANalyzer			CANoe		
	fun	exp	pro	pex	run	full version
Diagnostics with CAPL	-	-	✓	✓r	✓r	✓
Basic Diagnostics Diagnostic support without description file	-	✓	✓	✓r	✓	✓
ODXStudio View and CANdelaStudio View Display diagnostic description files (ODX/CDD)	-	✓	✓	-	✓	✓
VDS Library .NET diagnostics scripting for CANoe, CANape and Indigo	-	-	-	✓	✓	✓
Diagnose Simulation	-	-	-	✓r	✓r	✓
Option .DiVa[2] Automatically generate test modules or test units from a diagnostic description and add the corresponding DiVa project to a CANoe configuration	-	-	-	✓r	✓r	✓
DTC Monitor (J1939, ISO11783)[1] Display error codes	✓	✓	✓	✓r	✓	✓
Diagnostic memory access (ISO11783, J1939,)[1]	✓	✓	✓	✓r	✓	✓
OBD Inspection and Maintenance Monitor (J1939)[1] Emissions-related diagnostic functionality	✓	✓	✓	✓r	✓	✓
DC Monitor (J1708/J1587)[1] Evaluate transmitted error codes (DC)	✓	✓	✓	✓r	✓	✓

Extension of functional range by integration of other interfaces or additional options

CANoe and CANalyzer are open tools that can be combined with different systems. This makes it possible to perform such tasks as controlling auxiliary measurement hardware, or integrating MATLAB/Simulink models in the simulation.

	CANalyzer			CANoe		
	fun	exp	pro	pex	run	full version
CAPL DLL Implement your own functions in C	-	-	✓	✓r	✓r	✓
CANoe RT Real-time extension for heightened latency and jitter requirements	-	-	-	✓r	✓r	✓
CAPL-on-Board Execute CAPL right on the network interface (CAN)	-	-	-	✓r	✓r	✓
ERT – Extended Real Time Improves latency and determinism of CANoe and CANape	-	-	-	✓r	✓r	✓
I/O Hardware interface Link analog/digital measurement hardware from third-party suppliers	-	-	-	✓	✓	✓
GPIB support Drive external measuring instruments	-	-	-	✓	✓	✓
IOcab/IOpiggy support	-	✓	✓	✓	✓	✓
COM Server Automation interface for remote control	✓	✓	✓	✓	✓	✓
FDX (Fast Data Exchange) UDP/IP based protocol for fast data exchange with external systems	-	-	-	✓	✓	✓
MATLAB Interface and Model Viewer Integrate Simulink models in the simulation	-	-	-	✓r	✓r	✓

	CANalyzer			CANoe		
	fun	exp	pro	pex	run	full version
LabVIEW Interface Data exchange with LabVIEW via shared network variables/COM/FDX	-/✓/-	-/✓/-	-/✓/-	✓r	✓r	✓
Functional Mock-up Interface (FMI) Integration and export of FMU files. Supported versions: FMI 1.0 and FMI 2.0	-	-	-	✓r	✓r	✓
Option .Scope[2] (CAN, LIN) Integration of USB oscilloscope hardware from PicoTech	✓	✓	✓	-	✓r	✓
Option .Sensor[2] Simulation of sensors and ECUs plus Test Feature Set integration	-	-	-	✓	✓	✓
Option .AMD/XCP[2] Read or write to memory locations in the ECU and analysis of ECUs	-	-	-	✓r	✓r	✓
GPS Visualize and log the vehicle's position	-	✓	✓	✓r	✓	✓
Signal protocol DLL (Ethernet)[1] Interpret signals in proprietary protocols	✓	✓	✓	✓	✓	✓
TCP/IP socket access with CAPL	-	-	✓	✓r	✓r	✓
RS232 access with CAPL	-	-	✓	✓	✓	✓

CANoe/CANalyzer option .Scope

The option .Scope is an integrated oscilloscope solution for CANoe and CANalyzer based on an USB oscilloscope hardware. The supported hardware has up to 4 input channels for 2 CAN/CAN FD/FlexRay or 4 LIN/IO and is triggered using the sync line of Vector´s interface hardware (e.g. VN1630/40, VN8900, VT System). With bus-specific trigger conditions and the CANoe/CANalyzer time synchronization, you can find the cause of protocol errors much faster than with any traditional oscilloscope. The option .Scope is available for all CANoe/CANalyzer variants with exception of CANoe pex.

	CANoe* and CANalyzer			
	CAN	CAN FD	LIN	FlexRay
Automatic configuration of sampling rate and acquisition time (according to baud rate)	✓	✓	✓	✓
Bit-accurate decode of bus signal	✓	✓	✓	✓
Complete decode of protocol errors (e.g. CAN Error Frames)	✓	✓	✓	-
Trigger conditions for frames and protocol errors	✓	✓	✓	✓
Trigger modes: single and repeat	✓	✓	✓	✓
Full import/export of scope measurements for offline analysis	✓	✓	✓	✓
Export of scope measurement data to ASCII (CSV) or MATLAB format (MAT)	✓	✓	✓	✓
CAPL interface for automatic scope test including report creation**	✓	✓	✓	✓
Eye diagram analysis with bit masks defined via CAPL**	✓	✓	-	✓
CAPL measurement functions for bus signal voltage and time difference (e.g. bit time)**	✓	✓	-	-

* Option .Scope is available for all CANoe/CANalyzer variants except CANoe pex.

** Feature only available with Test Feature Set of CANoe.

CANoe option .AMD/XCP

Option .AMD/XCP is used to access internal ECU parameters by write or read access. The ECU parameters are represented as system variables and can therefore be used in all analysis windows as well as in testing. The option .AMD/XCP is available for all CANoe variants.

	CANoe		
	pex	run	full version
XCP/CCP Window for configuration	-	-	✓
Online access to internal ECU values in RAM over XCP on CAN, XCP on Ethernet (TCP and UDP), XCP on FlexRay, XCP on LIN and CCP (For CCP/XCP on CAN, XCP on FlexRay and XCP on LIN the respective bus options are required.)	✓ r	✓ r	✓
Measurement methods: DAQ, Polling, on connect, Single Shot Upload over CAPL	✓ r	✓ r	✓
Writes scalar, multi-dimensional, and complex variables to the ECU's RAM via Download	✓	✓	✓
Measuring with ECU time stamp for DAQ	✓	✓	✓
Supports ASAM MCD-2 MC (A2L) databases up to version 1.7	✓ r	✓ r	✓
Support of scalar CCP/XCP data types (UBYTE, SBYTE, UWORD, SWORD, ULONG, SLONG, UINT64, SINT64, FLOAT32_IEEE, FLOAT64_IEEE)	✓	✓	✓
Complex CCP/XCP data types: 1-dimensional arrays, CURVE, MAP (supported axis types: COM_AXIS, SHARED_AXIS, FIX_AXIS)	✓	✓	✓
Secure access via Seed & Key (DLL and SKB format)	✓	✓	✓
Parallel access to multiple ECUs	✓	✓	✓
Address Update for ECU symbols from Linker Map file	✓	✓	✓
Address Update for ECU symbols from the ECU at runtime (generic measurement)	✓	✓	✓

System requirements for CANoe and CANalyzer

Component	Recommended	Minimum
CPU	Intel compatible > 2 GHz ≥ 2 cores	Intel compatible > 1 GHz ≥ 2 cores
	CANoe and CANalyzer benefit from higher clock rates rather than higher number of cores	
Memory (RAM)	16 GB	4 GB
Hard disk space	≥ 20 GB SSD	≥ 3 GB
	Depending on the options used and the operating system components	
Screen resolution	Full HD	1280×1024 Pixel
Operating system	Windows 10 (≥version 1709) Windows 8.1 Windows 7 (≥ SP1)	

Legend:

✓	=	Available (multiple)	-	=	Unavailable
1	=	Available once	r	=	Runtime (configuration cannot be changed)

[1] This function requires the noted bus system extension or the noted additional option. All bus system extensions are individually available and may be used in any combination. Additional CAN bus based options such as CANopen or J1939, require the bus option for CAN.

[2] Additional products, not included in the standard delivery.

[3] The actual functional range depends on the product variant used: CANoe pex, CANoe run or CANoe (full version).