What is CANape?
The primary application area of CANape is in optimizing parameterization (calibration) of electronic control units. During a measurement process, you can simultaneously calibrate parameters and record signals. The communication between CANape and the ECUs takes place via protocols such as XCP or via microcontroller-specific interfaces with the VX1000 measurement and calibration hardware. CANape supports various ADAS sensors such as radar, LIDAR and video. Combined with high-performance hardware, CANape can store gigabytes of data per second. Calibration data management and convenient measurement data analysis with reporting make CANape a complete tool for ECU calibration. Of course, CANape also provides access to bus data, diagnostic data and analog measurement data.

Overview of Advantages
> Open and flexible platform, since it is based on standards
> Acquire and log measurement data from a wide variety of sources time-synchronously, and, if necessary, analyze it in vMDM – a cloud-based measurement data management system
> Convenient calibration and management of parameters and direct transmission to server-based or cloud-based calibration management systems
> High-performance connection to controllers and sensors (radar, LIDAR, video ...) with outstanding measurement data rates
> Reliable ADAS logging solution for comprehensive testing
> Easy integration of analog measurement equipment with high sampling rates
> Automatic measurement data evaluation through data mining

CANape user interface with simultaneous use of multiple configurations
> User-friendly visualization of Simulink/Stateflow models
> Rapid prototyping platform as an efficient runtime environment for code and models
> Open interfaces for hardware integration with third-party suppliers

**Highlights of Version 18.0**
> Full Ethernet support in the vehicle and laboratory
> vMDM: The search engine for your measurement data
> High-performance function library for online calculation at sampling rates of more than 100kHz
> CANape log: Seamless transition from CANape project to logger hardware
> Capture data objects and raw data from any ADAS sensors in your vehicles
> Visualize traffic data objects detected by ADAS sensors
> Convenient offline evaluation e.g. in the office through support of the vSignalyzer license

**Basic Functions**
> Synchronous real-time acquisition and visualization of internal ECU signals with CCP/XCP as well as KWP2000/UDS, of bus messages, audio, video, GPS, external measuring equipment as well as radar, LIDAR and video sensors
> Online calibration via CCP/XCP and real-time stimulation and bypassing via XCP
> Offline calibration of HEX files
> Offline evaluation of measurement data from manual evaluation to automated data mining with integrated functional language or user-generated DLLs
> Runtime environment for “software in the loop” solutions: Algorithms that will run in the ECU later can be integrated in CANape
> Fast and secure flashing of binary files and parameter sets
> Seamlessly integrated diagnostics via KWP2000, UDS and OBD
> Powerful management of calibration data, comparing and merging of parameter sets
> Extensive printing and reporting functionalities

**CANape Options**
> **Option Driver Assistance**
  Object verification for driver assistance including high-performance data acquisition from ADAS sensors
> **Option vMDM**
  Direct connection between CANape and vMDM for the provision and analysis of measurement data
> **Option vCDM**
  Convenient exchange of parameter sets and values within a team

**Option Simulink XCP Server**
Visualize, measure and parameterize Simulink models easily and efficiently at runtime

**Option Bypassing**
Bypassing computation with deterministic time behavior

**Option Thermodynamic State Charts**
Display of thermodynamic data and informative state charts for online and offline analysis

**CANape log for Challenging ADAS Logging Tasks**
CANape log, in combination with Vector logger hardware, is a robust and easy-to-use solution for logging measurement data from a wide variety of sources – time-synchronously and with high performance. You benefit from CANape’s broad range of functionality and its flexible scalability when used as a stand-alone data logger in the automotive environment. In particular, CANape log can achieve the very high data rates which are needed in complex data acquisition scenarios in the ADAS field.

**Hardware Interfaces and Protocols**
> Bus monitoring of CAN, CAN FD, Automotive Ethernet, SOME/IP, FlexRay, LIN, SAE J1939, GMLAN, CANopen
> XCP on CAN, CAN FD, FlexRay, Ethernet, RS232
> High-speed controller interfaces such as JTAG, DAP, LFAST, RTP/DMM, Nexus AUX, AURORA via Vector’s VX1000 measurement and calibration hardware
> Fast PCIe processor interface over VX1000
> Interfaces for video sensors
> DoIP (Diagnostics over Internet Protocol)
> CCP
> ISO 14230 (KWP2000 on CAN) and ISO 14229 (UDS). ISO/TF2 and VW-TP2.0 transport protocols
> ISO 14229 (UDS) over FlexRay with the ISO transport protocol and the “AUTOSAR” and “BMW” transport protocols upon request
> Integration of measurement technology and hardware interfaces from third parties

More information: www.vector.com/canape