

CANalyzer Fundamentals and CAPL

Agenda VectorAcademy

Delivery Format:	This course is offered in Classroom or in Remote Format
Duration:	Classroom: 3 days Remote: 18 hours
Target Group:	CANalyzer users (controller development, motor vehicle electrical, test planning and execution)
Prerequisites:	Basic knowledge on Automotive systems
Goal:	Basics of CAN protocol. Understanding the application areas as a measurement and analysis tool, diagnostic basics, logging, offline analysis, send methods and panels. Basics of CAPL.

1. Introduction to CAN

- > Electronification of motor vehicles
- > Primary tasks in bus networking
- > Standards and implementation
- > Node architecture, bus-connection and termination
- > Voltage levels and corresponding bit values

2. Characteristics of the CAN Protocol

- > Addressing, message transmission and reception
- > Bus access method and arbitration
- > Message types, detailed description of the structure and functions
- > Increase noise immunity, neutralize errors
- > Error detection mechanisms
- > Error treatment & tracking
- > Motivation for the bit time interval
- > Relation of baud rate and length of the CAN bus
- > Synchronization and resynchronization

3. CAN Network Description

- > Usage and content of Network Description
- > Tools and Examples

4. Introduction to CANoe/CANalyzer

- > Differentiation CANoe/CANalyzer
- > Application areas
- > License model and registration
- > Creating a configuration in CANalyzer

5. Measurement and Analysis

- > Introduction into the graphical user interfaces
- > Dataflow and measurement setup

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- > Measurement and analysis windows for CAN
- > Filter and trigger blocks

6. Data Logging and Offline Analysis

- > Recording data traffic with trigger conditions
- > Offline analysis

7. Diagnostics

- > Application areas
- > Configuration
- > Diagnostic windows

8. Send Options

- > Interactive Generator Block
- > Replay Block

9. Introduction to CAPL

- > Usage of CAPL
- > Introduction to the CAPL browser
- > Network nodes and program nodes

10. Panels

- > Panel Creation

11. Measurement and Analysis with CAPL

- > Signal access with CAPL
- > Evaluating messages
- > Analysis nodes in the measurement setup
- > System variables
- > Generating messages
- > Working with timers