

CANoe/CANalyzer FlexRay

Agenda VectorAcademy

Delivery Format:	This Course is offered in Classroom.
Duration:	3 days
Target Group:	FlexRay Users, ECU Developers
Prerequisites:	General knowledge of serial buses, programming notions
Goal:	At the end of the training the trainee will be able to analyze and simulate a calculation, know the Flexray network with CANoe

Evaluation:

Validation of learning based on practical exercises with CANoe.

Pedagogical, technical and supervisory resources:

Course material is sent to each trainee. A link will be sent to each participant to install the CANoe software and use hardware interface HW. The training will be carried out in adapted rooms.

Competence of the trainer: 15 years of experience in training related to embedded developments, network architectures.

Method of follow-up of the trainee:

A sign-off sheet must be validated by the trainee. A first satisfaction questionnaire is planned at the end of the training.

1. Introduction to FlexRay

- > Electronification of motor vehicles
- > Motivation for the development of FlexRay
- > FlexRay consortium and specification
- > Differences between CAN and FlexRay

2. Physical Topologies and Signal Transmission

- > Physical topologies
- > Signal transmission and voltage levels
- > Node architecture and termination

3. Synchronization

- > Synchronization mechanism
- > Wake-Up and start-up
- > Time hierarchy
- > Re-Synchronization on bit level

4. Communication Structure and Bus Access

- > Communication cycle
- > Static and dynamic segment
- > Frame format
- > Bus access

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5. Data Bases for FlexRay

- > Introduction to ASAM MCD-2 NET (FIBEX)
- > Introduction to AUTOSAR System Configuration Description
- > Description of frames, PDUs and signals
- > Analyzing of network characteristics

6. Introduction to CANoe/CANalyzer .FlexRay

- > Characteristics of CANoe and CANalyzer for FlexRay
- > Available hardware for FlexRay
- > Licensing and registration

7. Initiation of a FlexRay Network

- > Creation of a configuration in CANoe and CANalyzer
- > Configuration of used hardware
- > Wake-Up and startup in CANoe and CANalyzer

8. Measuring and Analyzing in CANoe/CANalyzer .FlexRay

- > Windows for measuring and analyzing in a FlexRay network
- > Logging and offline analysis
- > Interactive sending

9. Introduction into CANoe Simulation

- > CANoe in the development process
- > Signal server concept and FlexRay scheduler
- > OEM-specific packages for FlexRay

10. Modeling and Simulation in CANoe .FlexRay

- > Creation of a configuration for modeling and simulation
- > System panel, node and network panels and signal generators
- > Panels and signal-oriented CAPL

11. Creation of Panels

- > Introduction to the Panel Designer
- > Creation of panels
- > Implementing of panels in CANoe.FlexRay

12. Introduction to CAPL

- > Introduction to the CAPL browser

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- > Network node and program node
- > Variables, operators, conditions and loops

13. CAPL for FlexRay

- > Event procedures for FlexRay
- > Frame object and PDU object
- > Functions for FlexRay