

# CANoe/CANalyzer for FlexRay

## Agenda VectorAcademy

<b>Delivery Format:</b>	This Course is offered in Classroom <b>or</b> Remote Format
<b>Duration:</b>	Classroom: 3 days Remote: 18 hours
<b>Target Group:</b>	FlexRay Users, ECU Developers
<b>Prerequisites:</b>	Basic understanding of serial data transmission
<b>Goal:</b>	Knowledge about physical characteristics of a FlexRay network and characteristics of the FlexRay protocol, Knowledge about databases for FlexRay, initiation of a FlexRay network and functionalities for measuring and analyzing in CANoe/CANalyzer .FlexRay, Knowledge about modeling and simulation in CANoe .FlexRay and CAPL for FlexRay

### 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 startup
- > Time hierarchy
- > Re-Synchronization on bit level

### 4. Communication Structure and Bus Access

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

### 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

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### 6. Introduction to CANoe/CANalyzer .FlexRay

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

### 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
- > Create and implement panels in CANoe.FlexRay

### 12. Introduction to CAPL

- > Introduction to the CAPL browser
- > 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