

Diagnostics and CANdelaStudio Workshop

Agenda VectorAcademy

Duration:	2 Days
Target Group:	Users of CANdelaStudio, users of diagnostics
Prerequisites:	None
Goal:	Introduction to vehicle diagnostics, working with CANdelaStudio

1 | Introduction to Vehicle Diagnostics

0.5 h

- > Motivation and necessity of diagnostics
- > Diagnostic use cases

2 | Diagnostic Protocol UDS

2.5 h

- > UDS services
- > Sessions and security access

3 | Fault Memory

1.0 h

- > DTCs
- > UDS Snapshots and Extended Data Records

4 | Diagnostics in AUTOSAR

material is distributed, optionally in the training

- > Brief overview of AUTOSAR
- > Brief overview what AUTOSAR provides for diagnostics, Diagnostic Extract DEXT

5 | Reprogramming

0.5 h

- > Concept of reprogramming
- > Reprogramming with UDS services

6 | Diagnostic Protocol UDS - Additional Topics

material is distributed, optionally in the training

- > UDS on J1939
- > Negative Response Codes

7 | OBD II and WWH-OBD

material is distributed, optionally in the training

- > Overview of OBD II modes and fault memory
- > Overview of WWH-OBD and fault memory

8 | Transport Protocol for Diagnostics on CAN/CAN FD

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- > Usage and features of transport protocol for UDS on CAN/CAN FD
- > Addressing schemes for CAN

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9 | Diagnostics on LIN

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- > Brief overview about configuration Bx services
- > Brief overview how UDS is applied on LIN

10 | Diagnostic Specification with CANdelaStudio

0.5 h

- > Main concept of CANdelaStudio: Creating ECU diagnostic specifications
- > Template concept

11 | Create a New Diagnostic Specification

2.5 h

- > Create a simple ECU diagnostic specification based on a given template
- > Diagnostic Instances, Parameters, Data Types, Exercises

12 | Fault Memory

1.0 h

- > DTCs
- > Snapshot Data and Extended Data Records, Exercises

13 | Sessions and Security Access

0.5 h

- > Create new Sessions and Security Access Levels
- > Make executions of all services consistent

14 | ECU Variants

0.5 h

- > How to create ECU variants and how to use variant identification feature
- > Compare variants

15 | ODX Export

0.5 h

- > Brief introduction to ODX
- > Possibilities to create ODX with ODX Export

16 | AUTOSAR Diagnostic Specification in DEXT with CANdelaStudio

0.5 h

- > Code generation before DEXT
- > DEXT
- > Code generation with DEXT

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17 | Import Features 0.5 h

- > Import of parameters and conversion from ODX, A2L, CDI, CANdb, FIBEX, AUTOSAR System Description
- > Creation of potential DTCs for signal errors

18 | Selected Features of CANdelaStudio

material is distributed, optionally in the training

- > Jobs, Vehicle System Groups
- > Boot Variant, Repository Feature

19 | CANoe CANape Diagnostic Feature Set

material is distributed, optionally in the training

- > Overview of Diagnostic Feature Set

20 | Diagnostic Validation with CANoe.DiVa

material is distributed, optionally in the training

- > Concept of CANoe.DiVa
- > Presentation of CANoe.DiVa Demo

21 | Questions, Feedback