

Diagnostics UDS

Agenda VectorAcademy

Delivery Format:	This course is offered in Classroom or Remote Format
Duration:	Classroom: 1 day Remote: 7 hours
Target Group:	Diagnostic Engineers
Prerequisites:	Knowledge of the CAN protocol and CANalyzer
Goal:	At the end of the training, the trainee will have knowledge of the basics of the UDS on CAN and DoIP protocol and will be able to analyze with CANalyzer/CANoe

Evaluation:

Validation of acquired knowledge on protocol analysis.

Pedagogical, technical and supervisory resources:

Course material is sent to each trainee. A link will be sent to each participant to install the CANoe/CANalyzer software and use the USB HW interface. 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. Vehicle and Fleet Diagnostics

- > Motivation and need for the diagnosis
- > Use cases

2. UDS protocol on CAN/J1939

- > DID concept, read/write data by identifier
- > Various UDS services: I/O control, routine control, session, EcuReset, secure access....
- > Transport layer concept (ISO TP)
- > Physical and functional diagnostics
- > UDS timing
- > SVD for J1939 in the road transport industries,
- > J1939 cases: Broadcast Announce Message (BAM) and Connection Mode Data Transfer (CMDT)

3. Default Memory

- > Services for reading the default memory (0x19), associated sub-functions and Status Byte
- > DTC structure and Snapshot concept
- > Pull up all DTCs (0x19 02)
- > Snapshot Record for a given DTC (0x19 04)
- > Extended Data Record (0x19 06)

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4. Introduction to CANalyzer For Diagnosis on CAN/J1939

- > Diagnostics on CAN or LIN
- > Diagnosis with the ODX file,
- > Sending of diagnostic requests and analysis of the answers in CANalyzer
- > Test of the various services of the " Fault memory" ...
- > CAPL test script to check the various DTCs in the fault memory
- > Specific diagnostic window for the J1939

5. DoIP : Diagnostics sur IP

- > Introduction to DoIP
- > DoIP communication process and DoIP Gateway
- > DoIP with CANalyzer.Ethernet: Diagnosis of a CAN ECU via the DoIP Gateway (VN5610)