

# Testing with CANoe

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|-----------------------|--------------------------------------|
| <b>Duration:</b>      | 2 days                               |
| <b>Target group:</b>  | CANoe users in the measurement field |
| <b>Prerequisites:</b> | Experience in using CANoe and CAPL   |

## 1 Introduction to CANoe's Test Feature Set (1.0 h)

Goal: Gain an understanding of testing ECUs and networks using CANoe's Test Feature Set

Contents: Overview of test features, basic layout of a test module, explanation of concepts

## 2 Setting Up Test Modules (2.0 h)

Goal: Gain an understanding of flow control in test modules. Become familiar with the differences between CAPL and XML test modules and their advantages/disadvantages

Contents: Flow of a test module, various options for creating test modules, new CAPL functions, principle of wait points, exercises

## 3 Creating Test Reports (1.0 h)

Goal: Learn how to automatically generate test reports

Contents: Principles of test report generation, ways to influence report generation, format of the test report, exercises

## 4 Creating Tests (3.0 h)

Goal: Learn how to generate complete test cycles, introduce the integrated Test Service Library (TSL)

Contents: Overview of TSL functions and their integration in the TFS, explanation of conditions and constraints, TSL check functions and TSL stimuli, sending of messages via an Interaction Layer (IL), extensive exercises

## 5 Brief Introduction to XML (0.5 h)

Goal: Learn about motivation for using XML in test descriptions

Contents: Basic structure of a XML file, explanation of the concepts XML, XSLT, DTD and XSD

## 6 Creating XML Test Modules (3.5 h)

Goal: Gain understanding of flow control in XML test modules, become familiar with difference between CAPL and XML test modules and their advantages/disadvantages, automatic generation of test reports, integration of conditions and constraints

Contents: Sequential flow of a XML test module, principle of XML patterns, principle of test report generation, options in creating XML test modules (brief overview of XML editors), integration of XML checks as constraints or conditions, linking CAPL test cases in XML test modules, exercises

## **7 Generating XML Test Modules (1.0 h)**

Goal: Gain an understanding of XML generators

Contents: Overview of XML generators for CANoe, XML generators in other Vector Tools (e.g. in CANdb++)

## **8 Brief Introduction to Diagnostics (0.5 h)**

Goal: Convey the basic principles of diagnostic and transport protocols

Contents: Overview of diagnostic and transport protocols, Vector diagnostic tools, structure of CDD files

## **9 Integration of Diagnostics in CAPL and XML Test Modules (1.5 h)**

Goal: Learn how to integrate diagnostic features in a test cycle (for CAPL and XML)

Contents: Principle of diagnostic request and diagnostic response, reading out fault memory, evaluating diagnostic parameters, exercises

## **10 Questions, Suggestions, Requests**

Goal: Clarification of open issues and open discussion as feedback for Vector