As of 20.01.2026

Agile Testing and Test-Driven Development (TDD) of Embedded Systems - Live Online Training

Agile testing of embedded systems is the consistent application of agile methods to the entire embedded system. Like agile development, the agile test approach involves a paradigm change. In test-driven development (TDD) processes, tests are generated and performed before the actual component is developed. The test grows incrementally with the system. By means of refactoring, test automation and test reruns, faults are identified at an early stage of the development process and can be located more efficiently. This training provides you with the required theoretical knowledge as well as practical methods of implementation.

Objectives

You know the key terminology, context and methods and can thus make a significant contribution to the conception and implementation of agile testing and test-driven development in the creation of your embedded systems (system, hardware and software development).

Participants

Test engineers, test managers, software developers, software architects, system architects, project leaders, team leaders

Requirements

Basic C or C++ knowledge. Experience with projects and processes related to the development of technical systems is an advantage.

Live-Online-Training

12.02. – 13.02.2026	1.500,00 €	2 Days

* Price per attendee, in Euro plus VAT

Training code: LE-AGILTDD

Face-To-Face - English

Date	Duration
11.06. – 12.06.2026	2 days

Live Online - German

Date	Duration
12.02. – 13.02.2026	2 days

Face-To-Face - German

Date	Duration
11.06. – 12.06.2026	2 days

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Content

Terminology and Test Methods

- Module, integration, system test
- Blackbox, whitebox, greybox test
- Regression test
- Continuous integration and test

Test-Driven Development Approach

- Comparison with conventional approaches
- Relation to agile development methods
- Continuous integration and test

Embedded TDD Strategy

- Target hardware
- Dual targeting
- Embedded TDD cycle

Test Generation

- FIRST, the five principles for developing efficient tests
- Test environment and dependencies
- Test doubles
- Mocks and stubs

Test Coverage

- Test targets
- Criteria for "done"
- Test reruns

TDD Cycle

- Red-green refactoring

Design for Test

- SOLID design principles
- Refactoring
- Testing legacy code
- Test patterns and random numbers

Hands-on Exercises

- Exercises to enhance your understanding of methods and principles
- Tools: Arm, µVision, Embedded-Unit

MicroConsult PLUS:

- We will provide you with a download link for your exercise directories and exemplary solutions for all exercises.