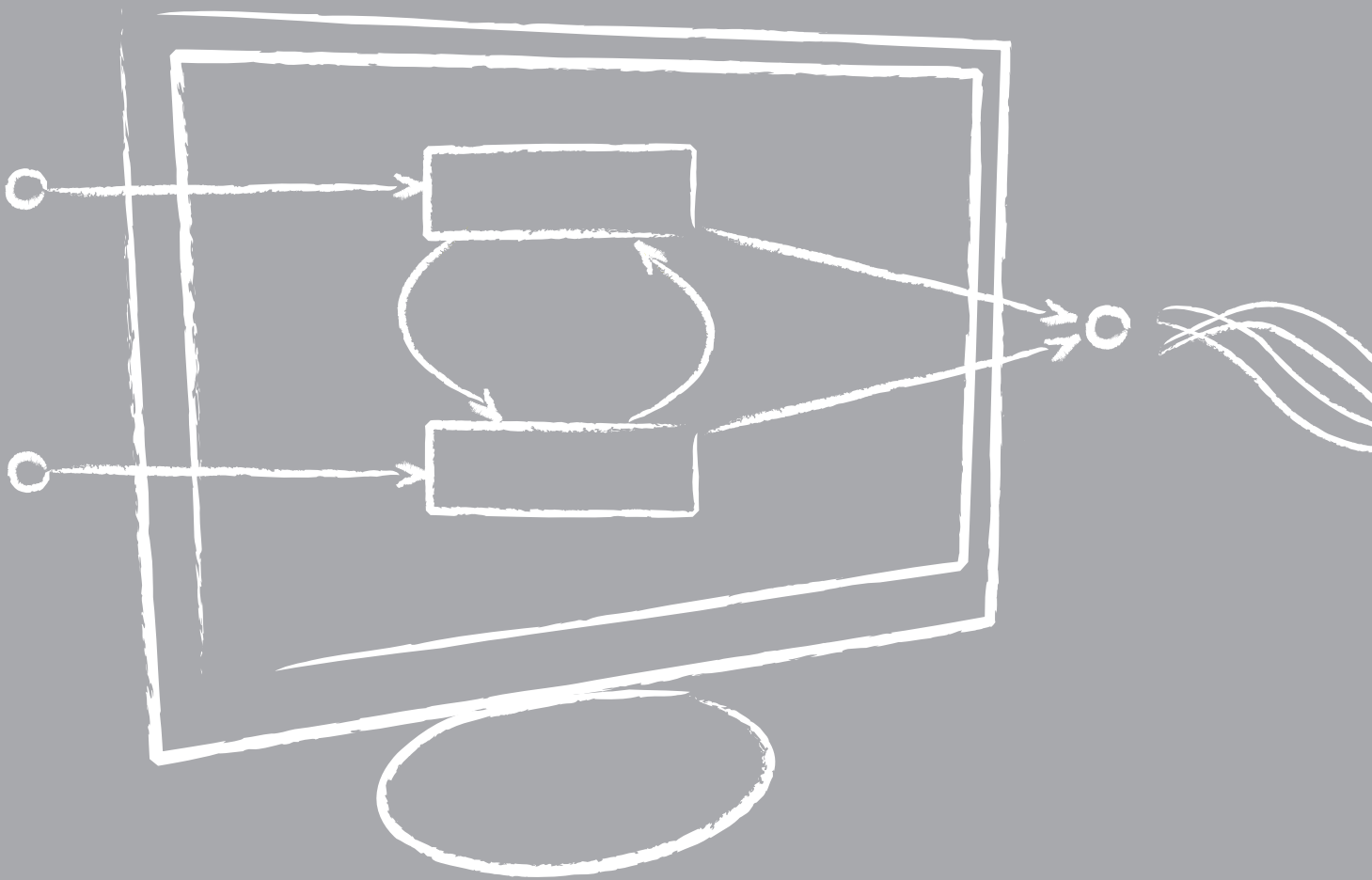




TPT

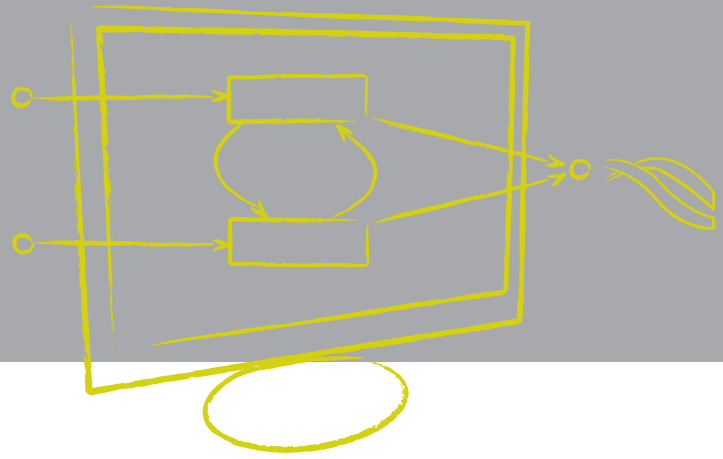
Model-based
Control System Test





TPT

Model-based Control System Test



TPT – Model-based Control System Test

TPT is a test tool used in the testing of embedded control systems. TPT supports fully automated tests – even in real-time contexts – and can use continuous as well as discrete signals. With TPT test cases are modeled graphically with unique features that simplify and accelerate the development of high-quality tests. Thanks to the built-in platform independence, TPT can be used universally from Model-test (MiL), through Software-test (SiL) to Hardware-in-the-Loop-Test (HiL).

TPT currently offers test support for MATLAB/Simulink models, ASCET models, 'C' code testing, AUTOSAR SW-C testing, HiL test systems as well as many customer specific environments.

Important features

- Testing using continuous and discrete signals
- Real-time enabled test execution
- Graphical test modeling
- Automated execution, evaluation, documentation and management of tests
- Compatibility with MATLAB/Simulink-Models, ASCET, C-Code, AUTOSAR, HiL systems and others

High quality test modeling with TPT

Test cases are modeled graphically in a feature-rich environment. Features such as parallel and hierarchical test flow, conditional branching as well as support for continuous and discrete signals allow the efficient construction of complex test cases.

For the testing of complex systems TPT offers a powerful approach for systematic test-case-generation which guarantees easy interaction and readability even with a larger number of tests.

Test execution

Test execution with TPT is fully automatic in almost every test environment. The core of the execution is TPT's virtual machine (TPT-VM) which allows tests to execute in real-time, hence making it possible to have cycle times in the order of microseconds. The VM requires only a few kilobytes of memory so that it may also be used in environments with limited resources.

Integration into development environments

To integrate TPT in an existing test or development environment, it is sufficient to attach the TPT-VM. TPT handles this integration itself, the development project's toolset does not need to be extended or changed for TPT.

Test evaluation

The automatic test evaluation can be done online (i.e. during the test execution) or offline (at the end of the test execution). It can formulate complex quality criteria made up from powerful operations such as comparisons with reference data, signal filters, state sequences and timing conditions.

Test documentation

TPT produces a test report of the test execution which contains the most important information regarding the execution and results of the test case. The information in the report can be configured such that it remains a readable summary of the execution even for highly complex tests.

