Arttest

Mindmotiv
Innovations in Motion | Embedded Software

A New Solution for Cross-Level Functional Testing and Quality Assurance

The Arttest tool is used for functional testing of Simulink models as recommended by ISO 26262 and other IEC 61508 derivatives. In close cooperation with the Ford Research and Innovation Center Aachen, new future-oriented methods for testing Simulink models and signal evaluation were developed at RWTH Aachen University. Since 2018, the project has also been supported by a federal high-tech start-up grant, the EXIST Transfer of Research program.

Modern, Clean and Uncluttered User Interface
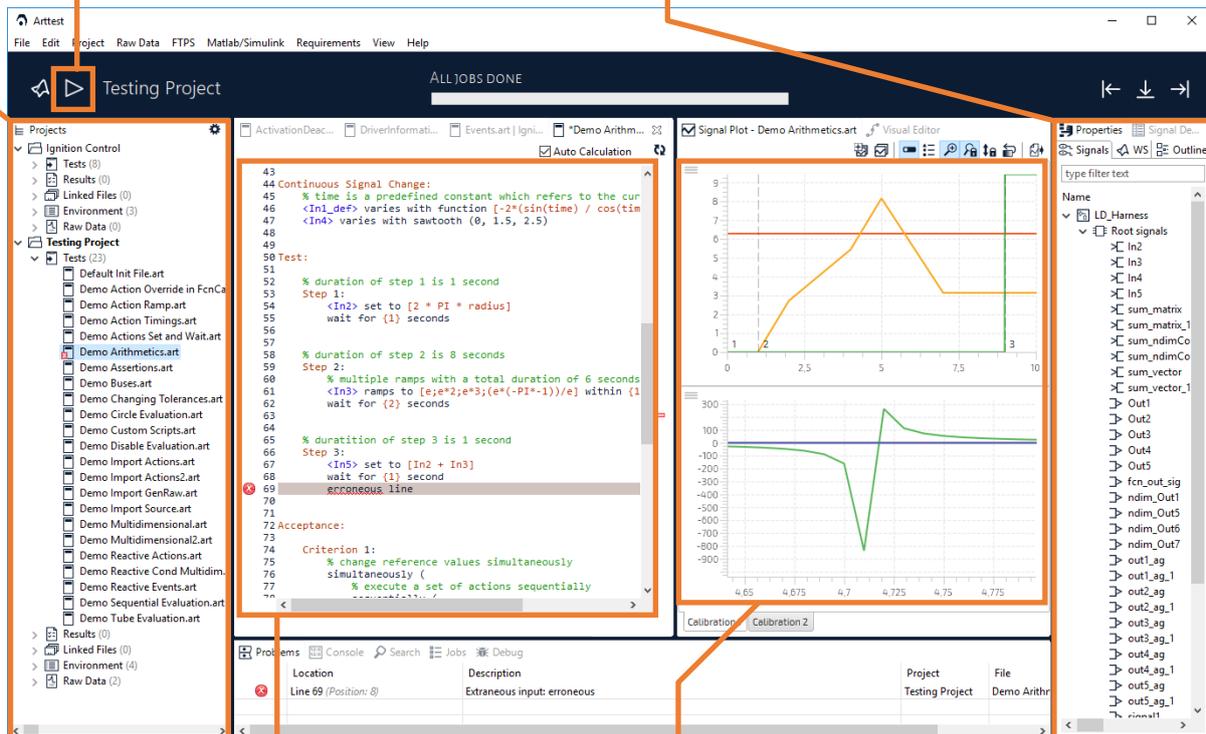
Clean Project Structure

- Easily handle all your test cases, results and artifacts
- Arttest integrates well to your file structure thanks to file linking

One-Click, Fully Automated Test Execution

- No overloaded toolbars
- Batch execution of multiple tests
- Schedulable test execution

Automated Model Analysis

- Once you import your Simulink models into Arttest, they are automatically analyzed. Within the test you can access all signals by their original identifier.
- Arttest automatically generates a test harness for the model to stimulate its input, read or override internal signals and capture the output. Time-consuming manual model adaptations as required by most tools are not necessary with Arttest.


Dedicated Test Specification Language

- The naturally readable test specification language allows a straightforward transformation of your requirements into test cases and test suites.
- Arttest's powerful editor allows for quick and convenient test definition and provides state-of-the-art features such as syntax coloring, content assist and auto-formatting.
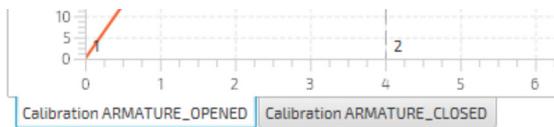
Live Signal Plot

- Arttest provides you with a live preview of the specified test and reference signals *as you type*. No simulation, execution or tedious calculation is necessary. Instead, every change of the test case is immediately applied to the plot.
- The view is highly configurable and allows grouping signals together, adjusting colors, zooming in on one axis, both axis or even synchronously in all plots. Image export is supported as well as markers and intelligent auto-grouping based on value ranges.
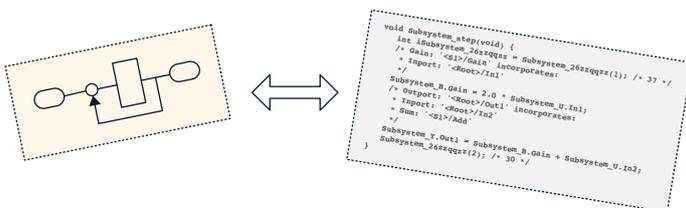
Powerful Evaluation Methods
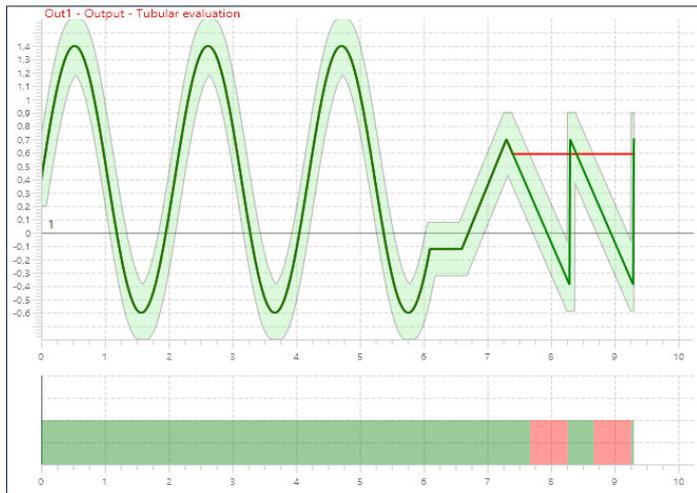
Arttest provides several fully automated evaluation methods. You can evaluate simulation outputs, internal signals captured during simulation, physically measured signals or imported raw data against reference signals or reference raw data. Tolerances are flexibly configurable and may vary over time or even conditionally.

Effective Closed-Loop Testing

Arttest is the first tool for effective closed-loop model testing of subsystems. It analyzes the entire model and lets you define a subsystem as the *model under test (MUT)* while treating the remainder as the *plant model*. Single test cases can record, define and even override the inputs and outputs of the MUT, leaving the remaining behavior to the plant model. Arttest simulates the entire model including plant and MUT, there is no need to copy the MUT out of its context to provide stimuli and capture outputs, which often causes a loss of information about data types, etc.
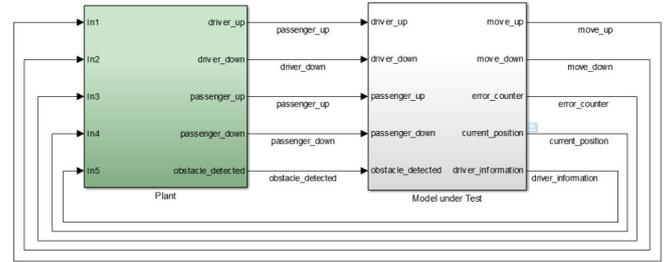
Multi-Calibration Support

A test suite often contains multiple test cases which are structurally and logically equivalent, except they assume different values for certain constants. Such a configuration of constant values is called a *calibration*. Within Arttest, you can define an arbitrary number of calibrations for a test and even use the same calibrations accross multiple tests.

Inspect and Override Internal Model Signals
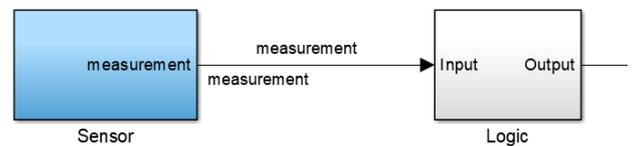

SIL and Back-to-Back Testing

You can execute all test cases in MIL or SIL mode. Back-to-back testing allows you to automatically compare the test results of both modes to each other, e.g., to unveil divergences in arithmetic semantics or rounding errors.

Training, Support and Custom Adaptations

Thanks to the excellent usability of Arttest, first productive results can be achieved within hours. We are happy to train your testing and development teams in using Arttest.

If you desire custom adaptations or extensions, e.g., for a proprietary requirements or raw data format, specialized tracing mechanisms or **test case execution on your HIL testbench**, do not hesitate to contact us.

We are happy to help you integrate Arttest into your workflow and customize it to your processes.

Contact our local distributor **Logic Technology B.V.** for more information - **info@logic.nl** - +31 77 3078438 - +49 89 2109 4779 - **www.logic.nl**