ANSYS® SCADE Test™ 17.0

ANSYS SCADE Test, a product line of the ANSYS embedded software family of products and solutions, provides test engineers with a complete testing environment for requirements validation, and test case creation and management. It allows automation of test case execution both on host and on target, measures coverage and manages test results for any SCADE application.
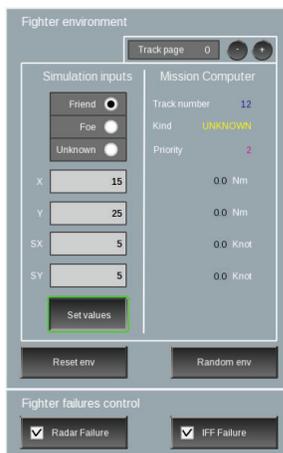
Test creation and maintenance, along with test execution and coverage analysis, are very time-consuming activities. Test engineers that use SCADE Test for verification and validation (V&V) activities now benefit from best-in-class technology in both a model-based approach and a cost-effective testing environment, whick allow them to significantly reduce testing efforts.

Requirements Validation and Test Creation
Requirements Validation

SCADE Test Rapid Prototyper enables you to create interactive panels using predefined widgets (buttons, sliders, etc.) to interact with the application under test. It empowers model simulation, including connections with ANSYS SCADE Suite®, ANSYS SCADE Display®, ANSYS® Simplorer®, and any other tools with easy-to-design interactive graphical panels. Early requirements validation capabilities include:

- Graphical panel design from a library of predefined widgets (controls and indicators) including next-generation human–machine interface (HMI) concepts such as gesture recognition and graphical animation.
- Interactive graphical panels for debug and simulation sessions
- Extensible library and customizable widgets
- Unified project structure across SCADE products for managing project files and resources
- Ease of resource table management (color, line/width stipple, texture, font, symbol, picture)
- Variables dictionary management
- Automatic generation of executable applications for Windows®/PC, Apple® iOS, or Android™ platforms at no runtime fee
- Integration with ANSYS SCADE Suite model-based development environment, ANSYS Simplorer, and other FMI-compliant tools
- FMU proxy generation for distributed/network simulation in FMI-compliant tools

Testing Environment for Host

ANSYS SCADE Test Environment for Host provides an interactive and a batch user interface for applications developed in SCADE Suite. From the interactive interface, test engineers can create and manage test data, set up and launch test execution, and finally, obtain summarized and detailed test execution reports.

For test creation, SCADE Test Environment for Host features:
• Interactive management of test data within Test Projects
• Interactive analysis of test results within Test Results Projects
• Readability of test cases for efficient reviews
• Tabular or textual format allowed
• Test case template generation and Microsoft® Excel® gateway
• Powerful checking capacity of expected results:
 • Invariant checking
 • Accuracy tolerance customization by data or group of data
• Test cases defined independently from model implementation
• Table of aliases to associate logical names to implementation names. The table is reusable for all test cases.
• Modularity allowing reuse and factorization (initialization sequence)
• Easy maintenance of test data

Delivered with SCADE Test Environment for Host, Rapid Prototyper provides requirements validation capabilities relying on interactive graphical panels.

Host Execution and Model Coverage
Test Execution on Host
ANSYS SCADE Test Environment for Host allows early testing at SCADE Suite or SCADE Display model level. Tests developed at model level can be automatically executed on host relying on C or Ada code. SCADE Test Environment for Host supports the verification of:
• Compliance to software high-level requirements
• Accuracy and consistency of the model
• Algorithm aspects

At test execution, SCADE Test Environment for Host automatically produces a test conformance report comparing actual results and expected results on host. This report includes a summary to quickly checking test status (passed or failed) along with further details to localize and understand issues.

SCADE Test Environment for Host is qualified as a verification tool under DO-178B and as DO-330 TQL-5 tool under DO-178C.

Model Coverage
ANSYS SCADE Test Model Coverage extends the development of SCADE Suite applications with the coverage measurement of models and of generated code relying on a high-level requirements-based test suite. Once test cases are created and executed on host, SCADE Test Environment for Host coupled with SCADE Test Model Coverage provides the capability to measure the model coverage of test cases.

Model-level coverage measures the following criteria:
• Decision structure:
 • Control flow, state machines, selection
 • Decision coverage (DC)
 • Modified condition/decision coverage (MC/DC)
• Control and data coupling coverage

Code-level coverage measures the following structural coverage criteria:
• Entry/exit points coverage
• Decision coverage
• Modified condition/decision coverage

SCADE Test Model Coverage is qualified as a verification tool under DO-178B and as DO-330 TQL-5 tool under DO-178C.

Target Execution

ANSYS SCADE Test Target Execution automates the generation of a target test harness for COTS tools (IBM Rational® Test RealTime, LDRA TestBed®, Vector Software VectorCAST™). It supports applications developed with SCADE Suite.

SCADE Test Target Execution translates model test cases into test harnesses. Harness generation is customizable for integration in any in-house or COTS target test infrastructure.

SCADE Test Target Execution is qualified as a verification tool under DO-178B and DO-330 TQL-5 tool under DO-178C.

Application Lifecycle Management

ANSYS SCADE Test includes application lifecycle management (ALM) capabilities:
• Connection to ALM tools through ANSYS SCADE LifeCycle ALM Gateway for requirements traceability from testing models
• Traceability link creation in SCADE Test Environment for host to perform traceability analysis in ALM tool environments
• Configuration management (CM) of test cases can be made with any CM tool.
• Test Data are read/write accessible from Product Lifecycle Management/ Application Lifecycle Management (PLM/ALM) tools through a Tcl and Java API

Minimal/Required System Configuration

OS Platforms	Microsoft® Windows 7 SP1 or Windows XP Professional SP3
CPU processor	1.5 GHz or faster
RAM	1 GB minimum (2 GB recommended)
Disk Space	1 GB minimum
Protocol	Network adapter and TCP/IP installed and configured for license management
Display	16-bit color, 1280x1024 screen resolution recommended

ANSYS SCADE Test Product Line

ANSYS SCADE Test Environment for Host
- Test Environment for Host
- Rapid Prototyper
- Application Lifecycle Management Gateway

ANSYS SCADE Test Target Execution
- Target Execution for RTRT
- Target Execution for LDRA
- Target Execution for VectorCAST
- Target Execution for Generic Target

ANSYS SCADE Test Model Coverage

Contact Information

Contact one of our sales representatives at
ansysinfo@ansys.com

Discover the latest news on our products and technology at
ansys.com/Products/Embedded-Software

ANSYS, Inc.
Southpointe
2600 ANSYS Drive
Canonsburg, PA 15317
U.S.A.
724.746.3304
ansysinfo@ansys.com

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