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Data Sheet CODESYS Test Manager

The CODESYS Test Manager enables the programming and execution of automated tests of applications and libraries developed with CODESYS (32/64 Bit).

The CODESYS Test Manager is part of the tool bundle CODESYS Professional Developer Edition.

Product description

The CODESYS Test Manager allows the programming and execution of automated tests, above all of applications and libraries developed with CODESYS. This applies both for 32- and 64-bit variants.

The CODESYS Test Manager is the central component for test automation and management and it serves most primarily for the test of applications and libraries.

The CODESYS Test Manager supports tests of the following objects * Application * IEC libraries * Communication

Der CODESYS Test Manager stellt die notwendige Funktionalität zur Verfügung, um automatisierte Testläufe über Befehle, die nach Befehlskategorien sortiert sind, durchzuführen. Ein konfigurierter Befehl heißt Testaktion. Testaktionen fügen sich zu einem Testfall zusammen. Testfälle lassen sich zu einem Testskript zusammenfassen. Die Testskripte werden im Test Repository verwaltet, ebenso wie die zugehörigen Testreports, die die Ergebnisse des Testlaufs enthalten.

The CODESYS Test Manager provides the necessary functionality to execute automated test runs via commands sorted by command categories. A configured command is called a test action. A test case consists of one or more test actions. A test script consists of one or more test cases. Test scripts and test reports are managed in the test repository. The same goes for test reports containing the results of the test run.
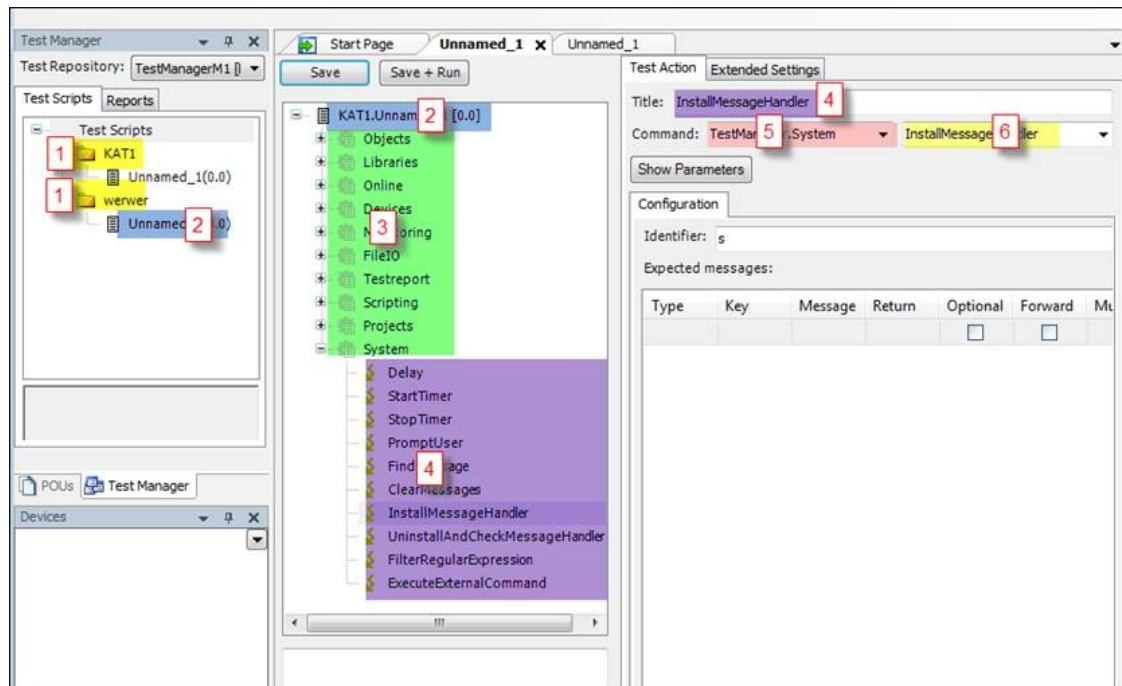
Top down development strategy of a test script

1. Define test repository
2. Create test script
3. Create test cases and/or program IEC unit tests
4. Define test actions for each test case
5. Execute test scripts and generate the test report
6. Save the test report to the test repository or export it as HTML report

Test cases can also be realized as IEC unit test. Then the test steps can be programmed in any IEC language, and they can be stored as CODESYS project. During test run this test project will be included by the CODESYS Test Manager. In case of IEC unit tests a further subdivision of a test case is not necessary.

Usage

In most cases test scripts are based on a CODESYS project which is adapted to the test object. During the test run this project is loaded and preparatory steps are executed (i.e. establishing the communication to the controller). The test object (i.e. an application) is changed step by step and its behavior is compared to the nominal behavior. The results are summarized in a test report. Before completing the test run the test environment must be brought to its end state. So, for instance the communication must be terminated. The generated report can be managed in the test repository afterwards.

Picture 1: Terminology: (1) Test category, (2) Test script, (3) Test case, (4) Test action, (5) Command category, (6) Command

The most important commands for the user

- Devices: Select gateway and controller
- Projects: Commands having impact on the complete project (load, close, save…)
- Online: Online commands (start, stop, reset….)
- Monitoring: Online access to variables (read/write/compare value)
- Test report: Issue of version information in test report

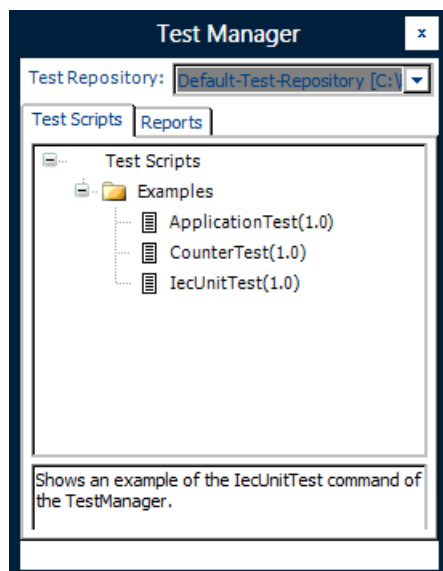## Default test repository at the first start of the CODESYS Test Manager

Open the CODESYS Test Manager

Tools ➔ Test Manager : Use this command to open the editor of the Test Manager. By default the *Test Manager* opens in the left part of the development system interface. It displays the directory structure of the recently opened test repository in a new tab. All scripts and reports of this test repository will be displayed.

Default test repository

After installation the default rest repository is set up with the first call of the CODESYS Test Manager. If it is missing or if its test scripts and projects are modified, you can use *Test Repository ➔ Edit Test Repository … ➔ Init default…*

Here you find test scripts taking account of different applications and demonstrating the procedure.

Picture 2: Examples

Examples

ApplicationTest: After the test project "Bspdt.projectarchive" has been loaded and the preparatory actions have been finished (test case Prepare) the application will be tested. It contains function blocks in SFC whose behavior will be checked. Then the test environment will be brought to an end state (test case Cleanup) .
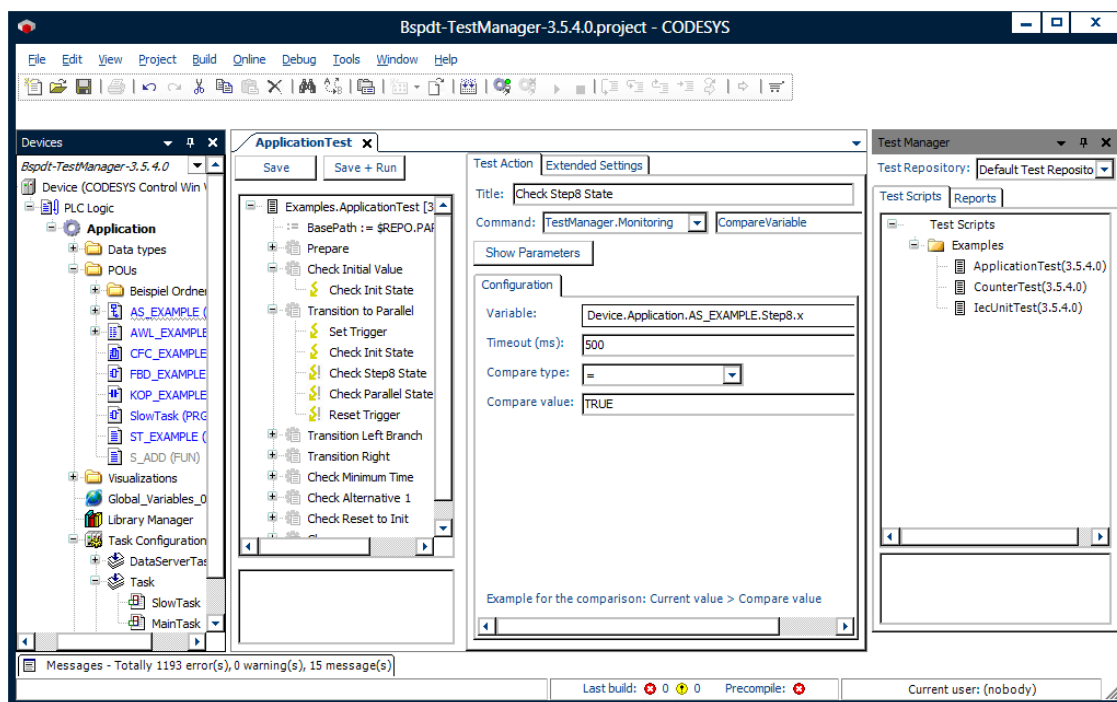
CounterTest: After the test project "CounterTest.project" has been loaded and the preparatory actions have been finished (test case Prepare) the counter used in the project will be tested. Then, by use of the test case Cleanup, the test environment will be brought to an end state.

IecUnitTest: After the test project "Example_IecUnitTest.project" has been loaded and the preparatory actions have been finished (test case Prepare) an IEC test will be started. This will cause first the generation of an application by use of pragmas. Afterwards this application will be started. As programmed in the test project the nominal values will be measured and recorded in the test report. Then the application and the communication will be stopped and the project will be closed.

Test report

After completion of the test, a test report will be created automatically with the following content: * When/who/what * Version information * Test result as an overview and in detail

The reporting will be done in XML format which can be used for an automatic analysis. Additionally the report can be exported as HTML.

Picture 3: Overview CODESYS Test Manager

Test of Project   Report of project   x

Overview

Date   19.11.2013 18:26
Script   Examples.Garagentest (0.0)
Tester   VMUserx64

Summary

Total test cases   5
Succeeded   3
Failed   2
Skipped   0
Execution time   00:00:18.9938190

Version information

Details

Examples.Garagentest [0.0] - **Succeeded**
1.   Prepare - **Succeeded**
    1.   Action: ResetDevice - **Succeeded**
    2.   Action: SetActiveApplication - **Succeeded**
    3.   Action: Login - **Succeeded**
2.   Alle Eingänge und Ausgänge auf FALSE - **Succeeded**
    1.   Action: Betaetigung auf False - **Succeeded**
    2.   Action: TorOben auf False - **Succeeded**
    3.   Action: TorUnten auf False - **Succeeded**
    4.   Action: TorRauf auf False - **Succeeded**
    5.   Action: TorRunter auf False - **Succeeded**
3.   Normalfall runter - **Failed**
    1.   Action: TorUnten rücksetzen - **Succeeded**
    2.   Action: TorOben rücksetzen - **Succeeded**
    3.   Action: Taste drücken - **Succeeded**
    4.   Action: TorRauf prüfen - **Succeeded**
    5.   Action: TorRunter prüfen - **Succeeded**
    6.   Action: Beleuchtung prüfen - **Succeeded**
    7.   Action: Taste loslassen - **Succeeded**
    8.   Action: TorUnten setzen - **Succeeded**
    9.   Action: TorRauf prüfen - **Succeeded**
    10.   Action: TorRunter prüfen - **Succeeded**
    11.   Action: Warten auf Licht aus - **Succeeded**
    12.   Action: Beleuchtung prüfen - **Failed**
      The values of Beleuchtung are not equal, the expected value is False, but the current value is True.

Save as HTM

Picture 4: Automatically generated test report

General information

Vendor:

CODESYS GmbH
Memminger Strasse 151
87439 Kempten
Germany

Support:

https://support.codesys.com

This product includes a CODESYS Support Ticket, i.e. 1 hour of support of CODESYS. More details can be found in the CODESYS Store product: CODESYS Support Ticket.

Item:
CODESYS Test Manager

Item number:
2101000003

Sales:

CODESYS Store
https://store.codesys.com

Included in delivery:
- CODESYS software and / or license key with billing information
- For training courses and events: Booking confirmation

System requirements and restrictions

Programming System	CODESYS Development System V3.5.16.0 or higher
Runtime System	CODESYS Control V3.5.5.0 or higher
Supported Platforms/ Devices	-
Additional Requirements	Subscription of the CODESYS Professional Developer Edition.
Restrictions	64 bit support with version 4.2.2.0 and higher
Licensing	The following licenses are available: • Demo license: Time limited usage • Subscription license: Time limited usage The following licensing options are supported: • Soft Key, with CODESYS Development System SP 13 (Workplace-bound licensing, free part of all CODESYS products) • Optional: CODESYS Key (Increased security against loss of license keys, transferable licensing to other workstations)
Required accessories	Optional: CODESYS Key

Detailed compatibility information

Version	Programming System Version
4.3.1.0	3.5.16.0 - newest
4.3.0.0	3.5.5.0 - newest
4.2.4.0	3.5.5.0 - newest
4.2.3.0	3.5.5.0 - newest
4.2.2.0	3.5.5.0 - newest
4.2.1.0	3.5.5.0 - newest
4.2.0.0	3.5.5.0 - newest
4.1.0.2	3.5.5.0 - newest

Note: Not all CODESYS features are available in all territories. For more information on geographic restrictions, please contact sales@codesys.com.

Note: Technical specifications are subject to change. Errors and omissions excepted. The content of the current online version of this document applies.