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STDINOUT Test Port for TTCN-3 Toolset with TITAN, User Guide

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# Introduction

## Revision history

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| --- | --- | --- | --- |
| Date | Rev | Characteristics | Prepared |
| 2009-04-20 | PA1 | Initial version | ETHEKR |

## About this Document

### How to Read this Document

This is the User Guide for the STDINOUT Test Port. The STDINOUT Test Port is developed for the TTCN-3 Toolset with TITAN [5]. This document is intended to be read together with Product Revision Information [2] and Functional Specification [3].

### Presumed Knowledge

The knowledge of the TITAN TTCN-3 Test Executor [5] and the TTCN-3 language [1] is essential.

### References

#### ETSI ES 201 873-1 v3.2.1 (02/2007) The Testing and Test Control Nota­tion version 3. Part 1: Core Language

#### 109 21-CNL 113 642-1 STDINOUT Test Port for TTCN-3 Toolset with TITAN, Product Revision Information

#### 155 17-CNL 113 642 STDINOUT Test Port for TTCN-3 Toolset with TITAN, Function Specification

#### 1/1531-CRL 113 200 Uen Installation Guide for TITAN TTCN-3 Test Executor

#### 1/19817-CRL 113 200 Uen User Guide for TITAN TTCN-3 Test Executor

### Abbreviations

SUT System Under Test

TP Test Port: Adaptation between TITAN TTCN-3 Test Ex­ecutor and SUT.

TTCN-3 Testing and Test Control Notation version 3

### Terminology

None.

## System Requirements

In order to operate the STDINOUT Test Port the following system requirements must be satisfied:

* TITAN TTCN-3 Test Executor R7A (1.7.pl0) or higher installed. For installation guide see [4]. Please note: This version of the Test Port is not compatible with TITAN releases earlier than R7A.
* Unix, Sun Solaris or Linux operating system.

## Fundamental Concepts

This Test Port handles connection between the TTCN-3 test executor and the operator.

# The Test Port

## Overview

The STDINOUT Test Port provides a simple interface between the TTCN-3 test suite and operator.

The operator can enter text in a terminal (stdin) and the test port transmits this text as a charstring to the TTCN-3 test suite.

The TTCN-3 test suite can send a charstring and the test port outputs this to the terminal (stdout).

## Installation

Since the STDINOUT Test Port is used as a part of the TTCN-3 test environment this requires TTCN-3 Test Executor to be installed before any operation of the STDINOUT Test Port. For more details on the installation of TTCN-3 Test Executor see the relevant section of [4].

### Preparation

The STDINOUT Test Port package contains the following files:  
  
STDINOUTmsg\_PT.cc  
STDINOUTmsg\_PT.hh

STDINOUTmsg\_PortType.ttcn

### Description of the files in the package

#### STDINOUTmsg\_PortType.ttcn

This contains the STDINOUT Test Port definition.

#### STDINOUTmsg\_PT.hh

This is the C++ header file of the STDINOUT Test Port

#### STDINOUTmsg\_PT.cc

This is the C++ source file of the STDINOUT Test Port

## Configuration

The executable test program behaviour is determined via the run-time configuration file. This is a simple text file, which contains various sections (e.g. [TESTPORT\_PARAMETERS]) after each other. The usual suffix of configuration files is .cfg. For further information about the configuration file see [5].

### Test Port parameters in the Test Port configuration file

No test port parameters are used for this Test Port.

## Test Port Operation

The STDINOUT Test Port has no ASPs. The Test Port can be used for sending and receiving TTCN-3 charstrings.   
The TTCN-3 “send” command followed by the necessary charstring in the TTCN-3 code will cause the text to be displayed at stdout (i.e.the terminal).  
The operator entered text at stdin (i.e. the terminal) is converted to TTCN-3 charstring by the test port when pressing “Enter”. The “receive” command in the TTCN-3 code has to be used for the TTCN-3 test suite to receive this charstring.

See the Examples section for example ways to use the STDINOUT Test Port in command line mode.

# Error messages

"Only one STDINOUT Test Port entity can be mapped on the same time"

The TTCN-3 map function can be used only once on a component for this test Port. If the map function is repeated then this error message is displayed.

# Examples

The demo directory includes the example TTCN-3 file STDINOUT\_Test.ttcn. This file includes a simple test which outputs “Hello, world!” and expects the user input of “Hello, TTCN-3!”. An example Makefile, stdinout.cfg file and ttcn3\_autostart.sh file is also included.

## Non-parallel Execution Mode

When the Makefile includes “TTCN3\_LIB = ttcn3”

then the user can run the example test in a single terminal:

ehubuux110> STDINOUT\_Test stdinout.cfg

TTCN-3 Test Executor (single mode), version 1.7.pl4

Using configuration file: `stdinout.cfg'

Execution of control part in module STDINOUT\_Test started.

Test case HelloW2 started.

Hello, world!

Hello, TTCN-3!

Test case HelloW2 finished. Verdict: pass

Execution of control part in module STDINOUT\_Test finished.

Verdict statistics: 0 none (0.00 %), 1 pass (100.00 %), 0 inconc (0.00 %), 0 fail (0.00 %), 0 error (0.00 %).

Test execution summary: 1 test case was executed. Overall verdict: pass

ehubuux110>

## Parallel Execution Mode

When the Makefile includes “TTCN3\_LIB = ttcn3-parallel” then the host controller terminal can be used for the input/output:

-- Main Controller Terminal --

ehubuux110> mctr\_cli stdinout.cfg

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* TTCN-3 Test Executor - Main Controller 2 \*

\* Version: 1.7.pl4 (R7E) \*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Using configuration file: stdinout.cfg

MC@ehubuux110: Listening on TCP port 56550.

MC2>

-- Host Controller Terminal --

ehubuux110> STDINOUT\_Test ehubuux110 56550

TTCN-3 Host Controller (parallel mode), version 1.7.pl4

-- Main Controller Terminal --

MC2> MC@ehubuux110: New HC connected from ehubuux110 [159.107.193.33]. ehubuux110: SunOS 5.8 on sun4u.  
MC2> cmtc  
MC@ehubuux110: Downloading configuration file to all HCs.  
MC@ehubuux110: Configuration file was processed on all HCs.  
MC@ehubuux110: Creating MTC on host ehubuux110.  
MC@ehubuux110: MTC is created.  
MC2> smtc  
Executing all items of [EXECUTE] section.  
MC2> MTC@ehubuux110: Execution of control part in module STDINOUT\_Test started.  
MTC@ehubuux110: Test case HelloW2 started.

-- Host Controller Terminal --  
  
Hello, world!  
Hello, TTCN-3!

-- Main Controller Terminal –  
  
MTC@ehubuux110: Test case HelloW2 finished. Verdict: pass  
MTC@ehubuux110: Execution of control part in module STDINOUT\_Test finished.  
MC@ehubuux110: Test execution finished.  
Execution of [EXECUTE] section finished.  
MC2> emtc  
MC@ehubuux110: Terminating MTC.  
MTC@ehubuux110: Verdict statistics: 0 none (0.00 %), 1 pass (100.00 %), 0 inconc (0.00 %), 0 fail (0.00 %), 0 error (0.00 %).  
MTC@ehubuux110: Test execution summary: 1 test case was executed. Overall verdict: pass  
MC@ehubuux110: MTC terminated.  
MC2> exit  
MC@ehubuux110: Shutting down session.  
MC@ehubuux110: Shutdown complete.

## Parallel Execution Mode with Autostart Script

When the Makefile includes “TTCN3\_LIB = ttcn3-parallel” then the example shell script ttcn3\_autostart.sh can also be used. This script needs the binary executable and the configuration file as parameters (NumHCs := 1 in the configuration file). For example it can be started as:

ttcn3\_autostart.sh STDINOUT\_Test stdinout.cfg

This script will open a new terminal which can be used for the input/output.