ISUP ITU-T Protocol Modules for TTCN-3 Toolset with TITAN, User Guide

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About This Document

How to Read This Document

This is the User Guide for the ISUP ITU-T protocol module. The ISUP ITU-T protocol module is developed for the TTCN-3 Toolset with TITAN. This document should be read together with Function Specification [3].

Presumed Knowledge

To use this protocol module the knowledge of the TTCN-3 language [1] and TITAN Test Executor [2] is essential.

System Requirements

Protocol modules are a set of TTCN-3 source code files that can be used as part of TTCN-3 test suites only. Hence, protocol modules alone do not put specific requirements on the system used. However, in order to compile and execute a TTCN-3 test suite using the set of protocol modules the following system requirements must be satisfied:

- TITAN TTCN-3 Test Executor R7A (1.7.pl0) or higher installed. For installation guide see [2].

| NOTE | This version of the protocol module is not compatible with TITAN releases earlier than R7A. |

Protocol Modules

Overview

Protocol modules implement the messages structure of the related protocol in a formalized way, using the standard specification language TTCN-3. This allows defining of test data (templates) in the TTCN-3 language [1] and correctly encoding/decoding messages when executing test suites using the Titan TTCN-3 test environment [2].

Protocol modules are using Titan's RAW encoding attributes [2] and hence is usable with the Titan test toolset only.

Installation

The set of protocol modules can be used in developing TTCN-3 test suites using any text editor. However, to make the work more efficient a TTCN-3-enabled text editor is recommended (e.g.`nedit`, `xemacs`). Since the ISUP ITU-T protocol is used as a part of a TTCN-3 test suite, this requires TTCN-3 Test Executor be installed before the module can be compiled and executed together with other

parts of the test suite. For more details on the installation of TTCN-3 Test Executor see the relevant section of [2].

Configuration

None.

Sending Order of Parameters

From R2A02 the parameters are in "set", and not in "set of". It has the consequence that the parameters will be sent out in fixed order (as defined in set). So the tester cannot modify the sending order of the parameters with modification of the field order in the template. There is a limited number of parameters, which can be multiple within a message (e.g.: Generic digits). If such a parameter is repeated in the message then they are sent out directly after each other.

Parameters in the received message can be in any order, but after decoding the tester will see the parameters in order as defined in TTCN protocol module.

If the order is important, then the previous version of this protocol module should be used.

Examples

The demo directory of the deliverable contains the following additional files:

Makefile
used for controlling the compiling procedure.

General_Types.ttcn
contains types which are used by several protocols. ISUP ITU-T imports information from this file.

ISUP_Mapping.ttcn
contains component definitions and encoding decoding function for ISUP ITU-T.

The following files are needed for the MTP3 test port:

MTP3asp_PT.cc
MTP3asp_PT.hh
MTP3asp_PortType.ttcn
MTP3asp_Types.ttcn
mphclib.h
libmphclib.a

Terminology

No specific terminology is used.

Abbreviations

TTCN-3

Testing and Test Control Notation version 3

References

[1] ETSI ES 201 873-1 v.2.2.1 (02/2003)
The Testing and Test Control Notation version 3. Part 1: Core Language

[2] User Documentation for the TITAN TTCN-3 Test Executor

[3] ISUP ITU-T Protocol Modules for TTCN-3 Toolset with TITAN, Function Specification