IUA Protocol Modules for TTCN-3 Toolset with TITAN, User Guide

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Version 198 17-CNL 113 439, Rev. B, 2006-12-20

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About This Document

How to Read This Document

This is the User Guide for the IUA protocol module. The IUA 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] is essential.

IUA is specified in the draft [4]. A Function Specification was not available.

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]. Please 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.

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

The table below contains the implemented messages and the corresponding TTCN-3 type records. Using those type records, templates can be defined to send and receive a given message.

Message name	**Reference**	**Corresponding type record in *IUA_Types.ttcn***
Establish Request	[4] 3.3.1.1	IUA_EST_REQ
Establish Confirm	[4] 3.3.1.1	IUA_EST_CFM
Establish Indication	[4] 3.3.1.1	IUA_EST_IND

Message name	Reference	Corresponding type record in *IUA_Types.ttcn*
Release Request	[4] 3.3.1.2	IUA_REL_REQ
Release Confirm	[4] 3.3.1.2	IUA_REL_CFM
Release Indication	[4] 3.3.1.2	IUA_REL_IND
Data Request	[4] 3.3.1.3	IUA_DATA_REQ
Data Indication	[4] 3.3.1.3	IUA_DATA_IND
Unit Data Request	[4] 3.3.1.4	IUA_uDATA_REQ
Unit Data Indication	[4] 3.3.1.4	IUA_uDATA_IND
ASP Up	[4] 3.3.2.1	IUA_ASPUP
ASP Up Ack	[4] 3.3.2.2	IUA_ASPUP_Ack
ASP Down	[4] 3.3.2.3	IUA_ASPDN
ASP Down Ack	[4] 3.3.2.4	IUA_ASPDN_Ack
ASP Active	[4] 3.3.2.5	IUA_ASPAC
ASP Active Ack	[4] 3.3.2.6	IUA_ASPAC_Ack
ASP Inactive	[4] 3.3.2.7	IUA_ASPIA
ASP Inactive Ack	[4] 3.3.2.8	IUA_ASPIA_Ack
Heartbeat	[4] 3.3.2.9	IUA_BEAT
Heartbeat Ack	[4] 3.3.2.10	IUA_BEAT_Ack
Error	[4] 3.3.3.1	IUA_ERR
Notify	[4] 3.3.3.2	IUA_NTFY
TEI Status Request	[4] 3.3.3.3	IUA_TEIs_REQ
TEI Status Confirm	[4] 3.3.3.3	IUA_TEIs_CFM
TEI Status Indication	[4] 3.3.3.3	IUA_TEIs_IND
TEI Query message	[4] 3.3.3.4	IUA_TEIq_REQ

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 (for example, `nedit`, `xemacs`). Since the IUA 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.

Example

There are no examples available for this protocol module.

Terminology

Application Server Process (ASP)

A process instance of an application Server. Examples of Application Server Processes are primary or backup MGC instances.

Abbreviations

ASP
: Application Server Process

ISDN
: Integrated Services Digital Network

IUA
: ISDN User Application Layer Protocol

MGC
: Media Gateway Controller

PDU
: Protocol Data Unit

TEI
: Terminal Endpoint Identifier

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] IUA Protocol Modules for TTCN-3 Toolset with TITAN, Function Specification

[4] draft-ietf-sigtran-rfc3057bis-02.txt
ISDN Q.921-User Adaptation Layer