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Approved ETH/RZDC (Árpád Szakács)	Checked ETHTCS	Date 2006-12-20	Rev B	Reference GASK2

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

Contents

1	Introduction.....	2
1.1	Revision history	2
1.2	About this Document	2
1.2.1	How to Read this Document.....	2
1.2.2	Presumed Knowledge	2
1.2.3	References	2
1.2.4	Abbreviations.....	3
1.2.5	Terminology	3
1.3	System Requirements	3
2	Protocol Modules.....	3
2.1	Overview	3
2.2	Installation	4
2.3	Configuration	4
3	Example	4

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1 Introduction

1.1 Revision history

Date	Rev	Characteristics	Prepared
2005-05-13	PA1	First draft version	ETHLAFA
2005-05-31	A	Updated after inspection	ETHLAFA
2006-12-20	PB1	Updated for TITAN R7	ETHBAAT

1.2 About this Document

1.2.1 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 Product Revision Information [3] and Function Specification [4].

1.2.2 Presumed Knowledge

To use this protocol module the knowledge of the TTCN-3 language [1] is essential.

IUA is specified in the draft [5]. A Function Specification was not available.

1.2.3 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] 1/1553-CRL 113 200 Uen
User Documentation for the TITAN TTCN-3 Test Executor
- [3] 109 21-CNL 113 439 –1 Uen
IUA Protocol Modules for TTCN-3 Toolset with TITAN, Product Revision Information
- [4] 155 17-CNL 113 439
IUA Protocol Modules for TTCN-3 Toolset with TITAN, Function Specification
- [5] [draft-ietf-sigtran-rfc3057bis-02.txt](#)
ISDN Q.921-User Adaptation Layer

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1.2.4 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

1.2.5 Terminology

1.2.5.1 Application Server Process (ASP)

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

1.3 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.

2 Protocol Modules

2.1 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.

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Message name	Reference	Corresponding type record in IUA_Types.ttcn
Establish Request	[5] 3.3.1.1	IUA_EST_REQ
Establish Confirm	[5] 3.3.1.1	IUA_EST_CFM
Establish Indication	[5] 3.3.1.1	IUA_EST_IND
Release Request	[5] 3.3.1.2	IUA_REL_REQ
Release Confirm	[5] 3.3.1.2	IUA_REL_CFM
Release Indication	[5] 3.3.1.2	IUA_REL_IND
Data Request	[5] 3.3.1.3	IUA_DATA_REQ
Data Indication	[5] 3.3.1.3	IUA_DATA_IND
Unit Data Request	[5] 3.3.1.4	IUA_uDATA_REQ
Unit Data Indication	[5] 3.3.1.4	IUA_uDATA_IND
ASP Up	[5] 3.3.2.1	IUA_ASPUP
ASP Up Ack	[5] 3.3.2.2	IUA_ASPUP_Ack
ASP Down	[5] 3.3.2.3	IUA_ASPDN
ASP Down Ack	[5] 3.3.2.4	IUA_ASPDN_Ack
ASP Active	[5] 3.3.2.5	IUA_ASPAC
ASP Active Ack	[5] 3.3.2.6	IUA_ASPAC_Ack
ASP Inactive	[5] 3.3.2.7	IUA_ASPIA
ASP Inactive Ack	[5] 3.3.2.8	IUA_ASPIA_Ack
Heartbeat	[5] 3.3.2.9	IUA_BEAT
Heartbeat Ack	[5] 3.3.2.10	IUA_BEAT_Ack
Error	[5] 3.3.3.1	IUA_ERR
Notify	[5] 3.3.3.2	IUA_NTFY
TEI Status Request	[5] 3.3.3.3	IUA_TEIs_REQ
TEI Status Confirm	[5] 3.3.3.3	IUA_TEIs_CFM
TEI Status Indication	[5] 3.3.3.3	IUA_TEIs_IND
TEI Query message	[5] 3.3.3.4	IUA_TEIq_REQ

2.2 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 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].

2.3 Configuration

None.

3 Example

There are no examples available for this protocol module.