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

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# Introduction

## Revision history

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Rev | Characteristics | Prepared |
| 2005-11-11 | PA1 | First draft version | ETHLAFA |
| 2005-11-14 | PA2 | Updated after inspection | ETHLAFA |
| 2007-01-10 | PB1 | Updated for TITAN R7 | ETHBAAT |
|  |  |  |  |

## About this Document

### How to Read this Document

This is the User Guide for the SUA protocol module. The SUA 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].

### Presumed Knowledge

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

SUA is specified in the Request for Comments 3868 [5].   
A Function Specification was not available.

### References

[1] ETSI ES 201 873-1 v.3.1.1 (06/2005)  
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 113 478 –2 Uen  
SUA Protocol Modules for TTCN-3 Toolset with TITAN, Product Revision Information

[4] 155 17-CNL 113 478  
SUA Protocol Modules for TTCN-3 Toolset with TITAN, Function Specification

[5] <http://www.apps.ietf.org/rfc/rfc3868.html>  
Signalling Connection Control Part User Adaptation Layer (SUA)

### Abbreviations

ASP Application Server Process

HLR Home Location Register

IP Internet Protocol

MGC Media Gateway Controller

SUA Signalling Connection Control Part User Adaptation Layer

SCP Service Control Point

TTCN-3 Testing and Test Control Notation version 3

### Terminology

#### Application Server Process (ASP)

An Application Server Process serves as an active or backup process of an Application Server (e.g., part of a distributed signalling node or database element). Examples of Application Server Processes are MGCs, IP SCPs, or IP-based HLRs.

## 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 message structures of the related protocol in a formalized way, using the standard specification language TTCN-3. This allows definition of test data (templates) in TTCN-3 language [1] and correct encoding/decoding of 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 **SUA\_Types.ttcn** |
| Connectionless Data Transfer | [5] 3.2.1 | SUA\_CLDT |
| Connectionless Data Response | [5] 3.2.2 | SUA\_CLDR |
| Connection Oriented Data Transfer | [5] 3.3.1 | SUA\_CODT |
| Connection Oriented Data Acknowledge | [5] 3.3.2 | SUA\_CODA |
| Connection Request | [5] 3.3.3 | SUA\_CORE |
| Connection Acknowledge | [5] 3.3.4 | SUA\_COAK |
| Connection Refused | [5] 3.3.5 | SUA\_COREF |
| Release Request | [5] 3.3.6 | SUA\_RELRE |
| Release Complete | [5] 3.3.7 | SUA\_RELCO |
| Reset Request | [5] 3.3.8 | SUA\_RESRE |
| Reset Confirm | [5] 3.3.9 | SUA\_RESCO |
| Connection Oriented Error | [5] 3.3.10 | SUA\_COERR |
| Connection Oriented Inactivity Test | [5] 3.3.11 | SUA\_COIT |
| Destination Unavailable | [5] 3.4.1 | SUA\_DUNA |
| Destination Available | [5] 3.4.2 | SUA\_DAVA |
| Destination State Audit | [5] 3.4.3 | SUA\_DAUD |
| Signalling Congestion | [5] 3.4.4 | SUA\_SCON |
| Destination User Part Unavailable | [5] 3.4.5 | SUA\_DUPU |
| Destination Restricted | [5] 3.4.6 | SUA\_DRST |
| ASP Up | [5] 3.5.1 | SUA\_ASPUP |
| ASP Up Ack | [5] 3.5.2 | SUA\_ASPUP\_Ack |
| ASP Down | [5] 3.5.3 | SUA\_ASPDN |
| ASP Down Ack | [5] 3.5.4. | SUA\_ASPDN\_Ack |
| Heartbeat | [5] 3.5.5 | SUA\_BEAT |
| Heartbeat Ack | [5] 3.5.6 | SUA\_BEAT\_Ack |
| ASP Active | [5] 3.6.1 | SUA\_ASPAC |
| ASP Active Ack | [5] 3.6.2 | SUA\_ASPAC\_Ack |
| ASP Inactive | [5] 3.6.3 | SUA\_ASPIA |
| ASP Inactive Ack | [5] 3.6.4 | SUA\_ASPIA\_Ack |
| Error | [5] 3.7.1 | SUA\_ERR |
| Notify | [5] 3.7.2 | SUA\_NTFY |
| Registration Request | [5] 3.8.1 | SUA\_REGREQ |
| Registration Response | [5] 3.8.2 | SUA\_REGRSP |
| Deregistration Request | [5] 3.8.3 | SUA\_DEREGREQ |
| Deregistration Response | [5] 3.8.4 | SUA\_DEREGRSP |

## Installation

The set of protocol modules can be used for 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 SUA 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.