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M2PA Protocol Modules for TTCN-3 Toolset with TITAN User Guide

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# Introduction

## Revision History

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| --- | --- | --- | --- |
| Date | Rev | Characteristics | Prepared |
| 2007-11-07 | PA1 | First draft version | ETHGBH |
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## 

## About this Document

### How to read this document

This is the User Guide for the M2PA protocol module. The M2PA protocol module is developed for the TTCN-3 Toolset with TITAN. This document should be read together with the Product Revision Information [3], and Function Specification [4].

### Presumed Knowledge

To use this protocol module, the knowledge of the TTCN-3 language [5] is essential.

### References

1. 1/1531-CRL 113 200 Uen   
   Installation Guide for the TITAN TTCN-3 Test Executor
2. 2/198 17-CRL 113 200 Uen  
   Programmer’s Technical Reference for the TITAN TTCN-3 Test Executor
3. 109 21-CNL 113 558-1 Uen  
   M2PA Protocol Modules for TTCN-3 Toolset with TITAN, Product Revision Information
4. 155 17- CNL 113 558 Uen  
   M2PA Protocol Modules for TTCN-3 Toolset with TITAN,, Function Specification
5. ETSI ES 201 873-1 v.3.2.1 (02/2007)  
   The Testing and Test Control Notation version 3. Part 1: Core Language
6. IETF RFC 4165  
   Signaling System 7 (SS7) Message Transfer Part 2 (MTP2) - User   
   Peer-to-Peer Adaptation Layer (M2PA)

### Abbreviations

IETF Internet Engineering Task Force

MTP2 Message Transfer Part 2

M2PA MTP2 User Peer-to-Peer Adaptation Layer

RFC Request for Comments

TTCN-3 Testing and Test Control Notation version 3

### Terminology

TITAN TTCN-3 Test Executor

## System Requirements

Protocol modules are a set of TTCN-3 source code files that can be used as a 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 1.7.pl0 or higher installed. For installation guide see [1].

# Protocol Modules

## Overview

Protocol modules implement the message structure of the corresponding protocol in a formalized way, using the standard specification language TTCN-3. This allows defining of test data (templates) in the TTCN-3 language [5] 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 M2PA messages and the corresponding TTCN-3 type records. Using these type records, templates can be defined to send and receive a given message.

|  |  |  |
| --- | --- | --- |
| Message name | Reference | Corresponding type record in M2PA\_Types.ttcn |
| User Data | [6] 2.3.1 | M2PA\_DATA |
| Link Status | [6] 2.3.2 | M2PA\_LINK\_STATUS |

## Installation

The set of protocol modules can be used in developing TTCN-3 test suites using any text editor. However to make work more efficient a TTCN-3 enabled text editor is recommended (e.g. nedit, xemacs). Since the M2PA protocol is used as a part of a TTCN-3 test suite, this requires TTCN-3 Test Executor and a C compiler 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 parts of [1].

## Encoding Decoding and Other Related Functions

For encoding and decoding the messages two functions are available.

* Function **enc\_PDU\_M2PA** makes simple RAW encoding without any modification on the input M2PA message.
* Function **dec\_PDU\_M2PA** makes simple RAW decoding without any modification on the input octetstring.