

# SMTP Protocol Modules for TTCN-3 Toolset with TITAN, Function Specification

János Kövesdi

Version 155 17-CNL 113 598, Rev. A, 2013-09-06

# Table of Contents

How to Read This Document .....	1
Scope .....	1
General .....	1
Functional Specification .....	1
Protocol Version Implemented .....	1
Modifications/Deviations Related to the Protocol Specification .....	1
Implemented Messages .....	1
Protocol Modifications/Deviations .....	2
Encoding/Decoding Functions .....	2
Terminology .....	2
Abbreviations .....	2
References .....	2

# How to Read This Document

This is the Function Specification for the SMTP protocol module. SMTP protocol module is developed for the TTCN-3 Toolset with TITAN.

## Scope

The purpose of this document is to specify the content of the SMTP protocol modules.

## General

Protocol modules implement the message structures 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 [\[3\]](#) and correctly encoding/decoding messages when executing test suites using the Titan TTCN-3 test environment.

Protocol module is using Titan's TEXT encoding attributes [\[4\]](#) and hence is usable with the Titan test toolset only.

## Functional Specification

### Protocol Version Implemented

This set of protocol modules implements protocol messages and constants of the SMTP protocol (see [\[1\]](#)) and the ARPA Internet Text Messages (see [\[2\]](#)) with the modifications specified in [Modifications/Deviations Related to the Protocol Specification](#).

## Modifications/Deviations Related to the Protocol Specification

### Implemented Messages

All of the SMTP commands, replies and message headers defined in [\[1\]](#) are implemented.

Only the following message header fields implemented from [\[2\]](#):

- **Date**
- **From**
- **To**
- **Cc**
- **Bcc**

- **Sender**
- **Subject**

Any other header fields are treated as **Unknown\_Header**.

## Protocol Modifications/Deviations

The type structure has been based on [2] and [1], but the protocol module is able to handle the messages which are coded according to the newest version of the standards. See [5] and [6].

## Encoding/Decoding Functions

This product also contains encoding/decoding functions which assure correct encoding of messages when sent from Titan and correct decoding of messages when received by Titan. Implemented encoding/decoding functions:

Name	Type of formal parameters	Type of return value
<b>enc_SMTP_PDU</b>	(in SMTP_PDU pdu)	return charstring
<b>dec_SMTP_PDU</b>	(in charstring stream)	return SMTP_PDU
<b>enc_Mail_PDU</b>	(in Mail_PDU pdu)	return charstring
<b>dec_Mail_PDU</b>	(in charstring stream)	return Mail_PDU
<b>enc_Mail_PDU_utf8</b>	(in Mail_PDU_utf8 pdu)	return octetstring
<b>dec_Mail_PDU_utf8</b>	(in octetstring stream)	return Mail_PDU_utf8

## Terminology

No specific terminology is used.

## Abbreviations

### SMTP

Simple Mail Transfer Protocol

### TTCN-3

Testing and Test Control Notation version 3

## References

[1] [RFC 821](#)

Simple Mail Transfer Protocol

[2] [RFC 822](#)

Standard for the Format of ARPA Internet Text Messages

[3] ETSI ES 201 873-1 v.2.2.1 (02/2003)

The Testing and Test Control Notation version 3. Part 1: Core Language

[4] User Guide for TITAN TTCN-3 Test Executor

[5] [RFC 2821](#)

Simple Mail Transfer Protocol

[6] [RFC 2822](#)

Internet Message Format