

SMPP protocol module for TTCN-3 Toolset with TITAN, Function Description

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Functionality

The SMPP protocol module provides type definitions, encoder, and decoder functions to handle SMPP messages defined by the standard [2].

Implemented Protocols

The SMPP protocol module implements the messages, and information elements defined in Short Message Peer to Peer Protocol Specification v5.0, Document Issue 1.2 [2].

Supported SMPP Messages

The test port supports sending and reception of the following SMPP PDUs as defined in [2].

- BIND_TRANSMITTER
- BIND_TRANSMITTER_RESP
- BIND_RECEIVER
- BIND_RECEIVER_RESP
- BIND_TRANSCEIVER
- BIND_TRANSCEIVER_RESP
- OUTBIND
- UNBIND
- UNBIND_RESP
- SUBMIT_SM
- SUBMIT_SM_RESP
- SUBMIT_MULTI
- SUBMIT_MULTI_RESP
- DELIVER_SM
- DELIVER_SM_RESP
- ENQUIRE_LINK
- ENQUIRE_LINK_RESP
- CANCEL_SM
- CANCEL_SM_RESP
- REPLACE_SM
- REPLACE_SM_RESP
- GENERICK_NACK

Other SMPP PDUs are accepted on reception, but only the protocol header is decoded.

PDU encoding/decoding is based on RAW attributes [3].

System Requirements

In order to operate the SMPP test port the following system requirements must be satisfied:

- TITAN TTCN-3 Test Executor version R8B (1.8.pl1) or higher installed. Please note: This version of the test port is not compatible with TITAN releases earlier than R8B.

Installation

Since the SMPP test port is used as a part of the TTCN-3 test environment this requires TTCN-3 Test Executor to be installed before any operation of the SMPP test port. For more details on the installation of TTCN-3 Test Executor see the relevant section of [\[3\]](#).

Encoder/Decoder Functions

The SMPP protocol module declares the following encoder, and decoder functions:

```
external function f_decode_SMPP(in octetstring data, out SMPP_PDU pdu) return integer
with { extension "prototype(backtrack)" }
```

```
external function f_encode_SMPP(in SMPP_PDU pdu, out octetstring data) with {
extension "prototype(fast)" }
```

Message Length Calculation Function

The following function can be used to calculate the length of the received message. The function returns the length of the received message in octets or `-1` if the length can not be calculated.

```
external function f_msg_length(in octetstring data) return integer
```

References

[1] ETSI ES 201 873-1 v4.5.1

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

[2] Short Message Peer to Peer Protocol Specification v5.0, Document Issue 1.2, SMPP Developers Forum

[3] Programmer's Technical Reference for TITAN TTCN-3 Test Executor