

# BSSMAP (11.2.0) Protocol Modules for TTCN-3 Toolset with TITAN, Function Specification

Endre Kulcsár

Version 155 17-CNL 113 761, Rev. A, 2012-12-12

# 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 .....	1
Encoding/Decoding and Other Related Functions .....	2
Limitations .....	2
Terminology .....	2
Abbreviations .....	2
References .....	3

# How to Read This Document

This is the Function Specification for the set of BSSMAP (v11.2.0) protocol modules. BSSMAP protocol modules are developed for the TTCN-3 Toolset with TITAN.

## Scope

The purpose of this document is to specify the content of the BSSMAP (V11.2.0) 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 [2] 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 [3] and hence are usable with the TITAN test toolset only.

## Functional Specification

### Protocol Version Implemented

This set of protocol modules implements protocol messages and constants of the BSSMAP protocol, version 11.2.0 (see [1]).

### Modifications/Deviations Related to the Protocol Specification

#### Implemented Messages

All BSSMAP messages listed in section 3.2 of [1] are implemented, except for the ones listed in [Protocol Modifications/Deviations](#)

#### Protocol Modifications/Deviations

The following messages are not implemented:

- EMERGENCY RESET INDICATION
- EMERGENCY RESET COMMAND

Message type definitions for these messages are missing from [\[1\]](#).

# Encoding/Decoding and Other Related Functions

This product also contains encoding/decoding functions that 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
<code>enc_PDU_BSSAP</code>	PDU_BSSAP	octetstring
<code>dec_PDU_BSSAP</code>	octetstring	PDU_BSSAP
<code>enc_PDU_BSSAP_fast</code>	PDU_BSSAP	octetstring
<code>dec_PDU_BSSAP_backtrack</code>	octetstring	PDU_BSSAP

## Limitations

Debug log generation is not supported when this revision of this product is used with TITAN version R7A (1.7pl0), because the encoder/decoder functions, automatically generated by TITAN version R7A (1.7pl0) do not contain logging functions. Newer versions of TITAN supports the debug logging within the automatically generated encoder/decoder functions that can be activated by allowing the `DEBUG_ENCDEC` (see Programmer's Technical Reference for TITAN TTCN-3 Test Executor, clause 6.2.3.2) in TITAN runtime configuration files.

## Terminology

TITAN TTCN-3 Test Executor (see [\[3\]](#)).

## Abbreviations

### **3GPP**

3rd Generation Partnership Project

### **BSSAP**

Base Station Subsystem Application Part

### **BSSMAP**

Base Station Subsystem Management Application Part

### **TTCN-3**

Testing and Test Control Notation version 3

# References

[1] 3GPP TS 48.008 V11.2.0 (2012-05)

3rd Generation Partnership Project;

Technical Specification Group GSM/EDGE Radio Access Network;

Mobile Switching Centre - Base Station System(MSC-BSS) interface;

Layer 3 specification(Release 11)

[2] ETSI ES 201 873-1 v4.4.1 (2012-04)

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

[3] TITAN User Guide