NS (V7.3.0) Protocol Modules for TTCN-3 Toolset with TITAN, Function Specification

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# Introduction

## Revision history

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| --- | --- | --- | --- |
| Date | Rev | Characteristics | Prepared |
| 2008-01-22 | PA1 | First draft version | ETHEKR |
| 2008-01-23 | PA2 | Upated after inspection | ETHEKR |
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## How to Read this Document

This is the Function Specification for the set of NS v7.3.0 protocol modules. NS v7.3.0 protocol modules are developed for the TTCN-3 Toolset with TITAN. This document should be read together with Product Revision Information ‎[3].

## Scope

The purpose of this document is to specify the content of the NS v7.3.0 protocol modules. Basic knowledge of TTCN-3 ‎[2] and TITAN TTCN-3 Test Executor ‎[4] is valuable when reading this document.

## References

1. 3GPP TS 48.016 V7.3.0 (2006-12)  
    3rd Generation Partnership Project; Technical Specification Group GSM EDGE Radio Access Network; General Packet Radio Service (GPRS); Base Station System (BSS) - Serving GPRS Support Node (SGSN) interface; Network Service (Release 7)
2. ETSI ES 201 873-1 v.3.2.1 (2007-02)  
   The Testing and Test Control Notation version 3. Part 1: Core Language
3. 109 21-CNL 113 578-1 Uen  
   NS (V7.3.0) Protocol Modules for TTCN-3 Toolset with TITAN, Product Revision Information
4. 1/198 17-CRL 113 200/3 Uen  
   User Guide for the TITAN TTCN-3 Test Executor
5. 2/198 17-CRL 113 200/3 Uen  
   Programmer’s Technical Reference for the TITAN TTCN-3 Test Executor

## Abbreviations

GPRS General Packet Radio Service

NS Network Service

TTCN-3 Testing and Test Control Notation version 3

## Terminology

TITAN TTCN-3 Test Executor (see ‎[4]).

# 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 ‎[4].

Protocol modules are using Titan’s RAW encoding attributes ‎[5] 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 NS protocol. The modules are based on 48.016 V7.3.0 (see ‎[1]) with the modifications specified in 3.1.1 and 3.1.2.

### Unimplemented Messages, Information Elements and Constants

None.

### Protocol Modifications/Deviations

None.

## Encoding/Decoding and Other Related Functions

This product also contains encoding/decoding functions, which assure correct RAW encoding of messages when sent from Titan and correct RAW decoding of messages when received by Titan. Implemented encoding/decoding functions:  
Name Type of formal parameters Type of return value  
enc\_PDU\_NS PDU\_NS octetstring

dec\_PDU\_NS octetstring PDU\_NS