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# Introduction

## Revision history

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| --- | --- | --- | --- |
| Date | Rev | Characteristics | Prepared |
| 2013-04-10 | PA1 | First draft version | ETHLEL |
| 2013-08-08 | PB1 | Editorial changes | ETHLEL |
|  |  |  |  |

## How to Read this Document

This is the Function Specification for the set of NTAF protocol modules. NTAF protocol modules are developed for the TTCN-3 Toolset with TITAN. This document should be read together with Product Revision Information [2].

## Scope

The purpose of this document is to specify the content of the NTAF protocol modules. Basic knowledge of TTCN-3 [1] and TITAN TTCN-3 Test Executor [3] is valuable when reading this document.

## References

1. ETSI ES 201 873-1 V.4.4.1 (2012-04) The Testing and Test Control Notation version 3 Part 1: Core Language
2. 109 21-CNL 113 776-2 Uen NTAF Protocol Modules for TTCN-3 Toolset with TITAN, Product Revision Information
3. 1/198 17-CRL 113 200/3 Uen - User Guide for TITAN TTCN–3 Test Executor
4. The XMPP Standards Foundation   
    [xmpp.org](http://xmpp.org)
5. The Network Test Automation Forum   
    <http://www.ntaforum.org/>

## Abbreviations

TTCN-3 Testing and Test Control Notation version 3

XMPP Extensible Messaging and Presence Protocol

NTAF Network Test Automation Forum

## Terminology

No specific terminology is used.

# General

Protocol modules implement the message structures of the related protocol in a formalized way, using the standard specification language TTCN-3 [1]. 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 [3].  
The protocol module is using encoding attributes 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 NTAF protocol as described in the NTAF documents TS-001(Tool registration, Discovery and Activation) and TS-002(Tool Automation Harness).

### Protocol Modifications/Deviations

None.

## Encoding/Decoding and Other Related Functions

The XML encoding/decoding functions which assure correct encoding of messages when sent and correct decoding of messages when received are automatically generated by Titan based on encoding instructions associated with the protocol modules.