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Approved	Checked	Date	Rev	Reference	
ETH/RZDC (Árpád Szakács)	ETHGRY	2006-11-14	Α	GASK2	

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

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1 Introduction

1.1 Revision history

Date	Rev	Characteristics	Prepared
2006-09-22	PA1	First draft version	ETHESI
2006-11-14	Α	Approved after review	ETHESI

1.2 How to Read this Document

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

1.3 Scope

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

1.4 References

- [1] RFC 3095
 RObust Header Compression (ROHC): Framework and four profiles: RTP, UDP, ESP, and uncompressed
- [2] ETSI ES 201 873-1 v.3.1.1 (2005-06)
 The Testing and Test Control Notation version 3. Part 1: Core Language
- [3] 109 21-CNL113 426-1 ROHC Protocol Modules for TTCN-3 Toolset with TITAN, Product Revision Information
- [4] 1/1553-CRL 113 200 Uen
 User Documentation for the TITAN TTCN-3 Test Executor
- [5] RFC 3843 RObust Header Compression (ROHC): A Compression Profile for IP

1.5 Abbreviations

ESP	Encapsulating Security Payload
IP	Internet Protocol
RFC	Request For Comments
ROHC	RObust Header Compression
RTP	Real-time Transport Protocol



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TTCN-3 Testing and Test Control Notation version 3

UDP User Datagram Protocol

1.6 Terminology

No specific terminology is used.

2 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 [4] and hence is usable with the TITAN test toolset only.

3 Functional specification

3.1 Protocol version implemented

This set of protocol modules implements protocol messages and constants of the ROHC framework (see [1]) and the following profiles:

- Uncompressed profile: 0x0000 (see [1])
- IP/UDP/RTP profile: 0x0001 (see [1])
- IP/UDP profile: 0x0002 (see [1])
- IP only profile: 0x0004 (see [5])

with the modifications specified in 3.2.

3.2 Modifications/deviations related to the protocol specification

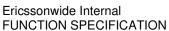
3.2.1 Unimplemented Messages

The following messages are not implemented from [1]:

• the ESP NULL tail in ROHC messages is not supported. It is part of the payload.

3.2.2 Protocol Modifications/Deviations

None.



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3.3 Encoding/Decoding and Other Related 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 f_ROHC_enc (ROHC_packet_u, ROHC_config) returns octetstring

f_ROHC_dec (octetstring, inout ROHC_config) returns ROHC_packet_u

f_FBCK_enc (Feedback_data, ROHC_config) returns octetstring

f FBCK dec (octetstring, ROHC config) returns Feedback data

The product also provides supporting functions to the user via the following functions:

<u>Name</u> <u>Type of formal parameters</u> <u>Type of return value</u> f_ROHC_CRC (octetstring, integer) returns integer