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| Approved ETH/RZDC (Árpád Szakács) | Checked ETHGRY | Date 2006-11-14 | Rev A | Reference 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 | A | 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:

| <u>Name</u> | <u>Type of formal parameters</u> | <u>Type of return value</u> |
|-------------|----------------------------------|-----------------------------|
| 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 |