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Core Network and Interoperability Testing (INT); Diameter Conformance testing for Sh/Dh interfaces; (3GPP™ Release 13); Part 3: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) pro forma specification

Reference

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Keywords

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ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Core Network and Interoperability Testing (INT).

The present document is part 3 of a multi-part deliverable. Full details of the entire series can be found in part 1 [3].

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

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1 Scope

The present document specifies the Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) pro forma for the test specifications for Diameter protocol on the Sh/Dh interfaces as specified in ETSI TS 129 328 [1] and ETSI TS 129 329 [2] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [7] and ETSI ETS 300 406 [8].

The test notation used in the ATS is TTCN-3 (see ETSI ES 201 873-1 [9]).

The following test specification and design considerations can be found in the body of the present document:

- the overall test suite structure;
- the testing architecture;
- the test methods and port definitions;
- the test configurations;
- TTCN styles and conventions;
- the partial PIXIT pro forma;
- the modules containing the TTCN-3 ATS.

Annex A provides the Partial Implementation Extra Information for Testing (PIXIT) Pro forma.

Annex B provides the Abstract Test Suite (ATS) part of the ATS.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at https://docbox.etsi.org/Reference/.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

[1] ETSI TS 129 328 (V13.10.0): "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; IP Multimedia (IM) Subsystem Sh interface; Signalling flows and message contents (3GPP TS 29.328 version 13.10.0 Release 13)".

[2] ETSI TS 129 329 (V13.1.0): "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; Sh interface based on the Diameter protocol; Protocol details (3GPP TS 29.329 version 13.1.0 Release 13)".

[3] ETSI TS 103 571-1: "Core Network and Interoperability Testing (INT); Diameter Conformance testing for Sh/Dh interfaces; (3GPP™ Release 13); Part 1: Protocol Implementation Conformance Statement (PICS)".

[4] ETSI TS 103 571-2: "Core Network and Interoperability Testing (INT); Diameter Conformance testing for Sh/Dh interfaces; (3GPP™ Release 13); Part 2: Test Suite Structure (TSS) and Test Purposes (TP)".

[5] ISO/IEC 9646-1: "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 1: General concepts".

[6] ISO/IEC 9646-6: "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 6: Protocol profile test specification".

[7] ISO/IEC 9646-7: "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 7: Implementation Conformance Statements".

[8] ETSI ETS 300 406: "Methods for testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

[9] ETSI ES 201 873-1: "Methods for Testing and Specification (MTS); The Testing and Test Control Notation version 3; Part 1: TTCN-3 Core Language".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

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The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

Not applicable.

3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in ISO/IEC 9646-7 [7], ETSI TS 129 328 [1] and ETSI TS 129 329 [2] apply.

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in ISO/IEC 9646-1 [5], ISO/IEC 9646-6 [6], ISO/IEC 9646-7 [7], ETSI TS 129 328 [1] and ETSI TS 129 329 [2] apply.

4 Abstract Test Method (ATM)

4.1 Introduction

This clause describes the ATM used to test the Diameter protocol on the Sh/Dh interfaces at the AS/OSA SCS side and at the HSS/SLF side.

4.2 Test architecture

Void.

4.2.1 Test method

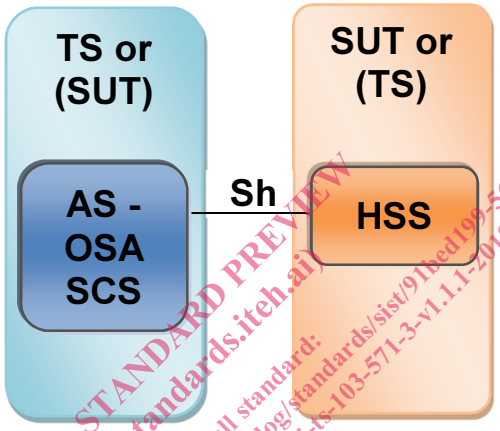
Void.

4.2.2 Test machine configuration

Void.

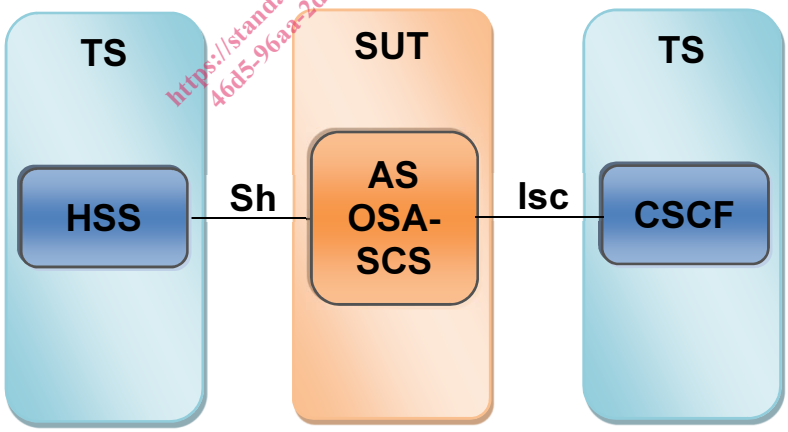
4.2.2.1 Test configurations using Sh interface

The Sh interface is located between an AS or OSA SCS and the HSS.



NOTE: Sh interface (DIAMETER protocol) is located between an HSS and AS or between an HSS and OSA SCS.

Figure 1: Test configuration CF_1Sh



NOTE: Within figure 2 CSCF represents S-CSCF component. Isc interface (SIP protocol) is located between a AS and S-CSCF. Sh interface (DIAMETER protocol) is located between an HSS and an AS or between an HSS and OSA_SCS.

Figure 2: Test configuration CF_1Sh1Isc

4.2.2.2 Test configurations using Dh interface

The Dh interface is located between an AS or OSA SCS and the SLF.

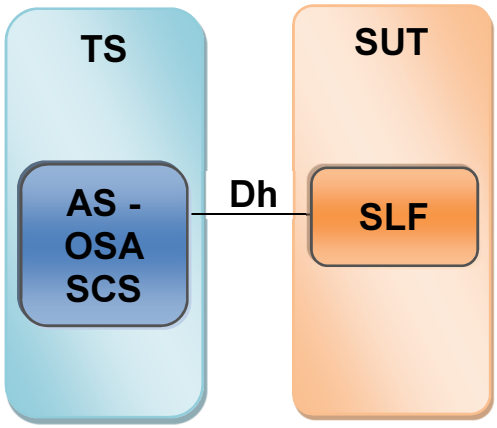
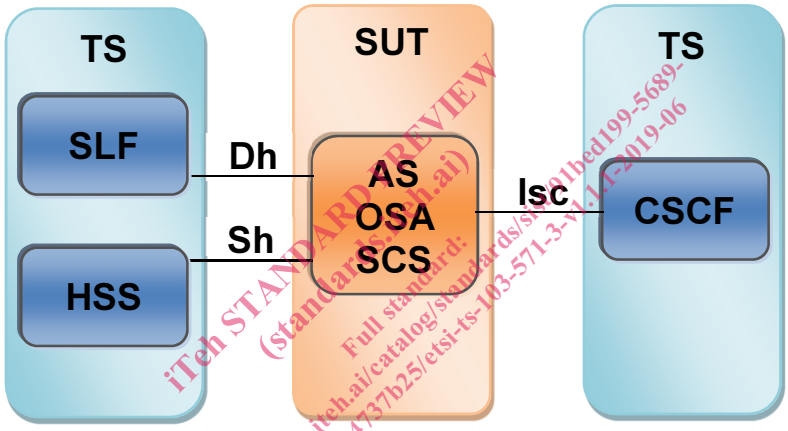


Figure 3: Test configuration CF_1Dh



NOTE: Within figure 4 CSCF represents S-CSCF component. Isc interface (SIP protocol) is located between an AS and S-CSCF. Sh interface (DIAMETER protocol) is located between an HSS and AS or between an HSS and OSA-SCS. Dh interface (DIAMETER protocol) is located between an SLF and AS or between an SLF and OSA-SCS.

Figure 4: Test configuration CF_1DhSh or CF_1Dh1Sh1Isc

4.2.3 Interconnection of TS and SUT

4.2.3.1 HSS Role

Figure 5 shows the interconnection of TS and SUT in terms of Diameter message flows. Diameter messages are transferred over the DIAM port.