ETSI TS 103 289-3 V2.1.1 (2016-07)

Core Network and Interoperability Testing (INT);
Diameter Conformance testing for Cx and Dx interfaces;
(3GPP™ Release 10);
Part 3: Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) pro forma specification

Reference
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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 covering the test specifications for the Diameter protocol on the Cx and Dx interfaces, as identified below:

Part 1: "Protocol Implementation Conformance Statement (PICS)";

Part 2: "Test Suite Structure (TSS) and Test Purposes (TP)";

Part 3: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) pro forma specification".

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) proforma for the test specifications for Diameter protocol on the Cx and Dx interfaces as specified in ETSI TS 129 228 [1] and ETSI TS 129 229 [2] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [6] and ETSI ETS 300 406 [7].

The test notation used in the ATS is TTCN-3 (see ETSI ES 201 873-1 [8]).

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 proforma;
- the modules containing the TTCN-3 ATS.

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

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 http://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 129 228 (V10.8.0): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; IP Multimedia (IM) Subsystem Cx and Dx Interfaces; Signalling flows and message contents (3GPP TS 29.228 version 10.8.0 Release 10)".

[2] ETSI TS 129 229 (V10.5.0): "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Cx and Dx interfaces based on the Diameter protocol; Protocol details (3GPP TS 29.229 version 10.5.0 Release 10)".

[3] ETSI TS 103 289-2: "Core Network and Interoperability Testing (INT); Diameter Conformance testing for Cx and Dx interfaces; (3GPP Release 10); Part 2: Test Suite Structure (TSS) and Test Purposes (TP)".

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

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

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

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

[8] 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 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ISO/IEC 9646-7 [6] and ETSI TS 129 228 [1] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ISO/IEC 9646-1 [4], ISO/IEC 9646-6 [5], ISO/IEC 9646-7 [6] and ETSI TS 129 228 [1] apply.

4 Abstract Test Method (ATM)

4.1 Introduction

This clause describes the ATM used to test ETSI TS 129 229 [2].

NOTE: In a real operating network the different Diameter nodes would not connect directly to each other. The connection is usually proxied through one or more Diameter Agents. In the following test architecture figures the Diameter Agent is not explicitly depicted as it is seen as a transparent message handler for conformance testing purposes.

4.2 Test architecture

4.2.1 Test method

The test method chosen is the remote test method. Remote test method means that the test tool (the test machine + the executable test suite) shall behave as a CSCF when the IUT is an HSS or an SLF and shall behave as an HSS or SLF when the IUT is a CSCF. As the exchange between the test system and the IUT is at the diameter message level, the lower layers of the test machine shall be totally conformant with the corresponding lower layers specifications to use the remote test method.

4.2.2 Test machine configuration

4.2.2.1 Test configurations using Cx interface

The Cx interface is located between a CSCF and the HSS.

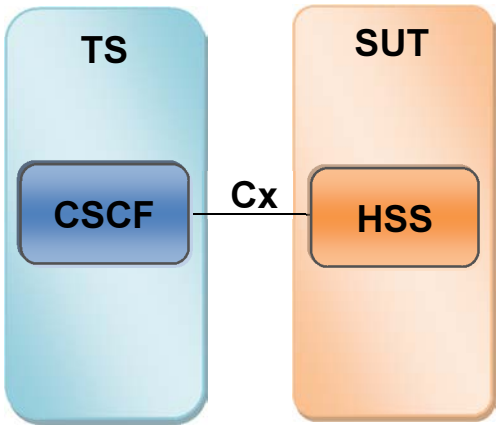

Figure 1: Test configuration CF_1Cx

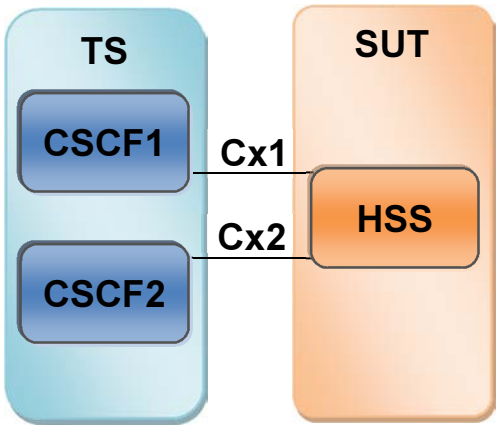

Figure 2: Test configuration CF_2Cx

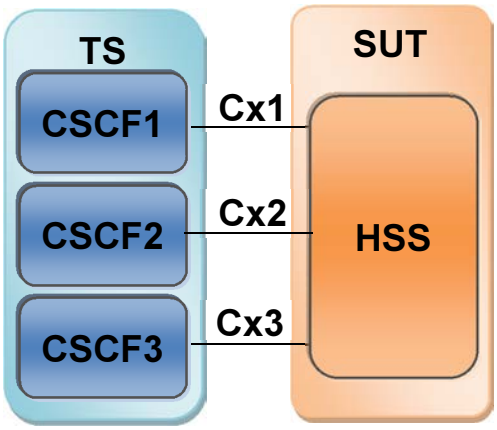

Figure 3: Test configuration CF_3Cx

NOTE 1: Within figure 3 CSCF represents one I-CSCF and two S-CSCF components. Cx interface (DIAMETER protocol) is located between an HSS and I-CSCF or between an HSS and S-CSCF.

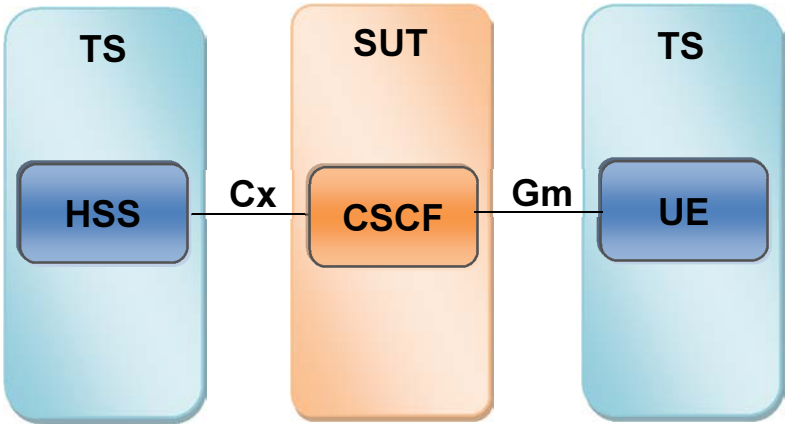

Figure 4: Test configuration CF_1Cx1Gm

NOTE 2: Within figure 4 CSCF represents P-CSCF, I-CSCF and S-CSCF components. Gm interface (SIP protocol) is located between a UE and P-CSCF. Cx interface (DIAMETER protocol) is located between an HSS and I-CSCF or between an HSS and S-CSCF.

4.2.2.2 Test configurations using the Dx interface

The Dx interface is located between a CSCF and the SLF.

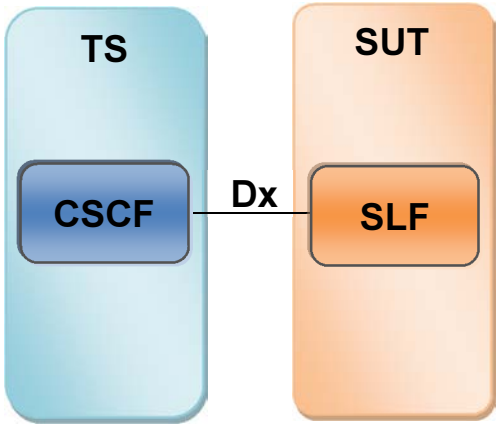

Figure 5: Test configuration CF_1Dx

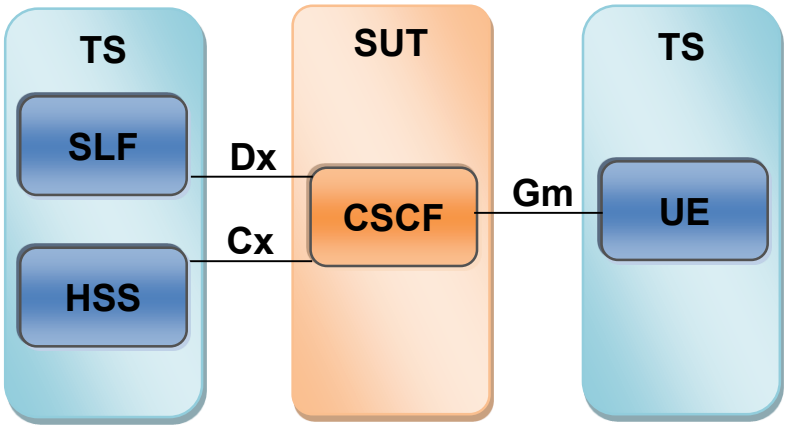

Figure 6: Test configuration CF_1Dx1Cx1Gm

NOTE: Within figure 5 CSCF represents P-CSCF, I-CSCF and S-CSCF components. Gm interface (SIP protocol) is located between a UE and P-CSCF. Cx interface (DIAMETER protocol) is located between an HSS and I-CSCF or between an HSS and S-CSCF. Dx interface (DIAMETER protocol) is located between an SLF and I-CSCF or between an SLF and S-CSCF.

4.2.3 Interconnection of TS and SUT

4.2.3.1 HSS Role

Figure 7 shows the interconnection of TS and SUT in terms of Diameter message flows. Diameter messages are transferred over the DIAM port. However in case of several Cx interfaces (CF_2Cx and CF_3Cx) there will be only one

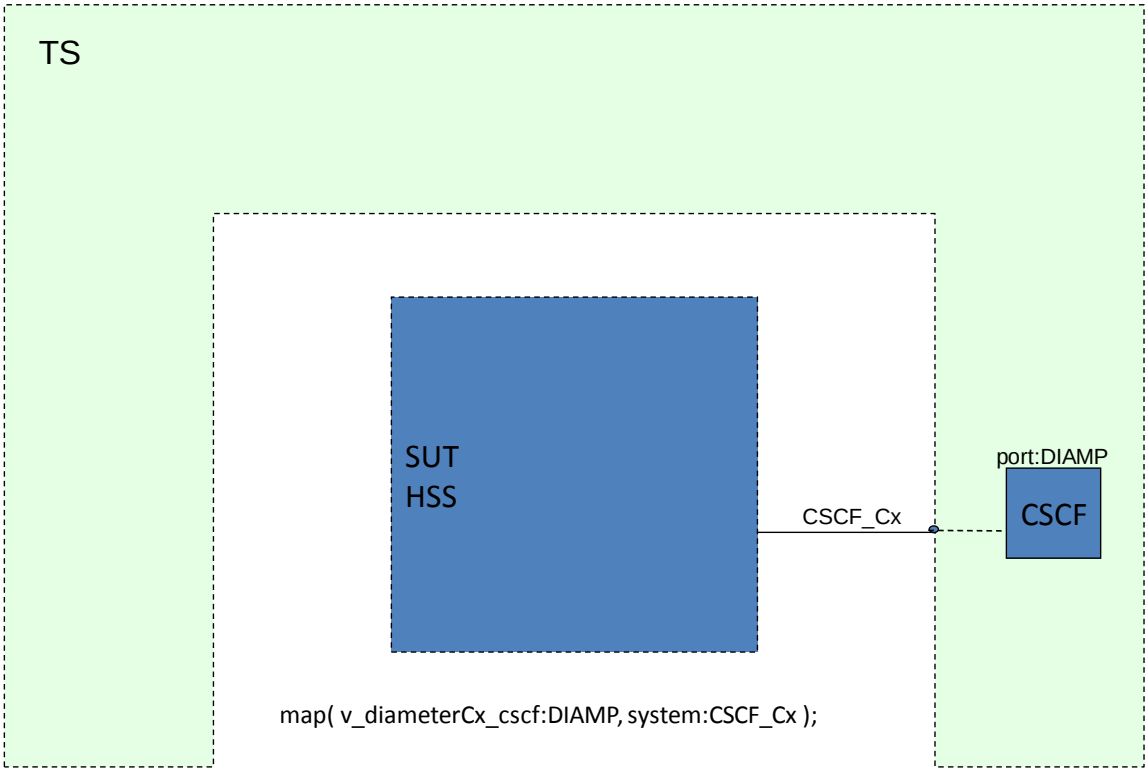

Figure 7: Interconnection for HSS role

4.2.3.2 CSCF Role

If SUT has the role of CSCF figure 8 shows the interconnection of TS and SUT in terms of signalling message flows. Diameter messages are transferred over the DIAM port. IMS messages are transferred over the Gm. The use of the Dx port depends on the selected test suite group.

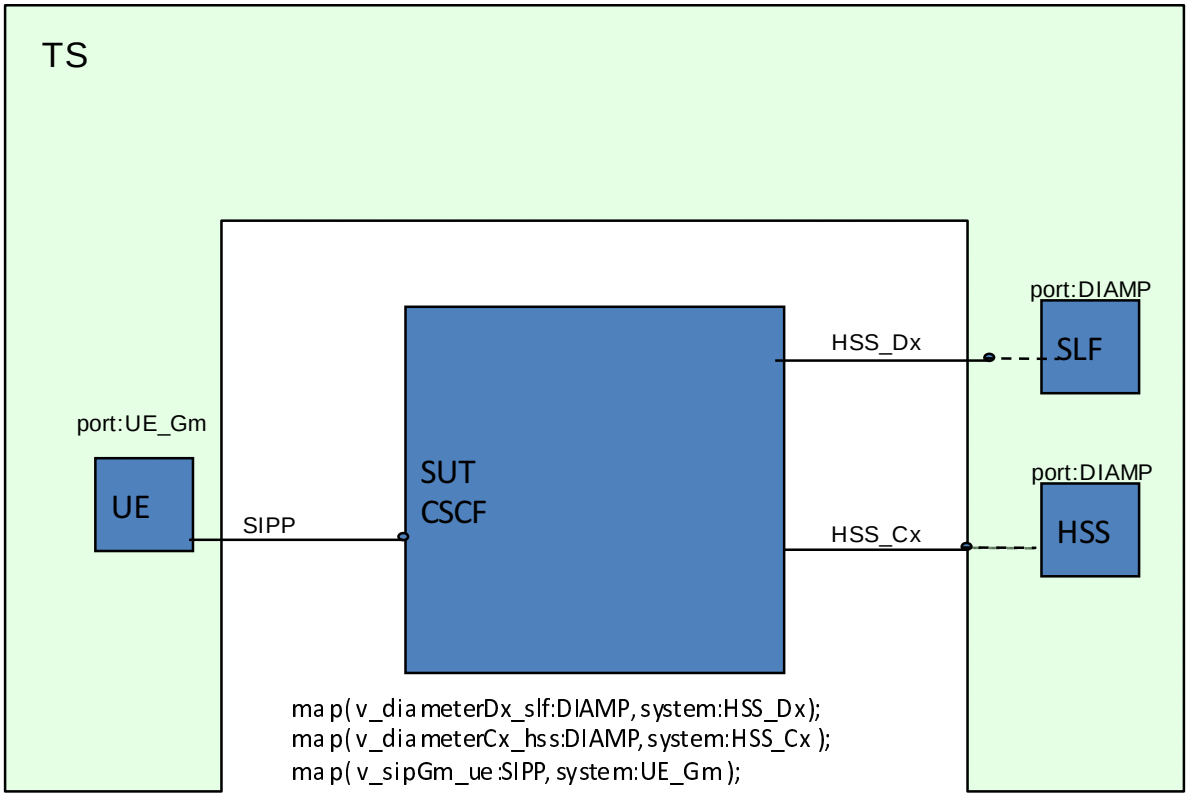

Figure 8: Interconnection for CSCF role

4.2.3.3 SLF Role

If SUT has the role of SLF figure 9 shows the interconnection of TS and SUT in terms of signalling message flows. Diameter messages are transferred over the DIAM port.

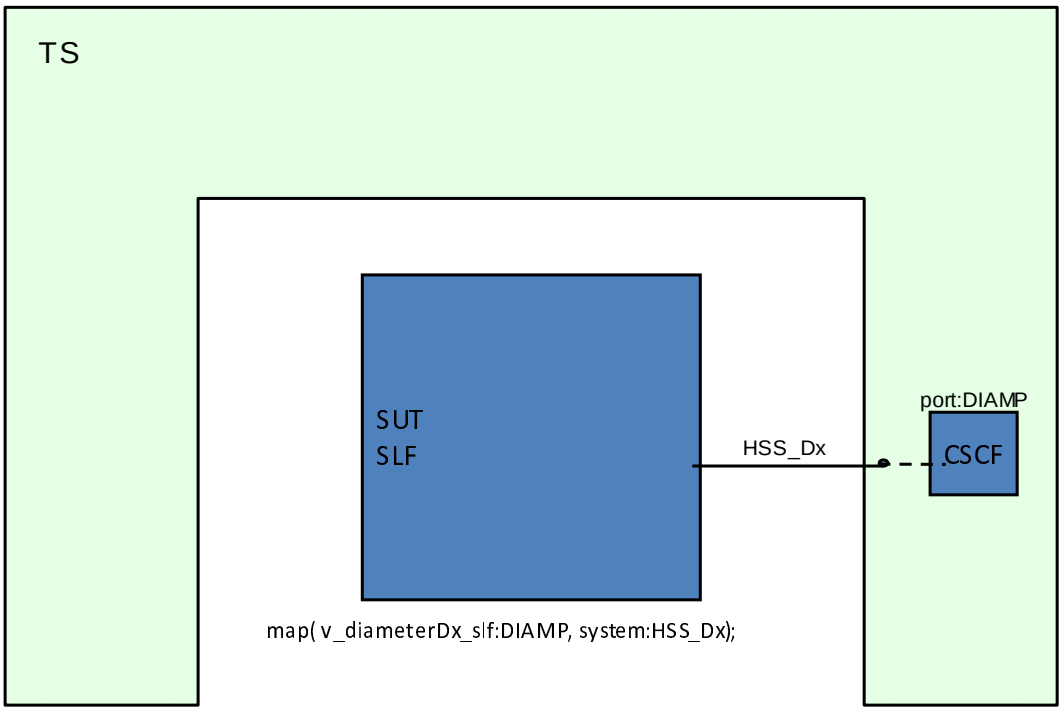

Figure 9: Interconnection for SLF role

4.2.3.4 Test Adapter

For execution of the tests the Test Adapter (TA) shall be developed. There are two possibilities to communicate over TA:

- ATS provides only Diameter messages; or
- ATS provides Diameter messages and SIP messages.

5 ATS conventions

5.0 Introduction

The ATS conventions are intended to give a better understanding of the ATS but they also describe the conventions made for the development of the ATS. These conventions shall be considered during any later maintenance or further development of the ATS.

The ATS conventions contain two clauses, the naming conventions and the implementation conventions. The naming conventions describe the structure of the naming of all ATS elements. The implementation conventions describe the functional structure of the ATS.

To define the ATS, the guidelines of the document ETSI ETS 300 406 [7] were considered.

5.1 Testing conventions

5.1.1 Test cases Preamble and Postamble

As described in the test method clause the test tool shall behave as an HSS or SLF when the IUT is an CSCF and shall behave as an CSCF when the IUT is an HSS or SLF. For that reason the test case preambles and postambles are named as follows:

IUT is a HSS, tested interface is Cx (example TC_CX_HSS_LI_01)

```
f_cf_1CxUp_HSS

f_cf_1CxDown_HSS
```

NOTE 1: The tester also behaves as a Diameter Client.

IUT is a CSCF, tested interface is Dx (example TC_DX_CSCF_LI_01)

```
f_cf_1DxUp_HSS

f_cf_1CxDown_HSS
```

NOTE 2: The tester also behaves as a Diameter Server.

5.2 Naming conventions

5.2.1 General guidelines

The naming conventions are based on the following underlying principles:

- In most cases, identifiers should be prefixed with a short alphabetic string (specified in table 1) indicating the type of TTCN-3 element it represents.
- Suffixes should not be used except in those specific cases identified in table 2.
- Prefixes and suffixes should be separated from the body of the identifier with an underscore ("_"):

EXAMPLE 1: `c_sixteen, t_wait_max`.

- Only module names, data type names and module parameters should begin with an upper-case letter. All other names (i.e. the part of the identifier following the prefix) should begin with a lower-case letter.
- The start of second and subsequent words in an identifier should be indicated by capitalizing the first character. Underscores should not be used for this purpose.

EXAMPLE 2: `f_authenticateUser`.

Table 1 specifies the naming guidelines for each element of the TTCN-3 language indicating the recommended prefix, suffixes (if any) and capitalization.

Table 1: TTCN-3 naming convention

Language element	Naming convention	Prefix	Suffix	Example	Notes
Module	Use upper-case initial letter	DiameterCxDx_	*none*	DiameterCxDx_Steps	
TSS grouping	Use all upper-case letter	*none*	*none*	TP_HSSRole_MS	
Message template	Use lower-case initial letter	m_	none	m_authApplicationId	
Message template with wildcard or matching expression	Use lower-case initial letter	mw_	none	mw_subscriptionId	
Port instance	Use upper-case initial letter	*none*	*none*	DiameterPort	
Constant	Use lower-case initial letter	c_	*none*	c_maxRetransmission	
Function	Use lower-case initial letter	f_	*none*	f_authentication()	
Altstep	Use lower-case initial letter	a_	*none*	a_receive()	
Variable	Use lower-case initial letter	v_	*none*	v_basicId	
PICS values	Use all upper case letter	*PC_*	*none*	PICS_HSS_IUT	Note
PIXIT values	Use all upper case letter	*PX_*	*none*	PX_DIAMETER_IP_ADDR	Note
Parameterization	Use lower-case initial letter	p_	*none*	p_macId	
Enumerated Value	Use lower-case initial letter	e_	*none*	e_synCpk	
NOTE: In this case it is acceptable to use underscore as a word delimiter.					

5.2.2 Test case grouping

The ATS structure is based on the Test Purposes for the Diameter protocol on the Gx interface as defined in ETSI TS 103 289-2 [3].

5.2.3 Test case identifiers

The test cases have been divided according to the functionalities into several groups.

The test case names are built up according to the following scheme.

Table 2: TC identifier naming convention scheme

Identifier:	"<tc>"_"<interface>"_"<iut >"_"<scope >"_"<number>"		
<tc>	=	Test Case:	fixed to "TC"
<interface>	=	target interface:	CX or DX
<iut>	=	type of IUT:	HSS or CSCF or SLF
<scope>	=	group	MS xMessage Synt
			UA User Authorization
			SA Server Assignement
			RT Registration Termination
			LI Location Information
			PU Push Profile
			MA Multimedia Authentication
			ER Error Handling
<number>	=	sequential number	(01-99)

NOTE: This naming scheme results into a one-to-one correspondence between the test purpose identifiers as defined in ETSI TS 103 289-2 [3] and the test case identifiers.
The TP identifier of the test case TC_xxx_01 is TP_xxx_01.

Annex A (normative): DIAMETER Cx Partial PIXIT proforma

A.0 Introduction

The PIXIT Proforma is based on ISO/IEC 9646-6 [5]. Any additional information which may be needed can be found in this international standard document.

A.1 Identification summary

Table A.1

PIXIT Number:	
Test Laboratory Name:	
Date of Issue:	
Issued to:	

A.2 ATS summary

Table A.2

Protocol Specification:	ETSI TS 129 228 [1], ETSI TS 129 229 [2]
Protocol to be tested:	
ATS Specification:	ETSI TS 103 289-2 [3]
Abstract Test Method:	ETSI TS 103 289-3, clause 4

A.3 Test laboratory

Table A.3

Test Laboratory Identification:	
Test Laboratory Manager:	
Means of Testing:	
SAP Address:	

A.4 Client identification

Table A.4

Client Identification:	
Client Test manager:	
Test Facilities required:	

A.5 SUT

Table A.5

Name:	
Version:	
SCS Number:	
Machine configuration:	
Operating System Identification:	
IUT Identification:	
PICS Reference for IUT:	
Limitations of the SUT:	
Environmental Conditions:	

A.6 Protocol layer information

A.6.1 Protocol identification

Table A.6

Name:	ETSI TS 129 228 [1], ETSI TS 129 229 [2]
Version:	
PICS References:	

A.7 PIXIT items

A.7.1 Cx related PIXIT items

Tables in this clause need to be filled by the IUT Manufacturer to specify how the IUT needs to be configured with IUT specific values or describe IUT specific procedures required for complete testing of the IUT.

Table A.7: PIXIT for the Cx interface

No	PIXIT Identifier	Description
1.	PX_DIAMETER_CX_ETS_ICSCF_IPADDR	charstring, PIXIT item IP address of the test system.
2.	PX_DIAMETER_CX_ETS_SCSCF_IPADDR	charstring, PIXIT item IP address of the test system.
3.	PX_DIAMETER_CX_ETS_SCSCF2_IPADDR	charstring, PIXIT item IP address of the test system.
4.	PX_DIAMETER_CX_ETS_HSS_IPADDR	charstring, PIXIT item IP address of the test system.
5.	PX_DIAMETER_CX_SUT_ICSCF_IPADDR	charstring, PIXIT item IP address of the system under test.
6.	PX_DIAMETER_CX_SUT_SCSCF_IPADDR	charstring, PIXIT item IP address of the system under test.
7.	PX_DIAMETER_CX_SUT_HSS_IPADDR	charstring, PIXIT item IP address of the system under test.
8.	PX_DIAMETER_CX_ETS_ICSCF_PORT	charstring, PIXIT item Port number of the test system.
9.	PX_DIAMETER_CX_ETS_SCSCF_PORT	charstring, PIXIT item Port number of the test system.
10.	PX_DIAMETER_CX_ETS_SCSCF2_PORT	charstring, PIXIT item Port number of the test system.
11.	PX_DIAMETER_CX_ETS_HSS_PORT	charstring, PIXIT item Port number of the test system.
12.	PX_DIAMETER_CX_SUT_ICSCF_PORT	charstring, PIXIT item Port number of the system under test.
13.	PX_DIAMETER_CX_SUT_SCSCF_PORT	charstring, PIXIT item Port number of the system under test.
14.	PX_DIAMETER_CX_SUT_HSS_PORT	charstring, PIXIT item Port number of the system under test.
15.	PX_DIAMETER_GM_ETS_UE_IPADDR	charstring, PIXIT item IP address of the test system.
16.	PX_DIAMETER_GM_SUT_PCSCF_IPADDR	charstring, PIXIT item IP address of the system under test.
17.	PX_DIAMETER_GM_ETS_UE_PORT	charstring, PIXIT item Port number of the test system.

No	PIXIT Identifier	Description
18.	PX_DIAMETER_GM_SUT_PCSCF_PORT	charstring, PIXIT item Port number of the system under test.
19.	PX_SessionID	UTF8String, PIXIT item The Session-Id AVP (AVP Code 263) is of type UTF8String and is used to identify a specific session; All messages pertaining to a specific session SHALL include only one Session-Id AVP and the same value SHALL be used throughout the life of a session; When present, the Session-Id SHOULD appear immediately following the Diameter Header.
20.	PX_OriginHost	charstring, PIXIT item The Origin-Host AVP (AVP Code 264) is of type DiameterIdentity, and SHALL be present in all Diameter messages; This AVP identifies the endpoint that originated the Diameter message; Relay agents SHALL NOT modify this AVP; The value of the Origin-Host AVP is guaranteed to be unique within a single host.
21.	PX_OriginRealm	charstring, PIXIT item The Origin-Realm AVP (AVP Code 296) is of type DiameterIdentity; This AVP contains the Realm of the originator of any Diameter message and SHALL be present in all messages.
22.	PX_DestinationHost	charstring, PIXIT item The Destination-Host AVP (AVP Code 293) is of type DiameterIdentity; This AVP SHALL be present in all unsolicited agent initiated messages, MAY be present in request messages, and SHALL NOT be present in Answer messages.
23.	PX_DestinationRealm	charstring, PIXIT item The Destination-Realm AVP (AVP Code 283) is of type DiameterIdentity, and contains the realm the message is to be routed to; The Destination-Realm AVP SHALL NOT be present in Answer messages.
24.	PX_UserName	UTF8String, PIXIT item The User-Name AVP (AVP Code 1) [RADIUS] is of type UTF8String, which contains the User-Name, in a format consistent with the NAI specification [NAI].
25.	PX_OtherUserName	UTF8String, PIXIT item The User-Name AVP (AVP Code 1) [RADIUS] is of type UTF8String, which contains the User-Name, in a format consistent with the NAI specification [NAI].
26.	PX_UnknownUserName	UTF8String, unknown value for the User-Name AVP (AVP Code 1) [RADIUS] of type UTF8String, which contains the User-Name, in a format consistent with the NAI specification [NAI].
27.	PX_PublicIdentity	UTF8String, PIXIT item The Public-Identity AVP is of type UTF8String.
28.	PX_OtherPublicIdentity	UTF8String, the Public-Identity value shall be different to PX_PublicIdentity.
29.	PX_PublicIdentityBarred	UTF8String, the Public-Identity value shall be barred.
30.	PX_UnknownPublicIdentity	UTF8String, the Public-Identity value shall be unknown.
31.	PX_InactivePublicIdentity	UTF8String, the Public-Identity value shall be inactive.
32.	PX_NotAllowedPublicIdentity	UTF8String, the Public-Identity value shall not allowed to register.
33.	PX_ServiceIdentity	UTF8String, the service-Identity value.
34.	PX_WildcardIdentity	UTF8String, the wildcard-Identity value.
35.	PX_ApplicationServer	UTF8String, the application server URL.
36.	PX_ServerName	UTF8String, the Server-Name AVP is of type UTF8String.
37.	PX_OtherServerName	UTF8String, The Server-Name AVP is of type UTF8String.
38.	PX_VisitedNetworkId	charstring the Visited-Network-Identifier AVP is of type OctetString and charstring is converted into OctetString.
39.	PX_DiameterUri	DiameterURI, the Diameter URI SHALL follow the Uniform Resource Identifiers (URI).
40.	PIXIT_SIP_ITEM_NUMBER	Integer SIP-Item-Number AVP.
41.	PIXIT_DIGEST_USERNAME	charstring Digest-Username Attribute.
42.	PIXIT_DIGEST_REALM	charstring Digest-Realm Attribute.
43.	PIXIT_DIGEST_NONCE	charstring Digest-Nonce Attribute.
44.	PIXIT_DIGEST_RESPONSE	charstring Digest_Response_AVP.
45.	PIXIT_URI	charstring Digest-URI Attribute.

No	PIXIT Identifier	Description
46.	PX_SIPsupport	boolean indicator that is true if the Gm interface (SIP protocol) is accessible to trigger Diameter events at the Cx/Dx interface.
47.	PX_HSSsupport	boolean indicator that is true if the HSS interface is accessible for testing Diameter events at the Cx interface for CF_1Dx1Cx1Gm configuration Note that: in case of false value the TP is partially covered.
48.	PIXIT_SAR_SERVER_ASSIGNEMENT_TYPE_TABLE3	Variant values for Server-Assignment-Type AVP.
49.	PIXIT_SAR_SERVER_ASSIGNEMENT_TYPE_TABLE4	Variant values for Server-Assignment-Type AVP.
50.	PIXIT_SAR_SERVER_ASSIGNEMENT_TYPE_TABLE5	Variant values for Server-Assignment-Type AVP.
51.	PIXIT_SAR_SERVER_ASSIGNEMENT_TYPE_TABLE6	Variant values for Server-Assignment-Type AVP.
52.	PIXIT_SAR_SERVER_ASSIGNEMENT_TYPE_TABLE7	Variant values for Server-Assignment-Type AVP.

Table A.8: PIXIT for LibSip

No	PIXIT Identifier	Description
53.	PX_SIP_SDP_USER_NAME	charstring for SDP user name.
54.	PX_SIP_SDP_SESSION_ID	charstring for SDP session identifier.
55.	PX_SIP_SDP_DYN	charstring for SDP dynamic port.
56.	PX_SIP_SDP_B_MODIFIER	charstring for SDP bandwidth modifier.
57.	PX_SIP_SDP_B_BANDWIDTH	integer for SDP bandwidth value.
58.	PX_SIP_SDP_ENCODING	charstring for SDP media attribute encoding supported by the IUT.
59.	PX_SIP_SDP_CLOCKRATE	charstring for SDP media attribute encoding clock rate supported by the IUT.
60.	PX_MB_LENGTH_FROM_ENCVAL	boolean for MessageBody length calculation based on encvalue operation result.
61.	PX_USE_FX_FOR_XML_LENGTH	boolean for MessageBody length calculation to be performed by external function.
62.	PX_SIP_TRANSPORT	charstring for Used Transport in upper case "UDP"/"TCP".
63.	PX_SIP_REGISTRATION	boolean for the SIP user if it have to register itself before executing a test case.
64.	PX_AUTH_ALGORITHM	charstring for PX_AUTH_ALGORITHM security algorithm Possible values: MD5 or AKAv1-MD5.
65.	PX_SIP_REGISTER_AUTHENTICATION_ENABLED	boolean for option controlling if authentication is enabled/disabled for REGISTER messages.
66.	PX_SIP_INVITE_AUTHENTICATION_ENABLED	boolean for option controlling if authentication is enabled/disabled for INVITE messages.
67.	PX_SIP_TWAIT	float for TWait default value for waiting an operator action.
68.	PX_SIP_TACK	float for TAck default value for waiting an acknowledgement.
69.	PX_SIP_TRESP	float for TResp default value for waiting for a response from the IUT.
70.	PX_SIP_TNOACT	float for TNoAct default value for waiting no message from the IUT Value given for PX_TNOACT should be less than value of SHORT_REGISTRATION constant (which is currently "3" (seconds)).
71.	PX_SIP_MIME_BOUNDARY	charstring for delimiter value used in mime multipart message to separate message body parts.

Table A.9: PIXIT for LibCommon

No	PIXIT Identifier	Description
72.	PX_TSYNC_TIME_LIMIT	Default time limit for a sync client to reach a synchronization point.
73.	PX_TSHUT_DOWN_TIME_LIMIT	Default time limit for a sync client to finish its execution of the shutdown default.

Annex B (normative): DIAMETER Dx Partial PIXIT proforma

B.0 Introduction

The PIXIT Proforma is based on ISO/IEC 9646-6 [5]. Any additional information which may be needed can be found in this international standard document.

B.1 Identification summary

Table B.1

PIXIT Number:	
Test Laboratory Name:	
Date of Issue:	
Issued to:	

B.2 ATS summary

Table B.2

Protocol Specification:	ETSI TS 129 228 [1], ETSI TS 129 229 [2]
Protocol to be tested:	
ATS Specification:	ETSI TS 103 289-2 [3]
Abstract Test Method:	ETSI TS 103 289-3, clause 4

B.3 Test laboratory

Table B.3

Test Laboratory Identification:	
Test Laboratory Manager:	
Means of Testing:	
SAP Address:	

B.4 Client identification

Table B.4

Client Identification:	
Client Test manager:	
Test Facilities required:	

B.5 SUT

Table B.5

Name:	
Version:	
SCS Number:	
Machine configuration:	
Operating System Identification:	
IUT Identification:	
PICS Reference for IUT:	
Limitations of the SUT:	
Environmental Conditions:	

B.6 Protocol layer information

B.6.1 Protocol identification

Table B.6

Name:	ETSI TS 129 228 [1], ETSI TS 129 229 [2]
Version:	
PICS References:	

B.7 PIXIT items

B.7.1 Dx related PIXIT items

Tables in this clause need to be filled by the IUT Manufacturer to specify how the IUT needs to be configured with IUT specific values or describe IUT specific procedures required for complete testing of the IUT.

The Dx test suite makes use of all Cx test parameters and the specific values from the following list.

Table B.7: PIXIT for the Dx interface

No	PIXIT Identifier	Description
1	PX_DIAMETER_DX_ETS_SLF_IPADDR	charstring, PIXIT item IP address of the test system
2	PX_DIAMETER_DX_SUT_SLF_IPADDR	charstring, PIXIT item IP address of the system under test
3	PX_DIAMETER_DX_ETS_SLF_PORT	charstring, PIXIT item Port number of the test system
4	PX_DIAMETER_DX_SUT_SLF_PORT	charstring, PIXIT item Port number of the system under test

Annex C (normative): DIAMETER Cx and Dx Abstract Test Suite (ATS)

This ATS has been produced using the Testing and Test Control Notation (TTCN-3) according to ETSI ES 201 873-1 [8].

The TTCN-3 library modules corresponding to the ATS are contained in archive ts_10328903v020101p0.zip which accompanies the present document.

History

Document history		
V1.1.1	June 2015	Publication
V2.1.1	July 2016	Publication