



**Core Network and Interoperability Testing (INT);
GTPv2-C Conformance Testing for S11 Interface;
(3GPP™ Release 10);
Part 1: Protocol Implementation
Conformance Statement (PICS)**

Reference

DTS/INT-00092-1

Keywords

conformance, GTPv2-C, MME, PICS, S11, SGW

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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 1 of a multi-part deliverable covering the test specifications for the GTPv2-C protocol on the S11 interface, as identified below:

- Part 1: "**Protocol Implementation Conformance Statement (PICS)**";
- Part 2: "Test Suite Structure and Test Purposes (TSS&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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Introduction

To evaluate protocol conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a telecommunication specification. Such a statement is called a Protocol Implementation Conformance Statement (PICS).

1 Scope

The present document provides the Protocol Implementation Conformance Statement (PICS) pro forma for the test specifications for the GTPv2-C protocol on the S11 interface as specified in ETSI TS 129 274 [1] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [3] and ETSI ETS 300 406 [4].

The supplier of a protocol implementation which is claimed to conform to ETSI TS 129 274 [1] is required to complete a copy of the PICS pro forma provided in annex A of the present document and is required to provide the information necessary to identify both the supplier and the implementation.

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 reference 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 129 274 (V10.14.0): "Universal Mobile Telecommunications System (UMTS); LTE; 3GPP Evolved Packet System (EPS); Evolved General Packet Radio Service (GPRS) Tunnelling Protocol for Control plane (GTPv2-C); Stage 3 (3GPP TS 29.274 version 10.14.0 Release 10)".
- [2] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [3] ISO/IEC 9646-7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".
- [4] ETSI ETS 300 406: "Methods for testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

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 reference document (including any amendments) applies.

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 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 ETSI TS 129 274 [1] and the following apply:

PICS pro forma: document, in the form of a questionnaire, designed by the protocol specifier or conformance test suite specifier, which, when completed for an OSI implementation or system, becomes the PICS

NOTE: See ISO/IEC 9646-1 [2].

Protocol Implementation Conformance Statement (PICS): statement made by the supplier of an Open Systems Interconnection (OSI) implementation or system, stating which capabilities have been implemented for a given OSI protocol

NOTE: See ISO/IEC 9646-1 [2].

static conformance review: review of the extent to which the static conformance requirements are met by the IUT, accomplished by comparing the PICS with the static conformance requirements expressed in the relevant standard(s)

NOTE: See ISO/IEC 9646-1 [2].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI TS 129 274 [1] and the following apply:

PICS Protocol Implementation Conformance Statement

4 Conformance

A PICS pro forma which conforms to this PICS pro forma specification shall be technically equivalent to annex A, and shall preserve the numbering and ordering of the items in annex A.

A PICS which conforms to this PICS pro forma specification shall:

- a) describe an implementation which claims to conform to ETSI TS 129 274 [1];
- b) be a conforming PICS pro forma which has been completed in accordance with the instructions for completion given in clause A.1;
- c) include the information necessary to uniquely identify both the supplier and the implementation.

Annex A (normative): PICS pro forma

A.1 The right to copy

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document may freely reproduce the PICS pro forma in this annex so that it can be used for its intended purposes and may further publish the completed PICS pro forma.

A.2 Guidance for completing the PICS pro forma

A.2.1 Purposes and structure

The purpose of this PICS pro forma is to provide a mechanism whereby a supplier of an implementation of the requirements defined in relevant specifications may provide information about the implementation in a standardized manner.

The PICS pro forma is subdivided into clauses for the following categories of information:

- instructions for completing the PICS pro forma;
- identification of the implementation;
- identification of the protocol;
- PICS pro forma tables (for example: Major capabilities, etc.).

A.2.2 Abbreviations and conventions

This annex does not reflect dynamic conformance requirements but static ones. In particular, a condition for support of a PDU parameter does not reflect requirements about the syntax of the PDU (i.e. the presence of a parameter) but the capability of the implementation to support the parameter.

In the sending direction, the support of a parameter means that the implementation is able to send this parameter (but it does not mean that the implementation always sends it).

In the receiving direction, it means that the implementation supports the whole semantic of the parameter that is described in the related protocol specification.

As a consequence, PDU parameter tables in this annex are not the same as the tables describing the syntax of a PDU in the reference specification.

The PICS pro forma contained in this annex is comprised of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7 [3].

Item column

The item column contains a number which identifies the item in the table.

Item description column

The item description column describes in free text each respective item (e.g. parameters, timers, etc.). It implicitly means "is <item description> supported by the implementation?".

Reference column

The reference column gives reference to the relevant sections in core specifications.

Status column

The various status used in this annex are in accordance with the rules in table A.1.

Table A.1: Key to status codes

Status code	Status name	Meaning
m	mandatory	The capability shall be supported. It is a static view of the fact that the conformance requirements related to the capability in the reference specification are mandatory requirements. This does not mean that a given behaviour shall always be observed (this would be a dynamic view), but that it shall be observed when the implementation is placed in conditions where the conformance requirements from the reference specification compel it to do so. For instance, if the support for a parameter in a sent PDU is mandatory, it does not mean that it shall always be present, but that it shall be present according to the description of the behaviour in the reference specification (dynamic conformance requirement).
o	optional	The capability may or may not be supported. It is an implementation choice.
n/a	not applicable	It is impossible to use the capability. No answer in the support column is required.
c.<integer>	conditional	The requirement on the capability ("m", "o", "n/a") depends on the support of other optional or conditional items. <integer> is the identifier of the conditional expression.
o.<integer>	qualified optional	For mutually exclusive or selectable options from a set. <integer> is the identifier of the group of options, and the logic of selection of the options.

Mnemonic column

The Mnemonic column contains mnemonic identifiers for each item.

Support column

The support column shall be filled in by the supplier of the implementation. The following common notations, defined in ISO/IEC 9646-7 [3], are used for the support column:

- Y or y supported by the implementation
- N or n not supported by the implementation
- N/A, n/a or - no answer required (allowed only if the status is N/A, directly or after evaluation of a conditional status)

References to items

For each possible item answer (answer in the support column) within the PICS pro forma there exists a unique reference, used, for example, in the conditional expressions. It is defined as the table identifier, followed by a solidus character "/", followed by the item number in the table.

EXAMPLE: A.5/4 is the reference to the answer of item 4 in table A.5.

A.2.3 Instructions for completing the PICS pro forma

The supplier of the implementation may complete the PICS pro forma in each of the spaces provided. More detailed instructions are given at the beginning of the different clauses of the PICS pro forma.

A.3 Identification of the Network Equipment

A.3.1 Introduction

Identification of the Network Equipment should be filled in so as to provide as much detail as possible regarding version numbers and configuration options.

The product supplier information and client information should both be filled in if they are different.

A person who can answer queries regarding information supplied in the PICS should be named as the contact person.

A.3.2 Date of the statement

.....

A.3.3 Network Equipment Under Test identification

Name:

.....
.....

Hardware configuration:

.....
.....
.....

Software configuration:

.....
.....
.....

A.3.4 Product supplier

Name:

.....

Address:

.....
.....
.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....
.....
.....

A.3.5 Client

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

A.3.6 PICS contact person

Name:

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

A.4 Identification of the protocol

This PICS pro forma applies to the following specifications:

- ETSI TS 129 274 [1].

A.5 Global statement of conformance

The implementation described in this PICS meets all the mandatory requirements of the referenced standard?

Yes

No

NOTE: Answering "No" to this question indicates non-conformance to the protocol specification. Non-supported mandatory capabilities are to be identified in the PICS, with an explanation of why the implementation is non-conforming. Explanations may be entered in the comments field at the bottom of each table or on attached pages.

In the tabulations which follow, all references are to ETSI TS 129 274 [1] unless another numbered reference is explicitly indicated.

A.6 PICS pro forma tables

A.6.1 Roles

Table A.2: Roles

Item	Roles	Reference	Status	Support
1	MME	6.1	o.1	
2	SGW	6.1	o.1	
o.1: At least one of these roles shall be supported.				

A.6.2 System Capabilities for MME

The tables provided in this clause need only to be completed for MME implementations, where item A.2/1 above is supported.

Table A.3: System Capabilities for MME

Item	Does the IUT support ...	Reference	Status	Support
1	Echo Request	7.1.1	m	
2	Echo Response	7.1.2	m	
3	Version Not Supported	7.1.3	m	
4	Create Session Request	7.2.1	m	
5	Create Bearer Response	7.2.4	m	
6	Bearer Resource Command	7.2.5	m	
7	Modify Bearer Request	7.2.7	m	
8	Delete Session Request	7.2.9.1	m	
9	Delete Bearer Response	7.2.10.2	m	
10	Downlink Data Notification Acknowledge	7.2.11.2	m	
11	Downlink Data Notification Failure Indication	7.2.11.3	m	
12	Delete Indirect Data Forwarding Tunnel Request	7.2.12	m	
13	Modify Bearer Command	7.2.14.1	m	
14	Update Bearer Response	7.2.16	m	
15	Delete Bearer Command	7.2.17.1	m	
16	Create Indirect Data Forwarding Tunnel Request	7.2.18	m	
17	Release Access Bearers Request	7.2.21	m	
18	Suspend Notification	7.4.1	m	
19	Resume Notification	7.4.3	m	
20	Create Forwarding Tunnel Request	7.5.1	m	
21	Handling Piggybacked Messages	7.7.0	m	
22	Protocol Errors	7.7.1	m	
23	Different GTP Versions	7.7.2	m	
24	GTP Message of Invalid Length	7.7.3	m	
25	Unknown GTP Message	7.7.4	m	
26	Unexpected GTP Message	7.7.5	m	
27	Missing Information Elements	7.7.6	m	
28	Invalid Length Information Element	7.7.7	m	
29	Semantically incorrect Information Element	7.7.8	m	
30	Unknown or unexpected Information Element	7.7.9	m	
31	Repeated Information Elements	7.7.10	m	
32	Path Failure	7.8	o	
33	Delete PDN Connection Set Request	7.9.1	m	
34	Delete PDN Connection Set Response	7.9.2	m	
35	Fallback to GTPv0 Not Allowed	7.11	m	
36	Trace Session Activation	7.12.1	m	
37	Trace Session Deactivation	7.12.2	m	

A.6.3 System Capabilities for SGW

The tables provided in this clause need only to be completed for SGW implementations, where item A.2/2 above is supported.

Table A.4: System Capabilities for SGW

Item	Does the IUT support ...	Reference	Status	Support
1	Echo Request	7.1.1	m	
2	Echo Response	7.1.2	m	
3	Version Not Supported	7.1.3	m	
4	Create Session Response	7.2.2	m	
5	Create Bearer Request	7.2.3	m	
6	Bearer Resource Failure Indication	7.2.6	m	
7	Modify Bearer Response	7.2.8	m	
8	Delete Bearer Request	7.2.9.2	m	
9	Delete Session Response	7.2.10.1	m	
10	Downlink Data Notification	7.2.11.1	m	
11	Delete Indirect Data Forwarding Tunnel Response	7.2.13	m	
12	Modify Bearer Failure Indication	7.2.14.2	m	
13	Update Bearer Request	7.2.15	m	
14	Delete Bearer Failure Indication	7.2.17.2	m	
15	Create Indirect Data Forwarding Tunnel Response	7.2.19	m	
16	Release Access Bearers Response	7.2.22	m	
17	Stop Paging Indication	7.2.23	m	
18	Change Notification Response	7.3.15	o	
19	Suspend Acknowledge	7.4.2	m	
20	Resume Acknowledge	7.4.4	m	
21	Create Forwarding Tunnel Response	7.5.2	m	
22	Handling Piggybacked Messages	7.7.0	m	
23	Protocol Errors	7.7.1	m	
24	Different GTP Versions	7.7.2	m	
25	GTP Message of Invalid Length	7.7.3	m	
26	Unknown GTP Message	7.7.4	m	
27	Unexpected GTP Message	7.7.5	m	
28	Missing Information Elements	7.7.6	m	
29	Invalid Length Information Element	7.7.7	m	
30	Semantically incorrect Information Element	7.7.8	m	
31	Unknown or unexpected Information Element	7.7.9	m	
32	Repeated Information Elements	7.7.10	m	
33	Path Failure	7.8	o	
34	Delete PDN Connection Set Request	7.9.1	m	
35	Fallback to GTPv0 Not Allowed	7.11	m	

History

Document history		
V1.1.1	December 2015	Publication