ETSI TS 103 530-1 V1.1.1 (2018-01)

TECHNICAL SPECIFICATION

**Core Network and Interoperability Testing (INT);
NAS Conformance Testing for the S1-MME interface;
(3GPP™ Release 13);
Part 1: Protocol Implementation Conformance
Statement (PICS)**

Reference

DTS/INT-00136-1

Keywords

conformance, PICS, S1AP

Important notice

The present document can be downloaded from:
http://www.etsi.org/standards-search

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at
https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx

If you find errors in the present document, please send your comment to one of the following services:
https://portal.etsi.org/People/CommiteeSupportStaff.aspx

Contents

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (https://ipr.etsi.org/).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

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 S1AP protocol on the S1-MME interface, 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).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

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 specification for the NAS protocol on the S1-MME interface as specified in ETSI TS 124 301 [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 124 301 [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 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 124 301 (V13.8.0): "Universal Mobile Telecommunications System (UMTS); LTE; Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3 (3GPP TS 24.301 version 13.8.0 Release 13)".

[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 referenced 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 124 301 [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 124 301 [1] apply.

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 124 301 [1];

   b)   be a conforming ICS 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 ICS 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 124 301 [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 124 301 [1] unless another numbered reference is explicitly indicated.

A.6   PICS pro forma tables for the S1 interface

A.6.1   Roles

Table A.2: Roles for the S1AP interface

Item	Roles	Reference	Status	Support
1	MME		m	

A.6.2   PICS Items for MME

A.6.2.1   Sublayer states in the MME

Table A.3: Sublayer states in the MME

Item	Does the IUT support state ...	Reference	Status	Support
EMM sublayer states				
1	EMM-DEREGISTERED?	5.1.3.4.1	m	
2	EMM-COMMON-PROCEDURE-INITIATED?	5.1.3.4.2	m	
3	EMM-REGISTERED?	5.1.3.4.3	m	
3.1	EMM-REGISTERED without PDN connection?	5.1.3.4.3	o	
4	EMM-DEREGISTERED-INITIATED?	5.1.3.4.4	m	
ESM sublayer states				
5	BEARER CONTEXT INACTIVE?	6.1.3.3.1	m	
6	BEARER CONTEXT ACTIVE PENDING?	6.1.3.3.2	m	
7	BEARER CONTEXT ACTIVE?	6.1.3.3.3	m	
8	BEARER CONTEXT INACTIVE PENDING?	6.1.3.3.4	m	
9	BEARER CONTEXT MODIFY PENDING?	6.1.3.3.5	m	
10	PROCEDURE TRANSACTION INACTIVE?	6.1.3.3.6	m	
11	PROCEDURE TRANSACTION PENDING?	6.1.3.3.7	m	

A.6.2.2   EPS mobility management procedures

Table A.4: EPS mobility management procedures

Item	Does the IUT support ...	Reference	Status	Support
EMM common procedures				
1	GUTI reallocation procedures?	5.4.1	m	
1.1	Inclusion of a TAI list in the GUTI REALLOCATION REQUEST?	5.4.1.2	o	
2	Authentication procedures?	5.4.2	m	
2.1	Sending of an AUTHENTICATION REJECT message in case of receipt of an invalid authentication response from the UE?	5.4.2.5	o	
2.2	Initiation of the identification procedure on receipt of an AUTHENTICATION FAILURE message indicating cause #20 "MAC Failure"?	5.4.2.7 c)	o	
2.2.1	Sending of an AUTHENTICATION REQUEST in case the identification procedures shows an incorrect GUTI/IMSI mapping?	5.4.2.7 c)	o.1	
2.2.2	Sending of an AUTHENTICATION REJECT in case the identification procedures shows a correct GUTI/IMSI mapping?	5.4.2.7 c)	o.1	
2.3	Initiation of the identification procedure on receipt of an AUTHENTICATION FAILURE message indicating cause #26 "non-EPS authentication unacceptable"?	5.4.2.7 d)	o	
2.3.1	Sending of an AUTHENTICATION REQUEST in case the identification procedures shows an incorrect GUTI/IMSI mapping?	5.4.2.7 d)	o.2	
2.3.2	Sending of an AUTHENTICATION REJECT in case the identification procedures shows a correct GUTI/IMSI mapping?	5.4.2.7 d)	o.2	
2.4	Termination of the authentication procedure on receipt of two consecutive AUTHENTICATION FAILURE messages indicating cause #21 "synch failure"?	5.4.2.7 e) Note 3	o	
3	Security mode control procedures?	5.4.3	m	
3.1	Initiation of the security mode control procedure to change the NAS security algorithms for a current EPS security context already in use?	5.4.3.1, 5.4.3.2	o	
3.2	Initiation of the security mode control procedure to change the value of the uplink NAS COUNT?	5.4.3.1	o	
4	Identification procedures?	5.4.4	m	

Item	Does the IUT support ...	Reference	Status	Support
5	EMM information procedures?	5.4.5	o	
EMM specific procedures				
6	Attach procedures?	5.5.1	m	
6.1	Attach for emergency bearer services?	5.5.1.1	o	
6.1.1	Execution of the security mode control procedures without prior authentication procedure?	5.5.1.2.3	o.3	
6.2	Activation of dedicated bearers as part of the attach procedure?	5.5.1.1, 5.5.1.2.4	o	
6.3	Initiation of EMM common procedures during the attach procedure?	5.5.1.2.3	o	
6.4	Inclusion of a list of equivalent PLMNs in the ATTACH ACCEPT message?	5.5.1.2.4	o	
6.5	Initiation of the EMM common procedures on receipt of ATTACH REQUEST messages in state EMM-REGISTERED?	5.5.1.2.7 f)	o	
6.6	Attach successful for EPS services and not accepted for SMS services?	5.5.1.2.4A	o	
7	Detach procedures?	5.5.2	m	
7.1	UE initiated detach procedures?	5.5.2.2	m	
7.2	Network initiated detach procedures?	5.5.2.3	m	
7.2.1	Inclusion of an EMM cause IE in the DETACH REQUEST message?	5.5.2.3.1	o	
8	Tracking area updating procedures?	5.5.3	m	
8.1	Normal and periodic tracking area updating procedures?	5.5.3.2	m	
8.1.1	Initiation of EMM common procedures during the tracking area updating procedure?	5.5.3.2.3	o	
8.1.2	Inclusion of a new TAI list for the UE in the TRACKING AREA UPDATE ACCEPT message?	5.5.3.2.4	o	
8.1.3	Re-establishment of radio and S1 bearers for all active EPS bearer contexts on receipt of a TRACKING AREA UPDATE REQUEST message without "active" flag?	5.5.3.2.4	o	
8.1.4	Inclusion of the header compression configuration status IE in the TRACKING AREA UPDATE ACCEPT message for each established EPS bearer context using control plane CIoT EPS optimisation?	5.5.3.2.4	o	
8.1.5	Inclusion of a list of equivalent PLMNs in the TRACKING AREA UPDATE ACCEPT message?	5.5.3.2.4	o	
8.2	Combined tracking area updating procedures?	5.5.3.3	m	
8.2.1	Initiation of EMM common procedures during the combined tracking area updating procedure?	5.5.3.3.3	o	
EMM connection management procedures				
9	Service request procedures?	5.6.1	m	
9.1	Initiation of EMM common procedures during the service request procedures?	5.6.1.3	o	
9.1.1	Initiation of EMM common procedures on receipt of a SERVICE REQUEST message?	5.6.1.3, 5.6.1.7 d), e)	o.4	
9.1.2	Initiation of EMM common procedures on receipt of an EXTENDED SERVICE REQUEST message?	5.6.1.3	o.4	
9.1.3	Initiation of EMM common procedures on receipt of a CONTROL PLANE SERVICE REQUEST message?	5.6.1.3	o.4	
10	Paging procedures?	5.6.2	m	
10.1	Reinitialisation of the paging procedure upon expiry of timer T3413?	5.6.2.2.1.1	o	
10.2	Initiation of the paging procedure for CS fallback when a UE is IMSI attached for non-EPS services?	5.6.2.3.1	o	
11	Transport of NAS messages procedures?	5.6.3	o	
12	Generic transport of NAS messages procedures?	5.6.4	o	
13	Sending of EMM STATUS messages?	5.7	o	
o.1:	o, if A4/2.2 is supported, else N/A.			
o.2:	o, if A4/2.3 is supported, else N/A.			
o.3:	o, if A4/6.1 is supported, else N/A.			
o.4:	o, if A4/9.1 is supported, else N/A.			

A.6.2.3 EPS session management procedures

Table A.5: EPS session management procedures

Item	Does the IUT support ...	Reference	Status	Support
Network initiated ESM procedures				
1	Default EPS bearer context activation procedures?	6.4.1	m	
2	Dedicated EPS bearer context activation procedures?	6.4.2	m	
3	EPS bearer context modification procedures?	6.4.3	m	
3.1	The use of the previous configuration of the EPS bearer context on the expiry of timer T3486?	6.4.3.6	o.5	
3.2	The initiation of an EPS bearer context deactivation procedure on the expiry of timer T3486?	6.4.3.6	o.5	
4	EPS bearer context deactivation procedures?	6.4.4	m	
UE requested ESM procedures				
5	UE requested PDN connectivity procedures?	6.5.1	m	
5.1	Inclusion of the Back-off timer value IE in the PDN CONNECTIVITY REJECT message?	6.5.1.4.1	o	
In the case that one or more information elements in the PDN CONNECTIVITY REQUEST message differ from the ones received within the previous PDN CONNECTIVITY REQUEST message, and multiple PDN connections for a given APN are not allowed.				
5.1	Deactivation of the existing EPS bearer contexts for the PDN connection locally without notification to the UE?	6.5.1.6	o.6	
5.2	Rejection of the PDN connectivity procedure with inclusion of ESM cause #55 "multiple PDN connections for a given APN not allowed", in the PDN CONNECTIVITY REJECT message?	6.5.1.6	o.6	
6	UE requested PDN disconnect procedures?	6.5.2	m	
7	UE requested bearer resource allocation procedures?	6.5.3	m	
7.1	Inclusion of the Back-off timer value IE in the BEARER RESOURCE MODIFICATION REJECT message?	6.5.3.4.1	o	
8	UE requested bearer resource modification procedures?	6.5.4	m	
8.1	Inclusion of the Back-off timer value IE in the BEARER RESOURCE ALLOCATION REJECT message?	6.5.4.4.1	o	
Miscellaneous procedures				
9	ESM information request procedures?	6.6.1.2	m	
10	Notification procedures?	6.6.2	m	
11	Remote UE report procedures?	6.6.3	m	
12	Transport of user data via the control plane procedures?	6.6.4	m	
13	Sending of ESM STATUS messages?	6.7	o	
o.5: At least one of these options shall be supported. o.6: At least one of these options shall be supported.				

A.6.2.4 Procedures for handling of unknown, unforeseen, and erroneous protocol data

Table A.6: Error handling procedures

Item	Does the IUT support ...	Reference	Status	Support
1	Procedures for handling of unknown, unforeseen, and erroneous protocol data?	7	m	
Unknown or unforeseen message type				
1.1	Sending of an EMM STATUS message with cause #97 "message type non-existent or not implemented" on receipt of a message with message type not defined for the PD or not implemented by the receiver?	7.4, 5.7	o.7	
1.2	Sending of an ESM STATUS message with cause #97 "message type non-existent or not implemented" on receipt of a message with message type not defined for the PD or not implemented by the receiver?	7.4, 6.7	o.8	
Non-semantical mandatory information element errors				
1.3	Treating messages (see note) received with non-semantical mandatory information element errors?	7.5.1	o.9	

Item	Does the IUT support ...	Reference	Status	Support
1.3.1	Sending of an EMM STATUS message with cause #96 "invalid mandatory information" on receipt of a message non-semantical mandatory information element errors?	7.5.1, 5.7	o.10	
1.3.2	Sending of an ESM STATUS message with cause #96 "invalid mandatory information" on receipt of a message non-semantical mandatory information element errors?	7.5.1, 6.7	o.11	
1.4	Ignoring messages (see note) received with non-semantical mandatory information element errors?	7.5.1	o.9	
Unknown and unforeseen IEs in the non-imperative message part				
1.5	Ignoring of all IEs unknown in messages which are not encoded as "comprehension required"?	7.6.2	o	
1.6	Ignoring of repeated IEs when the number of allowed repetitions is exceeded?	7.6.3	o	
Non-imperative message part errors				
1.7	Treating messages with errors in conditional IEs?	7.7.2		
1.8	Ignoring messages with errors in conditional IEs?	7.7.2		
1.8.1	Sending of an EMM STATUS message with cause #100 "conditional IE error" on receipt of a message with errors in conditional IEs?	7.7.2, 5.7	o.12	
1.8.2	Sending of an ESM STATUS message with cause #100 "conditional IE error" on receipt of a message with errors in conditional IEs?	7.7.2, 6.7	o.13	
Messages with semantically incorrect contents				
1.9	Responding to messages with semantically incorrect contents (where a reaction is foreseen)?	7.8	o	
1.10	Ignoring of messages with semantically incorrect contents (where no reaction is foreseen)?	7.8	o	
1.10.1	Sending of an EMM STATUS with cause #95 "semantically incorrect message" on receipt of a message with semantically incorrect contents (where no reaction is foreseen)?	7.8, 5.7	o.14	
1.10.2	Sending of an ESM STATUS with cause #95 "semantically incorrect message" on receipt of a message with semantically incorrect contents (where no reaction is foreseen)?	7.8, 6.7	o.15	
o.7:	o, if A4/13 is supported, else N/A.			
o.8:	o, if A5/13 is supported, else N/A.			
o.9:	At least one of these options shall be supported.			
o.10:	o, if A4/13 and A6/1.3 are supported, else N/A.			
o.11:	o, if A5/13 and A6/1.3 are supported, else N/A.			
o.12:	o, if A4/13 and A6/1.8 are supported, else N/A.			
o.13:	o, if A5/13 and A6/1.8 are supported, else N/A.			
o.14:	o, if A4/13 and A6/1.10 are supported, else N/A.			
o.15:	o, if A5/13 and A6/1.10 are supported, else N/A.			
NOTE:	Messages other than PDN CONNECTIVITY REQUEST, PDN DISCONNECT REQUEST, BEARER RESOURCE ALLOCATION REQUEST or BEARER RESOURCE MODIFICATION REQUEST.			

History

Document history		
V1.1.1	January 2018	Publication