

ETSI TS 103 920-3 V1.1.1 (2024-10)



TECHNICAL SPECIFICATION

**Core Network and Interoperability Testing (INT);
5G NGAP Conformance Testing for the N2 interface;
(3GPP™ Release 16);
Part 3: Abstract Test Suite (ATS) and partial
Protocol Implementation eXtra Information for Testing (PIXIT)
pro forma specification**

Reference

DTS/INT-00199

Keywords

ATS, conformance, NGAP, PIXIT

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 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

Important notice

The present document can be downloaded from the
ETSI [Search & Browse Standards](#) application.

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 prevailing version of an ETSI deliverable is the one made publicly available in PDF format on [ETSI deliver](#).

Users should be aware that the present document may be revised or have its status changed,
this information is available in the [Milestones listing](#).

If you find errors in the present document, please send your comments to
the relevant service listed under [Committee Support Staff](#).

If you find a security vulnerability in the present document, please report it through our
[Coordinated Vulnerability Disclosure \(CVD\)](#) program.

Notice of disclaimer & limitation of liability

The information provided in the present deliverable is directed solely to professionals who have the appropriate degree of experience to understand and interpret its content in accordance with generally accepted engineering or other professional standard and applicable regulations.

No recommendation as to products and services or vendors is made or should be implied.

No representation or warranty is made that this deliverable is technically accurate or sufficient or conforms to any law and/or governmental rule and/or regulation and further, no representation or warranty is made of merchantability or fitness for any particular purpose or against infringement of intellectual property rights.

In no event shall ETSI be held liable for loss of profits or any other incidental or consequential damages.

Any software contained in this deliverable is provided "AS IS" with no warranties, express or implied, including but not limited to, the warranties of merchantability, fitness for a particular purpose and non-infringement of intellectual property rights and ETSI shall not be held liable in any event for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or any other pecuniary loss) arising out of or related to the use of or inability to use the software.

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2024.
All rights reserved.

Contents

Intellectual Property Rights	4
Foreword.....	4
Modal verbs terminology.....	4
1 Scope	5
2 References	5
2.1 Normative references	5
2.2 Informative references.....	6
3 Definition of terms, symbols and abbreviations.....	6
3.1 Terms.....	6
3.2 Symbols.....	6
3.3 Abbreviations	6
4 Abstract Test Method (ATM).....	6
4.1 Introduction	6
4.2 Test architecture	6
4.2.1 Test method	6
4.2.2 Test machine configuration.....	7
4.2.2.1 Test configurations using N2 interface	7
4.2.3 Interconnection of TS and SUT	8
4.2.3.1 gNB Role	8
4.2.3.2 AMF Role	8
5 ATS conventions	9
5.1 Introduction	9
5.2 Testing conventions.....	9
5.2.1 Test cases Preamble and Postamble.....	9
5.3 Naming conventions.....	10
5.3.1 General guidelines	10
5.3.2 Test case grouping	10
5.3.3 Test case identifiers	11
Annex A (normative): NGAP N2 Partial PIXIT pro forma	12
A.1 The right to copy	12
A.2 Identification summary.....	12
A.3 ATS summary	12
A.4 Test laboratory.....	12
A.5 Client identification.....	12
A.6 SUT	13
A.7 Protocol layer information.....	13
A.7.1 Protocol identification	13
A.8 PIXIT items	13
A.8.1 Introduction	13
A.8.2 Port and Address items.....	13
A.8.3 LibCommon items.....	14
A.8.4 LibNGAP items.....	14
Annex B (normative): NGAP N2 Abstract Test Suite (ATS)	16
B.1 The TTCN-3 Module.....	16
History	17

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are 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 Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, 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.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™** and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

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 [2].

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.

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 specification for the NGAP protocol on the N2 interface as specified in ETSI TS 138 413 [1] in compliance with the relevant requirements and in accordance with the relevant guidance given in ISO/IEC 9646-7 [i.2] and ETSI ETS 300 406 [5].

The test notation used in the ATS is TTCN-3 (see ETSI ES 201 873-1 [6]).

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).

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 138 413 \(V16.14.0\)](#): "5G; NG-RAN; NG Application Protocol (NGAP) (3GPP TS 38.413 version 16.14.0 Release 16)".
- [2] [ETSI TS 103 920-1](#): "Core Network and Interoperability Testing (INT); 5G NGAP Conformance Testing for the N2 interface; (3GPPTM Release 16); Part 1: Protocol Implementation Conformance Statement (PICS)".
- [3] [ETSI TS 103 920-2](#): "Core Network and Interoperability Testing (INT); 5G NGAP Conformance Testing for the N2 interface; (3GPPTM Release 16); Part 2: Test Suite Structure (TSS) and Test Purposes (TP)".
- [4] [ISO/IEC 9646-6](#): "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 6: Protocol profile test specification".
- [5] [ETSI ETS 300 406](#): "Methods for testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

- [6] [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".
- [7] [ETSI TS 123 501](#): "5G; System architecture for the 5G System (5GS) (3GPP TS 23.501)".

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.

- [i.1] [ISO/IEC 9646-1](#): "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 1: General concepts".
- [i.2] [ISO/IEC 9646-7](#): "Information technology -- Open Systems Interconnection -- Conformance testing methodology and framework -- Part 7: Implementation Conformance Statements".

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 [i.2] and ETSI TS 138 413 [1] apply.

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in ISO/IEC 9646-1 [i.1], ISO/IEC 9646-6 [4], ISO/IEC 9646-7 [i.2] and ETSI TS 138 413 [1] apply.

4 Abstract Test Method (ATM)

4.1 Introduction

This clause describes the ATM used to test the NGAP protocol on the N2 interface at the gNB and AMF side.

4.2 Test architecture

4.2.1 Test method

Void.

4.2.2 Test machine configuration

4.2.2.1 Test configurations using N2 interface

The N2 interface is located between the gNB and the AMF. Following configurations are simplified to highlight tested interface and involved entities.

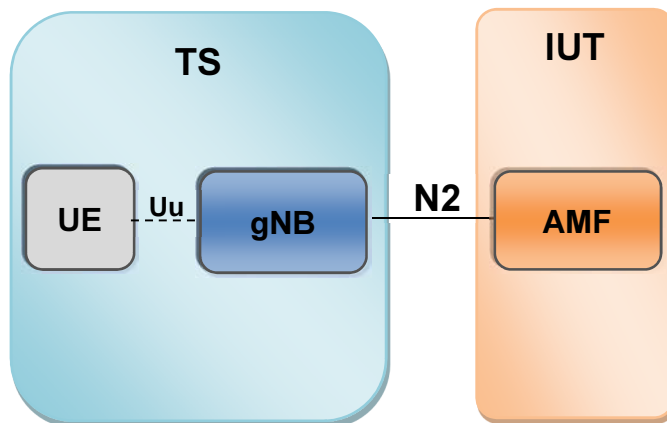


Figure 1: Test configuration CF_AMF_N2

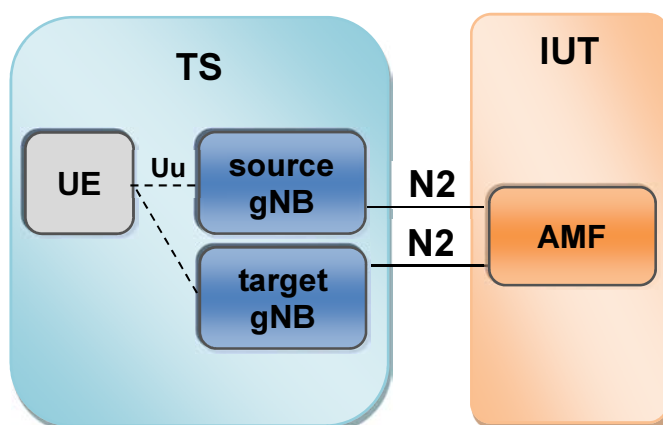


Figure 2: Test configuration CF_AMF_2N2

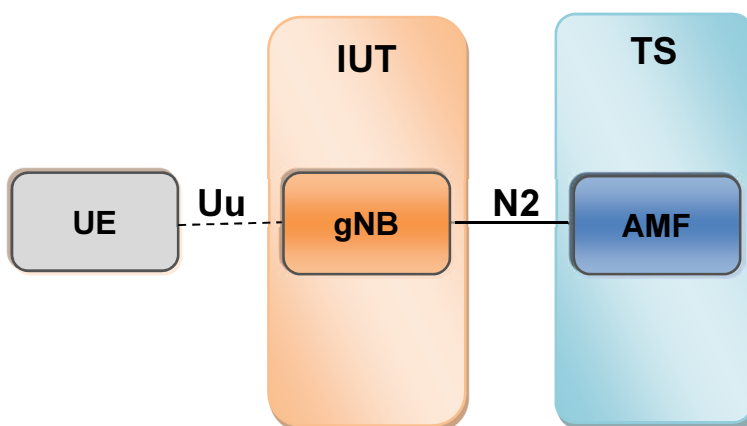


Figure 3: Test configuration CF_GNB_N2

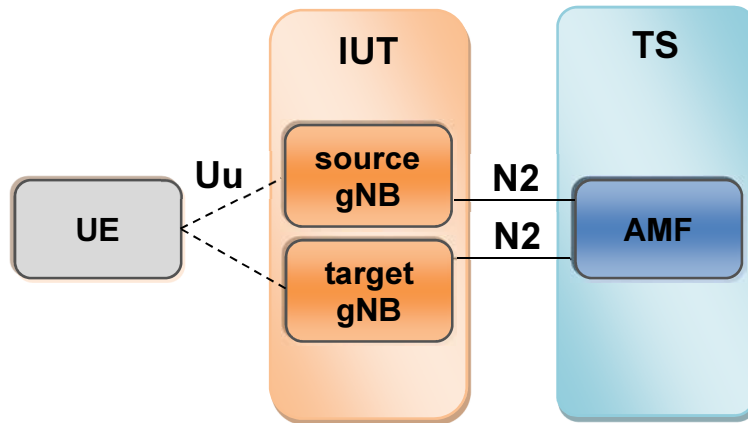


Figure 4: Test configuration CF_GNB_2N2

4.2.3 Interconnection of TS and SUT

4.2.3.1 gNB Role

Figure 5 shows the interconnection of TS and SUT in terms of NGAP message flows. NGAP messages are transferred over the N2 port.

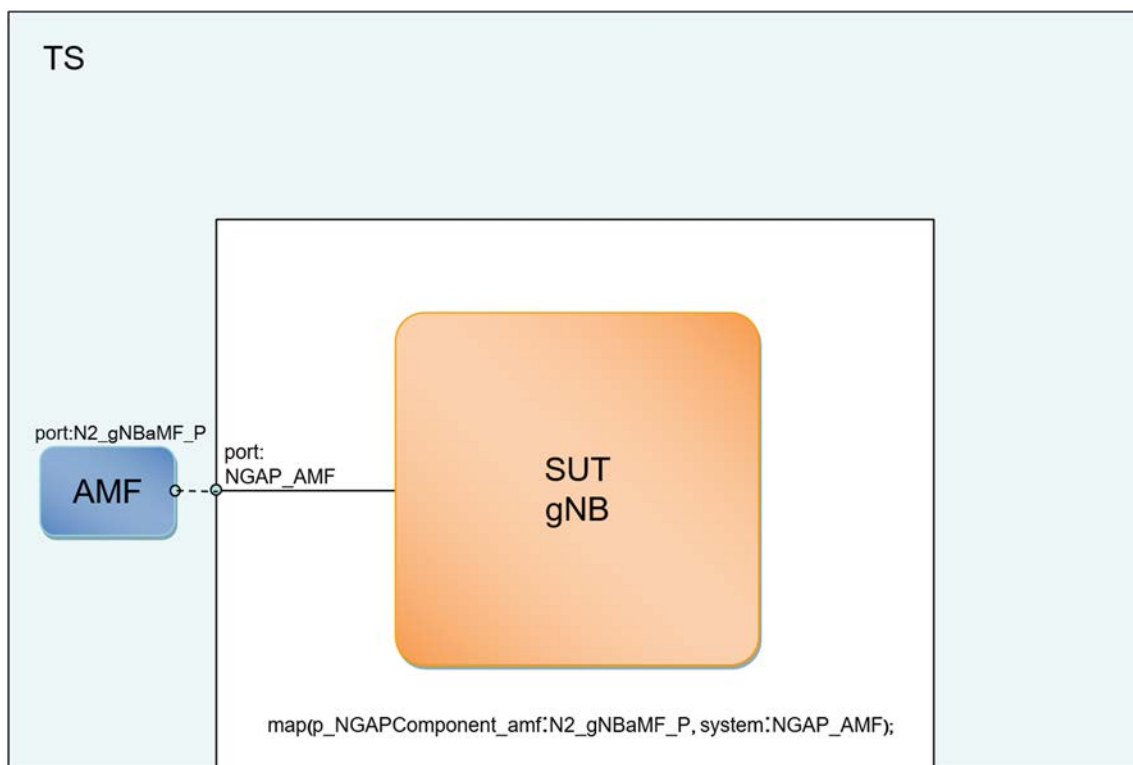


Figure 5: Interconnection for gNB role

4.2.3.2 AMF Role

If SUT has the role of AMF Figure 6 shows the interconnection of TS and SUT in terms of signalling message flows. NGAP messages are transferred over the N2 port.

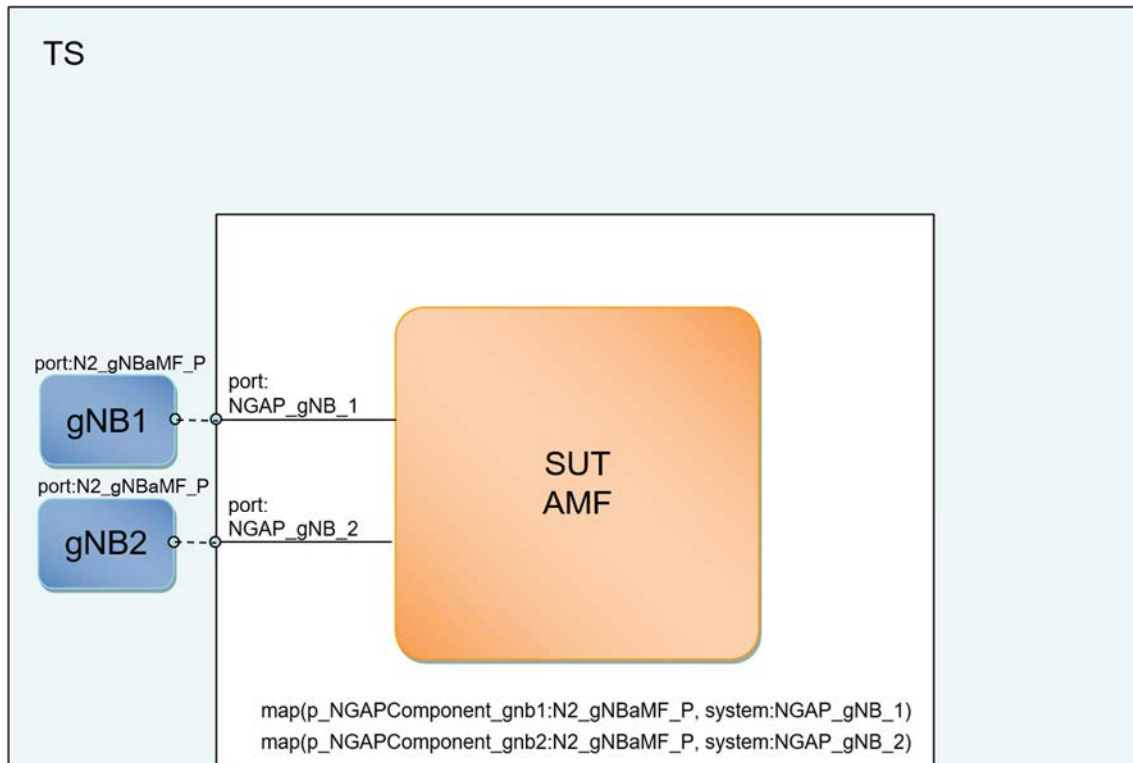


Figure 6: Interconnection for AMF role

5 ATS conventions

5.1 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 testing conventions and the naming conventions. The naming conventions describe the structure of the naming of all ATS elements.

To define the ATS, the guidelines of ETSI ETS 300 406 [5] were considered.

5.2 Testing conventions

5.2.1 Test cases Preamble and Postamble

As described in the test method clause the test tool shall behave as a gNB when the IUT is an AMF and shall behave as an AMF when the IUT is a gNB. For that reason the test case preambles and postambles are named as follows:

IUT is an NGAP/gNB (example TC_NGAP_gNB_PDU_01):

f_cf_NGAP_gNB_Up

f_cf_NGAP_gNB_Down

f_cf_NGAP_gNB2_Up

f_cf_NGAP_gNB2_Down

IUT is a NGAP/AMF (example TC_NGAP_AMF_PDU_01):

f_cf_NGAP_AMF_Up

f_cf_NGAP_AMF_Down

5.3 Naming conventions

5.3.1 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 1.
- 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_send_Location_Reporting_Control.

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	LibNGAP_	none	LibNGAP_Interface	
TSS grouping	Use all upper-case letters	none	none	NGAP_gNB_PDU	
Message template	Use lower-case initial letter	m_	none	m_E_PDUSetupRequest	
Message template with wildcard or matching expression	Use lower-case initial letter	mw_	none	mw_cause	
Port instance	Use upper-case initial letter	none	none	NGAPPort	
Constant	Use lower-case initial letter	c_	none	c_maxRetransmission	
Function	Use lower-case initial letter	f_	none	f_recv_NGAP_PDU()	
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 letters	PICS_	none	PICS_NGAP_AMF_IUT	See note
PIXIT values	Use all upper case letters	PX_	none	PX_NGAP_AMF_ETS_PORT	See note
Parameterization	Use lower-case initial letter	p_	none	p_servedPLMNs	
Enumerated Value	Use lower-case initial letter	e_	none	e_preamble	

NOTE: In this case it is acceptable to use underscore as a word delimiter.

5.3.2 Test case grouping

The ATS structure is based on the Test Purposes for the NGAP protocol on the N2 interface as defined in ETSI TS 103 920-2 [3].

5.3.3 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>_<iut>_<scope>_<nn>		
<tp>	= Test Case:	fixed to "TC"
<interface>	= Interface:	NGAP
<iut>	= type of IUT:	gNB or AMF
<scope>	= group	PDU PDU Session Management Procedures
		CMP Context Management Procedures
		MMP UE Mobility Management Procedures
		PAG Paging
		NAS Transport of NAS Messages Procedures
		IMP Interface Management Procedures
		CTP Configuration Transfer Procedures
		WTP Warning Message Transmission Procedures
		NTP NRPPa Transport Procedures
		TRP Trace Procedures
		LRP Location Reporting Procedures
		UBP UE TNLA Binding Procedures
		URP UE Radio Capability Management Procedures
		DRP Data Usage Reporting Procedures
		RIP RIM Information Transfer Procedures
<nn>	= sequential number	(01 to 99)

NOTE: This naming scheme results into a one-to-one correspondence between the test purpose identifiers as defined in ETSI TS 103 920-2 [3] and the test case identifiers.
The TP identifier of the test case TC_xxx_01 is TP_xxx_01.

Annex A (normative): NGAP N2 Partial PIXIT 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 Partial PIXIT pro forma in this annex so that it can be used for its intended purposes and may further publish the completed Partial PIXIT.

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

A.2 Identification summary

Table A.1

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

A.3 ATS summary

Table A.2

Protocol Specification:	ETSI TS 138 413 version 16.14.0 (Release 16)
Protocol to be tested:	NGAP
ATS Specification:	ETSI TS 103 920-2
Abstract Test Method:	ETSI TS 103 920-3, clause 4

A.4 Test laboratory

Table A.3

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

A.5 Client identification

Table A.4

Client Identification:	
Client Test manager:	
Test Facilities required:	

A.6 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.7 Protocol layer information

A.7.1 Protocol identification

Table A.6

Name:	ETSI TS 138 413: "NG-RAN; NG Application Protocol (NGAP)"
Version:	Version 16.14.0 (Release 16)
PICS References:	ETSI TS 103 920-1

A.8 PIXIT items

A.8.1 Introduction

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.

Each PIXIT item corresponds to a Module Parameter of the ATS.

A.8.2 Port and Address items

Table A.7: Test system ports and addresses

Item	Identifier	Type	Description
1	PX_NGAP_ETS_IPADDR	Charstring	IP address of the gNB/AMF test system
2	PX_NGAP_ETS_PORT	Integer	Port number of the gNB/AMF test system
3	PX_NGAP_ETS_IPADDR2	Charstring	IP address of the second gNB test system
4	PX_NGAP_ETS_PORT2	Integer	Port number of the second gNB test system
5	PX_VA	Integer	Variant selection
6	PX_VA_CRITICALITY	Enum	Criticality for variant selection
7	PX_TNGRELOCOOverall	Float	Timer TNGRELOCOOverall

Table A.8: SUT ports and addresses

Item	Identifier	Type	Description
1	PX_NGAP_SUT_IPADDR	Charstring	IP address of the gNB/AMF system under test
2	PX_NGAP_SUT_PORT	Integer	Port number of the gNB/AMF system under test

A.8.3 LibCommon items

Table A.9: PIXIT for LibCommon

Item	Identifier	Type	Description
1	PX_TSYNC_TIME_LIMIT	Float	Default time limit for a sync client to reach a synchronization point
2	PX_TSHUT_DOWN_TIME_LIMIT	Float	Default time limit for a sync client to finish its execution of the shutdown default

A.8.4 LibNGAP items

Table A.10: PIXIT for LibNGAP

Item	Identifier	Type	Description
1	PX_AMF_UE_NGAP_ID	integer	Unique identifier assigned by the AMF to the UE for NGAP signaling purposes
2	PX_RAN_UE_NGAP_ID	integer	This IE carries an identifier assigned by the RAN to the UE for the purposes of NGAP signaling
3	PX_PDU_SESSION_ID	integer	The identifier for the PDU session
4	PX_SST	integer	Single Network Slice Selection Assistance Information
5	PX_TRANSPORT_LAYER_ADDRESS	bitstring	Transport Layer Address
6	PX_SOURCE_TRANSPORT_LAYER_ADDRESS	bitstring	Source Transport Layer Address
7	PX_MC_TRANSPORT_LAYER_ADDRESS	bitstring	Multicast Transport Layer Address
8	PX_GTP_TEID	octetstring	GPRS Tunneling Protocol - Tunnel Endpoint Identifier
9	PX_QOS_FLOW_IDENTIFIER	integer	To identify QoS flow
10	PX_ALTERNATIVE_QOS_PARA_SET_INDEX	Integer	To Indicate alternative sets of QoS parameters for the QoS flow
11	PX_ALTERNATIVE_QOS_PARA_SET_NOTIFY_INDEX	integer	To indicate the QoS parameters set which can currently be fulfilled
12	PX_PLMN_IDENTITY	octetstring	The Mobile Country Code (MCC) and Mobile Network Code (MNC)
13	PX_EUTRA_CELL_IDENTITY	bitstring	The leftmost bits of the E-UTRA Cell Identity IE correspond to the ng-eNB ID
14	PX_PDU_SESSION_RESOURCE_RELEASE_COMMAND_TRANSFER	octetstring	
15	PX_EXPECTED_ACTIVITY_PERIOD	integer	The expected activity time in seconds
16	PX_EXPECTED_IDLE_PERIOD	integer	The expected idle time in seconds
17	PX_RRC_STATE	enum	To indicate the RRC state of the UE
18	PX_AMF_POINTER	bitstring	To identify the AMF within the global 5G network
19	PX_AMF_REGION_ID	bitstring	To identify the AMF within the global 5G network
20	PX_AMF_SET_ID	bitstring	To identify the AMF within the global 5G network
21	PX_TAC	octetstring	To uniquely identify a Tracking Area Code
22	PX_RRC_ESTABLISHMENT_CAUSE	enum	To indicate the reason for RRC Connection Establishment/Resume
23	PX_RRC_RESUME_CAUSE	enum	To indicate the reason for RRC Connection Establishment/Resume
24	PX_HANDOVER_TYPE	enum	To indicate which kind of handover was triggered in the source side
25	PX_UE_AGGREGATE_MAXIMUM_BIT_RATE_DL	integer	To indicates the UE Aggregate Maximum Bit Rate as specified in ETSI TS 123 501 [7] in the downlink direction (bit/s)
26	PX_UE_AGGREGATE_MAXIMUM_BIT_RATE_UL	integer	To indicates the UE Aggregate Maximum Bit Rate as specified in ETSI TS 123 501 [7] in the uplink direction (bit/s)

Item	Identifier	Type	Description
27	PX_NR_ENCRYPTION_ALGORITHMS	Bitstring	Each position in the bitmap represents an encryption algorithm
28	PX_NR_INTEGRITY_PROTECTION_ALGORITHMS	bitstring	Each position in the bitmap represents an encryption algorithm
29	PX_DRB_ID	integer	Contains the DRB ID
30	PX_AMF_NAME	string	To uniquely identify the AMF
31	PX_RAN_NODE_NAME	string	Human readable name of the NG-RAN node
32	PX_MESSAGE_IDENTIFIER	bitsring	To identify the warning message
33	PX_SERIAL_NUMBER	bitsring	To identifies a particular message from the source and type
34	PX_REPETITION_PERIOD	integer	To indicate the periodicity of the warning message to be broadcast
35	PX_NUMBER_OF_BROADCASTS_REQUESTED	integer	To indicate the number of times a message is to be broadcast
36	PX_Index_to_RAT_Frequency_Selection_Priority	integer	To indicat local configuration for RRM strategies such as camp priorities in Idle mode and control of inter-RAT/inter-frequency handover in Active mode
37	PX_MaskedIMEISV	bitstring	To indicate IMEISV value with a mask, to identify a terminal model without identifying an individual Mobile Equipment.
38	PX_CAUSE_INITIAL_SETUP_FAILURE	enum	To indicate the reason for a particular event for the NGAP protocol
39	PX_UE_CONTEXT_RELEASE_COMMAND_CAUSE	enum	To indicate the reason for a particular event for the NGAP protocol
40	PX_CAUSE_UE_CONTEXT_MODIFICATION_FAILURE	enum	To indicate the reason for a particular event for the NGAP protocol
41	PX_CAUSE_UE_CONTEXT_SUSPEND_FAILURE	enum	To indicate the reason for a particular event for the NGAP protocol
42	PX_CAUSE_UE_CONTEXT_RESUME_FAILURE	enum	To indicate the reason for a particular event for the NGAP protocol
43	PX_CAUSE_HANDOVER_REQUIRED	enum	To indicate the reason for a particular event for the NGAP protocol
44	PX_CAUSE_HANDOVER_PREPARATION_FAILURE	enum	To indicate the reason for a particular event for the NGAP protocol
45	PX_CAUSE_HANDOVER_REQUEST	enum	To indicate the reason for a particular event for the NGAP protocol
46	PX_CAUSE_HANDOVER_FAILURE	enum	To indicate the reason for a particular event for the NGAP protocol
47	PX_CAUSE_HANDOVER_CANCEL	enum	To indicate the reason for a particular event for the NGAP protocol
48	PX_CAUSE_NAS_NON_DELIVERY_INDICATION	enum	To indicate the reason for a particular event for the NGAP protocol
49	PX_NG_SETUP_FAILURE	enum	To indicate the reason for a particular event for the NGAP protocol
50	PX_RAN_CONFIGURATION_UPDATE_FAILURE	enum	To indicate the reason for a particular event for the NGAP protocol
51	PX_AMF_CONFIGURATION_UPDATE_FAILURE	enum	To indicate the reason for a particular event for the NGAP protocol
52	PX_CAUSE_MULTIPLE_LOCATION_REPORTING	enum	To indicate the reason for a particular event for the NGAP protocol

Annex B (normative): NGAP N2 Abstract Test Suite (ATS)

B.1 The TTCN-3 Module

This ATS has been produced using the Testing and Test Control Notation (TTCN-3) according to ETSI ES 201 873-1 [6].

This test suite has been compiled error-free using two different TTCN-3 compilers.

The TTCN-3 library modules corresponding to the ATS are released in the ETSI forge repository:

- <https://forge.etsi.org/rep/int/5g-core/ngap/-/tree/main/ttcn>.

History

Document history		
V1.1.1	October 2024	Publication