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Part 2: Common Implementation Conformance Statement (ICS) proforma
(3GPP TS 38.508-2 version 15.0.0 Release 15)

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Foreword

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Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

The present document is part 2 of a multi-part deliverable covering the 5G System (5GS) User Equipment (UE) protocol conformance specification, as identified below:

- 3GPP TS 38.508-1 [11]: "5GS; User Equipment (UE) conformance specification; Part 1: Common test environment ".
- 3GPP TS 38.508-2: "**5GS; User Equipment (UE) conformance specification; Part 2: Common Implementation Conformance Statement (ICS) proforma**" (the present document).

1 Scope

The present document provides the Implementation Conformance Statement (ICS) proforma for 5G New Radio (NR) User Equipment (UE), in compliance with the relevant requirements.

Special conformance testing functions can be found in 3GPP TS 38.509 [12] and 3GPP TS 36.509 [14] and the common test environments are included in 3GPP TS 38.508-1 [11] and 3GPP TS 36.508 [13].

The present document is valid for UE implemented according to 3GPP Releases starting from Release 15 up to the Release indicated on the cover page of the present document.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 38.523-1: "5GS; UE conformance specification; Part 1: Protocol conformance specification".

[3] 3GPP TS 38.523-2: “5GS; User Equipment (UE) conformance specification; Part 2: Applicability of protocol test cases”.

[4] 3GPP TS 38.523-3: “5GS; User Equipment (UE) conformance specification; Part 3: Protocol Test Suites”.

[5] 3GPP TS 38.521-1: “NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Range 1 Standalone”.

[6] 3GPP TS 38.521-2: “NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 2: Range 2 Standalone”.

[7] 3GPP TS 38.521-3: “NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 3: Range 1 and Range 2 Interworking operation with other radios”.

[8] 3GPP TS 38.521-4: “NR; User Equipment conformance specification; Radio transmission and reception; Part 4: Performance”.

[9] 3GPP TS 38.522: “NR; User Equipment (UE) conformance specification; Applicability of radio transmission, radio reception and radio resource management test cases”.

[10] 3GPP TS 38.523: “NR; User Equipment (UE) conformance specification; Radio resource management”.

[11] 3GPP TS 38.508-1: "5GS; User Equipment (UE) conformance specification; Part 1: Common test environment".

[12] 3GPP TS 38.509: "5GS; Special conformance testing functions for UE".

[13] 3GPP TS 36.508: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access (E-UTRAN); Common Test Environments for User Equipment (UE) Conformance Testing".

[14] 3GPP TS 36.509: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Special conformance testing functions for User Equipment (UE)".

[15] 3GPP TS 34.229-2: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP);User Equipment (UE) conformance specification; Part 2: Implementation Conformance Statement (ICS) specification".

[16] 3GPP TS 36.523-2: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access (E-UTRAN); User Equipment (UE) conformance specification; Part 2: Implementation Conformance Statement (ICS) proforma specification".

[17] 3GPP TS 38.306: “NR; User Equipment (UE) radio access capabilities”.

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

[19] 3GPP TS 38.307: “NR; User Equipments (UEs) supporting a release-independent frequency band”.

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [5] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [5].

Implementation Conformance Statement (ICS): statement made by the supplier of an implementation or system claimed to conform to a given specification, stating which capabilities have been implemented

ICS proforma: document, in the form of a questionnaire, which when completed for an implementation or system becomes an ICS

Implementation extra Information for Testing (IXIT): A statement made by a supplier or implementer of an UEUT which contains or references all of the information (in addition to that given in the ICS) related to the UEUT and its testing environment, which will enable the test laboratory to run an appropriate test suite against the UEUT

IXIT proforma: A document, in the form of a questionnaire, which when completed for an UEUT becomes an IXIT

Protocol Implementation Conformance Statement (PICS): An ICS for an implementation or system claimed to conform to a given protocol specification

Protocol Implementation extra Information for Testing (PIXIT): An IXIT related to testing for conformance to a given protocol specification

Static conformance review: A review of the extent to which the static conformance requirements are claimed to be supported by the UEUT, by comparing the answers in the ICS(s) with the static conformance requirements expressed in the relevant specification(s)

3.2 Symbols

For the purposes of the present document, the following symbols apply:

<symbol> <Explanation>

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

For the purposes of the present document, the following abbreviations apply:

FFS	For Further Study
ICS	Implementation Conformance Statement
IXIT	Implementation extra Information for Testing
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation extra Information for Testing
SCS	System Conformance Statement
TC	Test Case
UEUT	User Equipment Under Test

Annex A (normative): ICS proforma for NR/5GS Generation User Equipment

A.1 Guidance for completing the ICS proforma

A.1.1 Purposes and structure

The purpose of this ICS proforma 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 standardised manner.

The ICS proforma is subdivided into clauses for the following categories of information:

- instructions for completing the ICS proforma;
- identification of the implementation;
- identification of the protocol;
- ICS proforma tables (for example: UE implementation types, Teleservices, etc).

A.1.2 Abbreviations and conventions

The ICS proforma contained in this annex is comprised of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7 [18].

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 3GPP core specifications.

Release column

The release column indicates the earliest release from which the capability or option is relevant.

Mnemonic column

The Mnemonic column contains mnemonic identifiers for each item.

Comments column

This column is left blank for particular use by the reader of the present document.

References to items

For each possible item answer (answer in the support column) within the ICS proforma 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. If there is more than one support column in a table, the columns shall be discriminated by letters (a, b, etc.), respectively.

A.1.3 Instructions for completing the ICS proforma

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

A.2 Identification of the User Equipment

Identification of the User 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 ICS should be named as the contact person.

A.2.1 Date of the statement

.....

A.2.2 User Equipment Under Test (UEUT) identification

UEUT name:

.....

.....

Hardware configuration:

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.....

.....

Software configuration:

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.....

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A.2.3 Product supplier

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

A.2.4 Client

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

A.2.5 ICS contact person

Name:

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

A.3 Identification of the protocol

This ICS proforma applies to the 3GPP standards listed in the normative references clause of the present document.

A.4 ICS proforma tables

A.4.1 UE Implementation Types

Table A.4.1-1: UE Radio Technologies

Item	UE Radio Technologies	Ref.	Release	Mnemonic	Comments
1	NR FDD NR FDD (sub-6GHz) (Option 2)	38.101	Rel-15	pc_nrFDD	
2	NR TDD NR TDD (sub-6GHz and/or mmWave) (Option 2)	38.101	Rel-15	pc_nrTDD	
3	NG-RAN E-UTRA FDD (Option 5)	38.101	Rel-15	pc_NGeFDD	
4	NG-RAN E-UTRA TDD (Option 5)	38.101	Rel-15	pc_NGeTDD	
5	EN-DC (Option 3)	38.101	Rel-15	pc_EN_DC	
6	NE-DC (Option 4)	38.101	Rel-15	pc_NE_DC	
7	NGEN-DC (option 7)	38.101	Rel-15	pc_NGEN_DC	

Table A.4.1-2: UE general functionality

Item	UE Functionality	Ref.	Release	Mnemonic	Comments
1	Support of multiple NR FDD bands	38.101, 5.2	Rel-15	pc_nrFDD_MultiBand	
2	Support of multiple NR TDD bands	38.101, 5.2	Rel-15	pc_nrTDD_MultiBand	

A.4.2 UE Service Capabilities

A.4.2.1 3GPP Standardised UE Service Capabilities

A.4.2.1.1 Bearer Services

Table A.4.2.1.1-1: Definition of Bearer Services

Item	Definition of Bearer Services	Ref.	Release	Mnemonic	Comments
1	FFS				

A.4.3 Baseline Implementation Capabilities

Table A.4.3-1: Supported protocols

Item	Supported protocols	Ref.	Release	Mnemonic	Comments
1	5GS Mobility Management	24.501	Rel-15		
2	5GS Session Management	24.501	Rel-15		
3	Radio Resource Control	38.331	Rel-15		
4	Service Data Adaptation Protocol	37.324	Rel-15		
5	Packet Data Convergence Protocol	38.323	Rel-15		
6	Radio Link Control	38.322	Rel-15		
7	Medium Access Control	38.321	Rel-15		
8	Physical Layer	38.201	Rel-15		

Table A.4.3-2: Special Conformance Testing Functions

Item	Special Conformance Testing Functions	Ref.	Release	Mnemonic	Comments
1	UE test loop	38.509	Rel-15		

A.4.3.1 RF Baseline Implementation Capabilities

NOTE: The values indicated in column "Release" in tables A.4.3.1-1 and A.4.3.1-2 below are to be understood as the specifications release version in which a band was introduced and not as a mandate that a UE conforming to particular release shall support a particular band. For further guidance to release independent bands see TS 38.307 [19].

Table A.4.3.1-1: NR FDD RF Baseline Implementation Capabilities

Item	NR FDD RF Baseline Implementation Capabilities	Ref.	Release	Mnemonic	Comments
1	NR Frequency band: 1920-1980, 2110-2170 MHz	38.101-1, 5.2	Rel-15	pc_nrBand1_Supp	NR Band 1
2	NR Frequency band: 1850-1910, 1930-1990 MHz	38.101-1, 5.2	Rel-15	pc_nrBand2_Supp	NR Band 2
3	NR Frequency band: 1710-1785, 1805-1880 MHz	38.101-1, 5.2	Rel-15	pc_nrBand3_Supp	NR Band 3
4	NR Frequency band: 824-849, 869-894 MHz	38.101-1, 5.2	Rel-15	pc_nrBand5_Supp	NR Band 5
5	NR Frequency band: 2500-2570, 2620-2690 MHz	38.101-1, 5.2	Rel-15	pc_nrBand7_Supp	NR Band 7
6	NR Frequency band: 880-915, 925-960 MHz	38.101-1, 5.2	Rel-15	pc_nrBand8_Supp	NR Band 8
7	NR Frequency band: 832-862, 791-821 MHz	38.101-1, 5.2	Rel-15	pc_nrBand20_Supp	NR Band 20
8	NR Frequency band: 703-748, 758-803 MHz	38.101-1, 5.2	Rel-15	pc_nrBand28_Supp	NR Band 28
9	NR Frequency band: 1710-1780, 2110-2200 MHz	38.101-1, 5.2	Rel-15	pc_nrBand66_Supp	NR Band 66
10	NR Frequency band: 1695-1710, 1995-2020 MHz	38.101-1, 5.2	Rel-15	pc_nrBand70_Supp	NR Band 70

Table A.4.3.1-2: NR TDD RF Baseline Implementation Capabilities

Item	NR TDD RF Baseline Implementation Capabilities	Ref.	Release	Mnemonic	Comments
1	NR Frequency band: 2570-2620 MHz	38.101-1, 5.2	Rel-15	pc_nrBand38_Supp	NR Band 38
2	NR Frequency band: 2496-2690 MHz	38.101-1, 5.2	Rel-15	pc_nrBand41_Supp	NR Band 41
3	NR Frequency band: 3300–4200 MHz	38.101-1, 5.2	Rel-15	pc_nrBand77_Supp	NR Band 77
4	NR Frequency band: 3300–3800 MHz	38.101-1, 5.2	Rel-15	pc_nrBand78_Supp	NR Band 78

A.4.3.2 Physical Layer Baseline Implementation Capabilities

Table A.4.3.2-1: UE Physical Layer Baseline Implementation Capabilities

Item	UE Physical Layer Baseline Implementation Capabilities	Ref.	Release	Mnemonic	Comments
1	Support PDSCH reception based on semi-persistent scheduling	38.306, 4.2.6	Rel-15	pc_downlinkSPS	
2	Support 256QAM for PDSCH for FR1	38.306, 4.2.6	Rel-15	pc_pdsch_256QAM_FR1	
3	Support 256QAM for PDSCH for FR2	38.306, 4.2.6	Rel-15	pc_pdsch_256QAM_FR2	
4	Support 256QAM for PUSCH for FR1	38.306, 4.2.6	Rel-15	pc_pusch_256QAM_FR1	
5	Support receiving PDSCH using PDSCH mapping type A with less than seven symbols	38.306, 4.2.6	Rel-15	pc_pdsch_MappingTypeA	
6	Support receiving PDSCH using PDSCH mapping type B	38.306, 4.2.6	Rel-15	pc_pdsch_MappingTypeB	
7	Support resource allocation Type 0 for PUSCH	38.306, 4.2.6	Rel-15	pc_ra_Type0_PUSCH	
8	Support scaling factor 0.75 is applied to the band in the max data rate calculation	38.306, 4.2.6	Rel-15	pc_scalingFactor0dot75	
9	Support handover using a contention free random access on PRACH resources that are associated with CSI-RS resources of the target cell	38.306, 4.2.6	Rel-15	pc_csi_RS_CFRA_ForHO	

A.4.3.3 PDCP Implementation Capabilities

Table A.4.3.3-1: UE PDCP Implementation Capabilities

Item	UE PDCP Implementation Capabilities	Ref.	Release	Mnemonic	Comments
1	Support 12 bit length of PDCP sequence number	38.306, 4.2.4	Rel-15	pc_shortSN	

A.4.3.4 RLC Implementation Capabilities

Table A.4.3.4-1: UE RLC Implementation Capabilities

Item	UE RLC Implementation Capabilities	Ref.	Release	Mnemonic	Comments
1	Support RLC AM with 12 bit length of RLC sequence number	38.306, 4.2.5	Rel-15	pc_am_WithShortSN	
2	Support RLC UM with 12 bit length of RLC sequence number	38.306, 4.2.5	Rel-15	pc_um_WIthLongSN	
3	Support RLC UM with 6 bit length of RLC sequence number	38.306, 4.2.5	Rel-15	pc_um_WithShortSN	

A.4.3.5 MAC Implementation Capabilities

Table A.4.3.5-1: UE MAC Implementation Capabilities

Item	UE MAC Implementation Capabilities	Ref.	Release	Mnemonic	Comments
1	Support long DRX cycle	38.306, 4.2.6	Rel-15	pc_longDRX_Cycle	
2	Support short DRX cycle	38.306, 4.2.6	Rel-15	pc_shortDRX_Cycle	
3	Support skipping of UL transmission for an uplink grant indicated on PDCCH if no data is available for transmission	38.306, 4.2.6	Rel-15	pc_skipUplinkTxDynamic	

A.4.3.6 Measurement Capabilities

Table A.4.3.6-1: UE Measurement Capabilities

Item	UE Measurement Capabilities	Ref.	Release	Mnemonic	Comments
1	Support NR measurements and events A triggered reporting	38.306, 4.2.9	Rel-15	pc_eventA_MeasAndReport	
2	Support two independent measurement gap configurations for FR1 and FR2	38.306, 4.2.9	Rel-15	pc_independentGapConfig	
3	Support NR intra-frequency and inter-frequency measurements and at least periodical reporting	38.306, 4.2.9	Rel-15	pc_intraAndInterF_MeasAndReport	
4	Support CSI-RSRP and CSI-RSRQ measurement as specified in TS38.215 [21], where CSI-RS resource is configured with an associated SS/PBCH	38.306, 4.2.9	Rel-15	pc_csi_RSRP_AndRSRQ_MeasWithSSB	

A.4.3.7 General Capabilities

Table A.4.3.7-1: UE General Capabilities

Item	UE General Capabilities	Ref.	Release	Mnemonic	Comments
1	Support UL transmission via either MCG path or SCG path for the split SRB as specified in TS 37.340[20]	38.306, 4.2.2	Rel-15	pc_splitSRB_WithOneUL_Path	
2	Support UL transmission via both MCG path and SCG path for the split DRB as specified in TS 37.340[20]	38.306, 4.2.2	Rel-15	pc_splitDRB_withUL_Both_MCG_SCG	
3	Support direct SRB between the SN and the UE as specified in TS 37.340[20]	38.306, 4.2.2	Rel-15	pc_srb3	

A.4.4 Additional information

Table A.4.4-1: Additional information

Item	Additional information	Ref.	Release	Mnemonic	Comments
1	Support of ICMP or ICMP IPv6	RFC 792 OR RFC 4443, RFC 4884	NA	pc_IP_Ping	UE supports ICMP or ICMPv6 protocol to enable IP Ping Operation

Annex B (informative): Change history

Change history							
Date	**Meeting**	**TDoc**	**CR**	**Rev**	**Cat**	**Subject/Comment**	**New version**
2017-12	RAN5#77	R5-176852	-	-	-	Introduction of TS 38.508-2	0.1.0
2018-04	RAN5#2-5G-NR Adhoc	R5-182069	-	-	-	Addition of several required PICS	0.2.1
2018-05	RAN5#79	R5-183271	-	-	-	Addition of Missing PICS	1.0.0
2018-06	RAN#80	RP-181208	-	-	-	put under revision control as v15.0.0 with small editorial changes	15.0.0

History

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