# 1 Scope

The present document describes the technical characteristics and methods of test for testing the USIM Application Toolkit implemented in Mobile Equipments (ME) or Mobile Station (MS) within the 3GPP digital cellular telecommunications system, in compliance with the relevant requirements, and in accordance with the relevant guidance given in ISO/IEC 9646‑7 [19] and ETSI ETS 300 406 [20].

The present document is valid for ME implemented according to 3GPP Release 99, or Release 4, or any later Release.

The present document covers the minimum characteristics considered necessary in order to provide sufficient performance for mobile equipment and to prevent interference to other services or to other users, and to the PLMNs.

It does not necessarily include all the characteristics which may be required by a user or subscriber, nor does it necessarily represent the optimum performance achievable.

The present document is part of the 3GPP-series of technical specifications. The present document neither replaces any of the other 3GPP technical specifications or 3GPP related ETSs or ENs, nor is it created to provide full understanding of (or parts of) the UMTS. The present document lists the requirements, and provides the methods of test for testing the USIM Application Toolkit implemented in a ME for conformance to the 3GPP standard.

For a full description of the system, reference should be made to all the 3GPP technical specifications or 3GPP related ETSIs, ETSs or ENs. Clause 2 provides a complete list of the 3GPP technical specifications, 3GPP related ETSI's ETSs, ENs, and ETRs, on which this conformance test specifications is based.

If there is a difference between this present conformance document, and any other 3GPP technical specification or 3GPP related ETSI, ETS, EN, or 3GPP TS, then the other 3GPP technical specification or 3GPP related ETSI ETS, EN or 3GPP TS shall prevail.

Within the context of this document, the term "terminal" used in ETSI TS 102 384 [26] refers to the Mobile Equipment (ME).

Within the context of this document, the term "UICC" used in ETSI TS 102 384 [26] refers to the USIM card.

Within the context of this document, the term "NAA" used in ETSI TS 102 384 [26] refers to the USIM application.

For the avoidance of doubt, references to clauses of ETSI TS 102 384 [26] or ETSI TS 102 221 [13] include all the clauses of that clause, unless specifically mentioned.

The target test specification ETSI TS 102 384 [26] contains material that is outside of the scope of 3GPP requirements and the present document indicates which parts are in the scope and which are not.

A 3GPP ME may support functionality that is not required by 3GPP, but the requirements to do so are outside of the scope of 3GPP. Thus the present document does not contain tests or references to ETSI TS 102 384 [26] tests for features which are out of scope of 3GPP.

In the present document, unless explicitly stated otherwise, for Rel-13 onwards the term E-UTRAN implicitly refers to the E-UTRAN in WB-S1 mode. E-UTRAN in NB-S1 mode is always explicitly referred to as NB-IoT.

# 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 relevant Release*.

- References to 3GPP Technical Specifications and Technical Reports throughout the present document shall be interpreted according to the Release shown in the formal reference in this clause, based upon the Release of the implementation under test.

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

[2] 3GPP TS 22.001: "Principles of circuit telecommunication services supported by a Public Land Mobile Network (PLMN)".

[3] 3GPP TS 22.003: "Circuit Teleservices supported by a Public Land Mobile Network (PLMN)".

[4] 3GPP TS 22.004: "General on supplementary services".

[5] ETSI TS 101 220: "ETSI numbering system for telecommunication application providers"

[6] 3GPP TS 21.904: "UE capability requirements"

[7] 3GPP TS 23.038: "Alphabets and language-specific information".

[8] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS)".

[9] 3GPP TS 23.041: "Technical realization of Cell Broadcast Service (CBS)".

[10] 3GPP TS 24.008: "Mobile radio interface layer 3 specification; Core network protocols; Stage 3".

[11] 3GPP TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) Support on mobile radio interface".

[12] 3GPP TS 34.108: "Common test environments for User Equipment (UE) conformance testing".

[13] If the device under test is a

- R99 ME: ETSI TS 102 221 v3.18.0: "UICC-Terminal interface; Physical and logical characteristics",

- Rel-4 ME: ETSI TS 102 221 v4.16.0: "UICC-Terminal interface; Physical and logical characteristics",

- Rel-5 ME: ETSI TS 102 221 v5.10.0: "UICC-Terminal interface; Physical and logical characteristics",

- Rel-6 ME: ETSI TS 102 221 v6.15.0: "UICC-Terminal interface; Physical and logical characteristics",

- Rel-7 ME: ETSI TS 102 221 v7.17.0: "UICC-Terminal interface; Physical and logical characteristics",

- Rel-8 ME: ETSI TS 102 221 v8.5.0: "UICC-Terminal interface; Physical and logical characteristics",

- Rel-9 ME: ETSI TS 102 221 v9.2.0: "UICC-Terminal interface; Physical and logical characteristics"",

- Rel-10 ME: ETSI TS 102 221 v10.0.0: "UICC-Terminal interface; Physical and logical characteristics",

- Rel-11 ME: ETSI TS 102 221 v11.1.0: "UICC-Terminal interface; Physical and logical characteristics",

- Rel-12 ME: ETSI TS 102 221 v12.1.0: "UICC-Terminal interface; Physical and logical characteristics".

- Rel-13 ME: ETSI TS 102 221 v13.1.0: "UICC-Terminal interface; Physical and logical characteristics".

- Rel-14 ME: ETSI TS 102 221 v14.1.0: "UICC-Terminal interface; Physical and logical characteristics".

- Rel-15 ME: ETSI TS 102 221 v15.0.0: "UICC-Terminal interface; Physical and logical characteristics".

[14] 3GPP TS 31.102: "Characteristics of the USIM application".

[15] 3GPP TS 31.111: "USIM Application Toolkit (USAT)"

[16] Void

[17a] ISO/IEC 10646-1: "Information technology - Universal Multiple Octet Coded Character Set (UCS) - Part 1: Architecture and Basic Multilingual Plane".

[17b] ISO/IEC 10646‑2: "Information technology - Universal Multiple Octet Coded Character Set (UCS) - Part 2: Supplementary Planes".

[18] 3GPP TS 27.007: "AT command set for User Equipment (UE)".

[19] ISO/IEC 9646‑7 (1995): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

[20] ETSI ETS 300 406 (1995): "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

[21] 3GPP TS 31.121: "UICC-terminal interface; USIM application test specification"

[22] 3GPP TS 22.101: "Service Aspects; Service principles"

[23] 3GPP TS 51.010-1: "Mobile Station (MS) conformance specification; Part 1: Conformance specification"

[24] Void.

[25] TIA/IS‑820‑A: "Removable User Identity Module (R-UIM) for TIA/EIA Spread Spectrum System".

[26] ETSI TS 102 384: "Smart cards; UICC-Terminal interface; Card Application Toolkit (CAT) conformance specification".

[27] 3GPP TS 34.123-3: "User Equipment (UE) conformance specification; Part 3: Abstract test suites (ATSs)".

[28] 3GPP TS 31.115: "Secured packet structure for (U)SIM Toolkit applications".

[29] 3GPP TS 23.122: "Non-Access Stratum functions related to Mobile Station (MS) in idle mode".

[30] 3GPP TS 23.107: "Quality of Service (QoS) concept and architecture".

[31] 3GPP TS 23.203: "Policy and charging control architecture".

[32] 3GPP TS 24.301: "Technical Specification Group Core Network and Terminals; Non-Access-Stratum (NAS) protocol for Evolved Packet Systems (EPS): Stage 3".

[33] 3GPP TS 36.508: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); Common test environments for User Equipment (UE) conformance testing".

[34] 3GPP TS 36.523-2 " Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 2: Implementation Conformance Statement (ICS) proforma specification"

[35] 3GPP TS 31.103: "Characteristics of the IP Multimedia Services Identity Module (ISIM) application".

[36] 3GPP TS 34.229-1: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification".

[37] 3GPP TS 24.341: "Support of SMS over IP networks".

[38] 3GPP TS 24.229: "IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

[39] 3GPP TS 38.508-1: "5GS; User Equipment (UE) conformance specification; Part 1: Common test environment".

[40] 3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Overall description; Stage 2".

[40] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".

[41] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".

[42] 3GPP TS 23.503: "Policy and charging control framework for the 5G System (5GS); Stage 2".

[43] 3GPP TS 24.526: "User Equipment (UE) policies for 5G System (5GS); Stage 3".

[44] 3GPP TS 23.003: "Numbering, addressing and identification".

[45] 3GPP TS 33.203: "3G security;Access security for IP-based services".

# 3 Definitions and abbreviations

## 3.1 Mobile station definition and configurations

The mobile station definition and configurations specified in TS 34.108 [12] and TS 36.508 [33] shall apply, unless otherwise specified in the present clause.

## 3.2 Applicability

### 3.2.1 Applicability of the present document

The present specification applies to a terminal equipment that supports the USIM Application Toolkit optional feature.

### 3.2.2 Applicability of the individual tests

Table A.1 lists the optional features for which the supplier of the implementation states the support.

### 3.2.3 Applicability to terminal equipment

The applicability to terminal equipment specified in TS 34.108 [12] and TS 36.508 [33] shall apply, unless otherwise specified in the present clause.

NOTE: For RedCap UEs, test cases applicable to 5G NR UEs and RedCap specific test cases (if any) are applicable.

Within the context of this document, the term "USS" refers to the "UMTS System Simulator" when accessing a UTRAN, to the "System Simulator" when accessing a GERAN, the term "E-USS" refers to the "Evolved Universal System Simulator" when accessing an E-UTRAN in WB-S1 mode, the term "NB-SS" refers to the "NB System Simulator" when accessing an E-UTRAN in NB-S1 mode and the term "NG-SS" refers to the "Next Generation System Simulator" when accessing an NG-RAN.

See table B.1.

### 3.2.4 Definitions

For the purposes of the present document, the terms and definitions given in TS 34.108 [12] and TS 31.121 [21] apply.

#### 3.2.4.1 Format of the table of optional features

Option: The optional feature supported or not by the implementation.

Support Answer notation: The support columns shall be filled in by the supplier of the implementation. The following common notations, defined in ISO/IEC 9646‑7 [19], are used for the support column in the tables below.

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)

Mnemonic column: The Mnemonic column contains mnemonic identifiers for each item.

#### 3.2.4.2 Format of the applicability table

The applicability of every test in table B.1 is formally expressed by the use of Boolean expression defined in the following clause.

The columns in table B.1 have the following meaning:

- In the "Item" column a local entry number for the requirement in the table is given.

- In the "Description" column a short non-exhaustive description of the requirement is found.

- The "Release" column gives the Release applicable and onwards, for the item in the "Description" column

- The "Test Sequence(s)" column gives a reference to the test sequence number(s) detailed in the present document and required to validate the implementation of the corresponding item in the "Description" column.

- For a given Release, the corresponding "Rel X ME" column lists the tests required for a Mobile Station to be declared compliant to this Release.

- The "Support" column is blank in the proforma, and shall be completed by the manufacturer in respect of each particular requirement to indicate the choices, which have been made in the implementation.

- The "Network Dependency" column indicates if a test depends on specific network access technology or requires network connection, but the status may not have an impact on references to ETSI TS 102 384 [26].

- The "Terminal Profile" column gives a reference to the corresponding Terminal Profile bit(s) that is/are related to the toolkit feature(s) of the respective test(s).

- The "Additional test case execution parameter" column shall be used in conjunction with the entry in the "Rel-xx ME" column. The column indicates if the test is affected by additional test case execution parameters.

#### 3.2.4.3 Status and notations

"Release X ME" columns show the status of the entries as follows:

The following notations, defined in ISO/IEC 9646‑7 [19], are used for the status column:

M mandatory - the capability is required to be supported.

O optional - the capability may be supported or not.

N/A not applicable - in the given context, it is impossible to use the capability.

X prohibited (excluded) - there is a requirement not to use this capability in the given context.

O.i qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies an unique group of related optional items and the logic of their selection which is defined immediately following the table.

Ci conditional - the requirement on the capability ("M", "O", "X" or "N/A") depends on the support of other optional or conditional items. "i" is an integer identifying an unique conditional status expression which is defined immediately following the table. For nested conditional expressions, the syntax "IF ... THEN (IF ... THEN ... ELSE...) ELSE ..." shall be used to avoid ambiguities.

The "Additional test case execution parameter" column shows the status of the entries as follows:

TCEPi Test Case Execution Parameter –defines additional parameters which have to be taken into account when executing affected test case(s). "i" is an integer identifying an unique parameter which is defined immediately following the table.

A applicable - the test is applicable according to the corresponding entry in the "Rxx ME" column

R(x) redundant – the test has to be considered as redundant when the corresponding E-UTRAN/EPC related test "x" of the present document has been validated and successfully executed. In that case the requirement may be verified by means of the E-UTRAN/EPC functionality only.

AERi Additional test case Execution Recommendation – with respect to the above listed definitions of ("A") and ("R") the test is applicable ("A") or redundant ("R") depending on the support of other optional or conditional items. "i" is an integer identifying a unique conditional status expression which is defined immediately following the table. For nested conditional expressions, the syntax "IF ... THEN (IF ... THEN ... ELSE...) ELSE ..." shall be used to avoid ambiguities.

References to items: For each possible item answer (answer in the support column) 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.

EXAMPLE: A.1/4 is the reference to the answer of item 4 in table A.1.