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| Draft 3GPP TS 31.117 V0.0.3 (2024-05) | |
| Technical Specification | |
| 3rd Generation Partnership Project;  Technical Specification Group Core Network and Terminals;  Mobile Equipment (ME) conformance test specification;  Universal Subscriber Identity Module Application Toolkit (USAT) application behavioural test specification  (Release 17) | |
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# 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.

In the present document, modal verbs have the following meanings:

**shall** indicates a mandatory requirement to do something

**shall not** indicates an interdiction (prohibition) to do something

The constructions "shall" and "shall not" are confined to the context of normative provisions, and do not appear in Technical Reports.

The constructions "must" and "must not" are not used as substitutes for "shall" and "shall not". Their use is avoided insofar as possible, and they are not used in a normative context except in a direct citation from an external, referenced, non-3GPP document, or so as to maintain continuity of style when extending or modifying the provisions of such a referenced document.

**should** indicates a recommendation to do something

**should not** indicates a recommendation not to do something

**may** indicates permission to do something

**need not** indicates permission not to do something

The construction "may not" is ambiguous and is not used in normative elements. The unambiguous constructions "might not" or "shall not" are used instead, depending upon the meaning intended.

**can** indicates that something is possible

**cannot** indicates that something is impossible

The constructions "can" and "cannot" are not substitutes for "may" and "need not".

**will** indicates that something is certain or expected to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

**will not** indicates that something is certain or expected not to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

**might** indicates a likelihood that something will happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

**might not** indicates a likelihood that something will not happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

In addition:

**is** (or any other verb in the indicative mood) indicates a statement of fact

**is not** (or any other negative verb in the indicative mood) indicates a statement of fact

The constructions "is" and "is not" do not indicate requirements.

# Introduction

The present document defines application behavioural tests for USIM Application Toolkit functionality on an ME with a non-removable UICC/USIM where no access to the physical UICC-Terminal interface can be granted when interacting with a 3GPP network.

The aim of the present document is to ensure the correct behaviour of a UE interfacing with a 3GPP network whilst it is proved that USIM Application Toolkit specific data and functionality is used wherever indicated, similar to application tests defined in TS 31.124 [2] but without direct access to the UICC-Terminal interface.

The present document does not define any aspects related to the administrative management phase of the UICC. Any internal technical realisation of either the UICC or the terminal is only specified where these are important for the verification of specific behaviour. Application specific details for applications residing on an UICC are specified in the respective application specific documents.

# 1 Scope

The present document describes behavioural tests for the USIM Application Toolkit implemented in Mobile Equipment (ME) or Mobile Stations (MS) supporting a non-removable UICC only 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].

This document shall provide alternative verification and testing approaches for test cases initially defined in TS 31.124 [2]. If no ETSI or 3GPP defined alternative method to verify an existing requirement is available or if the result generated by the proposed verification method is less reliable, this has to be clearly stated in the test description.

Due to possible limitations in profile handling and updating it is not intended to use the test case defined within this document with 2G only MEs or MEs implemented in accordance to Rel-12 or earlier.

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. The present document does not contain tests for features that 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 E-UTRAN in WB-S1 mode. E-UTRAN in NB-S1 mode is always explicitly referred to as NB-IoT.

Within the context of this document, the term "terminal" used in ETSI TS 102 384 [3] refers to the Mobile Equipment (ME).

Within the context of this document, the term "UICC" used in ETSI TS 102 384 [3] refers to the USIM card.

Within the context of this document, the term "NAA" used in ETSI TS 102 384 [3] refers to the USIM application.

For the avoidance of doubt, references to clauses of ETSI TS 102 384 [3] or ETSI TS 102 221 [9] include all the subclauses of that clause, unless specifically mentioned.

The target test specifications ETSI TS 102 384 [3] and TS 31.124 [2] contain material that is outside of the scope of the 3GPP requirements for nrUSIM testing the 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 [3] 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 same Release as the present document*.

1. 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
2. 3GPP TS 31.124: " Mobile Equipment (ME) conformance test specification; Universal Subscriber Identity Module Application Toolkit (USAT) conformance test specification".
3. ETSI TS 102 384: "Smart cards; UICC-Terminal interface; Card Application Toolkit (CAT) conformance specification".
4. 3GPP TS 38.508-1: "5GS; User Equipment (UE) conformance specification; Part 1: Common test environment".
5. 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".
6. 3GPP TS 34.108: "Common test environments for User Equipment (UE) conformance testing".
7. 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".
8. ISO/IEC 9646‑7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".
9. ETSI TS 102 221: "UICC-Terminal interface; Physical and logical characteristics".
10. GSMA TS.48: "Generic eUICC Test Profile for Device Testing".
11. ETSI TS 103 666-1: "Smart Secure Platform (SSP); Part 1: General characteristics".
12. ETSI TS 103 666-2: "Smart Secure Platform (SSP); Part 2: Integrated SSP (iSSP) characteristics".
13. ETSI TS 103 666-3: "Smart Secure Platform (SSP); Part 3: Embedded SSP (eSSP) Type 1 characteristics".
14. 802.11-2016: "IEEE Standard for Information technology—Telecommunications and information exchange between systems Local and metropolitan area networks—Specific requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications".
15. ETSI TS 102 225: "Secured packet structure for UICC based applications".
16. ETSI TS 102 226: "Remote APDU structure for UICC based applications".
17. 3GPP TS 27.007: "AT command set for User Equipment (UE) ".
18. 3GPP TS 31.130: "(U)SIM Application Programming Interface (API); (U)SIM API for Java™Card".
19. 3GPP TS 22.011: "Service accessibility".
20. 3GPP TS 31.102: "Characteristics of the Universal Subscriber Identity Module (USIM) application".
21. 3GPP TS 21.111: "USIM and IC card requirements".
22. 3GPP TS 24.301: "Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3".
23. Trusted Connectivity Alliance: "eUICC Profile Package: Interoperable Format Technical Specification".
24. ETSI TS 102 241: "UICC Application Programming Interface (UICC API) for Java Card™".
25. 3GPP TS 33.501: "Security architecture and procedures for 5G system".
26. 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".
27. 3GPP TS 31.111: "Universal Subscriber Identity Module (USIM) Application Toolkit (USAT)"
28. ETSI TS 102 223: "Card Application Toolkit (CAT)"
29. ETSI TS 102 221: "UICC-Terminal interface; Physical and logical characteristics"
30. ETSI TS 102 671: "Machine to Machine UICC; Physical and logical characteristics"
31. GSMA SGP.22: "RSP Technical specification"
32. 3GPP TS 24.008: "Mobile radio interface Layer 3 specification; Core network protocols; Stage 3"
33. 3GPP TS 25.331: "Radio Resource Control (RRC); Protocol specification"
34. 3GPP TS 31.101: "UICC-terminal interface; Physical and logical characteristics"
35. 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".
36. ISO/IEC 10646-1: "Information technology - Universal Multiple Octet Coded Character Set (UCS) – Part 1: Architecture and Basic Multilingual Plane".
37. ISO/IEC 10646‑2: "Information technology - Universal Multiple Octet Coded Character Set (UCS) – Part 2: Supplementary Planes".

# 3 Definitions of terms, symbols and abbreviations

## 3.1 Terms

For the purposes of the present document, the terms given in TR 21.905 [1], TS 31.124 [2] and the following apply:

**nrUSIM:** non-removable Universal Subscriber Identity Module, i.e. a USIM application or equivalent functionality embedded or integrated into a ME.

**TT:** Test Tool: collective term for requirements fulfilling but not clearly specified test environment

A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

## 3.2 Symbols

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

bx Bit x of byte (leftmost bit is MSB)

Bn Byte No. n

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] [1], TS 31.124 [2] and the following apply:

CR Conformance Requirement

EUT Equipment Under Test

SA Suitability Assessment

TT Test Tool

An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

## 3.4 Mobile station definition and configurations

The mobile station definition and configurations specified in TS 34.108 [6] and TS 36.508 [35] shall apply, unless otherwise specified in the present clause.

## 3.5 Coding Conventions

For the purposes of the present document, the following coding conventions apply:

All lengths are presented in bytes, unless otherwise stated. Each byte B is represented by eight bits b8 to b1, where b8 is the most significant bit (MSB) and b1 is the least significant bit (LSB). In each representation, the leftmost bit is the MSB.

In the UICC, all bytes specified as RFU shall be set to '00' and all bits specifies as RFU shall be set to '0'. If the GSM and/or USIM application exists on a UICC or is built on a generic telecommunications card, then other values may apply for the non- GSM or non-USIM applications. The values will be defined in the appropriate specifications for such cards and applications. These bytes and bits shall not be interpreted by a Terminal in 3GPP session.

The coding of all data objects in the present document is according to ETSI TS 102 221 [9]. All data objects are BER‑TLV except if otherwise defined.

## 3.6 Applicability

### 3.6.1 Applicability of the present document

The present document applies to user equipment that supports the USIM Application Toolkit optional feature where the UICC-terminal interface is not accessible and communication on the UICC-terminal interface cannot be traced.

### 3.6.2 Applicability to user equipment

The applicability to user equipment specified in TS 34.108 [6] and TS 36.508 [5] supporting the non-removable USIM is specified in table B.1, unless otherwise specified in the specific clause.

Within the context of this document, the term "USS" refers to the "UMTS System Simulator" when accessing a UTRAN, 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.

### 3.6.3 Applicability of the individual tests

Table B.1 lists the optional, conditional, or mandatory features for which the supplier of the implementation states the support. As pre-condition the supplier of the implementation shall state the support of possible options in accordance with table A.1 of TS 31.124 [2], clause 3.3. ME default configuration in accordance with table A.2 of TS 31.124 [2], clause 5.2 and declare what testing options are supported in table A.3 of the present document.

The "Release XY ME" columns shows the status of the entries as follows:

The following notations, defined in ISO/IEC 9646‑7 [7], 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 a 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 recommendation" column shows the status of the entries as follows:

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

R redundant – the test has to be considered as redundant when the corresponding E-UTRAN/EPC related test 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.

### 3.6.4 Declaration of options specific for testing of terminals with non‑removable USIM

To identify a suitable test environment the support of some specific features is required. The supplier of the implementation shall state the support of possible options in table A.3.

Table A.3: Declaration of supported testing options

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item | Option | Status | Support | Mnemonic |
| 1 | Support of UTRAN access | O |  | O\_UTRAN |
| 2 | Support of E-UTRAN access | O |  | O\_E-UTRAN |
| 3 | Support of NB-IoT access only | O |  | O\_NB-IoT |
| 4 | Support of 5G Core Network | O |  | O\_5GC |
| 5 | Support of New Radio access | O |  | O\_5G\_NR |
| 6 | Support of RSP(SGP.22) | C003 |  | O\_RSP22 |
| 7 | Support of AT+CSIM | O |  | O\_AT+CSIM |
| 8 | ME supports non-removable UICC only (see NOTE 1) | O |  | O\_NON-REMOVABLE\_UICC\_ONLY |
| 9 | Support of UICC and USIM API for Java Card (see NOTE 2) | O |  | O\_JAVA\_CARD\_API |
| 10 | Support of USAT functionality (see NOTE 3) | O |  | O\_USAT |

|  |  |
| --- | --- |
| NOTE1: | ‘ME supports non-removable UICC only’ means that access to the physical card interface as defined in ETSI TS 102 221 is not available |
| NOTE 2: | The UE shall claim to support the Java Card API if test relevant functions as defined in Annex A, clause A.2 are supported. |
| NOTE 3: | The support of the USAT as defined here requires the support of the UICC API defined in ETSI TS 102 241 [23] and the USIM API defined in 3GPP TS 31.130 [17] |

### 3.6.5 Applicability to user equipment

The applicability to user equipment supporting the non-removable USIM is specified in table B.1, regardless of references to complete tests, test purposes, conformance requirements or test methods from TS 31.124 [2] the applicability of the individual test cases is defined within the present document.

Tests where the implicit verification of conformance requirements is not considered sufficient on its own require additional (explicit) verification methods. The support of additional verification methods by the EUT has to be declared in accordance to table A.4 (see clause 3.6.6). Test sequence specific declarations of methods required to be supported are listed in the Applicability table – Table B.1.

### 3.6.6 Supported additional explicit verification methods

The support of additional verification methods is optional for an nrUICC operated device (EUT). As the implicit verification of test results is not sufficient in some test cases the support of an explicit testing option and the provisioning of an interface for file contents verification improves test coverage. The UE manufacturer shall declare the support of possible testable options listed in tables A.1, A.2 and A.3. This declaration is used for the suitability assessment of the conformance requirement (CR) per test case.

Table A.4: Test Options Declaration

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **Option** | **Status** | **Support** | **Mnemonic** |
| 1 | Support of Toolkit Test Events (see note) | O |  | O\_Toolkit\_Test\_Events |
| 2 | Support of seamless test APDU logging via Baseband (see note) | O |  | O\_Seamless\_APDU\_Logging |
| 3 | Interface for file contents verification | O |  | O\_File\_Contents\_Verification |
| NOTE: The support of the SSP Test Tool Interface (ETSI TS 103 834) is handled like the support of seamless test APDU logging via Baseband or for Test Toolkit Event based testing. Specific information may be added to test cases where needed. | | | | |

For details on these options see clauses 4.1.3, to 4.1.6 of the present document.

## 3.7 Table of optional features

Support of several features is optional or release dependent for the user equipment. However, if a UE states conformance with a specific 3GPP release, it is mandatory for the UE to support all mandatory functions of that release, as stated in table A.1.

The supplier of the implementation shall state the support of possible options in table A.1 as defined in TS 31.124 [2].

## 3.9 Applicability table

Table B.1: Applicability of tests

| Item | Description | defined in Rel | Test Seq.(s) | Rel-13 ME | Rel-14 ME | Rel-15 ME | Rel-16 ME | Rel-17 ME | Network Simulation | Support | AER |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **…** |  |  |  |  |  |  |  |  |  |  |  |
| X | UE identification by short IMSI using a 2 digit MNC | R99 | 5.1.2 | C001 | C001 | C001 | C001 |  | USS |  | AER001 |
| **…** |  |  |  |  |  |  |  |  |  |  |  |
| Y | SUCI calculation by ME using Profile B | Rel-15 | 5.3.2 | C001 | C001 | C001 | C001 |  | NG-SS |  | AER002 |
| **…** |  |  |  |  |  |  |  |  |  |  |  |
| Z | Adding FPLMN to the forbidden PLMN list when accessing E UTRAN | Rel-8 | 7.1.4 | C001 | C001 | C001 | C001 |  | E-USS or NB-SS |  | AER003 |
| **…** |  |  |  |  |  |  |  |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| C001 | IF A.1/14 THEN M ELSE N/A | O\_NON-REMOVABLE\_UICC\_ONLY |
| O.1 | TBD |  |
| AER001 | IF A.1/1 AND A.1/14 THEN A ELSE R | O\_UTRAN AND O\_NON-REMOVABLE\_UICC\_ONLY |
| AER002 | IF A.1/4 AND A.1/5 AND A.1/14 THEN A ELSE R | O\_5GC AND O\_5G\_NR AND O\_NON-REMOVABLE\_UICC\_ONLY |
| AER003 | IF (A.1/2 OR A.1/3) AND A.1/14 THEN A ELSE R | (O\_E-UTRAN OR O\_NB-IoT) AND O\_NON-REMOVABLE\_UICC\_ONLY |
| NOTE 1: IF C001 FFS. | | |

4.1 Test environment description

### 4.1.1 General test environment

Without having the UICC-Terminal interface accessible a direct verification of APDU/data timing and contents is not possible. Thus, alternative implementations and methods will be used to provide sufficient confidence in the result obtained. The present document will not specify an authoritative test environment. The following figure shows a test environment that allows the verification of test results for UEs with an integrated and not removable UICC/USIM (nrUSIM).

Without having the UICC-Terminal interface accessible, a direct verification of APDU or data contents is not possible. The present document shall provide a test environment and test methods that allow the verification of test results for UEs with an integrated and not removable UICC/USIM (nrUSIM).



Figure 4.1: General test environment

Figure 4.1 gives an overview on how a test case shall be executed.

Based on the identified test purpose and the related conformance requirements an appropriate test sequence is defined. The test itself can be split into three phases:

* In the preparation phase the initial set-up for the test case is performed. Test specific data is transferred to the nrUSIM. E.g. by provisioning a test specific profile.
* In the execution phase the test procedure is performed. It has to be ensured that all steps defined in the test procedure are executed and that they are executed in order. The data generated during this execution is stored in the TT and/or test EFs in the file system within the nrUICC.
* In the verification phase the data, procedures and processes identified and stored during execution are checked against given conformance requirements. A final verification of specific EF/DF contents might be required. The exchange of required data has to be ensured, even though the required data transfer is not necessarily listed in the test procedure.

### 4.1.2 Example - test environment for implicit testing

Implicit testing within the scope of the present document describes an end-to-end test method where the UICC/USIM file system of the DUT is prepared to contain specific data. During test execution the data transferred from the DUT to the TT is checked and compared to the expected result or value respectively.

Example:

- During preparation phase specific content for the EFIMSI is updated in the nrUSIM;

- A registration to the network shall be executed using this value;

- The TT compares the initial value sent with the value returned during registration.

NOTE: A test toolkit applet can be used for testing USAT specific test cases in TS 31.117 [35].



Figure 4.2: Test environment for implicit testing

### 4.1.3 Example - test environment for contents verification

Contents verification within the scope of the present document describes a procedure that allows the TT to compare contents of EFs/DFs available on the EUT with expected values defined in the present document.

Example:

- During preparation phase specific content for the EFFPLMN is updated in the nrUSIM;

- During execution of the test the FPLMN value is modified;

- As the FPLMN value stored in EFFPLMN is not transferred to the TT during test execution;

- The TT performs a read procedure on EFFPLMN at test case end (not necessarily part of the test procedure);

- The TT compares the value read with the expected value stored in the TT.

The contents verification method described here is not applicable when a verification of EF/DF contents needs to be performed at a time other than the preparation or the verification phase.

NOTE: It is not expected that a reading procedure on EF contents can be performed whilst the test procedure is executed.

The test environment needed to perform contents verification is identical to the test environment shown for implicit testing.

### 4.1.4 Example - test environment for seamless testing

Seamless testing within the scope of the present document relies on monitoring of data transfer between ME and nrUSIM traced by a software interface between nrUSIM and baseband implemented by the ME vendor.

The logged communication can be transferred to the TT and will be used to determine if conformance requirements are met.

NOTE: A test toolkit applet can be used for testing USAT specific test cases in TS 31.117 [35].



Figure 4.3: Test environment for seamless testing

### 4.1.5 Example – test environment for test toolkit events based testing

Test toolkit events based testing within the scope of the present document is applicable for UEs supporting the required USIM application toolkit functionality. A toolkit applet is installed onto the nrUSIM, capable of handling test events internal to the card runtime environment and the applets to monitor APDUs received at the nrUICC.

NOTE: The same test toolkit applet can be used for testing USAT specific test cases in TS 31.117 [35].

The logged events can be stored in a test EF during the test execution phase and transferred to the TT during the verification phase to determine if conformance requirements are met.



Figure 4.4: Test environment for test toolkit events based testing

Please see the required "Test configuration state" in Annex N and the "Examples of test configuration usage" in Annex O of ETSI TS 102 221 [8]

### 4.1.6 Example – test environment for UEs with ETSI eSSP/iSSP

For testing UEs with an USIM functionality provided by an eSSP/iSSP as defined in ETSI TS 103 666‑x specifications a test tool interface as defined in ETSI TS 103 834 has to be supported. For the usage within this specification the SSP test tool interface is handled like the test environment for seamless or for test toolkit event based testing. Specific execution requirements or setups may be added to this specification when required. Adaption needed to operate tests on UEs with an eSSP/iSSP, like e.g., an APDU gate are out of scope of the present document.



Figure 4.5: Test environment for UEs with ETSI eSSP/iSSP

## 4.2 Requirements to the EUT and the test environment

### 4.2.1 General Requirements

All tests defined in the subsequent clauses apply to UEs operating an nrUSIM, what implies that the UICC‑Terminal interface cannot be exposed to a TT. Depending on the test method used, an explicit verification of APDUs or data sent via the UICC‑Terminal interface might not be possible. If explicit verification of APDUs, data or file contents is needed to verify a conformance requirement the implementation and applicability has to be declared (see also clause 3.7.1).

The tests are not applicable for UEs providing a UICC‑Terminal interface in accordance to interface form factors defined in ETSI TS 102 221 [28] or ETSI TS 102 671 [29].

The following sequence of tests confirms:

a) the usage of the test specific UICC/USIM data;

b) the correct interpretation of data read from the USIM (Universal Subscriber Identification Module) by the ME;

c) the correct writing of data to the USIM by the ME;

d) the initiation of appropriate procedures by the ME;

e) the correct execution of functions

All tests apply to the USIM application on the UICC or an equivalent application implemented in accordance to the ETSI SSP specifications ETSI TS 103 666-1 [10], ETSI TS 103 666-2 [11] and ETSI TS 103 666-3 [12]

### 4.2.2 Requirements to the UE (EUT) – supported interfaces

The EUT has to support interfaces and administration methods to allow the TT or the User to set the initial conditions defined for the test cases. Where the EUT may be solely the UE or the UE connected to an interface device.

NOTE: The connection of the UE and an interface device is set up similar to what is described in the Companion Device scenario in GSMA SGP.22 [30], but not limited to remote SIM provisioning functionality.

**Suggested interfaces:**

• Wi-Fi (IEEE 802.11-2016 [13])

• USB (USB-IF, USB 2.0 or higher)

The UE has to support at least one of the following data transfer methods:

• RFM and OTA via ETSI TS 102 225 [14] and ETSI TS 102 226 [15]

• AT commands as defined in TS 27.007 [16]

• JavaTMCard as defined in TS 31.130 [17]

Even though the availability of at least one of the suggested interfaces and one of the suggested data transfer method is recommended, interfaces and methods for UICC/USIM preparation for testing purposes are to be provided by the UE vendor and are out of scope of the present document.

### 4.2.3 Supported RATs

UEs tested in accordance to the present document shall support any 3GPP defined RATs. Test cases defined in the present document may contain RAT or RAN specific conformance requirements and methods of test. The applicability of the individual test cases can be determined by using Table B.1.

Tests that would require 2G network access (GERAN) are out of scope of the present document.

### 4.2.4 Initial and final procedure steps

Initial and final procedure steps are out of scope of the current specification to not explicitly exclude methods that might be used to get a UE set up at test case start or to have it 'cleaned up' at the end of a test (if required).

The testing person has to ensure that the UE has installed test specific the UICC and USIM data in accordance to the definitions of the particular test(see note). The UE has to be accessible and is brought into a specific reception mode if required by the test case. It has to be ensured that interfaces that are used to verify file data or a specific functionality do not interfere or block the operation of the test procedure as defined within this specification.

For verification purposes an interaction with the UE is allowed even after ending the defined test procedure. If such interaction takes place it has to be reported to the TT. A verification of conformance requirements that is based on data or information that is generated during this post-procedure interaction has to be identifiable as a post process, but can be used for the result generation.

NOTE: For all EFs, DFs and ADFs building the UICC and USIM where no data is explicitly defined in the test or by reference, an appropriate test value can be used (e.g.: values from GSMA TS.48 [9]).

## 4.3 Suitability assessment

### 4.3.1 Suitability assessment in present test procedures

Test procedures defined within the present document or derived from TS 31.124 [2] hold a separate column for the "suitability assessment", abbreviated as "SA". It will show the identifier of any conformance requirement (CR) where gaining suitable verification requires the usage of an optional test method. Conformance requirements that can be verified by "implicit" methods, e.g. the usage of a specific value is sufficiently verified if the test proceeds correctly with the next step or if the expected value can be seen on the air interface, will not be listed in the SA column.

### 4.3.2 Suitability assessment in test descriptions

For each CR listed in the SA column of a test procedure available in the present document additional information about the SA shall be provided with the description of the CR verification.

Tests purposes, conformance requirements and/or procedures defined in TS 31.124 [2] may be referenced. Modifications needed to adopt a test from TS 31.124 [2] to use the random value generation for the implicit testing will not be explicitly mentioned. If it becomes necessary to add suitable test methods from Table A.4 to a particular CR this shall be done by adding the related information to the related CR in the Acceptance criteria clauses available in the present document.

### 4.3.3 Suitability assessment in the test protocol

Whenever a test is executed using additional methods to generate a result the method and the gained result shall be noted in the test protocol. If none of the indicated optional test methods is supported, it shall be clearly noted that the no verification took place. A test step to be verified by an explicit method that could not be verified has to be marked as "Inconclusive". In case any test step is marked as "Inconclusive", the overall test case verdict shall be set to "Inconclusive".

### 4.3.4 Justification of additional measures

Even if implicit verification is recognized as a suitable and appropriate verification method, additional methods to explicitly verify file contents and/or the file handling shall be used if supported. The verification result and the used verification method shall be noted in the test report. In case this additional measure leads to a deviating result, the result of the explicit check defined to this test case applies.

Conformance requirements that can be verified with such an additional measure are marked with an ‘O’ in the SA column. Possible optional verification methods are noted in the acceptance criteria for each test case if applicable.

## 4.4 Definition of default values

### 4.4.1 Introduction

#### 4.4.1.1 Installation, provisioning or modification methods for EFs and DFs

Installation, provisioning or modification methods for EFs and DFs defined in the UICCs/USIMs used for testing or in the test cases are out of scope of the present document. Respective methods have to be provided by the UE vendor.

#### 4.4.1.2 TS.48 Version and usage

Unless stated differently in the test description or in the specific UICC definition TS.48 eSIM GTP v5.0 is used

The usage of file values defined in GSMA TS.48 [9] does not imply that remote SIM provisioning as defined in GSMA or profiles as defined by the TCA have to be supported by the nrUSIM.

# 5 Testing methodology in general

When possible, the present document refers to ETSI TS 102 384 [3] to describe generic aspects of application toolkit tests

## 5.1 Testing of optional functions and procedures

Any function or procedure which is optional, as indicated in the present document, may be subject to a conformance test

if it is implemented in the ME.

## 5.2 Test interfaces and facilities

The UICC and NG-SS/NB-SS/E-USS/USS/SS interfaces provide the main test interfaces for the purpose of performing conformance tests.

The tests which require a network simulator shall be carried out with using a Next Generation System Simulator when accessing a NG-RAN, a NB System Simulator when accessing an E-UTRAN in NB-S1 mode, an Evolved Universal System Simulator when accessing an E-UTRAN in WB-S1 mode, a Universal System Simulator when accessing a UTRAN.

## 5.3 Information to be provided by the apparatus supplier

The information to be provided by the apparatus supplier specified in TS 38.508-1 [39], TS 36.523-2 [34], TS 36.508 [33], TS 34.108 [12] and TS 51.010-1 [23] shall apply, unless otherwise specified in the present clause.

In addition, the apparatus supplier shall provide the information with respect to the Supported Option table A.1 and to ME's default configuration table A.2.

# 6 Measurement uncertainty

The measured value relating to the corresponding limit shall be used to determine whether or not a terminal equipment meets the requirement. (ETR 028, annex B).

This process is often referred to as "shared risk".

# 7 Format of tests

The Format of tests defined in TS 31.124 [2], clause 8 applies.

# 8 Generic call set up procedures

The generic call set up procedures as defined in TS 31.124 [2], clause 9 apply.

# 9 - 26 Not used

NOTE: this is done to keep the test case numbering aligned with TS 31.124 [2]

# 27 Testing of the UICC/ME interface

## 27.0 Introduction

The introduction provided in TS 31.124 [2], clause 27.0 applies.

## 27.1 - 27.21 Void

NOTE: this is done to keep the test case numbering aligned with TS 31.124 [2]

## 27.22 USIM Application Toolkit

### 27.22.1A General Test purpose

The General Test purpose defined in TS 31.124 [2], clause 27.22.1A applies.

### 27.22.2A Definition of default values for USIM Application Toolkit testing

Unless otherwise stated the test sequences defined in the present specification use UICC/USIM files as coded in the GSMA TS.48 eSIM GTP[10] referenced in clause 4.4.1.2 of the present document with the following exceptions:

**EFUST (USIM Service Table)**

Logically:

|  |  |  |
| --- | --- | --- |
| Service n°1: | Local Phone Book | available |
| Service n°2: | Fixed Dialling Numbers (FDN) | available |
| Service n°6: | Barred Dialling Numbers (BDN) | available |
| Service n°10: | Short Message Storage (SMS) | available |
| Service n°11: | Short Message Status Reports (SMSR) | available |
| Service n°12: | Short Message Service Parameters (SMSP) | available |
| Service n°15: | Cell Broadcast Message Identifier | available |
| Service n°17: | Group Identifier Level 1 | not available |
| Service n°18: | Group Identifier Level 2 | not available |
| Service n°20: | User controlled PLMN selector with Access Technology | available |
| Service n°22: | Image (IMG) | available |
| Service n°27: | GSM Access | available |
| Service n°28: | Data download via SMS-PP | available |
| Service n°29: | Data download via SMS‑CB | available |
| Service n°30: | Call Control by USIM | not available |
| Service n°31: | MO-SMS Control by USIM | not available |
| Service n°32: | RUN AT COMMAND command | available |
| Service n°33: | shall be set to '1' | available |
| Service n°34: | Enabled Services Table | available |
| Service n°85 | EPS Mobility Management Information | not available |
| Service n°86 | Allowed CSG Lists and corresponding indications | not available |

Coding:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** |
| binary | xx1x xx11 | x1xx 111x | xx1x 1x00 | 1001 11xx | xxx xx11 | xxxx xxxx |
|  | **B7** | **B8** | **B9** | **B10** | **B11** |  |
|  | xxxx xxxx | xxxx xxxx | xxxx xxxx | xxxx xxxx | xx00 xxxx |  |

The coding of EFUST shall conform with the capabilities of the USIM used.

**EFEST (Enabled Services Table)**

Logically:

|  |  |
| --- | --- |
| Service n°1: | Fixed Dialling Numbers (FDN) |
| Service n°2: | Barred Dialling Numbers (BDN) |
| Service n°3: | APN Control List (ACL) |

Coding:

|  |  |
| --- | --- |
| **Byte** | **B1** |
| Hex | 00 |

**EFIMSI (International Mobile Subscriber Identity)**

Logically:

Length: 8 bytes

IMSI: 001 01 0123456789

Coding:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** | **B9** |
| Hex | 08 | 09 | 10 | 10 | 10 | 32 | 54 | 76 | 98 |

**EFAD (Administrative Data)**

Logically: Type approval operations

OFM to be deactivated by the Terminal

MNC: 2 digit

Coding:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **B4** |
| Hex | 80 | 00 | 00 | 02 |

**EFLOCI (Location Information)**

Logically:

LAI-MCC: 001

LAI-MNC: 01

LAI-LAC: 0001

TMSI: "FF .. FF"

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** | **B9** | **B10** | **B11** |
| Hex | FF | FF | FF | FF | 00 | F1 | 10 | 00 | 01 | FF | 00 |

**EFPSLOCI (Packet Switch Location Information)**

Logically:

RAI-MCC: 001

RAI-MNC: 01

RAI-LAC: 0001

RAI-RAC: 05

P-TMSI: "FF….FF"

P-TMSI signature value: "FF…FF"

Coding:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| Hex | FF | FF | FF | FF | FF | FF | FF | 00 |
|  | **B9** | **B10** | **B11** | **B12** | **B13** | **B14** |
|  | F1 | 10 | 00 | 01 | 05 | 00 |

**EFCBMI (Cell Broadcast Message Identifier)**

Logically:

Cell Broadcast Message Identifier 1: '03 E7'

Coding:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **..** | **Bx** |
| Hex | 03 | E7 | FF | .. | FF |

**EFCBMID (Cell Broadcast Message Identifier for Data Download)**

Logically:

Cell Broadcast Message Identifier 1: '10 01'

Coding:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **..** | **Bx** |
| Hex | 10 | 01 | FF | .. | FF |

**EFFDN (Fixed Dialling Numbers)**

Logically:

Record 1: Length of alp ha identifier: 6 characters;

Alpha identifier: "FDN111";

Length of BCD number: "03";

TON and NPI: Telephony and unknown;

Dialled number: 123;

CCI: None;

Ext2: None.

Coding for record 1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** | **B9** | **B10** | **B11** | **B12** |
| Hex | 46 | 44 | 4E | 31 | 31 | 31 | 03 | 81 | 21 | F3 | FF | FF |
|  | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** |
|  | FF | FF | FF | FF | FF | FF | FF | FF |

Record 2: Length of alpha identifier: 6 characters;

Alpha identifier: "FDN222";

Length of BCD number: "03";

TON and NPI: Telephony and Unknown;

Dialled number: 9876;

CCI: None;

Ext2: None.

Coding for record 2:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** | **B9** | **B10** | **B11** | **B12** |
| Hex | 46 | 44 | 4E | 32 | 32 | 32 | 03 | 81 | 89 | 67 | FF | FF |
|  | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** |
|  | FF | FF | FF | FF | FF | FF | FF | FF |

Record 3: Length of alpha identifier: 6 characters;

Alpha identifier: "FDN333";

Length of BCD number: "0B";

TON and NPI: Telephony and International;

Dialled number: +12345678901234567890;

CCI: None;

Ext2: None.

Coding for record 3:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** | **B9** | **B10** | **B11** | **B12** |
| Hex | 46 | 44 | 4E | 33 | 33 | 33 | 0B | 91 | 21 | 43 | 65 | 87 |
|  | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** |
|  | 09 | 21 | 43 | 65 | 87 | 09 | FF | FF |

**EFBDN (Barred Dialling Numbers)**

Logically:

Record 1: Length of alpha identifier: 6 characters;

Alpha identifier: "BDN111";

Length of BCD number: "06";

TON and NPI: Telephony and International;

Dialled number: +1357924680;

CCI: None;

Ext4: None

Comprehension method pointer: None.

Coding for record 1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** | **B9** | **B10** | **B11** | **B12** |
| Hex | 42 | 44 | 4E | 31 | 31 | 31 | 06 | 91 | 31 | 75 | 29 | 64 |
|  | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** | **B21** |
|  | 08 | FF | FF | FF | FF | FF | FF | FF | FF |

Record 2: Length of alpha identifier: 6 characters;

Alpha identifier: "BDN222";

Length of BCD number: "03";

TON and NPI: Telephony and Unknown;

Dialled number: 122;

CCI: None;

Ext4: None

Comprehension method pointer: None.

Coding for record 2:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** | **B9** | **B10** | **B11** | **B12** |
| Hex | 42 | 44 | 4E | 32 | 32 | 32 | 04 | 81 | 21 | F2 | FF | FF |
|  | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** | **B21** |
|  | FF | FF | FF | FF | FF | FF | FF | FF | FF |

Record 3: Length of alpha identifier: 6 characters;

Alpha identifier: "BDN333";

Length of BCD number: "03";

TON and NPI: Telephony and Unknown;

Dialled number: 112;

CCI: None;

Ext4: None.

Comprehension method pointer: None

Coding for record 3:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** | **B9** | **B10** | **B11** | **B12** |
| Hex | 42 | 44 | 4E | 33 | 33 | 33 | 03 | 81 | 11 | F2 | FF | FF |
|  | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** | **B21** |
|  | FF | FF | FF | FF | FF | FF | FF | FF | FF |

**EFECC (Emergency Call Codes)**

Logically: Emergency call code: "122";

Emergency call code alpha identifier: "TEST";

Emergency call Service Category: RFU

Coding:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| Hex | 21 | F2 | FF | 54 | 45 | 53 | 54 | 00 |

**EFSMSS (SMS Status)**

Logically: Last used TP-MR set to"00".

Memory capacity available (flag unset b1="1").

Coding:

|  |  |  |
| --- | --- | --- |
| **Byte** | **B1** | **B2** |
| Hex | 00 | FF |

**EFSMSP (Short message service parameters)**

Logically:

Record 1:

Record length: 28 bytes

Parameter Indicators:

TP-Destination Address: Parameter absent

TS-Service Centre Address: Parameter present

TP-Protocol Identifier: Parameter absent

TP-Data Coding Scheme: Parameter absent

TP-Validity Period: Parameter absent

TS-Service Centre Address:

TON: International Number

NPI: "ISDN / telephone numbering plan"

Dialled number string: "112233445566778"

Coding for record 1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **..** | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** |
| Hex | FD | FF | FF | .. | FF | 09 | 91 | 11 | 22 | 33 | 44 | 55 |
|  | **B21** | **B22** | **B23** | **B24** | **B25** | **B26** | **B27** | **B28** |
|  | 66 | 77 | F8 | FF | FF | FF | FF | FF |

For the display of icon: See ETSI TS 102 384 [26] clause 27.22.1B.

### 27.22.2B Definition of default values for LTE related USIM Application Toolkit testing

#### 27.22.2B.1 Definition of E-UTRAN/EPC UICC

For each item, the logical default values and the coding within the Elementary Files (EF) of the USIM follow, as defined in clause 27.22.2A of the present document with the following execptions:

**EFUST (USIM Service Table)**

Logically:

Settings from 27.22.2A of the present document apply with the following changes:

|  |  |  |
| --- | --- | --- |
| Service n°85 | EPS Mobility Management Information | available |

Coding:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** |
| binary | xx1x xx11 | x1xx 111x | xx1x 1x00 | 1001 11xx | xxx xx11 | xxxx xxxx |
|  | **B7** | **B8** | **B9** | **B10** | **B11** |  |
|  | xxxx xxxx | xxxx xxxx | xxxx xxxx | xxxx xxxx | xx01 xxxx |  |

The coding of EFUST shall conform with the capabilities of the USIM used.

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 0010100010266341122

Last visited registered TAI: 001/01/0001

EPS update status: not updated

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** | **B9** | **B10** | **B11** | **B12** |
| Hex | 0B | F6 | 00 | F1 | 10 | 00 | 01 | 02 | 66 | 43 | 11 | 22 |
|  | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** |
|  | 00 | F1 | 10 | 00 | 01 | 01 |

**EFEPSNSC (EPS NAS Security Context)**

Logically: Key Set Identifier KSIASME: '07' (no key available)

ASME Key (KSIASME): 32 byte key, any value

Uplink NAS count: '00'

Downlink NAS count: '00'

Identifiers of selected NAS  
integrity and encryption algorithm: 'FF'

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** | **..** | **B39** | **B40** | **B41** | |
| Hex | A0 | 34 | 80 | 01 | 07 | 81 | 20 | xx | .. | xx | 82 | 04 | |
|  | **B42** | **B43** | **B44** | **B45** | **B46** | **B47** | **B48** | **B49** | **B50** | **B51** | **B52** | **B53** |
|  | 00 | 00 | 00 | 00 | 83 | 04 | 00 | 00 | 00 | 00 | 84 | 01 |
|  | **B54** |
|  | FF |

#### 27.22.2B.2 Definition of E-UTRAN parameters

The default E-UTRAN parameters of the system simulator are:

- Mobile Country Code (MCC) = 001;

- Mobile Network Code (MNC) = 01;

- Tracking Area Code (TAC) = 0001;

- Cell Identity value = 0001;

The default EPS bearer context is defined in "Reference default EPS bearer context #1" in cl. 6.6.1 of TS 36.508 [33].

The default PDP type shall be "IP".

### 27.22.2C Definition of E-UTRAN/EPC ISIM-UICC

#### 27.22.2C.1 Applications on the E-UTRAN/EPC ISIM-UICC

The E-UTRAN/EPC ISIM-UICC shall contain a USIM as defined in clause 27.22.2B.1 and an ISIM as defined in clause 27.22.2C.3.

#### 27.22.2C.2 Default USIM values of E-UTRAN/EPC ISIM-UICC

The E-UTRAN/EPC ISIM-UICC related test cases require a USIM to access the E-UTRAN/EPC. For this purpose the USIM shall be configured as defined in clause 27.22.2B.1.

#### 27.22.2C.3 Default ISIM values of E-UTRAN/EPC ISIM-UICC

The E-UTRAN/EPC ISIM-UICC shall contain an ISIM for IMS access with the following values:

##### 27.22.2C.3.1 EFAD (Administrative Data)

Logically: Type approval operations

Coding:

|  |  |  |  |
| --- | --- | --- | --- |
| **Byte** | **B1** | **B2** | **B3** |
| Hex | 80 | 00 | 00 |

##### 27.22.2C.3.2 EFIST (ISIM Service Table**)**

Logically:

|  |  |  |
| --- | --- | --- |
| Service n°1: | P-CSCF address | available |
| Service n°2 | Generic Bootstrapping Architecture (GBA) | not available |
| Service n°3 | HTTP Digest | not available |
| Service n°4 | GBA-based Local Key Establishment Mechanism | not available |
| Service n°5 | Support of P-CSCF discovery for IMS Local Break Out | not available |
| Service n°6 | Short Message Storage (SMS) | available |
| Service n°7 | Short Message Status Reports (SMSR) | available |
| Service n°8 | Support for SM-over-IP including data download via SMS-PP as defined in TS 31.111 [31] | available |

Coding:

|  |  |
| --- | --- |
| **Byte** | **B1** |
| binary | 1110 0001 |

##### 27.22.2C.3.3 EFIMPI (IMS private user identity)

Logically: 001010123456789@test.3gpp.com

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte:** | **B01** | **B02** | **B03** | **B04** | **B05** | **B06** | **B07** | **B08** | **B09** | **B10** |
| Coding: | 80 | 1D | 30 | 30 | 31 | 30 | 31 | 30 | 31 | 32 |
|  | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** |
|  | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 74 | 65 |
|  | **B21** | **B22** | **B23** | **B24** | **B25** | **B26** | **B27** | **B28** | **B29** | **B30** |
|  | 73 | 74 | 2E | 33 | 67 | 70 | 70 | 2E | 63 | 6F |
|  | **B31** | **B32** | **B33** | **B34** | **B35** | **B36** | **B37** | **B38** | **B39** | **B40** |
|  | 6D | FF | FF | FF | FF | FF | FF | FF | FF | FF |

##### 27.22.2C.3.4 EFDOMAIN (Home Network Domain Name)

Logically: test.3gpp.com

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte:** | **B01** | **B02** | **B03** | **B04** | **B05** | **B06** | **B07** | **B08** | **B09** | **B10** |
| Coding: | 80 | 0D | 74 | 65 | 73 | 74 | 2E | 33 | 67 | 70 |
|  | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** |
|  | 70 | 2E | 63 | 6F | 6D | FF | FF | FF | FF | FF |

##### 27.22.2C.3.5 EFIMPU (IMS public user identity)

Record 1:

Logically: sip:001010123456789@ims.mnc246.mcc081.3gppnetwork.org

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte:** | **B01** | **B02** | **B03** | **B04** | **B05** | **B06** | **B07** | **B08** | **B09** | **B10** |
| Coding: | 80 | 35 | 73 | 69 | 70 | 3A | 30 | 30 | 31 | 30 |
|  | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** |
|  | 31 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 |
|  | **B21** | **B22** | **B23** | **B24** | **B25** | **B26** | **B27** | **B28** | **B29** | **B30** |
|  | 39 | 40 | 69 | 6D | 73 | 2E | 6D | 6E | 63 | 32 |
|  | **B31** | **B32** | **B33** | **B34** | **B35** | **B36** | **B37** | **B38** | **B39** | **B40** |
|  | 34 | 36 | 2E | 6D | 63 | 63 | 30 | 38 | 31 | 2E |
|  | **B41** | **B42** | **B43** | **B44** | **B45** | **B46** | **B47** | **B48** | **B49** | **B50** |
|  | 33 | 67 | 70 | 70 | 6E | 65 | 74 | 77 | 6F | 72 |
|  | **B51** | **B52** | **B53** | **B54** | **B55** | **B56** | **B57** | **B58** | **B59** | **B60** |
|  | 6B | 2E | 6F | 72 | 67 | FF | FF | FF | FF | FF |

Record 2:

Logically: sip:+11234567890@test.3gpp.com

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte:** | **B01** | **B02** | **B03** | **B04** | **B05** | **B06** | **B07** | **B08** | **B09** | **B10** |
| Coding: | 80 | 1E | 73 | 69 | 70 | 3A | 2B | 31 | 31 | 32 |
|  | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** |
|  | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 30 | 40 | 74 |
|  | **B21** | **B22** | **B23** | **B24** | **B25** | **B26** | **B27** | **B28** | **B29** | **B30** |
|  | 65 | 73 | 74 | 2E | 33 | 67 | 70 | 70 | 2E | 63 |
|  | **B31** | **B32** | **B33** | **B34** | **B35** | **B36** | **B37** | **B38** | **B39** | **B40** |
|  | 6F | 6D | FF | FF | FF | FF | FF | FF | FF | FF |
|  | **B41** | **B42** | **B43** | **B44** | **B45** | **B46** | **B47** | **B48** | **B49** | **B50** |
|  | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |
|  | **B51** | **B52** | **B53** | **B54** | **B55** | **B56** | **B57** | **B58** | **B59** | **B60** |
|  | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |

Record 3:

Logically: tel:+11234567890

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte:** | **B01** | **B02** | **B03** | **B04** | **B05** | **B06** | **B07** | **B08** | **B09** | **B10** |
| Coding: | 80 | 10 | 74 | 65 | 6C | 3A | 2B | 31 | 31 | 32 |
|  | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** |
|  | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 30 | FF | FF |
|  | **B21** | **B22** | **B23** | **B24** | **B25** | **B26** | **B27** | **B28** | **B29** | **B30** |
|  | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |
|  | **B31** | **B32** | **B33** | **B34** | **B35** | **B36** | **B37** | **B38** | **B39** | **B40** |
|  | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |
|  | **B41** | **B42** | **B43** | **B44** | **B45** | **B46** | **B47** | **B48** | **B49** | **B50** |
|  | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |
|  | **B51** | **B52** | **B53** | **B54** | **B55** | **B56** | **B57** | **B58** | **B59** | **B60** |
|  | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |

##### 27.22.2C.3.6 EFP-CSCF (P-CSCF ADDRESS)

Logically:

Address Type: FQDN

P-CSCF Address: pcscf1.anyims.test.3gpp.com

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte:** | **B01** | **B02** | **B03** | **B04** | **B05** | **B06** | **B07** | **B08** | **B09** | **B10** |
| Coding: | 80 | 1C | 00 | 70 | 63 | 73 | 63 | 66 | 31 | 2E |
|  | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** |
|  | 61 | 6E | 79 | 69 | 6D | 73 | 2E | 74 | 65 | 73 |
|  | **B21** | **B22** | **B23** | **B24** | **B25** | **B26** | **B27** | **B28** | **B29** | **B30** |
|  | 74 | 2E | 33 | 67 | 70 | 70 | 2E | 63 | 6F | 6D |
|  | **B31** | **B32** | **B33** | **B34** | **B35** | **B36** | **B37** | **B38** | **B39** | **B40** |
|  | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |

Note: This EF does not apply for 3GPP and shall not be used by a terminal using a 3GPP access network or a 3GPP Interworking WLAN.

##### 27.22.2C.3.7 EFSMS (Short Message Service)

At least 10 records.

All records shall be empty.

Logically: Status byte set to empty.

Record 1-x (x ≥10):

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte:** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** | **B9** | **B10** | **B11** | **B12** | **…** | **B176** |
| Coding: | 00 | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | … | FF |

##### 27.22.2C.3.8 EFSMSR (Short message status reports)

This EF shall contain as many records as EFSMS.

All records shall be empty.

Logically: Status byte set to empty.

Record 1-x (x ≥10):

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte:** | **B01** | **B02** | **B03** | **B04** | **B05** | **B06** | **B07** | **B08** | **B09** | **B10** |
| Coding: | 00 | FF | FF | FF | FF | FF | FF | FF | FF | FF |
|  | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** |
|  | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |
|  | **B21** | **B22** | **B23** | **B24** | **B25** | **B26** | **B27** | **B28** | **B29** | **B30** |
|  | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |

##### 27.22.2C.3.9 EFSMSP (Short message service parameters)

Logically:

Record 1:

Record length: 28 bytes

Parameter Indicators:

TP-Destination Address: Parameter absent

TS-Service Centre Address: Parameter present

TP-Protocol Identifier: Parameter absent

TP-Data Coding Scheme: Parameter absent

TP-Validity Period: Parameter absent

TS-Service Centre Address:

TON: International Number

NPI: "ISDN / telephone numbering plan"

Dialled number string: "112233445566778"

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Byte: | B1 | B2 | B3 | ... | B13 | B14 | B15 | B16 | B17 | B18 | B19 | B20 | B21 | B22 | B23 |
| Coding: | FD | FF | FF | ... | FF | 09 | 91 | 11 | 22 | 33 | 44 | 55 | 66 | 77 | F8 |
|  | B24 | B25 | B26 | B27 | B28 |  |  |  |  |  |  |  |  |  |  |
|  | FF | FF | FF | FF | FF |  |  |  |  |  |  |  |  |  |  |

1. All other records shall be empty.

##### 27.22.2C.3.10 EFSMSS (SMS Status)

Logically: Last used TP-MR set to"00".

a) Memory capacity available (flag unset b1="1").

|  |  |  |
| --- | --- | --- |
| Byte: | B1 | B2 |
| Coding: | 00 | FF |

#### 27.22.2C.4 Default values at DF\_TELECOM

##### 27.22.2C.4.1 EFPSISMSC (Public Service Identity of the SM-SC)

1 record only.

Logically:

Record 1:

Public Service Identity of the SM-SC: tel:+112233445566778

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte:** | **B01** | **B02** | **B03** | **B04** | **B05** | **B06** | **B07** | **B08** | **B09** | **B10** |
| Coding: | 80 | 14 | 74 | 65 | 6C | 3A | 2B | 31 | 31 | 32 |
|  | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** |
|  | 32 | 33 | 33 | 34 | 34 | 35 | 35 | 36 | 36 | 37 |
|  | **B21** | **B22** | **B23** | **B24** | **B25** | **B26** | **B27** | **B28** | **…** | **Bxx** |
|  | 37 | 38 | FF | FF | FF | FF | FF | FF | … | FF |

### 27.22.2D Definition of default values for NG-RAN related USIM Application Toolkit testing

#### 27.22.2D.1 Definition of NG-RAN UICC

For each item, the logical default values and the coding within the Elementary Files (EF) of the USIM follow, as defined in clause 27.22.2B of the present document with the following exceptions:

**EFUST (USIM Service Table)**

Logically:

Settings from 27.22.2B of the present document apply with the following changes:

|  |  |  |
| --- | --- | --- |
| Service n°86 | Allowed CSG Lists and corresponding indications | available |
| Service n°122 | 5GS Mobility Management Information | available |
| Service n°123 | 5G Security Parameters | available |
| Service n°124 | Subscription identifier privacy support | available |
| Service n°125 | SUCI calculation by the USIM | not available |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte:** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| binary: | xxxx xx1x | xxxx xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 | xxxx xxxx | xxxx xxxx | xxxx xxxx |
|  | **B9** | **B10** | **B11** |  | **B16** |  |  |  |
|  | xxxx xxxx | xxxx xxxx | xx11 xxxx | ..... | xxx0 111x |  |  |  |

The coding of EFUST shall conform with the capabilities of the USIM used.

**EF5GS3GPPLOCI (5GS 3GPP location information)**

Logically:

5G-GUTI: FF FF FF FF FF FF FF FF FF FF FF FF FF

TAI: 246 081 000000

5GS update status: 5U2 NOT UPDATED

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coding:** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| Hex | FF | FF | FF | FF | FF | FF | FF | FF |
|  | **B9** | **B10** | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** |
|  | FF | FF | FF | FF | FF | 42 | 16 | 80 |
|  | **B17** | **B18** | **B19** | **B20** |  |  |  |  |
|  | 00 | 00 | 00 | 01 |  |  |  |  |

**EFSUCI\_Calc\_Info (Subscription Concealed Identifier Calculation Information EF)**

Logically:

Protection Scheme Identifier List data object

Protection Scheme Identifier 1 – null

Key Index 1: 0

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 |
| Hex | A0 | 02 | 00 | 00 | A1 | 00 |

**EFRouting\_Indicator (Routing Indicator EF)**

Logically:

Routing Indicator: 17

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 |
| Hex | 71 | FF | 00 | 00 |

**EF5GS3GPPNSC (5GS 3GPP Access NAS Security Context EF)**

Logically:

5GS NAS Security Context:

ngKSI: 00

KAMF:32 bytes, value not checked

Uplink NAS count: any value

Downlink NAS count: any value

Identifiers of selected NAS any value

integrity and encryption algorithms:

Identifiers of selected EPS NAS any value

integrity and encryption algorithms

for use after mobility to EPS:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | Bx |
| Hex | A0 | XX | 80 | 01 | 00 | 81 | xx | xx | … | xx |

#### 27.22.2D.2 Definition of NG-RAN cell parameters

The default NG-RAN parameters of the system simulator are:

- Mobile Country Code (MCC) = 001;

- Mobile Network Code (MNC) = 01;

- Tracking Area Code (TAC) = 000001;

- Cell Identity value = 0001 (36 bits);

#### 27.22.2D.3 Definition of NG-RAN UICC supporting Rel-17 features

For each item, the logical default values and the coding within the Elementary Files (EF) of the USIM follow, as defined in clause 27.22.2D.1 of the present document with the following exceptions:

**EFUST** (USIM Service Table)

Logically:

Settings from clause 27.22.2D.1 of the present document apply with the following changes:

|  |  |  |  |
| --- | --- | --- | --- |
| Service n°147 to n°152 |  | not defined | not available |

Coding:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Byte:** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| Binary: | xxxx xx1x | xxxx xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 | xxxx xxxx | xxxx xxxx | xxxx xxxx |
|  | **B9** | **B10** | **B11** | **…** | **B16** | **B17** | **B18** | **B19** |
|  | xxxx xxxx | xxxx xxxx | xx11 xxxx | ... | xxx0 111x | xxxx xxxx | xxxx xxxx | 0000 00xx |

### 27.22.2E Definition of NG-RAN ISIM-UICC

#### 27.22.2E.1 Applications on the NG-RAN ISIM-UICC

The NG-RAN ISIM-UICC shall contain a USIM as defined in clause 27.22.2D.1 and an ISIM as defined in clause27.22.2E.2.

#### 27.22.2E.2 Default ISIM values of NG-RAN ISIM-UICC

The NG-RAN ISIM-UICC shall contain an ISIM for IMS access. The values defined in 27.22.2C.3 shall be used.

### 27.22.1 Initialization of USIM Application Toolkit Enabled UICC by USIM Application Toolkit Enabled ME (Profile Download)

#### 27.22.1.1 Definition and applicability

See clause 3.6.3 of the present document.

#### 27.22.1.2 Conformance requirement

The ME shall support the PROFILE DOWNLOAD command as defined in:

- TS 31.111 [15] clause 5.2.

#### 27.22.1.3 Test purpose

To verify that the ME sends a TERMINAL PROFILE command in accordance with the above requirements.

#### 27.22.1.4 Method of test

##### 27.22.1.4.1 Initial conditions

The ME is connected to the USIM Simulator. All elementary files are coded as the default Toolkit personalization.

##### 27.22.1.4.2 Procedure

Expected Sequence 1 (PROFILE DOWNLOAD)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Step | Direction | Message / Action | Comments | SA |
| 1 | USER → ME | Power on ME | [UICC Activation] |  |
| 2 | ME → UICC | Select EFPL |  |  |
| 3 | UICC → ME | Read EFPL |  |  |
| 4 | ME → UICC | TERMINAL PROFILE 1.1 | PROFILE DOWNLOAD | A.3/1 OR A.3/2 |
| 5 | UICC → ME | NORMAL ENDING OF COMMAND 1.1 |  |  |
| 6 | ME → UICC | Select USIM Application |  |  |

**TERMINAL PROFILE: 1.1**

Logically:

Coding:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| APDU | CLA=80 | INS=10 | P1=00 | P2=00 | P3=XX |

|  |  |  |  |
| --- | --- | --- | --- |
| DATA IN: | YY | ZZ | .. |

With XX representing the length of the following DATA IN depending on the USIM Toolkit commands supported by the ME, and with YY, ZZ, … representing here the bytes of the TERMINAL PROFILE data, as specified in TS 31.111 [15], clause 5.2.

**NORMAL ENDING OF COMMAND: 1.1**

Logically:

Coding:

|  |  |
| --- | --- |
| SW1=90 | SW2=00 |

#### 27.22.1.5 Test requirement

The ME shall operate in the manner defined in expected sequence 1.

### 27.22.2 Contents of the TERMINAL PROFILE command

#### 27.22.2.1 Definition and applicability

See table E.1 in annex B of TS 31.124 [2].

#### 27.22.2.2 Conformance requirement

CR 1 The ME shall support the PROFILE DOWNLOAD command as defined in:

- TS 31.111 [27] clause 5.2.

#### 27.22.2.3 Test purpose

The purpose of this test is to:

1. verify that the TERMINAL PROFILE indicates that Profile Download facility is supported.

2. record which USIM Application Toolkit facilities are supported by the ME, to determine which subsequent tests are required.

#### 27.22.2.4 Method of test

##### 27.22.2.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48.

##### 27.22.1.4.2 Procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Step | Direction | Action | Information | SA |
| 1 | USER > ME | Power on ME | [UICC Activation] |  |
| 2 | ME > TT | Send TERMINAL PROFILE | The TT shall record the content of the TERMINAL PROFILE | A.3/1 OR A.3/2 |
| 3 | TT > ME | Return SW1/SW2: '90 00' |  |  |
| 4 | USER > ME | Power off ME |  |  |

#### 27.22.2.5 Test requirement

The ME shall operate in the manner defined in the test procedure.

#### 27.22.2.6 Acceptance criteria

CR 1 is met if a TERMINAL PROFILE command with bit 1 of the first byte set to 1 (facility supported by ME) is sent and if the TERMINAL PROFILE information "support" recorded is in accordance with the "Status" column as defined in table E.1 for the corresponding ME USIM Toolkit Release and Options

NOTE: Support of features defined only in releases later than currently tested release shall be ignored.

### 27.22.3 Servicing of proactive UICC commands

#### 27.22.3.1 Definition and applicability

See clause 3.6.3 of the present document.

#### 27.22.3.2 Conformance requirement

CR 1 On detection of a pending USIM Application Toolkit command from the UICC the ME shall perform the FETCH command to retrieve the proactive UICC command. The result of the executed command shall be transmitted from the ME to the UICC within a TERMINAL RESPONSE command.

- TS 31.111 [27]clause 6.3.

NOTE: The MORE TIME proactive command is used in this test. The ME shall have knowledge of this command, but may not support this USIM Application Toolkit facility.

#### 27.22.3.3 Test purpose

To verify that the ME uses the FETCH command to obtain the proactive UICC command, after detection of a pending proactive UICC command. The pending proactive UICC command is indicated by the response parameters '91 xx' from the UICC.

To verify that the ME transmits the result of execution of the proactive UICC command to the UICC in the TERMINAL RESPONSE command.

#### 27.22.3.4 Method of test

##### 27.22.3.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command 'MORE TIME'.

##### 27.22.3.4.2 Procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Step | Direction | MESSAGE / Action | Information / Comments | SA |
| 1 | USER > ME | Power on ME | [UICC Activation] |  |
| 2 | ME | Execute PROFILE DOWNLOAD |  | A.3/1 OR A.3/2 |
| 3 | nrUSIM > ME | Return SW1/SW2: '91 0B' | The nrUSIM indicates that a Proactive UICC Command is pending |  |
| 4 | ME > nrUSIM | Send FETCH command |  |  |
| 5 | nrUSIM > ME | Return Proactive UICC Command 2.1: MORE TIME |  | A.3/1 OR A.3/2 |
| 6 | USER > ME | Power off ME |  |  |

#### 27.22.3.5 Test requirement

The ME shall operate in the manner defined in the test procedure.

#### 27.22.3.6 Acceptance criteria

CR 1 is met if the ME sends a FETCH command in step 4) and it can be verified via A.3/x method that the TERMINAL RESPONSE command with command number "01", type of command "02" and command qualifier "00".

### 27.22.4 Proactive UICC commands

#### 27.22.4.1 DISPLAY TEXT

##### 27.22.4.1.1 DISPLAY TEXT (Normal)

27.22.4.1.1.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.1.2 Conformance requirements

CR 1 The ME shall support the DISPLAY TEXT command as defined in the following technical specifications: TS 31.111 [27], clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.15, clause 8.15.1, clause 8.15.2, clause 8.15.3 and clause 8.31.

27.22.4.1.1.3 Test purpose

To verify that the ME displays the text contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.1.4 Method of test

27.22.4.1.1.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.1.4.2 Procedure

Expected Sequence 1.1 (DISPLAY TEXT normal priority, Unpacked 8 bit data for Text String, successful)

See ETSI TS 102 384 [3] in clause 27.22.4.1.1.4.2, Expected Sequence 1.1.

Expected Sequence 1.2 (DISPLAY TEXT normal priority, Unpacked 8 bit data for Text String, screen busy)

See ETSI TS 102 384 [3] in clause 27.22.4.1.1.4.2, Expected Sequence 1.2.

Expected Sequence 1.3 (DISPLAY TEXT, high priority, Unpacked 8 bit data for Text String, successful)

See ETSI TS 102 384 [3] in clause 27.22.4.1.1.4.2, Expected Sequence 1.3.

Expected Sequence 1.4 (DISPLAY TEXT, Packed, SMS default alphabet, successful)

See ETSI TS 102 384 [3] in clause 27.22.4.1.1.4.2, Expected Sequence 1.4.

Expected Sequence 1.5 (DISPLAY TEXT, Clear message after delay, successful)

See ETSI TS 102 384 [3] in clause 27.22.4.1.1.4.2, Expected Sequence 1.5.

Expected Sequence 1.6 (DISPLAY TEXT, Text string with 160 bytes, successful)

See ETSI TS 102 384 [3] in clause 27.22.4.1.1.4.2, Expected Sequence 1.6.

Expected Sequence 1.7 (DISPLAY TEXT, Backward move in UICC session, successful)

See ETSI TS 102 384 [3] in clause 27.22.4.1.1.4.2, Expected Sequence 1.7.

Expected Sequence 1.8 (DISPLAY TEXT, session terminated by user)

See ETSI TS 102 384 [3] in clause 27.22.4.1.1.4.2, Expected Sequence 1.8.

Expected Sequence 1.9 (DISPLAY TEXT, icon and text to be displayed, no text string given, not understood by ME)

See ETSI TS 102 384 [3] in clause 27.22.4.1.1.4.2, Expected Sequence 1.9.

27.22.4.1.1.5 Test requirement

The ME shall operate in the manner defined in expected sequences 1.1 to 1.9.

27.22.4.1.1.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

##### 27.22.4.1.2 DISPLAY TEXT (Support of "No response from user")

27.22.4.1.2.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.2.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in the following technical specifications: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.15, clause 8.15.1, clause 8.15.2 and clause 8.15.3.

27.22.4.1.2.3 Test purpose

To verify that the ME displays the text contained in the DISPLAY TEXT proactive UICC command, and returns a "No response from user" result value in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.2.4 Method of test

27.22.4.1.2.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

ME Manufacturers shall set the "no response from user" period of time as declared in table A.2/1 of TS 31.124 [2]. The TT shall be set to that period of time, allowing that this time is exceeded by 10%.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.2.4.2 Procedure

Expected Sequence 2.1 (DISPLAY TEXT, no response from user)

See ETSI TS 102 384 [3] in clause 27.22.4.1.2.4.2, Expected Sequence.2.1.

27.22.4.1.2.5 Test requirement

The ME shall operate in the manner defined in expected sequence 2.1.

27.22.4.1.2.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH command and the PROACTIVE COMMAND as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

##### 27.22.4.1.3 DISPLAY TEXT (Display of extension text)

27.22.4.1.3.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.3.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in the following technical specifications: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.15.

27.22.4.1.3.3 Test purpose

To verify that the ME displays the extension text contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.3.4 Method of test

27.22.4.1.3.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.3.4.2 Procedure

Expected Sequence 3.1 (DISPLAY TEXT, display of the extension text)

See ETSI TS 102 384 [3] in clause 27.22.4.1.3.4.2, Expected Sequence 3.1.

27.22.4.1.3.5 Test requirement

The ME shall operate in the manner defined in expected sequence 3.1.

27.22.4.1.3.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH command and the PROACTIVE COMMAND as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

##### 27.22.4.1.4 DISPLAY TEXT (Sustained text)

27.22.4.1.4.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.4.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.15, clause 8.15.

27.22.4.1.4.3 Test purpose

To verify that the ME displays the text contained in the DISPLAY TEXT proactive UICC command, returns a successful result in the TERMINAL RESPONSE command send to the UICC and sustain the display beyond sending the TERMINAL response.

27.22.4.1.4.4 Method of test

27.22.4.1.4.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.4.4.2 Procedure

Expected Sequence 4.1 (DISPLAY TEXT, sustained text, unpacked data 8 bits, successful)

See ETSI TS 102 384 [3] in clause 27.22.4.1.4.4.2, Expected Sequence 4.1.

Expected Sequence 4.2 (DISPLAY TEXT, sustained text, clear message after delay, successful)

See ETSI TS 102 384 [3] in clause 27.22.4.1.4.4.2, Expected Sequence 4.2.

Expected Sequence 4.3 (DISPLAY TEXT, sustained text, wait for user MMI to clear, successful)

See ETSI TS 102 384 [3] in clause 27.22.4.1.4.4.2, Expected Sequence 4.3.

Expected Sequence 4.4 (DISPLAY TEXT, sustained text, wait for high priority event to clear, successful)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Step | Direction | MESSAGE / Action | Information / Comments | SA |
| 1 | nrUSIM > ME | PROACTIVE COMMAND PENDING: DISPLAY TEXT 4.4.1 |  |  |
| 2 | ME > nrUSIM | FETCH |  |  |
| 3 | nrUSIM > ME | PROACTIVE COMMAND: DISPLAY TEXT 4.4.1 | [wait for user to clear message] |  |
| 4 | ME > USER | Display "Toolkit Test 4" |  |  |
| 5 | ME > nrUSIM | TERMINAL RESPONSE: DISPLAY TEXT 4.4.1 | [Command performed successfully] | A.3/1 OR A.3/2 |
| 6 | nrUSIM > ME | PROACTIVE UICC SESSION ENDED |  |  |
| 7 | ME > USER | Display of "Toolkit Test 4" | Text shall sustain until - a higher priority event occurs. |  |
| 8 | TT → ME | INCOMING MOBILE TERMINATED CALL |  |  |

PROACTIVE COMMAND: DISPLAY TEXT 4.4.1

Logically:

Command details

Command number: 1

Command type: DISPLAY TEXT

Command qualifier: normal priority, wait for user to clear message

Device identities

Source device: UICC

Destination device: Display

Text String

Data coding scheme: unpacked, 8 bit data

Text: "Toolkit Test 4"

Immediate Response

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BER-TLV: | D0 | 1C | 81 | 03 | 01 | 21 | 80 | 82 | 02 | 81 | 02 | 8D |
|  | 0F | 04 | 54 | 6F | 6F | 6C | 6B | 69 | 74 | 20 | 54 | 65 |
|  | 73 | 74 | 20 | 34 | AB | 00 |

TERMINAL RESPONSE: DISPLAY TEXT 4.4.1

Logically:

Command details

Command number: 1

Command type: DISPLAY TEXT

Command qualifier: normal priority, wait for user to clear message

Device identities

Source device: ME

Destination device: UICC

Result

General Result: Command performed successfully

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BER-TLV: | 81 | 03 | 01 | 21 | 80 | 82 | 02 | 82 | 81 | 83 | 01 | 00 |

27.22.4.1.4.5 Test requirement

The ME shall operate in the manner defined in expected sequences 4.1 to 4.4.

27.22.4.1.4.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

##### 27.22.4.1.5 DISPLAY TEXT (Display of icons)

27.22.4.1.5.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.5.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.15, clause 8.15.1, clause 8.15.2, clause 8.15.3 and clause 8.31.

27.22.4.1.5.3 Test purpose

To verify that the ME displays the icons which are referred to in the contents of the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.5.4 Method of test

27.22.4.1.5.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.5.4.2 Procedure

Expected Sequence 5.1A (DISPLAY TEXT, display of basic icon, self-explanatory, successful)

See ETSI TS 102 384 [3] in clause 27.22.4.1.5.4.2, Expected Sequence 5.1A.

Expected Sequence 5.1B (DISPLAY TEXT, display of basic icon, self-explanatory, requested icon could not be displayed)

See ETSI TS 102 384 [3] in clause 27.22.4.1.5.4.2, Expected Sequence 5.1B.

Expected Sequence 5.2A (DISPLAY TEXT, display of colour icon, successful)

See ETSI TS 102 384 [3] in clause 27.22.4.1.5.4.2, Expected Sequence 5.2A.

Expected Sequence 5.2B (DISPLAY TEXT, display of colour icon, requested icon could not be displayed)

See ETSI TS 102 384 [3] in clause 27.22.4.1.5.4.2, Expected Sequence 5.2B.

Expected Sequence 5.3A (DISPLAY TEXT, display of basic icon, not self explanatory, successful)

See ETSI TS 102 384 [3] in clause 27.22.4.1.5.4.2, Expected Sequence 5.3A.

Expected Sequence 5.3B (DISPLAY TEXT, display of basic icon, not self explanatory, requested icon could not be displayed)

See ETSI TS 102 384 [3] in clause 27.22.4.1.5.4.2, Expected Sequence 5.3B.

27.22.4.1.5.5 Test requirement

The ME shall operate in the manner defined in expected sequences 5.1A to 5.3B.

27.22.4.1.5.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

##### 27.22.4.1.6 DISPLAY TEXT (UCS2 display in Cyrillic)

27.22.4.1.6.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.6.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.15, clause 8.15.1, clause 8.15.2, clause 8.15.3 and clause 8.31.

CR 2 The ME shall support the UCS2 alphabet for the coding of the Cyrillic alphabet, as defined in the following technical specification: ISO/IEC 10646 [36].

27.22.4.1.6.3 Test purpose

To verify that the ME displays the text contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.6.4 Method of test

27.22.4.1.6.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.6.4.2 Procedure

Expected Sequence 6.1 (DISPLAY TEXT, UCS2 coded in Cyrillic)

See ETSI TS 102 384 [3] in clause 27.22.4.1.6.4.2, Expected Sequence 6.1.

27.22.4.1.6.5 Test requirement

The ME shall operate in the manner defined in expected sequence 6.1.

27.22.4.1.6.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

CR 2 is implicitly met if the ME is capable to handle the UCS2 alphabet for the coding of the Cyrillic alphabet during test execution.

##### 27.22.4.1.7 DISPLAY TEXT (Variable Time out)

27.22.4.1.7.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.7.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.8, clause 8.15, clause 8.31 and clause 8.43.

CR 2 The ME shall support the variable time out for the display text.

27.22.4.1.7.3 Test purpose

To verify that the ME displays the text contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.7.4 Method of test

27.22.4.1.7.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.7.4.2 Procedure

Expected Sequence 7.1 (DISPLAY TEXT, variable timeout of 10 seconds)

See ETSI TS 102 384 [3] in clause 27.22.4.1.7.4.2, Expected Sequence 7.1.

27.22.4.1.7.5 Test requirement

The ME shall operate in the manner defined in expected sequence 7.1.

27.22.4.1.7.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

CR 2 is implicitly met if the ME is capable to handle the variable timeout of 10 seconds during test execution.

##### 27.22.4.1.8 DISPLAY TEXT (Support of Text Attribute)

27.22.4.1.8.1 DISPLAY TEXT (Support of Text Attribute – Left Alignment)

27.22.4.1.8.1.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.8.1.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.8, clause 8.15, clause 8.31, clause 8.43 and clause 8.70.

CR 2 The ME shall support the text attribute with 'Left Alignment' for the display text.

27.22.4.1.8.1.3 Test purpose

To verify that the ME displays the text formatted according to the left alignment text attribute configuration contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.8.1.4 Method of test

27.22.4.1.8.1.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.8.1.4.2 Procedure

Expected Sequence 8.1 (DISPLAY TEXT, Text Attribute with Left Alignment)

See ETSI TS 102 384 [3] in clause 27.22.4.1.8.1.4.2, Expected Sequence 8.1.

27.22.4.1.8.1.5 Test requirement

The ME shall operate in the manner defined in expected sequence 8.1.

27.22.4.1.8.1.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

CR 2 is implicitly met if the ME is capable to handle the text attribute with 'Left Alignment' for the display text during test execution.

27.22.4.1.8.2 DISPLAY TEXT (Support of Text Attribute – Center Alignment)

27.22.4.1.8.2.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.8.2.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.8, clause 8.15, clause 8.31, clause 8.43 and clause 8.70.

CR 2 The ME shall support the text attribute with 'Centre Alignment' for the display text.

27.22.4.1.8.2.3 Test purpose

To verify that the ME displays the text formatted according to the center alignment text attribute configuration contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.8.2.4 Method of test

27.22.4.1.8.2.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.8.2.4.2 Procedure

**Expected Sequence 8.2 (DISPLAY TEXT, Text Attribute with Center Alignment)**

See ETSI TS 102 384 [3] in clause 27.22.4.1.8.2.4.2, Expected Sequence 8.2.

27.22.4.1.8.2.5 Test requirement

The ME shall operate in the manner defined in expected sequence 8.2.

27.22.4.1.8.2.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

CR 2 is implicitly met if the ME is capable to handle the text attribute with 'Center Alignment' for the display text during test execution.

27.22.4.1.8.3 DISPLAY TEXT (Support of Text Attribute – Right Alignment)

27.22.4.1.8.3.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.8.3.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.8, clause 8.15, clause 8.31, clause 8.43 and clause 8.70.

CR 2 The ME shall support the text attribute with 'Right Alignment' for the display text.

27.22.4.1.8.3.3 Test purpose

To verify that the ME displays the text formatted according to the right alignment text attribute configuration contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.8.3.4 Method of test

27.22.4.1.8.3.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.8.3.4.2 Procedure

Expected Sequence 8.3 (DISPLAY TEXT, Text Attribute with Right Alignment)

See ETSI TS 102 384 [3] in clause 27.22.4.1.8.3.4.2, Expected Sequence 8.3.

27.22.4.1.8.3.5 Test requirement

The ME shall operate in the manner defined in expected sequence 8.3.

27.22.4.1.8.3.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

CR 2 is implicitly met if the ME is capable to handle the text attribute with 'Right Alignment' for the display text during test execution.

27.22.4.1.8.4 DISPLAY TEXT (Support of Text Attribute – Large Font Size)

27.22.4.1.8.4.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.8.4.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.8, clause 8.15, clause 8.31, clause 8.43 and clause 8.70.

CR 2 The ME shall support the text attribute with 'large font size ' for the display text.

27.22.4.1.8.4.3 Test purpose

To verify that the ME displays the text formatted according to the large size font text attribute configuration contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.8.4.4 Method of test

27.22.4.1.8.4.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.8.4.4.2 Procedure

Expected Sequence 8.4 (DISPLAY TEXT, Text Attribute with Large Font Size)

See ETSI TS 102 384 [3] in clause 27.22.4.1.8.4.4.2, Expected Sequence 8.4.

27.22.4.1.8.4.5 Test requirement

The ME shall operate in the manner defined in expected sequence 8.4.

27.22.4.1.8.4.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

CR 2 is implicitly met if the ME is capable to handle the text attribute with 'large font size' for the display text during test execution.

27.22.4.1.8.5 DISPLAY TEXT (Support of Text Attribute – Small Font Size)

27.22.4.1.8.5.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.8.5.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.8, clause 8.15, clause 8.31, clause 8.43 and clause 8.70.

CR 2 The ME shall support the text attribute with 'small font size' for the display text.

27.22.4.1.8.5.3 Test purpose

To verify that the ME displays the text formatted according to the small size font text attribute configuration contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.8.5.4 Method of test

27.22.4.1.8.5.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.8.5.4.2 Procedure

Expected Sequence 8.5 (DISPLAY TEXT, Text Attribute with Small Font Size)

See ETSI TS 102 384 [3] in clause 27.22.4.1.8.5.4.2, Expected Sequence 8.5.

27.22.4.1.8.5.5 Test requirement

The ME shall operate in the manner defined in expected sequence 8.5.

27.22.4.1.8.5.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

CR 2 is implicitly met if the ME is capable to handle the text attribute with 'small font size' for the display text during test execution.

27.22.4.1.8.6 DISPLAY TEXT (Support of Text Attribute – Bold On)

27.22.4.1.8.6.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.8.6.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.8, clause 8.15, clause 8.31, clause 8.43 and clause 8.70.

CR 2 The ME shall support the text attribute with 'bold on' for the display text.

27.22.4.1.8.6.3 Test purpose

To verify that the ME displays the text formatted according to the bold text attribute configuration contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.8.6.4 Method of test

27.22.4.1.8.6.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.8.6.4.2 Procedure

Expected Sequence 8.6 (DISPLAY TEXT, Text Attribute with Bold On)

See ETSI TS 102 384 [3] in clause 27.22.4.1.8.6.4.2, Expected Sequence 8.6.

27.22.4.1.8.6.5 Test requirement

The ME shall operate in the manner defined in expected sequence 8.6.

27.22.4.1.8.6.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

CR 2 is implicitly met if the ME is capable to handle the text attribute with 'bold on' for the display text during test execution.

27.22.4.1.8.7 DISPLAY TEXT (Support of Text Attribute – Italic On)

27.22.4.1.8.7.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.8.7.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.8, clause 8.15, clause 8.31, clause 8.43 and clause 8.70.

CR 2 The ME shall support the text attribute with 'italic on' for the display text.

27.22.4.1.8.7.3 Test purpose

To verify that the ME displays the text formatted according to the italic text attribute configuration contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.8.7.4 Method of test

27.22.4.1.8.7.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.8.7.4.2 Procedure

Expected Sequence 8.7 (DISPLAY TEXT, Text Attribute with Italic On)

See ETSI TS 102 384 [3] in clause 27.22.4.1.8.7.4.2, Expected Sequence 8.7.

27.22.4.1.8.7.5 Test requirement

The ME shall operate in the manner defined in expected sequence 8.7.

27.22.4.1.8.7.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

CR 2 is implicitly met if the ME is capable to handle the text attribute with 'italic on' for the display text during test execution.

27.22.4.1.8.8 DISPLAY TEXT (Support of Text Attribute – Underline On)

27.22.4.1.8.8.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.8.8.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.8, clause 8.15, clause 8.31, clause 8.43 and clause 8.70.

CR 2 The ME shall support the text attribute with ' underline on' for the display text.

27.22.4.1.8.8.3 Test purpose

To verify that the ME displays the text formatted according to the underline text attribute configuration contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.8.8.4 Method of test

27.22.4.1.8.8.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.8.8.4.2 Procedure

Expected Sequence 8.8 (DISPLAY TEXT, Text Attribute with Underline On)

See ETSI TS 102 384 [3] in clause 27.22.4.1.8.8.4.2, Expected Sequence 8.8.

27.22.4.1.8.8.5 Test requirement

The ME shall operate in the manner defined in expected sequence 8.8.

27.22.4.1.8.8.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

CR 2 is implicitly met if the ME is capable to handle the text attribute with 'underline on' for the display text during test execution.

27.22.4.1.8.9 DISPLAY TEXT (Support of Text Attribute – Strikethrough On)

27.22.4.1.8.9.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.8.9.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.8, clause 8.15, clause 8.31, clause 8.43 and clause 8.70.

CR 2 The ME shall support the text attribute with 'strikethrough on' for the display text.

27.22.4.1.8.9.3 Test purpose

To verify that the ME displays the text formatted according to the strikethrough text attribute configuration contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.8.9.4 Method of test

27.22.4.1.8.9.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.8.9.4.2 Procedure

Expected Sequence 8.9 (DISPLAY TEXT, Text Attribute with Strikethrough On)

See ETSI TS 102 384 [3] in clause 27.22.4.1.8.9.4.2, Expected Sequence 8.9.

27.22.4.1.8.9.5 Test requirement

The ME shall operate in the manner defined in expected sequence 8.9.

27.22.4.1.8.9.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

CR 2 is implicitly met if the ME is capable to handle the text attribute with 'strikethrough on' for the display text during test execution.

27.22.4.1.8.10 DISPLAY TEXT (Support of Text Attribute – Foreground and Background Colours)

27.22.4.1.8.10.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.8.10.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.8, clause 8.15, clause 8.31, clause 8.43 and clause 8.70.

CR 2 The ME shall support the text attribute with different foreground and background colours for the display text.

27.22.4.1.8.10.3 Test purpose

To verify that the ME displays the text formatted according to the foreground and background colour text attribute configuration contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.8.10.4 Method of test

27.22.4.1.8.10.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.8.10.4.2 Procedure

Expected Sequence 8.10 (DISPLAY TEXT, Text Attribute with Foreground and Background Colours)

See ETSI TS 102 384 [3] in clause 27.22.4.1.8.10.4.2, Expected Sequence 8.10.

27.22.4.1.8.10.5 Test requirement

The ME shall operate in the manner defined in expected sequence 8.10.

27.22.4.1.8.10.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

CR 2 is implicitly met if the ME is capable to handle the text attribute with 'foreground and background colours on' for the display text during test execution.

##### 27.22.4.1.9 DISPLAY TEXT (UCS2 display in Chinese)

27.22.4.1.9.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.9.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.8, clause 8.15, clause 8.15.1, clause 8.15.2, clause 8.15.3 and clause 8.31.

CR 2 The ME shall support the UCS2 alphabet for the coding of the Chinese characters, as defined in the following technical specification: ISO/IEC 10646 [17].

27.22.4.1.9.3 Test purpose

To verify that the ME displays the text contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.9.4 Method of test

27.22.4.1.9.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.9.4.2 Procedure

Expected Sequence 9.1 (DISPLAY TEXT, UCS2 coded – Chinese characters)

See ETSI TS 102 384 [3] in clause 27.22.4.1.9.4.2, Expected Sequence 9.1.

27.22.4.1.9.5 Test requirement

The ME shall operate in the manner defined in expected sequence 9.1.

27.22.4.1.9.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

CR 2 is implicitly met if the ME is capable to handle the UCS2 alphabet for the coding of the chinese characters for the display text during test execution.

##### 27.22.4.1.10 DISPLAY TEXT (UCS2 display in Katakana)

27.22.4.1.10.1 Definition and applicability

See clause 3.6.3 of the present document.

27.22.4.1.10.2 Conformance requirement

CR 1 The ME shall support the DISPLAY TEXT command as defined in: TS 31.111 [27] clause 5.2, clause 6.4.1, clause 6.5.4, clause 6.6.1, clause 6.8, clause 6.11, clause 8.6, clause 8.7, clause 8.8, clause 8.15, clause 8.15.1, clause 8.15.2, clause 8.15.3 and clause 8.31.

CR 2 The ME shall support the UCS2 alphabet for the coding of the Chinese characters, as defined in the following technical specification: ISO/IEC 10646 [17].

27.22.4.1.10.3 Test purpose

To verify that the ME displays the text contained in the DISPLAY TEXT proactive UICC command, and returns a successful result in the TERMINAL RESPONSE command send to the UICC.

27.22.4.1.10.4 Method of test

27.22.4.1.10.4.1 Initial conditions

The ME is connected to the TT. All elementary files are coded as defined in GSMA TS.48 with the exceptions defined in clause 27.22.2A of the present document.

A process is established to make the nrUSIM indicate that a proactive UICC command is pending. The nrUSIM is configured to send the Proactive command(s) indicated in the Expected Sequence(s).

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

The ME screen shall be in its normal stand-by display.

27.22.4.1.10.4.2 Procedure

Expected Sequence 10.1 (DISPLAY TEXT, UCS2 coded – Katakana characters)

See ETSI TS 102 384 [3] in clause 27.22.4.1.10.4.2, Expected Sequence 10.1.

27.22.4.1.10.5 Test requirement

The ME shall operate in the manner defined in expected sequence 10.1.

27.22.4.1.10.6 Acceptance criteria

CR 1 is met if the ME handles the send FETCH commands and the PROACTIVE COMMANDs as expected and if the expected TERMINAL RESPONSEs are sent and verified via an A.3/x method.

CR 2 is implicitly met if the ME is capable to handle the UCS2 alphabet for the coding of the katakana characters for the display text during test execution.

…

Annex <B> (informative):  
<Informative annex for a Technical Specification>

Informative annexes may appear in both Technical Specifications and Technical Reports. Use style "Heading 8" for use in TSs.

Informative annexes shall not contain requirements for the implementation of the Technical Specification.

# B.1 Heading levels in an annex

Heading levels within an annex are used as in the main document, but for Heading level selection, the "A.", "B.", etc. are ignored. e.g. **B.1.2** is formatted using ***Heading 2*** style.

Annex <B>:  
<Informative annex title for a Technical Report>

Informative annexes in Technical Reports do not use "(informative") in the title, since all annexes in TRs are informative. Use style "Heading 9" in TRs.

Annex <C> (informative):  
Bibliography

The Bibliography is optional. If it exists, it shall follow the last technical annex in the document.

The following material, though not specifically referenced in the body of the present document (or not publicly available), gives supporting information.

Bibliography format

<Publication>: "<Title>".

Annex <D> (informative):  
Index

The Index is optional. If it exists, it shall immediately precede the Changes history annex.

Generate the index using MS Word's index field feature.

Annex <X> (informative):  
Change history

This is the last annex for TS/TSs which details the change history using the following table.  
This table is to be used for recording progress during the WG drafting process till TSG approval of this TS/TR.  
For TRs under change control, use one line per approved Change Request  
Date: use format YYYY-MM  
CR: four digits, leading zeros as necessary  
Rev: blank, or number (max two digits)  
Cat: use one of the letters A, B, C, D, F  
Subject/Comment: for TSs under change control, include full text of the subject field of the Change Request cover  
New vers: use format [n]n.[n]n.[n]n

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| **Change history** | | | | | | | |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
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Change history of this template:

|  |  |  |
| --- | --- | --- |
| 2001-07 | Copyright date changed to 2001; space character added before TTC in copyright notification; space character before first reference deleted. | 1.3.3 |
| 2002-01 | Copyright date changed to 2002. | 1.3.4 |
| 2002-07 | Extra Releases added to title area. | 1.3.5 |
| *2002-12* | *"TM" added to 3GPP logo.* | *1.3.6* |
| *2003-02* | *Copyright date changed to 2003.* | *1.3.7* |
| *2003-12* | *Copyright date changed to 2004. Chinese OP changed from CWTS to CCSA* | *14.0* |
| *2004-04* | *North American OP changed from T1 to ATIS* | *1.5.0* |
| *2005-11* | *Stock text of clause 3 includes reference to 21.905.* | *1.6.0* |
| *2005-11* | *Caters for new TSG structure. Minor corrections.* | *1.6.1* |
| *2006-01* | *Revision marks removed.* | *1.6.2* |
| *2008-11* | *LTE logo line added, © date changed to 2008, guidance on keywords modified; acknowledgement of trade marks; sundry editorial corrections and cosmetic improvements* | *1.7.0* |
| *2010-02* | *3GPP logo changed for cleaner version, with tag line; LTE-Advanced logo line added;  © date changed to 2010; editorial change to cover page footnote text; trade marks acknowledgement text modified; additional Releases added on cover page; proforma copyright release text block modified* | *1.8.0* |
| *2010-02* | *Smaller 3GPP logo file used.* | *1.8.1* |
| *2010-07* | *Guidance note concerning use of LTE-Advanced logo added.* | *1.8.2* |
| *2011-04-01* | *Guidance of use of logos on cover page modified; copyright year modified.* | *1.8.3* |
| *2013-05-15* | *Changed File Properties to MCC macro default.*  *Removed R99, added Rel-12/13.*  *Modified Copyright year.*  *Guidance on annex X Change history.* | *1.8.4* |
| *2014-10-27* | *Updated Release selection on cover. In clause 3, added "3GPP" to TR 21.905.* | *1.8.5* |
| *2015-01-06* | *New Organizational Partner TSDSI added to copyright block. Old Releases removed.* | *1.9.0* |
| *2015-12-03* | *Provision for LTE Advanced Pro logo  Update copyright year to 2016* | *1.10.0* |
| *2016-03-08* | *Standarization of the layout of the Change History table in the last annex.(Unreleased)* | *1.11.0* |
| *2016-06-15* | *Minor adjustment to Change History table heading* | *1.11.1* |
| *2017-03-13* | *Adds option for 5G logo on cover* | *1.12.0* |
| *2017-05-03* | *Smaller 5G logo to reduce file size* | *1.12.1* |
| *2019-02-25* | *Replacement of frames on cover pages by in-line text.*  *Clarification of help text on when to use 5G logo. Removal of defunct keywords frame on page 2. Add Rel-16, Rel-17 options, eliminated earlier, frozen, Releases (cover page, below title) Corrections to some guidance text, addition of guidance text concerning automatic page headers under Word 2016 ff. Use of modal auxiliary verbs added to Foreword. More explicit guidance on Bibliography and Index annexes. Converted to .docx format.* | *1.13.0* |
| *2019-09-12* | *Cover page table outline shown dotted for ease of logo selection. (Author to hide outline after logo selection.) User now needs to delete whole table rows instead of individual cells, which proved to be tricky.*  *Change of style for "notes" in the Foreword to normal paragraphs.*  *Insertion of new bookmarks, correction of location of existing bookmarks. (To improve navigation.)*  *Improvements to guidance text.* | *1.13.1* |