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Universal Mobile Telecommunications System (UMTS);
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Universal Subscriber Identity Module (USIM)
conformance test specification
(3GPP TS 31.122 version 15.3.0 Release 15)

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Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

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Contents

Foreword

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

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- 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.

1 Scope

The present document provides the Conformance Test Specification for a Universal IC Card (UICC) defined in TS 31.101 [2] with Universal Subscriber Identity Module (USIM) defined in TS 31.102 [3].

2 Normative 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 to a non-3GPP document, the latest version applies.
- For a non-specific reference to a 3GPP document, the latest version in the same release as the implementation release of the UICC under test applies.

[1] ETSI TS 102 221: "UICC-Terminal Interface; Physical and Logical Characteristics".

[2] 3GPP TS 31.101: "UICC-Terminal Interface; Physical and Logical Characteristics".

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

[4] ISO/IEC 7816-1: "Identification cards - Integrated circuit(s) cards with contacts, Part 1: Physical characteristics".

[5] ISO/IEC 7816-2: "Identification cards - Integrated circuit cards - Part 2: Card with contacts - Dimensions and locations of the contacts".

[6] ISO/IEC 7816-3: "Identification cards - Integrated circuit(s) cards with contacts, Part 3: Electronic signals and transmission protocols".

[7] ISO/IEC 7816-4: "Identification cards - Integrated circuit cards - Part 4: Organization, security and commands for interchange".

[8] Void

[9] Void

[10] Void

[11] Void

[12] ISO/IEC 7811-1: "Identification cards - Recording technique - Part 1: Embossing"

[13] Void

[14] 3GPP TS 11.11: "Digital cellular telecommunications system (Phase 2+); Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface".

[15] ETSI TS 101 220: "Smart cards; ETSI numbering system for telecommunication application providers".

[16] ETSI TS 102 221 Release 99: "UICC-Terminal Interface; Physical and Logical Characteristics".

[17] ETSI TS 102 221 Release 4: "UICC-Terminal Interface; Physical and Logical Characteristics".

[18] ETSI TS 102 221 Release 5: "UICC-Terminal Interface; Physical and Logical Characteristics".

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

[20] ETSI TS 102 230 - 2 v9.1.0: "UICC-Terminal interface; Physical, electrical and logical test specification; Part 2: UICC features".

3 Definitions, symbols, abbreviations and coding

3.1 Definitions

For the purposes of the present document, the following definitions apply in addition to the terms defined in TS 102.221 [1] and TS 31.102 [3].

Implementation Conformance Statement (ICS): A statement made by the supplier of an implementation or system claimed to conform to a given specification, stating which capabilities have been implemented. The ICS can take several forms: protocol ICS, profile ICS, profile specific ICS, information object ICS, etc.

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

3.2 Symbols

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

t_F	fall time
t_R	rise time
V_{IH}	Input Voltage (high)
V_{IL}	Input Voltage (low)
V_{OH}	Output Voltage (high)
V_{OL}	Output Voltage (low)

3.3 Abbreviations

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

CRn	Conformance Requirement 'n'
IUT	Implementation Under Test
ME	Mobile Equipment
TS	Test Specification
UICC	Universal Integrated Circuit Card
USIM	Universal Subscriber Identity Module

3.4 Coding Conventions

The following coding conventions apply to the present document:

All lengths are presented in bytes, unless otherwise stated. Each byte is represented by bit 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.

3.5 Applicability

3.5.1 Applicability of the present document

The present document applies to a UICC which supports one or more USIMs.

3.5.2 Applicability to the UICC

The applicability to a UICC supporting one or more USIMs is specified in table B.1, unless otherwise specified in the specific clause.

3.5.3 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 table A.1.

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

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

M mandatory - the capability is required to be supported.

O optional - the capability may be supported or not.

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

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

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

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

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.

3.5.4 Applicability of conformance requirements

All conformance requirements are annotated with their applicability. This clause defines the notation used.

The basic notation is as follows:

(DefinedRelease) ReleaseRange: Options

The components of the notation are as follows:

Component	Content	Example content
DefinedRelease	Contains a single release. Optional (along with the surrounding parentheses). If present, it indicates the release of the core specification in which the conformance requirement was first defined. This is intended for conformance requirements which were defined in a certain release of the core specification but for which tests were not introduced into this document until a later release. If absent, this indicates that the conformance requirement was introduced in the first release contained in ReleaseRange.	R99 Rel-6
ReleaseRange	Contains a single release or a range of releases. An ellipsis (…) in the right-hand part indicates the current release of this document. Optional; but at least one of ReleaseRange and Options must be present. If present, it indicates the range of releases for which the conformance requirement is tested. If absent, it is equivalent to "R99 - …".	R99 R99 - Rel-5 Rel-6 - …
Options	A comma-separated list containing at least one of the options in table A.1. Optional (along with the preceding colon); but at least one of ReleaseRange and Options must be present. If present, this indicates that the conformance requirement is only applicable to UICCs supporting all of the specified options. If absent, this indicates that the conformance requirement applies to all UICCs.	O_LOG_CHANS O_LOG_CHANS, O_SHAREABLE

An additional shortcut notation for "R99 - …" is specified: "M". This indicates that the conformance requirement is mandatory for all UICCs of all releases.

Examples of the notation are as follows:

Example	Meaning
(Rel-4) Rel-6 – …: O_LOG_CHANS	Conformance requirement introduced in Rel-4, but not tested until Rel-6, where it is only applicable if O_LOG_CHANS is supported.
(Rel-4) Rel-6 – …: O_LOG_CHANS, O_SHAREABLE	Conformance requirement introduced in Rel-4, but not tested until Rel-6, where it is only applicable if O_LOG_CHANS and O_SHAREABLE are supported.
Rel-6 – …: O_LOG_CHANS	Conformance requirement introduced in Rel-6, where it is only applicable if O_LOG_CHANS is supported.
Rel-6 – …: O_LOG_CHANS, O_SHAREABLE	Conformance requirement introduced in Rel-6, where it is only applicable if O_LOG_CHANS and O_SHAREABLE are supported.
R99 - Rel-5	Mandatory for all UICCs from R99 to Rel-5.
Rel-6 - …	Mandatory for all UICCs from all releases up to and including the current release of this document.
O_MONO_APP	Applies to all releases, but only applicable if O_MONO_APP is supported by the UICC.
M	Mandatory for all releases; equivalent to "R99 - …".

3.6 Table of optional features

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

The "Option defined in Releases" column indicates the releases of the relevant core specification(s) in which the option is defined.

The supplier of the implementation shall state the support of possible options in table A.1.

A supplier may choose to use a single UICC and reconfigure it as required for each test; or may choose to use a number of UICCs which are based on the same platform but are configured differently. The supplier shall state the chosen solution and in the latter case shall confirm usage of identical platforms.

Table A.1: Options

Option	Status	Option defined in Releases	Support	Mnemonic
ID-1 UICC	O.1	R99		O_ID1_UICC
Plug-in UICC	O.1	R99		O_PLUG_IN_UICC
Type 1 (i.e. UICC which always enters the negotiable mode after a warm reset)	O.2	R99		O_TYPE_1
Type 2 (UICC which always enters the specific mode after a warm reset)	O.2	R99		O_TYPE_2
T=0	O.3	R99		O_T0
T=1	O.3	R99		O_T1
Mono application UICC	O.4	R99		O_MONO_APP
Multi-application UICC	O.4	R99		O_MULTI_APP
Single verification capable UICC	O.5	R99		O_SINGLE_VER
Multi-verification capable UICC	O.5	R99		O_MULTI_VER
More than one logical channel supported	O	Rel-4		O_LOG_CHANS
More than two logical channels supported	O	Rel-4		O_LOG_CHANS_34
Shareable files	O	Rel-4		O_SHAREABLE
Non-shareable files	O	Rel-4		O_NON_SHAREABLE
GET CHALLENGE	O	Rel-4		O_GET_CHALLENGE
Mini-UICC	O.1	Rel-6		O_MINI_UICC
(F, D) = (512, 64)	O	Rel-6		O_F_D_512_64
Low impedance drivers	O	Rel-6		O_LOW_IMPEDANCE
BER-TLV structure EFs	O	Rel-6		O_BER_TLV_FILES
GET IDENTITY when SUCI calculation performed by the USIM	O	Rel-15		O_GET IDENTITY_SUCI