

ETSI TS 151 010-4 V13.2.0 (2017-01)



**Digital cellular telecommunications system (Phase 2+) (GSM);
Mobile Station (MS) conformance specification;
Part 4: Subscriber Identity Module (SIM)
application toolkit conformance test specification
(3GPP TS 51.010-4 version 13.2.0 Release 13)**



ReferenceRTS/TSGC-0651010-4vd20

KeywordsGSM

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

The present document can be downloaded from:
<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at
<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:
<https://portal.etsi.org/People/CommitteeSupportStaff.aspx>

Copyright Notification

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

The content of the PDF version shall not be modified without the written authorization of ETSI.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2017.
All rights reserved.

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

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

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

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under <http://webapp.etsi.org/key/queryform.asp>.

Modal verbs terminology

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

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

Intellectual Property Rights	2
Foreword.....	2
Modal verbs terminology.....	2
Foreword.....	9
1 Scope	10
2 References	10
3 Definitions and abbreviations.....	12
3.1 Mobile station definition and configurations.....	12
3.2 Applicability.....	12
3.2.1 Applicability of the present document.....	12
3.2.2 Applicability of the individual tests.....	12
3.2.3 Applicability to terminal equipment	12
3.2.4 Definitions	12
3.2.4.1 Format of the table of optional features	12
3.2.4.2 Format of the applicability table	13
3.2.4.3 Status and notations.....	13
3.3 Table of optional features.....	14
3.4 Applicability table	19
3.5 Conventions for mathematical notations	54
3.6 Conventions on electrical terms	54
3.7 Terms on test conditions.....	54
4 Test equipment	54
5 Testing methodology in general.....	54
5.1 Testing of optional functions and procedures.....	54
5.2 Test interfaces and facilities	54
5.3 Different protocol layers	54
5.4 Information to be provided by the apparatus supplier	54
5.5 Definitions of transmit and receive times.....	55
6 Reference test methods.....	55
7 Implicit testing.....	55
8 Measurement uncertainty	55
9 Format of tests.....	55
10 Generic call set up procedures.....	58
11 - 26 Not used	58
27 Testing of the SIM/ME interface.....	58
27.1 - 27.21 Void.....	59
27.22 SIM Application Toolkit	59
27.22.1A General Test purpose	59
27.22.2A Definition of default values for SIM Application Toolkit testing.....	59
27.22.1 Initialization of SIM Application Toolkit Enabled SIM by SIM Application Toolkit Enabled ME (Profile Download)	65
27.22.1.1 Definition and applicability.....	65
27.22.1.2 Conformance requirement.....	65
27.22.1.3 Test purpose	65
27.22.1.4 Method of test	66
27.22.1.4.1 Initial conditions	66
27.22.1.4.2 Procedure.....	66
27.22.1.5 Test requirement	67
27.22.2 Contents of the TERMINAL PROFILE command.....	68

27.22.2.1	Definition and applicability.....	68
27.22.2.2	Conformance requirement.....	68
27.22.2.3	Test purpose	68
27.22.2.4	Method of test	68
27.22.2.4.1	Initial conditions.....	68
27.22.2.4.2	Procedure.....	68
27.22.2.5	Test requirement	68
27.22.3	Servicing of proactive SIM commands.....	68
27.22.3.1	Definition and applicability.....	68
27.22.3.2	Conformance requirement.....	69
27.22.3.3	Test purpose	69
27.22.3.4	Method of test	69
27.22.3.4.1	Initial conditions.....	69
27.22.3.4.2	Procedure.....	69
27.22.3.5	Test requirement	69
27.22.4	Proactive SIM commands.....	69
27.22.4.1	DISPLAY TEXT.....	69
27.22.4.1.1	DISPLAY TEXT (Normal)	69
27.22.4.1.2	DISPLAY TEXT (Support of "No response from user")	79
27.22.4.1.3	DISPLAY TEXT (Display of extension text).....	80
27.22.4.1.4	DISPLAY TEXT (Sustained text).....	82
27.22.4.1.5	DISPLAY TEXT (Display of icons)	87
27.22.4.1.6	DISPLAY TEXT (UCS2 display supported).....	92
27.22.4.2	GET INKEY	93
27.22.4.2.1	GET INKEY(normal).....	93
27.22.4.2.2	GET INKEY (No response from User)	100
27.22.4.2.3	GET INKEY (UCS2 format display)	102
27.22.4.2.4	GET INKEY (UCS2 format of entry)	104
27.22.4.2.5	GET INKEY ("Yes/No" Response).....	106
27.22.4.2.6	GET INKEY (display of Icon)	108
27.22.4.2.7	GET INKEY (Help Information).....	115
27.22.4.3	GET INPUT	118
27.22.4.3.1	GET INPUT (normal).....	118
27.22.4.3.2	GET INPUT (No response from User).....	130
27.22.4.3.3	GET INPUT (UCS2 format display)	132
27.22.4.3.4	GET INPUT (UCS2 format of entry)	135
27.22.4.3.5	GET INPUT (default text).....	138
27.22.4.3.6	GET INPUT (display of Icon)	142
27.22.4.3.7	GET INPUT (Help Information)	149
27.22.4.4	MORE TIME	151
27.22.4.4.1	Definition and applicability	151
27.22.4.4.2	Conformance requirement	151
27.22.4.4.3	Test purpose	151
27.22.4.4.4	Method of test.....	151
27.22.4.4.5	Test requirement	152
27.22.4.5	PLAY TONE.....	152
27.22.4.5.1	Definition and applicability	152
27.22.4.5.2	Conformance requirement	152
27.22.4.5.3	Test purpose	152
27.22.4.5.4	Method of test.....	153
27.22.4.6	POLL INTERVAL.....	165
27.22.4.6.1	Definition and applicability	165
27.22.4.6.2	Conformance requirement	165
27.22.4.6.3	Test purpose	165
27.22.4.6.4	Method of test.....	165
27.22.4.6.5	Test requirement	166
27.22.4.7	REFRESH	166
27.22.4.7.1	REFRESH (normal).....	166
27.22.4.7.2	REFRESH (IMSI changing procedure)	174
27.22.4.8	SET UP MENU and ENVELOPE MENU SELECTION	178
27.22.4.8.1	SET UP MENU (normal) and ENVELOPE MENU SELECTION.....	178
27.22.4.8.2	SET UP MENU (help request support) and ENVELOPE MENU SELECTION.....	189

27.22.4.8.3	SET UP MENU (next action support) and ENVELOPE MENU SELECTION	191
27.22.4.8.4	SET UP MENU (display of icons) and ENVELOPE MENU SELECTION	194
27.22.4.8.5	SET UP MENU (soft keys support) and ENVELOPE MENU SELECTION	199
27.22.4.9	SELECT ITEM	201
27.22.4.9.1	SELECT ITEM (mandatory features for ME supporting SELECT ITEM)	201
27.22.4.9.2	SELECT ITEM (next action support)	214
27.22.4.9.3	SELECT ITEM (default item support)	215
27.22.4.9.4	SELECT ITEM (help request support)	217
27.22.4.9.5	SELECT ITEM (icons support)	218
27.22.4.9.6	SELECT ITEM (presentation style)	223
27.22.4.9.7	SELECT ITEM (soft keys support)	225
27.22.4.9.8	SELECT ITEM (Support of "No response from user")	227
27.22.4.10	SEND SHORT MESSAGE	228
27.22.4.10.1	SEND SHORT MESSAGE (normal)	228
27.22.4.10.2	SEND SHORT MESSAGE (UCS2 support)	245
27.22.4.10.3	SEND SHORT MESSAGE (icon support)	247
27.22.4.11	SEND SS	253
27.22.4.11.1	SEND SS (normal)	253
27.22.4.11.2	SEND SS (Icon support)	264
27.22.4.11.3	SEND SS (UCS2 support)	271
27.22.4.12	SEND USSD	272
27.22.4.12.1	SEND USSD (normal)	272
27.22.4.12.2	SEND USSD (Icon support)	282
27.22.4.12.3	SEND USSD (UCS2 support)	288
27.22.4.13	SET UP CALL	290
27.22.4.13.1	SET UP CALL (normal)	290
27.22.4.13.2	SET UP CALL (second alpha identifier)	302
27.22.4.13.3	SET UP CALL (display of icons)	304
27.22.4.14	POLLING OFF	313
27.22.4.14.1	Definition and applicability	313
27.22.4.14.2	Conformance requirement	313
27.22.4.14.3	Test purpose	313
27.22.4.14.4	Method of test	313
27.22.4.14.5	Test requirement	315
27.22.4.15	PROVIDE LOCAL INFORMATION	315
27.22.4.15.1	Definition and applicability	315
27.22.4.15.2	Conformance requirement	315
27.22.4.15.3	Test purpose	315
27.22.4.15.4	Method of tests	316
27.22.4.15.5	Test requirement	322
27.22.4.16	SET UP EVENT LIST	322
27.22.4.16.1	SET UP EVENT LIST (normal)	322
27.22.4.17	PERFORM CARD APDU	331
27.22.4.17.1	PERFORM CARD APDU (normal)	331
27.22.4.17.2	PERFORM CARD APDU (detachable card reader)	349
27.22.4.18	POWER OFF CARD	350
27.22.4.18.1	POWER OFF CARD (normal)	350
27.22.4.18.2	POWER OFF CARD (detachable card reader)	352
27.22.4.19	POWER ON CARD	353
27.22.4.19.1	POWER ON CARD (normal)	353
27.22.4.19.2	POWER ON CARD (detachable card reader)	357
27.22.4.20	GET READER STATUS	358
27.22.4.20.1	GET READER STATUS (normal)	358
27.22.4.20.2	GET CARD READER STATUS (detachable card reader)	367
27.22.4.21	TIMER MANAGEMENT and ENVELOPE TIMER EXPIRATION	369
27.22.4.21.1	TIMER MANAGEMENT (normal)	369
27.22.4.21.2	ENVELOPE TIMER EXPIRATION (normal)	406
27.22.4.22	SET UP IDLE MODE TEXT	412
27.22.4.22.1	SET UP IDLE MODE TEXT (normal)	412
27.22.4.22.2	SET UP IDLE MODE TEXT (Icon support)	421
27.22.4.22.3	SET UP IDLE MODE TEXT (UCS2 support)	428
27.22.4.23	RUN AT COMMAND	429

27.22.4.23.1	RUN AT COMMAND (normal)	429
27.22.4.23.2	RUN AT COMMAND (Icon support)	432
27.22.4.24	SEND DTMF	438
27.22.4.24.1	SEND DTMF (Normal).....	438
27.22.4.24.2	SEND DTMF (Display of icons).....	443
27.22.4.24.3	SEND DTMF (UCS2 support)	448
27.22.4.25	LANGUAGE NOTIFICATION	450
27.22.4.25.1	Definition and applicability	450
27.22.4.25.2	Conformance Requirement.....	450
27.22.4.25.3	Test purpose	450
27.22.4.25.4	Method of Test	450
27.22.4.25.5	Test requirement	452
27.22.4.26	LAUNCH BROWSER.....	453
27.22.4.26.1	LAUNCH BROWSER (No session already launched)	453
27.22.4.26.2	LAUNCH BROWSER (Interaction with current session).....	459
27.22.4.26.3	LAUNCH BROWSER (UCS2 support).....	464
27.22.4.26.4	LAUNCH BROWSER (icons support)	466
27.22.4.27	OPEN CHANNEL	472
27.22.4.27.1	Void	472
27.22.4.27.2	Open Channel (related to GPRS).....	472
27.22.4.28	CLOSE CHANNEL	487
27.22.4.28.1	Definition and applicability	487
27.22.4.28.2	Conformance requirements.....	487
27.22.4.28.3	Test purpose	487
27.22.4.28.4	Method of Test	487
27.22.4.29	RECEIVE DATA.....	493
27.22.4.29.1	Definition and applicability	493
27.22.4.29.2	Conformance requirements.....	493
27.22.4.29.3	Test purpose	493
27.22.4.29.4	Method of test.....	494
27.22.4.30	SEND DATA	502
27.22.4.30.1	Definition and applicability	502
27.22.4.30.2	Conformance requirements.....	502
27.22.4.30.3	Test purpose	502
27.22.4.30.4	Method of test.....	503
27.22.4.31	GET CHANNEL STATUS.....	515
27.22.4.31.1	Definition and applicability	515
27.22.4.31.2	Conformance requirements.....	515
27.22.4.31.3	Test purpose	515
27.22.4.31.4	Method of test.....	515
27.22.5	Data Download to SIM	524
27.22.5.1	SMS-PP Data Download.....	524
27.22.5.1.1	Definition and applicability	524
27.22.5.1.2	Conformance requirement	524
27.22.5.1.3	Test purpose	524
27.22.5.1.4	Method of Test	524
27.22.5.1.5	Test requirement	529
27.22.5.2	SMS-CB Data Download.....	530
27.22.5.2.1	Definition and applicability	530
27.22.5.2.2	Conformance requirement	530
27.22.5.2.3	Test purpose	530
27.22.5.2.4	Method of Test	530
27.22.5.2.5	Test requirement	533
27.22.6	CALL CONTROL BY SIM	533
27.22.6.1	Procedure for Mobile Originated calls	533
27.22.6.1.1	Definition and applicability	533
27.22.6.1.2	Conformance requirement	533
27.22.6.1.3	Test purpose	533
27.22.6.1.4	Method of tests	533
27.22.6.1.5	Test requirement	556
27.22.6.2	Procedure for Supplementary (SS) Services	556
27.22.6.2.1	Definition and applicability	556

27.22.6.2.2	Conformance requirement	556
27.22.6.2.3	Test purpose	556
27.22.6.2.4	Method of tests	557
27.22.6.2.5	Test requirement	564
27.22.6.3	Interaction with Fixed Dialling Number (FDN).....	564
27.22.6.3.1	Definition and applicability	564
27.22.6.3.2	Conformance requirement	564
27.22.6.3.3	Test purpose	564
27.22.6.3.4	Method of tests	564
27.22.6.3.5	Test requirement	570
27.22.6.4	Support of Barred Dialling Number (BDN) service.....	571
27.22.6.4.1	Definition and applicability	571
27.22.6.4.2	Conformance requirement	571
27.22.6.4.3	Test purpose	571
27.22.6.4.4	Method of tests	571
27.22.6.4.5	Test requirement	578
27.22.7	EVENT DOWNLOAD	578
27.22.7.1	MT Call Event.....	578
27.22.7.1.1	MT Call Event (normal)	578
27.22.7.2	Call Connected Event.....	580
27.22.7.2.1	Call Connected Event (MT and MO call).....	580
27.22.7.2.2	Call Connected Event (ME supporting SET UP CALL)	582
27.22.7.3	Call Disconnected Event	585
27.22.7.3.1	Call Disconnected Event	585
27.22.7.4	Location Status Event	589
27.22.7.4.1	Location Status Event (normal)	589
27.22.7.5	User Activity Event.....	593
27.22.7.5.1	User Activity Event (normal)	593
27.22.7.6	Idle screen available event	595
27.22.7.6.1	Idle Screen Available (normal).....	595
27.22.7.7	Card reader status event	597
27.22.7.7.1	Card Reader Status (normal)	597
27.22.7.7.2	Card Reader Status(detachable card reader).....	602
27.22.7.8	Language selection event	604
27.22.7.8.1	Language selection event (normal).....	604
27.22.7.9	Browser termination event	606
27.22.7.9.1	Browser termination (normal)	606
27.22.7.10	Data available event	608
27.22.7.10.1	Definition and applicability	608
27.22.7.10.2	Conformance requirements.....	608
27.22.7.10.3	Test purpose	608
27.22.7.10.4	Method of test.....	608
27.22.7.11	Channel Status event	612
27.22.7.11.1	Definition and applicability	612
27.22.7.11.2	Conformance requirements.....	612
27.22.7.11.3	Test purpose	612
27.22.7.11.4	Method of test.....	612
27.22.8	MO SHORT MESSAGE CONTROL BY SIM	616
27.22.8.1	Definition and applicability.....	616
27.22.8.2	Conformance requirement.....	616
27.22.8.3	Test purpose	616
27.22.8.4	Method of tests	616
27.22.8.4.1	Initial conditions	616
27.22.8.4.2	Procedure.....	617
27.22.8.5	Test requirement	625
Annex A:	Void	626
Annex B:	Void	627
Annex C:	Void	628

Annex D (normative): **Details of Test-SIM (TestSIM).....629**

Annex E (normative): **Details of terminal profile support631**

Annex F (informative): **Change History636**

History641

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.

1 Scope

The present document describes the technical characteristics and methods of test for testing the SIM Application Toolkit implemented in Mobile Stations (MS) for the Pan European digital cellular communications system and Personal Communication Systems (PCS) operating in the 450 MHz, 480 MHz, 700 MHz, 750 MHz, 850 MHz, 900 MHz, 1 800 MHz and 1 900 MHz frequency band (GSM 400, GSM 700, GSM 750, GSM 850, GSM 900, DCS 1 800 and PCS 1 900) within the European 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 ETS 300 406 [20].

The present document is valid for MS implemented according to GSM Phase2+ R96, or R97, or R98, or R99.

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

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

The present document is part of the GSM-series of technical specifications. The present document neither replaces any of the other GSM technical specifications or GSM related ETSs or ENs, nor is it created to provide full understanding of (or parts of) the GSM 400, GSM 700, GSM 850, GSM 900, DCS1800 and PCS1900 systems . The present document lists the requirements, and provides the methods of test for testing the SIM Application Toolkit implemented in a MS for conformance to the GSM standard.

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

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

Normative requirements for the SIM and SIM Application Toolkit are only specified up to Rel-4. The present document is only available in this release for allowing maintenance of test cases. The core features related to those test cases remain applicable only to the releases in which they have been specified.

2 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the relevant Release*.
 - For a GSM Phase 2+ Release 1999 MS, references to GSM documents are to version 8.x.y (for 01.-series to 12.-series) or (3.x.y for 21.-series to 35.-series), when available.
 - For a GSM Phase 2+ Release 1998 MS, references to GSM documents are to version 7.x.y, when available.
 - For a GSM Phase 2+ Release 1997 MS, references to GSM documents are to version 6.x.y, when available.
 - For a GSM Phase 2+ Release 1996 MS, references to GSM documents are to version 5.x.y, when available.