

# ETSI TS 131 111 V14.2.0 (2017-04)



**Digital cellular telecommunications system (Phase 2+) (GSM);  
Universal Mobile Telecommunications System (UMTS);  
LTE;  
Universal Subscriber Identity Module (USIM)  
Application Toolkit (USAT)  
(3GPP TS 31.111 version 14.2.0 Release 14)**



---

Reference

RTS/TSGC-063111ve20

---

Keywords

GSM,LTE,UMTS

**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/CommiteeSupportStaff.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.

oneM2M logo is protected for the benefit of its Members

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.....                                                                  | 12 |
| 1 Scope .....                                                                  | 13 |
| 2 References .....                                                             | 13 |
| 3 Definitions, abbreviations and symbols .....                                 | 16 |
| 3.1 Definitions .....                                                          | 16 |
| 3.2 Abbreviations .....                                                        | 16 |
| 3.3 Symbols.....                                                               | 17 |
| 4 Overview of USAT .....                                                       | 17 |
| 4.1 Profile Download .....                                                     | 17 |
| 4.2 Proactive UICC .....                                                       | 17 |
| 4.3 Data download to UICC .....                                                | 17 |
| 4.4 Menu selection .....                                                       | 17 |
| 4.5 Call control by USIM.....                                                  | 18 |
| 4.6 MO Short Message control by USIM.....                                      | 18 |
| 4.7 Event download.....                                                        | 18 |
| 4.8 Security .....                                                             | 18 |
| 4.9 Multiple card .....                                                        | 18 |
| 4.10 Timer Expiration .....                                                    | 18 |
| 4.11 Bearer Independent Protocol .....                                         | 18 |
| 4.12 Description of the access technology indicator mechanism .....            | 18 |
| 4.13 Description of the network search mode mechanism .....                    | 19 |
| 4.14 Geographical location discovery .....                                     | 19 |
| 4.15 Operation in reduced USAT capable terminals .....                         | 19 |
| 4.16 Tag allocation guidelines.....                                            | 19 |
| 4.17 USAT over the AT interface .....                                          | 19 |
| 4.18 USAT facilities provided by eCAT clients.....                             | 19 |
| 4.19 Negotiation of Poll Interval .....                                        | 19 |
| 4.20 ProSe usage information reporting.....                                    | 19 |
| 5 Profile download .....                                                       | 20 |
| 5.1 Procedure.....                                                             | 20 |
| 5.2 Structure and coding of TERMINAL PROFILE.....                              | 20 |
| 5.3 Definition of display parameters in Profile download.....                  | 25 |
| 6 Proactive UICC .....                                                         | 25 |
| 6.1 Introduction .....                                                         | 25 |
| 6.2 Identification of ME support .....                                         | 25 |
| 6.3 General procedure .....                                                    | 26 |
| 6.4 Proactive UICC commands and procedures .....                               | 26 |
| 6.4.1 DISPLAY TEXT .....                                                       | 26 |
| 6.4.2 GET INKEY .....                                                          | 26 |
| 6.4.3 GET INPUT.....                                                           | 26 |
| 6.4.4 MORE TIME .....                                                          | 26 |
| 6.4.5 PLAY TONE .....                                                          | 26 |
| 6.4.6 POLL INTERVAL .....                                                      | 26 |
| 6.4.7 REFRESH.....                                                             | 26 |
| 6.4.7.1 EF <sub>IMSI</sub> changing procedure .....                            | 26 |
| 6.4.7.2 Generic Bootstrapping Procedure Request.....                           | 27 |
| 6.4.7.3 EF <sub>UICCIARI</sub> changing procedure .....                        | 27 |
| 6.4.7.4 Steering of roaming and steering of roaming for I-WLAN procedure ..... | 27 |
| 6.4.8 SET UP MENU .....                                                        | 27 |

|          |                                                                 |    |
|----------|-----------------------------------------------------------------|----|
| 6.4.9    | SELECT ITEM.....                                                | 27 |
| 6.4.10   | SEND SHORT MESSAGE .....                                        | 27 |
| 6.4.11   | SEND SS .....                                                   | 28 |
| 6.4.12   | SEND USSD.....                                                  | 29 |
| 6.4.12.1 | MMI Mode.....                                                   | 29 |
| 6.4.12.2 | Application Mode .....                                          | 30 |
| 6.4.13   | SET UP CALL.....                                                | 31 |
| 6.4.14   | POLLING OFF .....                                               | 31 |
| 6.4.15   | PROVIDE LOCAL INFORMATION .....                                 | 31 |
| 6.4.16   | SET UP EVENT LIST.....                                          | 34 |
| 6.4.17   | PERFORM CARD APDU .....                                         | 34 |
| 6.4.18   | POWER OFF CARD .....                                            | 34 |
| 6.4.19   | POWER ON CARD.....                                              | 34 |
| 6.4.20   | GET READER STATUS.....                                          | 34 |
| 6.4.21   | TIMER MANAGEMENT .....                                          | 34 |
| 6.4.22   | SET UP IDLE MODE TEXT .....                                     | 34 |
| 6.4.23   | RUN AT COMMAND .....                                            | 34 |
| 6.4.24   | SEND DTMF.....                                                  | 34 |
| 6.4.25   | LANGUAGE NOTIFICATION .....                                     | 34 |
| 6.4.26   | LAUNCH BROWSER .....                                            | 35 |
| 6.4.27   | OPEN CHANNEL .....                                              | 35 |
| 6.4.27.1 | OPEN CHANNEL related to CS bearer.....                          | 35 |
| 6.4.27.2 | OPEN CHANNEL related to GPRS/UTRAN packet service/E-UTRAN ..... | 35 |
| 6.4.27.3 | OPEN CHANNEL related to local bearer.....                       | 36 |
| 6.4.27.4 | OPEN CHANNEL related to Default (network) Bearer .....          | 36 |
| 6.4.27.5 | OPEN CHANNEL related to (I-)WLAN bearer .....                   | 36 |
| 6.4.27.6 | OPEN CHANNEL related to Terminal Server Mode .....              | 37 |
| 6.4.27.7 | OPEN CHANNEL related to UICC Server Mode .....                  | 37 |
| 6.4.27.8 | OPEN CHANNEL for IMS.....                                       | 37 |
| 6.4.28   | CLOSE CHANNEL.....                                              | 38 |
| 6.4.29   | RECEIVE DATA .....                                              | 38 |
| 6.4.30   | SEND DATA.....                                                  | 38 |
| 6.4.31   | GET CHANNEL STATUS .....                                        | 38 |
| 6.4.32   | SERVICE SEARCH .....                                            | 38 |
| 6.4.33   | GET SERVICE INFORMATION .....                                   | 38 |
| 6.4.34   | DECLARE SERVICE .....                                           | 38 |
| 6.4.35   | RETRIEVE MULTIMEDIA MESSAGE .....                               | 38 |
| 6.4.36   | SUBMIT MULTIMEDIA MESSAGE .....                                 | 39 |
| 6.4.37   | DISPLAY MULTIMEDIA MESSAGE .....                                | 39 |
| 6.4.38   | SET FRAMES .....                                                | 39 |
| 6.4.39   | GET FRAME STATUS.....                                           | 39 |
| 6.4.40   | Geographical Location Request.....                              | 39 |
| 6.4.41   | ACTIVATE .....                                                  | 40 |
| 6.4.42   | CONTACTLESS STATE CHANGED .....                                 | 40 |
| 6.4.43   | COMMAND CONTAINER .....                                         | 40 |
| 6.4.44   | ENCAPSULATED SESSION CONTROL .....                              | 40 |
| 6.5      | Common elements in proactive UICC commands .....                | 40 |
| 6.5.1    | Command number .....                                            | 40 |
| 6.5.2    | Device identities .....                                         | 40 |
| 6.5.3    | Alpha identifier .....                                          | 40 |
| 6.5.4    | Icon identifiers .....                                          | 40 |
| 6.5.5    | Text attribute.....                                             | 40 |
| 6.5.6    | Frame identifier .....                                          | 41 |
| 6.6      | Structure of proactive UICC commands .....                      | 41 |
| 6.6.1    | DISPLAY TEXT .....                                              | 41 |
| 6.6.2    | GET INKEY .....                                                 | 41 |
| 6.6.3    | GET INPUT.....                                                  | 41 |
| 6.6.4    | MORE TIME.....                                                  | 41 |
| 6.6.5    | PLAY TONE .....                                                 | 41 |
| 6.6.6    | POLL INTERVAL .....                                             | 41 |
| 6.6.7    | SET-UP MENU .....                                               | 41 |
| 6.6.8    | SELECT ITEM.....                                                | 41 |

|          |                                              |    |
|----------|----------------------------------------------|----|
| 6.6.9    | SEND SHORT MESSAGE .....                     | 41 |
| 6.6.10   | SEND SS .....                                | 42 |
| 6.6.11   | SEND USSD.....                               | 42 |
| 6.6.12   | SET UP CALL.....                             | 42 |
| 6.6.13   | REFRESH.....                                 | 43 |
| 6.6.14   | POLLING OFF .....                            | 44 |
| 6.6.15   | PROVIDE LOCAL INFORMATION.....               | 44 |
| 6.6.16   | SET UP EVENT LIST.....                       | 44 |
| 6.6.17   | PERFORM CARD APDU .....                      | 44 |
| 6.6.18   | POWER OFF CARD .....                         | 44 |
| 6.6.19   | POWER ON CARD.....                           | 44 |
| 6.6.20   | GET READER STATUS.....                       | 44 |
| 6.6.21   | TIMER MANAGEMENT .....                       | 44 |
| 6.6.22   | SET UP IDLE MODE TEXT .....                  | 44 |
| 6.6.23   | RUN AT COMMAND .....                         | 44 |
| 6.6.24   | SEND DTMF COMMAND.....                       | 44 |
| 6.6.25   | LANGUAGE NOTIFICATION .....                  | 45 |
| 6.6.26   | LAUNCH BROWSER .....                         | 45 |
| 6.6.27   | OPEN CHANNEL .....                           | 45 |
| 6.6.27.1 | OPEN CHANNEL related to (I-)WLAN Bearer..... | 45 |
| 6.6.27.2 | OPEN CHANNEL for IMS.....                    | 46 |
| 6.6.28   | CLOSE CHANNEL.....                           | 46 |
| 6.6.29   | RECEIVE DATA .....                           | 46 |
| 6.6.30   | SEND DATA.....                               | 46 |
| 6.6.31   | GET CHANNEL STATUS .....                     | 46 |
| 6.6.32   | SERVICE SEARCH .....                         | 46 |
| 6.6.33   | GET SERVICE INFORMATION .....                | 46 |
| 6.6.34   | DECLARE SERVICE .....                        | 46 |
| 6.6.35   | RETRIEVE MULTIMEDIA MESSAGE .....            | 46 |
| 6.6.36   | SUBMIT MULTIMEDIA MESSAGE .....              | 46 |
| 6.6.37   | DISPLAY MULTIMEDIA MESSAGE .....             | 46 |
| 6.6.38   | SET FRAMES .....                             | 46 |
| 6.6.39   | GET FRAMES STATUS.....                       | 47 |
| 6.6.40   | Geographical Location Request.....           | 47 |
| 6.6.41   | ACTIVATE .....                               | 47 |
| 6.6.42   | CONTACTLESS STATE CHANGED .....              | 47 |
| 6.6.43   | COMMAND CONTAINER .....                      | 47 |
| 6.6.44   | ENCAPSULATED SESSION CONTROL .....           | 47 |
| 6.7      | Command results.....                         | 47 |
| 6.8      | Structure of TERMINAL RESPONSE.....          | 48 |
| 6.8.1    | Command details .....                        | 50 |
| 6.8.2    | Device identities .....                      | 50 |
| 6.8.3    | Result .....                                 | 50 |
| 6.8.4    | Duration .....                               | 50 |
| 6.8.5    | Text string.....                             | 50 |
| 6.8.6    | Item identifier .....                        | 50 |
| 6.8.7    | Local information .....                      | 50 |
| 6.8.8    | Call control requested action .....          | 51 |
| 6.8.9    | Result data object 2.....                    | 51 |
| 6.8.10   | Card reader status .....                     | 51 |
| 6.8.11   | Card ATR .....                               | 51 |
| 6.8.12   | R-APDU .....                                 | 51 |
| 6.8.13   | Timer identifier .....                       | 51 |
| 6.8.14   | Timer value .....                            | 51 |
| 6.8.15   | AT Response.....                             | 51 |
| 6.8.16   | Text string 2.....                           | 52 |
| 6.8.17   | Channel data .....                           | 52 |
| 6.8.18   | Channel status.....                          | 52 |
| 6.8.19   | Channel data length .....                    | 52 |
| 6.8.20   | Bearer description.....                      | 52 |
| 6.8.21   | Buffer size.....                             | 52 |
| 6.8.22   | Total Display Duration .....                 | 52 |

|          |                                                                       |    |
|----------|-----------------------------------------------------------------------|----|
| 6.8.23   | Service Availability .....                                            | 52 |
| 6.8.24   | Service Record.....                                                   | 52 |
| 6.8.25   | Other address (local address).....                                    | 52 |
| 6.8.26   | Frames Information.....                                               | 52 |
| 6.9      | Proactive UICC session and ME display interaction.....                | 52 |
| 6.10     | Handling of unknown, unforeseen and erroneous messages .....          | 52 |
| 6.11     | Proactive commands versus possible Terminal response .....            | 53 |
| 7        | ENVELOPE Commands .....                                               | 54 |
| 7.1      | Data download to UICC .....                                           | 54 |
| 7.1.1    | SMS-PP data download .....                                            | 54 |
| 7.1.1.1  | Procedure .....                                                       | 54 |
| 7.1.1.2  | Structure of ENVELOPE (SMS-PP DOWNLOAD) .....                         | 55 |
| 7.1.2    | Cell Broadcast data download .....                                    | 55 |
| 7.1.2.1  | Procedure .....                                                       | 55 |
| 7.1.2.2  | Structure of ENVELOPE (CELL BROADCAST DOWNLOAD) .....                 | 56 |
| 7.2      | Menu Selection.....                                                   | 57 |
| 7.3      | Call Control and MO SMS control by USIM.....                          | 57 |
| 7.3.1    | Call Control by USIM.....                                             | 57 |
| 7.3.1.1  | Procedure for mobile originated calls .....                           | 57 |
| 7.3.1.2  | Procedure for Supplementary Services and USSD .....                   | 58 |
| 7.3.1.3  | Indication to be given to the user .....                              | 59 |
| 7.3.1.4  | Interaction with Fixed Dialling Number .....                          | 60 |
| 7.3.1.5  | Support of Barred Dialling Number (BDN) service.....                  | 60 |
| 7.3.1.6  | Structure of ENVELOPE (CALL CONTROL) .....                            | 60 |
| 7.3.1.7  | Procedure for PDP Context Activation .....                            | 63 |
| 7.3.1.8  | Procedure for EPS PDN connection Activation.....                      | 64 |
| 7.3.1.9  | Procedure for IMS communications establishment.....                   | 65 |
| 7.3.2    | MO Short Message Control by USIM .....                                | 65 |
| 7.3.2.1  | Description.....                                                      | 65 |
| 7.3.2.2  | Structure of ENVELOPE (MO SHORT MESSAGE CONTROL).....                 | 66 |
| 7.3.2.3  | Indication to be given to the user .....                              | 67 |
| 7.3.2.4  | Interaction with Fixed Dialling Number .....                          | 67 |
| 7.4      | Timer Expiration .....                                                | 67 |
| 7.5      | Event download.....                                                   | 67 |
| 7.5.1    | (I-)WLAN Access status event .....                                    | 67 |
| 7.5.1.1  | Procedure .....                                                       | 67 |
| 7.5.1.2  | Structure of ENVELOPE (EVENT DOWNLOAD – (I-)WLAN Access Status) ..... | 68 |
| 7.5.1A   | MT Call event .....                                                   | 68 |
| 7.5.1A.1 | Procedure .....                                                       | 68 |
| 7.5.1A.2 | Structure of ENVELOPE (EVENT DOWNLOAD - MT call) .....                | 68 |
| 7.5.2    | Network Rejection event .....                                         | 69 |
| 7.5.2.1  | Procedure .....                                                       | 69 |
| 7.5.2.2  | Structure of ENVELOPE (EVENT DOWNLOAD – Network Rejection) .....      | 69 |
| 7.5.2A   | Call connected event.....                                             | 70 |
| 7.5.2A.1 | Procedure .....                                                       | 70 |
| 7.5.2A.2 | Structure of ENVELOPE (EVENT DOWNLOAD - call connected) .....         | 70 |
| 7.5.3    | CSG Cell Selection event .....                                        | 71 |
| 7.5.3.1  | Procedure .....                                                       | 71 |
| 7.5.3.2  | Structure of ENVELOPE (EVENT DOWNLOAD – CSG Cell Selection) .....     | 71 |
| 7.5.3A   | Call disconnected event .....                                         | 72 |
| 7.5.3A.1 | Procedure .....                                                       | 72 |
| 7.5.3A.2 | Structure of ENVELOPE (EVENT DOWNLOAD - call disconnected) .....      | 72 |
| 7.5.4    | Location status event .....                                           | 73 |
| 7.5.5    | User activity event .....                                             | 74 |
| 7.5.6    | Idle screen available event .....                                     | 74 |
| 7.5.7    | Card reader status event .....                                        | 74 |
| 7.5.8    | Language selection event.....                                         | 74 |
| 7.5.9    | Browser termination event.....                                        | 74 |
| 7.5.10   | Data available event.....                                             | 74 |
| 7.5.11   | Channel status event .....                                            | 74 |
| 7.5.12   | Access Technology Change Event.....                                   | 74 |

|          |                                                                                 |    |
|----------|---------------------------------------------------------------------------------|----|
| 7.5.13   | Display parameters changed event.....                                           | 74 |
| 7.5.14   | Local Connection event .....                                                    | 74 |
| 7.5.15   | Network Search Mode Change Event.....                                           | 74 |
| 7.5.16   | Browsing status event .....                                                     | 74 |
| 7.5.17   | Frames Information changed event.....                                           | 74 |
| 7.5.18   | HCI connectivity event .....                                                    | 75 |
| 7.5.19   | Contactless state request .....                                                 | 75 |
| 7.5.20   | Incoming IMS Data event.....                                                    | 75 |
| 7.5.20.1 | Procedure .....                                                                 | 75 |
| 7.5.20.2 | Structure of ENVELOPE (EVENT DOWNLOAD – Incoming IMS Data) .....                | 75 |
| 7.5.21   | IMS Registration Event .....                                                    | 75 |
| 7.5.21.1 | Procedure .....                                                                 | 75 |
| 7.5.21.2 | Structure of ENVELOPE (EVENT DOWNLOAD – IMS Registration).....                  | 76 |
| 7.5.22   | Profile Container.....                                                          | 76 |
| 7.5.23   | Envelope Container.....                                                         | 76 |
| 7.5.24   | Poll Interval Negotiation.....                                                  | 76 |
| 7.5.25   | Data Connection Status Change Event .....                                       | 77 |
| 7.5.25.1 | Procedure .....                                                                 | 77 |
| 7.5.25.2 | Structure of ENVELOPE (EVENT DOWNLOAD – Data Connection Status Change).....     | 77 |
| 7.6      | USSD Data Download.....                                                         | 78 |
| 7.6.1    | Procedure .....                                                                 | 78 |
| 7.6.2    | Structure of ENVELOPE (USSD Data Download).....                                 | 78 |
| 7.7      | MMS Transfer Status.....                                                        | 79 |
| 7.8      | MMS notification download .....                                                 | 79 |
| 7.9      | Terminal Applications .....                                                     | 79 |
| 7.10     | Geographical Location Reporting .....                                           | 79 |
| 7.10.1   | Procedure .....                                                                 | 79 |
| 7.10.2   | Structure of ENVELOPE (Geographical Location Reporting).....                    | 80 |
| 7.11     | Void.....                                                                       | 80 |
| 7.12     | ProSe usage information reporting.....                                          | 80 |
| 7.12.1   | Procedure .....                                                                 | 80 |
| 7.12.2   | Structure of ENVELOPE (ProSe Report).....                                       | 81 |
| 8        | COMPREHENSION-TLV data objects.....                                             | 81 |
| 8.1      | Address.....                                                                    | 81 |
| 8.2      | Alpha identifier .....                                                          | 81 |
| 8.3      | Subaddress.....                                                                 | 81 |
| 8.4      | Capability configuration parameters .....                                       | 82 |
| 8.5      | Cell Broadcast Page.....                                                        | 82 |
| 8.6      | Command details.....                                                            | 82 |
| 8.7      | Device identities .....                                                         | 83 |
| 8.8      | Duration.....                                                                   | 83 |
| 8.9      | Item .....                                                                      | 83 |
| 8.10     | Item identifier .....                                                           | 83 |
| 8.11     | Response length.....                                                            | 83 |
| 8.12     | Result.....                                                                     | 83 |
| 8.12.1   | Additional information for SEND SS .....                                        | 84 |
| 8.12.2   | Additional information for ME problem.....                                      | 84 |
| 8.12.3   | Additional information for network problem.....                                 | 84 |
| 8.12.4   | Additional information for SS problem .....                                     | 84 |
| 8.12.5   | Additional information for SMS problem.....                                     | 84 |
| 8.12.6   | Not used .....                                                                  | 85 |
| 8.12.7   | Additional information for USSD problem .....                                   | 85 |
| 8.12.8   | Additional information for interaction with call control or MO SM control ..... | 85 |
| 8.12.9   | Additional information for MultipleCard commands .....                          | 85 |
| 8.12.10  | Additional information for launch browser problem .....                         | 85 |
| 8.12.11  | Additional information for Bearer Independent Protocol .....                    | 85 |
| 8.12.12  | Additional information for Frames commands .....                                | 85 |
| 8.12.13  | Additional information for SUBMIT and RETRIEVE MULTIMEDIA MESSAGE .....         | 85 |
| 8.13     | SMS TPDU .....                                                                  | 86 |
| 8.14     | SS string .....                                                                 | 86 |
| 8.15     | Text string .....                                                               | 86 |

|        |                                                                                             |     |
|--------|---------------------------------------------------------------------------------------------|-----|
| 8.16   | Tone.....                                                                                   | 86  |
| 8.17   | USSD string.....                                                                            | 86  |
| 8.18   | File List .....                                                                             | 87  |
| 8.19   | Location Information.....                                                                   | 87  |
| 8.20   | IMEI .....                                                                                  | 87  |
| 8.21   | Help Request .....                                                                          | 87  |
| 8.22   | Network Measurement Results.....                                                            | 87  |
| 8.23   | Default Text.....                                                                           | 89  |
| 8.24   | Items Next Action Indicator .....                                                           | 89  |
| 8.25   | Event list.....                                                                             | 89  |
| 8.26   | Cause .....                                                                                 | 89  |
| 8.27   | Location status.....                                                                        | 90  |
| 8.28   | Transaction identifier .....                                                                | 90  |
| 8.29   | BCCH channel list.....                                                                      | 91  |
| 8.30   | Call control requested action .....                                                         | 91  |
| 8.31   | Icon Identifier .....                                                                       | 92  |
| 8.32   | Item Icon Identifier list.....                                                              | 92  |
| 8.33   | Card reader status .....                                                                    | 92  |
| 8.34   | Card ATR .....                                                                              | 92  |
| 8.35   | C-APDU .....                                                                                | 92  |
| 8.36   | R-APDU .....                                                                                | 92  |
| 8.37   | Timer identifier .....                                                                      | 92  |
| 8.38   | Timer value .....                                                                           | 92  |
| 8.39   | Date-Time and Time zone .....                                                               | 92  |
| 8.40   | AT Command.....                                                                             | 92  |
| 8.41   | AT Response .....                                                                           | 93  |
| 8.42   | BC Repeat indicator .....                                                                   | 93  |
| 8.43   | Immediate response .....                                                                    | 93  |
| 8.44   | DTMF string.....                                                                            | 93  |
| 8.45   | Language .....                                                                              | 93  |
| 8.46   | Timing Advance .....                                                                        | 93  |
| 8.47   | Browser Identity .....                                                                      | 94  |
| 8.48   | URL .....                                                                                   | 94  |
| 8.49   | Bearer .....                                                                                | 94  |
| 8.50   | Provisioning File Reference .....                                                           | 94  |
| 8.51   | Browser Termination Cause .....                                                             | 94  |
| 8.52   | Bearer description.....                                                                     | 94  |
| 8.52.1 | Bearer parameters for CSD .....                                                             | 95  |
| 8.52.2 | Bearer parameters for GPRS/UTRAN Packet Service/E-UTRAN .....                               | 95  |
| 8.52.3 | Bearer parameters for UTRAN Packet Service with extended parameters / HSDPA / E-UTRAN ..... | 96  |
| 8.52.4 | Bearer parameters for (I-)WLAN .....                                                        | 97  |
| 8.52.5 | Bearer parameters for E-UTRAN / mapped UTRAN packet service .....                           | 97  |
| 8.53   | Channel data .....                                                                          | 97  |
| 8.54   | Channel data length .....                                                                   | 97  |
| 8.55   | Buffer size .....                                                                           | 97  |
| 8.56   | Channel status .....                                                                        | 98  |
| 8.57   | Card reader identifier.....                                                                 | 98  |
| 8.58   | Other Address.....                                                                          | 98  |
| 8.59   | UICC/ME interface transport level .....                                                     | 98  |
| 8.60   | AID.....                                                                                    | 98  |
| 8.61   | Network Access Name .....                                                                   | 98  |
| 8.62   | Access Technology.....                                                                      | 99  |
| 8.63   | Display parameters .....                                                                    | 99  |
| 8.64   | Service Record .....                                                                        | 99  |
| 8.65   | Device Filter.....                                                                          | 99  |
| 8.66   | Service Search .....                                                                        | 99  |
| 8.67   | Attribute Information .....                                                                 | 99  |
| 8.68   | Service Availability.....                                                                   | 99  |
| 8.69   | Remote Entity Address.....                                                                  | 99  |
| 8.70   | Text Attribute .....                                                                        | 99  |
| 8.71   | Item Text Attribute List.....                                                               | 99  |
| 8.72   | PDP context Activation parameters.....                                                      | 100 |

|       |                                                           |     |
|-------|-----------------------------------------------------------|-----|
| 8.73  | UTRAN/E-UTRAN Measurement Qualifier.....                  | 100 |
| 8.74  | Multimedia Message Reference .....                        | 100 |
| 8.75  | Multimedia Message Identifier.....                        | 100 |
| 8.76  | Multimedia Message Transfer status.....                   | 100 |
| 8.77  | MM Content Identifier .....                               | 101 |
| 8.78  | Multimedia Message Notification .....                     | 101 |
| 8.79  | Last Envelope.....                                        | 101 |
| 8.80  | Frames Layout .....                                       | 101 |
| 8.81  | Frames Information .....                                  | 101 |
| 8.82  | Frames identifier .....                                   | 101 |
| 8.83  | I-WLAN Identifier .....                                   | 101 |
| 8.84  | (I-)WLAN Access Status.....                               | 101 |
| 8.85  | IMEISV .....                                              | 102 |
| 8.86  | Network search mode.....                                  | 102 |
| 8.87  | Battery State .....                                       | 102 |
| 8.88  | Browsing status .....                                     | 102 |
| 8.89  | Registry application data .....                           | 102 |
| 8.90  | PLMNwAcT List.....                                        | 102 |
| 8.91  | Routing Area Identification.....                          | 102 |
| 8.92  | Update/Attach Type .....                                  | 103 |
| 8.93  | Rejection Cause Code .....                                | 103 |
| 8.94  | Geographical Location Parameters.....                     | 104 |
| 8.95  | GAD shapes.....                                           | 106 |
| 8.96  | NMEA sentence .....                                       | 107 |
| 8.97  | PLMN List.....                                            | 107 |
| 8.98  | EPS PDN connection activation parameters .....            | 107 |
| 8.99  | Tracking Area Identification .....                        | 107 |
| 8.100 | CSG ID list identifier .....                              | 108 |
| 8.101 | CSG cell selection status.....                            | 108 |
| 8.102 | CSG ID.....                                               | 109 |
| 8.103 | HNB name.....                                             | 109 |
| 8.104 | Activate descriptor .....                                 | 109 |
| 8.105 | Broadcast Network information .....                       | 109 |
| 8.106 | Contactless state request.....                            | 110 |
| 8.107 | Contactless functionality state .....                     | 110 |
| 8.108 | IMS URI.....                                              | 110 |
| 8.109 | Extended registry application data .....                  | 110 |
| 8.110 | IARI.....                                                 | 110 |
| 8.111 | IMPU List.....                                            | 110 |
| 8.112 | IMS status code .....                                     | 111 |
| 8.113 | eCAT client profile.....                                  | 111 |
| 8.114 | eCAT client identity.....                                 | 111 |
| 8.115 | Encapsulated envelope type .....                          | 111 |
| 8.116 | Void.....                                                 | 111 |
| 8.117 | Void.....                                                 | 111 |
| 8.118 | PLMN ID.....                                              | 111 |
| 8.119 | E-UTRAN Inter-frequency Network Measurement Results ..... | 112 |
| 8.120 | Call control result .....                                 | 112 |
| 8.121 | eCAT sequence number .....                                | 112 |
| 8.122 | Encrypted TLV list.....                                   | 112 |
| 8.123 | MAC.....                                                  | 112 |
| 8.124 | SA template .....                                         | 112 |
| 8.125 | CAT service list.....                                     | 112 |
| 8.126 | Refresh enforcement policy.....                           | 113 |
| 8.127 | DNS Server Address .....                                  | 113 |
| 8.128 | ProSe Report Data.....                                    | 113 |
| 8.129 | SSID .....                                                | 113 |
| 8.130 | BSSID .....                                               | 113 |
| 8.131 | HESSID.....                                               | 113 |
| 8.132 | Media Type .....                                          | 114 |
| 8.133 | IMS call disconnection cause .....                        | 114 |
| 8.134 | E-UTRAN Primary Timing Advance Information.....           | 114 |

|                               |                                                                                                       |            |
|-------------------------------|-------------------------------------------------------------------------------------------------------|------------|
| 8.135                         | URI truncated .....                                                                                   | 115        |
| 8.136                         | Extended Rejection Cause Code .....                                                                   | 115        |
| 8.137                         | Data connection status .....                                                                          | 115        |
| 8.138                         | Data connection type .....                                                                            | 115        |
| 8.139                         | (E)SM cause .....                                                                                     | 116        |
| 9                             | Tag values .....                                                                                      | 116        |
| 9.1                           | BER-TLV tags in ME to UICC direction .....                                                            | 117        |
| 9.2                           | BER-TLV tags in UICC TO ME direction .....                                                            | 117        |
| 9.3                           | COMPREHENSION-TLV tags in both directions .....                                                       | 118        |
| 9.4                           | Type of Command and Next Action Indicator .....                                                       | 119        |
| 10                            | Allowed Type of command and Device identity combinations .....                                        | 119        |
| 11                            | Security requirements .....                                                                           | 119        |
| <b>Annex A (normative):</b>   | <b>Support of USAT by Mobile Equipment .....</b>                                                      | <b>120</b> |
| <b>Annex B (informative):</b> | <b>Example of DISPLAY TEXT Proactive UICC Command .....</b>                                           | <b>121</b> |
| <b>Annex C (normative):</b>   | <b>Structure of USAT communications .....</b>                                                         | <b>122</b> |
| <b>Annex D (informative):</b> | <b>ME display in proactive UICC session .....</b>                                                     | <b>123</b> |
| <b>Annex E (informative):</b> | <b>Help information feature processing .....</b>                                                      | <b>124</b> |
| <b>Annex F (informative):</b> | <b>Monitoring of events .....</b>                                                                     | <b>125</b> |
| <b>Annex G (normative):</b>   | <b>Support of Multiple Card Operation .....</b>                                                       | <b>126</b> |
| <b>Annex H (informative):</b> | <b>Multiple Card proactive command examples .....</b>                                                 | <b>127</b> |
| <b>Annex I (informative):</b> | <b>Bearer independent protocol proactive command examples .....</b>                                   | <b>128</b> |
| <b>Annex J (informative):</b> | <b>WAP References .....</b>                                                                           | <b>129</b> |
| <b>Annex K (informative):</b> | <b>Use of USAT Bearer independent protocol for local links Bluetooth case .....</b>                   | <b>130</b> |
| <b>Annex L (informative):</b> | <b>Bluetooth Service Discovery protocol .....</b>                                                     | <b>131</b> |
| <b>Annex M (informative):</b> | <b>Use of USAT Bearer independent protocol for local links, server case ..</b>                        | <b>132</b> |
| <b>Annex N (informative):</b> | <b>USSD information flow between the Network, the ME and the UICC ..</b>                              | <b>133</b> |
| N.1                           | MMI Mode .....                                                                                        | 133        |
| N.2                           | Application Mode .....                                                                                | 135        |
| N.3                           | USSD Data Download .....                                                                              | 137        |
| <b>Annex O (informative):</b> | <b>Geographical location information discovery information flow between the ME and the UICC .....</b> | <b>138</b> |
| <b>Annex P (normative):</b>   | <b>Support of USAT by Terminals with reduced feature capabilities. ....</b>                           | <b>139</b> |
| <b>Annex Q (normative):</b>   | <b>Default routing for USAT over AT interface .....</b>                                               | <b>140</b> |
| Q.0                           | 3GPP-specific facilities .....                                                                        | 140        |
| Q.1                           | Default routing mechanism .....                                                                       | 140        |
| Q.2                           | Combination rules for terminal profiles .....                                                         | 141        |
| <b>Annex R (informative):</b> | <b>UICC access to IMS, command flow examples .....</b>                                                | <b>142</b> |
| R.1                           | Discovery of the UICC's IARI and IMS Registration .....                                               | 142        |
| R.2                           | Notification of Incoming IMS data .....                                                               | 143        |
| R.3                           | UICC originating a SIP message .....                                                                  | 144        |

|                               |                                                                         |            |
|-------------------------------|-------------------------------------------------------------------------|------------|
| <b>Annex S (normative):</b>   | <b>3GPP PS data off and Bearer Independent Protocol.....</b>            | <b>145</b> |
| <b>Annex T (informative):</b> | <b>Data Connection Status change event, command flow examples .....</b> | <b>146</b> |
| T.1                           | Introduction .....                                                      | 146        |
| T.2                           | Success activation of PDP/PDN request flow example .....                | 146        |
| T.3                           | Rejected activation of PDP/PDN request flow example .....               | 147        |
| T.4                           | PDP/PDN Data connection deactivated flow example.....                   | 147        |
| <b>Annex U (informative):</b> | <b>Change History .....</b>                                             | <b>149</b> |
| History .....                 |                                                                         | 153        |

---

# Foreword

This Technical Specification (TS) has been produced by the 3<sup>rd</sup> 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 defines the interface between the UICC and the Mobile Equipment (ME), and mandatory ME procedures, specifically for "USIM Application Toolkit".

The present document refers in its majority to the ETSI TS 102 223 [32], which describes the generic aspects of application toolkits within the UICC.

USAT is a set of commands and procedures for use during the network operation phase of 3G/LTE, in addition to those defined in TS 31.101 [13].

Specifying the interface is to ensure interoperability between a UICC and an ME independently of the respective manufacturers and operators.

The present document defines for 3G/LTE technology:

- the commands;
- the application protocol;
- the mandatory requirements on the UICC and ME for each procedure.

The present document does not specify any aspects related to the administrative management phase. Any internal technical realization of either the UICC or the ME are only specified where these reflect over the interface. The present document does not specify any of the security algorithms which may be used.

For the avoidance of doubt, references to clauses of ETSI TS 102 223 [32] include all the subclauses of that clause, unless specifically mentioned.

The target specification ETSI TS 102 223 [32] contains material that is outside of the scope of 3GPP requirements and the present document indicates which parts are in the scope and which are not.

A 3GPP ME may support functionality that is not required by 3GPP, but the requirements to do so are outside of the scope of 3GPP.

---

# 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 TS 22.002: "Circuit Bearer Services (BS) supported by a Public Land Mobile Network (PLMN)".
- [2] 3GPP TS 22.030: "Man-Machine Interface (MMI) of the User Equipment (UE)".
- [3] 3GPP TS 22.042: "Network Identity and Time Zone (NITZ); Service description; Stage 1".
- [4] 3GPP TS 23.038: "Alphabets and language-specific information".
- [5] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS)".
- [6] 3GPP TS 23.041: "Technical realization of Cell Broadcast Service (CBS)".
- [7] 3GPP TS 23.122: "Non-Access Stratum functions related to Mobile Station (MS) in idle mode".