ETSI TS 131 121 V11.0.0 (2012-11)

Universal Mobile Telecommunications System (UMTS);
LTE;
UICC-terminal interface;
Universal Subscriber Identity Module (USIM)
application test specification
(3GPP TS 31.121 version 11.0.0 Release 11)

Reference
RTS/TSGC-0631121vb00

Keywords
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

Individual copies of the present document can be downloaded from:
http://www.etsi.org

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the 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
http://portal.etsi.org/tb/status/status.asp

If you find errors in the present document, please send your comment to one of the following services:
http://portal.etsi.org/chaircor/ETSI_support.asp

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2012.
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 (http://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.

Contents

Intellectual Property Rights 2
Foreword 2
Foreword 17
Introduction 17
1 Scope 18
2 References 18
3 Definitions, symbols, abbreviations and coding 20
3.1 Definitions 20
3.2 Symbols 21
3.3 Abbreviations 21
3.4 Coding Conventions 22
3.5 Generic procedures for E-UTRAN/UTRAN/GERAN/IMS 23
3.6 Applicability 23
3.6.1 Applicability of the present document 23
3.6.2 Applicability to terminal equipment 23
3.6.3 Applicability of the individual tests 23
3.7 Table of optional features 24
3.8 Applicability table 26
4 Default Values 40
4.1 Definition of default values for USIM-Terminal interface testing (Default UICC) 40
4.1.1 Values of the EF's (Default UICC) 40
4.1.1.1 EF_{IMSI} (IMSI) 40
4.1.1.2 EF_{AD} (Administrative Data) 40
4.1.1.3 EF_{LOCI} (Location Information) 40
4.1.1.4 EF_{Keys} (Ciphering and Integrity Keys) 41
4.1.1.5 EF_{KeysPS} (Ciphering and Integrity Keys for Packet Switched domain) 41
4.1.1.6 EF_{ACC} (Access Control Class) 41
4.1.1.7 EF_{FPLMN} (Forbidden PLMNs) 41
4.1.1.8 EF_{UST} (USIM Service Table) 41
4.1.1.9 EF_{EST} (Enable Service Table) 42
4.1.1.10 EF_{ADN} (Abbreviated Dialling Number) 42
4.1.1.11 $EF_{PLMNwACT}$ (User Controlled PLMN Selector with Access Technology) 42
4.1.1.12 $EF_{OPLMNwACT}$ (Operator Controlled PLMN Selector with Access Technology) 43
4.1.1.13 Void 43
4.1.1.14 PIN 43
4.1.1.15 PIN2 43
4.1.1.16 Unblock PIN 44
4.1.1.17 Unblock PIN2 44
4.1.1.18 Other Values of the USIM 44
4.1.1.19 EF_{PSLOCI} (Packet Switch Location Information) 44
4.1.1.20 Universal PIN 44
4.1.1.21 Unblock Universal PIN 44
4.2 Definition of FDN UICC 45
4.2.1 Values of the EF's (FDN UICC) 45
4.2.1.1 EF_{UST} (USIM Service Table) 45
4.2.1.2 EF_{EST} (Enable Service Table) 45
4.2.1.3 EF_{FDN} (Fixed Dialling Numbers) 45
4.2.1.4 EF_{ECC} (Emergency Call Codes) 46
4.2.1.5 Other Values of the USIM 46
4.3 Void 46
4.4 Definition of E-UTRAN/EPC UICC 46
4.4.1 EF_{UST} (USIM Service Table) 46
4.4.2 $EF_{EPSLOCI}$ (EPS Information) 47

4.4.3 $EF_{PLMNwACT}$ (User Controlled PLMN Selector with Access Technology) 47
4.4.4 $EF_{OPLMNwACT}$ (Operator Controlled PLMN Selector with Access Technology) 48
4.4.5 EF_{ACSGL} (Allowed CSG Lists) 48
4.4.6 EF_{CSGT} (CSG Type) 49
4.4.7 EF_{HNBN} (Home (e)NodeB Name) 50
4.4.8 EF_{EPSNSC} (EPS NAS Security Context) 52
4.5 Definition of E-UTRAN/EPC ISIM-UICC 52
4.5.1 Applications on the E-UTRAN/EPC ISIM-UICC 52
4.5.2 Default USIM values on E-UTRAN/EPC ISIM-UICC 52
4.5.3 Default ISIM values on E-UTRAN/EPC ISIM-UICC 52
4.5.3.1 EF_{AD} (Administrative Data) 52
4.5.3.2 EF_{IST} (ISIM Service Table) 53
4.5.3.3 EF_{IMPI} (IMS private user identity) 53
4.5.3.4 EF_{DOMAIN} (Home Network Domain Name) 53
4.5.3.5 EF_{IMPU} (IMS public user identity) 53
4.5.3.6 $EF_{P\text{-}CSCF}$ (P-CSCF ADDRESS) 54
4.5.3.7 EF_{SMS} (Short Message Service) 55
4.5.3.8 EF_{SMSR} (Short message status reports) 55
4.5.3.9 EF_{SMSP} (Short message service parameters) 55
4.5.3.10 EF_{SMSS} (SMS Status) 56
4.5.4 Default values at DF_TELECOM 56
4.5.4.1 $EF_{PSISMSC}$ (Public Service Identity of the SM-SC) 56

5 Subscription related tests 56
5.1 IMSI / TMSI handling 56
5.1.1 UE identification by short IMSI 56
5.1.1.1 Definition and applicability 56
5.1.1.2 Conformance requirement 56
5.1.1.3 Test purpose 57
5.1.1.4 Method of test 57
5.1.1.4.1 Initial conditions 57
5.1.1.4.2 Procedure 57
5.1.1.5 Acceptance criteria 57
5.1.2 UE identification by short IMSI using a 2 digit MNC 57
5.1.2.1 Definition and applicability 57
5.1.2.2 Conformance requirement 58
5.1.2.3 Test purpose 58
5.1.2.4 Method of test 58
5.1.2.4.1 Initial conditions 58
5.1.2.4.2 Procedure 59
5.1.2.5 Acceptance criteria 59
5.1.3 UE identification by "short" TMSI 59
5.1.3.1 Definition and applicability 59
5.1.3.2 Conformance requirement 59
5.1.3.3 Test purpose 59
5.1.3.4 Method of test 60
5.1.3.4.1 Initial conditions 60
5.1.3.4.2 Procedure 60
5.1.3.5 Acceptance criteria 60
5.1.4 UE identification by "long" TMSI 61
5.1.4.1 Definition and applicability 61
5.1.4.2 Conformance requirement 61
5.1.4.3 Test purpose 61
5.1.4.4 Method of test 61
5.1.4.4.1 Initial conditions 61
5.1.4.4.2 Procedure 62
5.1.4.5 Acceptance criteria 62
5.1.5 UE identification by long IMSI, TMSI updating and key set identifier assignment 62
5.1.5.1 Definition and applicability 62
5.1.5.2 Conformance requirement 63
5.1.5.3 Test purpose 63
5.1.5.4 Method of test 63

5.1.5.4.1 Initial conditions 63
5.1.5.4.2 Procedure 64
5.1.5.5 Acceptance criteria 65
5.1.6 UE identification by short IMSI when accessing E-UTRAN/EPC 65
5.1.6.1 Definition and applicability 65
5.1.6.2 Conformance requirement 65
5.1.6.3 Test purpose 66
5.1.6.4 Method of test 66
5.1.6.4.1 Initial conditions 66
5.1.6.4.2 Procedure 66
5.1.6.5 Acceptance criteria 66
5.1.7 UE identification by short IMSI using a 2 digit MNC when accessing E-UTRAN/EPC 66
5.1.7.1 Definition and applicability 66
5.1.7.2 Conformance requirement 66
5.1.7.3 Test purpose 67
5.1.7.4 Method of test 67
5.1.7.4.1 Initial conditions 67
5.1.7.4.2 Procedure 67
5.1.7.5 Acceptance criteria 67
5.1.8 UE identification after changed IMSI with service "EMM Information" not available 68
5.1.8.2 Conformance requirement 68
5.1.8.3 Test purpose 68
5.1.8.4 Method of test 68
5.1.8.4.1 Initial conditions 68
5.1.8.4.2 Procedure 68
5.1.8.5 Acceptance criteria 69
5.1.9 UE identification by GUTI when using USIM with service "EMM Information" not available 69
5.1.9.2 Conformance requirement 69
5.1.9.3 Test purpose 70
5.1.9.4 Method of test 70
5.1.9.4.1 Initial conditions 70
5.1.9.4.2 Procedure 70
5.1.9.5 Acceptance criteria 70
5.1.10 UE identification by GUTI when using USIM with service "EMM Information" available 70
5.1.10.1 Definition and applicability 70
5.1.10.2 Conformance requirement 71
5.1.10.3 Test purpose 71
5.1.10.4 Method of test 71
5.1.10.4.1 Initial conditions 71
5.1.10.4.2 Procedure 71
5.1.10.5 Acceptance criteria 72
5.2 Access Control handling 72
5.2.1 Access Control information handling 72
5.2.1.1 Definition and applicability 72
5.2.1.2 Conformance requirement 72
5.2.1.3 Test purpose 73
5.2.1.4 Method of test 73
5.2.1.4.1 Initial conditions 73
5.2.1.4.2 Coding details 73
5.2.1.4.3 Procedure 74
5.2.1.5 Acceptance criteria 74
5.2.2 Access Control information handling for E-UTRAN/EPC 86
5.2.2.1 Definition and applicability 86
5.2.2.2 Conformance requirement 86
5.2.2.3 Test purpose 86
5.2.2.4 Method of test 86
5.2.2.4.1 Initial conditions 86
5.2.2.4.2 Coding details 87
5.2.2.4.3 Procedure 87
5.2.2.5 Acceptance criteria 87
6 Security related Tests 99

6.1 PIN handling 99
6.1.1 Entry of PIN 99
6.1.1.1 Definition and applicability 99
6.1.1.2 Conformance requirement 99
6.1.1.3 Test purpose 99
6.1.1.4 Method of test 99
6.1.1.4.1 Initial conditions 99
6.1.1.4.2 Procedure 99
6.1.1.5 Acceptance criteria 99
6.1.2 Change of PIN 100
6.1.2.1 Definition and applicability 100
6.1.2.2 Conformance requirement 100
6.1.2.3 Test purpose 100
6.1.2.4 Method of test 100
6.1.2.4.1 Initial conditions 100
6.1.2.4.2 Procedure 100
6.1.2.5 Acceptance criteria 100
6.1.3 Unblock PIN 101
6.1.3.1 Definition and applicability 101
6.1.3.2 Conformance requirement 101
6.1.3.3 Test purpose 101
6.1.3.4 Method of test 101
6.1.3.4.1 Initial conditions 101
6.1.3.4.2 Procedure 101
6.1.3.5 Acceptance criteria 102
6.1.4 Entry of PIN2 102
6.1.4.1 Definition and applicability 102
6.1.4.2 Conformance requirement 102
6.1.4.3 Test purpose 102
6.1.4.4 Method of test 102
6.1.4.4.1 Initial conditions 102
6.1.4.4.2 Procedure 103
6.1.4.5 Acceptance criteria 103
6.1.5 Change of PIN2 103
6.1.5.1 Definition and applicability 103
6.1.5.2 Conformance requirement 103
6.1.5.3 Test purpose 103
6.1.5.4 Method of test 103
6.1.5.4.1 Initial conditions 103
6.1.5.4.2 Procedure 103
6.1.5.5 Acceptance criteria 104
6.1.6 Unblock PIN2 104
6.1.6.1 Definition and applicability 104
6.1.6.2 Conformance requirement 104
6.1.6.3 Test purpose 104
6.1.6.4 Method of test 104
6.1.6.4.1 Initial conditions 104
6.1.6.4.2 Procedure 104
6.1.6.5 Acceptance criterias 105
6.1.7 Replacement of PIN 106
6.1.7.1 Definition and applicability 106
6.1.7.2 Conformance requirement 106
6.1.7.3 Test purpose 106
6.1.7.4 Method of test 106
6.1.7.4.1 Initial conditions 106
6.1.7.4.2 Procedure 106
6.1.7.5 Acceptance criteria 106
6.1.8 Change of Universal PIN 107
6.1.8.1 Definition and applicability 107
6.1.8.2 Conformance requirement 107
6.1.8.3 Test purpose 107
6.1.8.4 Method of test 107

6.1.8.4.1 Initial conditions 107
6.1.8.4.2 Procedure 107
6.1.8.5 Acceptance criteria 108
6.1.9 Unblock Universal PIN 108
6.1.9.1 Definition and applicability 108
6.1.9.2 Conformance requirement 108
6.1.9.3 Test purpose 108
6.1.9.4 Method of test 108
6.1.9.4.1 Initial conditions 108
6.1.9.4.2 Procedure 108
6.1.9.5 Acceptance criteria 109
6.1.10 Entry of PIN on multi-verification capable UICCs 109
6.1.10.1 Definition and applicability 109
6.1.10.2 Conformance requirement 109
6.1.10.3 Test purpose 109
6.1.10.4 Method of test 109
6.1.10.4.1 Initial conditions 109
6.1.10.4.2 Procedure 110
6.1.10.5 Acceptance criteria 110
6.1.11 Change of PIN on multi-verification capable UICCs 110
6.1.11.1 Definition and applicability 110
6.1.11.2 Conformance requirement 110
6.1.11.3 Test purpose 111
6.1.11.4 Method of test 111
6.1.11.4.1 Initial conditions 111
6.1.11.4.2 Procedure 111
6.1.11.5 Acceptance criteria 112
6.1.12 Unblock PIN on multi-verification capable UICCs 112
6.1.12.1 Definition and applicability 112
6.1.12.2 Conformance requirement 112
6.1.12.3 Test purpose 112
6.1.12.4 Method of test 112
6.1.12.4.1 Initial conditions 112
6.1.12.4.2 Procedure 113
6.1.12.5 Acceptance criteria 114
6.1.13 Entry of PIN2 on multi-verification capable UICCs 114
6.1.13.1 Definition and applicability 114
6.1.13.2 Conformance requirement 114
6.1.13.3 Test purpose 114
6.1.13.4 Method of test 114
6.1.13.4.1 Initial conditions 114
6.1.13.4.2 Procedure 115
6.1.13.5 Acceptance criteria 115
6.1.14 Change of PIN2 on multi-verification capable UICCs 116
6.1.14.1 Definition and applicability 116
6.1.14.2 Conformance requirement 116
6.1.14.3 Test purpose 116
6.1.14.4 Method of test 116
6.1.14.4.1 Initial conditions 116
6.1.14.4.2 Procedure 117
6.1.14.5 Acceptance criteria 117
6.1.15 Unblock PIN2 on multi-verification capable UICCs 117
6.1.15.1 Definition and applicability 117
6.1.15.2 Conformance requirement 117
6.1.15.3 Test purpose 118
6.1.15.4 Method of test 118
6.1.15.4.1 Initial conditions 118
6.1.15.4.2 Procedure 119
6.1.15.5 Acceptance criterias 119
6.1.16 Replacement of PIN with key reference "07" 120
6.1.16.1 Definition and applicability 120
6.1.16.2 Conformance requirement 120

6.1.16.3 Test purpose 120
6.1.16.4 Method of test 120
6.1.16.4.1 Initial conditions 120
6.1.16.4.2 Procedure 121
6.1.16.5 Acceptance criteria 121
6.2 Fixed Dialling Numbers (FDN) handling 122
6.2.1 Terminal and USIM with FDN enabled, EF_{ADN} readable and updateable 122
6.2.1.1 Definition and applicability 122
6.2.1.2 Conformance requirement 122
6.2.1.3 Test purpose 122
6.2.1.4 Method of test 123
6.2.1.4.1 Initial conditions 123
6.2.1.4.2 Procedure 123
6.2.1.5 Acceptance criteria 123
6.2.2 Terminal and USIM with FDN disabled 124
6.2.2.1 Definition and applicability 124
6.2.2.2 Conformance requirement 124
6.2.2.3 Test purpose 124
6.2.2.4 Method of test 124
6.2.2.4.1 Initial conditions 124
6.2.2.4.2 Procedure 125
6.2.2.5 Acceptance criteria 125
6.2.3 Enabling, disabling and updating of FDN 125
6.2.3.1 Definition and applicability 125
6.2.3.2 Conformance requirement 125
6.2.3.3 Test purpose 125
6.2.3.4 Method of test 126
6.2.3.4.1 Initial conditions 126
6.2.3.4.2 Procedure 126
6.2.3.5 Acceptance criteria 126
6.2.4 Terminal and USIM with FDN enabled, EF_{ADN} readable and updateable (Rel-4 and onwards) 126
6.2.4.1 Definition and applicability 126
6.2.4.2 Conformance requirement 126
6.2.4.3 Test purpose 127
6.2.4.4 Method of test 127
6.2.4.4.1 Initial conditions 127
6.2.4.4.2 Procedure 127
6.2.4.5 Acceptance criteria 128
6.3 Void 128
6.4 Advice of charge (AoC) handling 128
6.4.1 AoC not supported by USIM 128
6.4.1.1 Definition and applicability 128
6.4.1.2 Conformance requirement 128
6.4.1.3 Test purpose 129
6.4.1.4 Method of test 129
6.4.1.4.1 Initial conditions 129
6.4.1.4.2 Procedure 129
6.4.1.5 Acceptance criteria 130
6.4.2 Maximum frequency of ACM updating 130
6.4.2.1 Definition and applicability 130
6.4.2.2 Conformance requirement 130
6.4.2.3 Test purpose 130
6.4.2.4 Method of test 130
6.4.2.4.1 Initial conditions 130
6.4.2.4.2 Procedure 131
6.4.2.5 Acceptance criteria 133
6.4.3 Call terminated when ACM greater than ACMmax 133
6.4.3.1 Definition and applicability 133
6.4.3.2 Conformance requirement 133
6.4.3.3 Test purpose 133
6.4.3.4 Method of test 134
6.4.3.4.1 Initial conditions 134

6.4.3.4.2 Procedure 134
6.4.3.5 Acceptance criteria 136
6.4.4 Response codes of increase command of ACM 136
6.4.4.1 Definition and applicability 136
6.4.4.2 Conformance requirement 137
6.4.4.3 Test purpose 137
6.4.4.4 Method of test 137
6.4.4.4.1 Initial conditions 137
6.4.4.4.2 Procedure 138
6.4.4.5 Acceptance criteria 140

7 PLMN related tests 141
7.1 FPLMN handling 141
7.1.1 Adding FPLMN to the Forbidden PLMN list 141
7.1.1.1 Definition and applicability 141
7.1.1.2 Conformance requirement 141
7.1.1.3 Test purpose 143
7.1.1.4 Method of test 143
7.1.1.4.1 Initial conditions 143
7.1.1.4.2 Procedure 144
7.1.1.5 Acceptance criteria 147
7.1.2 UE updating forbidden PLMNs 148
7.1.2.1 Definition and applicability 148
7.1.2.2 Conformance requirement 149
7.1.2.3 Test purpose 149
7.1.2.4 Method of test 149
7.1.2.4.1 Initial conditions 149
7.1.2.4.2 Procedure 150
7.1.2.5 Acceptance criteria 150
7.1.3 UE deleting forbidden PLMNs 151
7.1.3.1 Definition and applicability 151
7.1.3.2 Conformance requirement 151
7.1.3.3 Test purpose 152
7.1.3.4 Method of test 152
7.1.3.4.1 Initial conditions 152
7.1.3.4.2 Procedure 153
7.1.3.5 Acceptance criteria 154
7.1.4 Adding FPLMN to the forbidden PLMN list when accessing E-UTRAN 155
7.1.4.1 Definition and applicability 155
7.1.4.2 Conformance requirement 155
7.1.4.3 Test purpose 156
7.1.4.4 Method of test 156
7.1.4.4.1 Initial conditions 156
7.1.4.4.2 Procedure 156
7.1.4.5 Acceptance criteria 157
7.1.5 UE updating forbidden PLMNs when accessing E-UTRAN 158
7.1.5.1 Definition and applicability 158
7.1.5.2 Conformance requirement 158
7.1.5.3 Test purpose 158
7.1.5.4 Method of test 158
7.1.5.4.1 Initial conditions 158
7.1.5.4.2 Procedure 159
7.1.5.5 Acceptance criteria 159
7.1.6 UE deleting forbidden PLMNs when accessing E-UTRAN 160
7.1.6.1 Definition and applicability 160
7.1.6.2 Conformance requirement 160
7.1.6.3 Test purpose 160
7.1.6.4 Method of test 160
7.1.6.4.1 Initial conditions 160
7.1.6.4.2 Procedure 161
7.1.6.5 Acceptance criteria 161
7.2 User controlled PLMN selector handling 162

7.2.1 UE updating the User controlled PLMN selector list 162
7.2.1.1 Definition and applicability 162
7.2.1.2 Conformance requirement 162
7.2.1.3 Test purpose 162
7.2.1.4 Method of test 162
7.2.1.4.1 Initial conditions 162
7.2.1.4.2 Procedure 162
7.2.1.5 Acceptance criteria 162
7.2.2 UE recognising the priority order of the User controlled PLMN selector list with the same access technology 163
7.2.2.1 Definition and applicability 163
7.2.2.2 Conformance requirement 163
7.2.2.3 Test purpose 164
7.2.2.4 Method of test 164
7.2.2.4.1 Initial conditions 164
7.2.2.4.2 Procedure 165
7.2.2.5 Acceptance criteria 166
7.2.3 UE recognising the priority order of the User controlled PLMN selector list using an ACT preference. 167
7.2.3.1 Definition and applicability 167
7.2.3.2 Conformance requirement 167
7.2.3.3 Test purpose 167
7.2.3.4 Method of test 167
7.2.3.4.1 Initial conditions 167
7.2.3.4.2 Procedure 168
7.2.3.5 Acceptance criteria 168
7.2.4 Void 168
7.2.5 UE updating the User controlled PLMN selector list for E-UTRAN 168
7.2.5.1 Definition and applicability 168
7.2.5.2 Conformance requirement 169
7.2.5.3 Test purpose 169
7.2.5.4 Method of test 169
7.2.5.4.1 Initial conditions 169
7.2.5.4.2 Procedure 169
7.2.5.5 Acceptance criteria 169
7.2.6 UE recognising the priority order of the User controlled PLMN selector list using an ACT preference- UTRAN/E-UTRAN 170
7.2.6.1 Definition and applicability 170
7.2.6.2 Conformance requirement 170
7.2.6.3 Test purpose 170
7.2.6.4 Method of test 170
7.2.6.4.1 Initial conditions 170
7.2.6.4.2 Procedure 171
7.2.6.5 Acceptance criteria 171
7.2.7 UE recognising the priority order of the User controlled PLMN selector list using an ACT preference- GSM/E-UTRAN 171
7.2.7.1 Definition and applicability 171
7.2.7.2 Conformance requirement 172
7.2.7.3 Test purpose 172
7.2.7.4 Method of test 172
7.2.7.4.1 Initial conditions 172
7.2.7.4.2 Procedure 172
7.2.7.5 Acceptance criteria 172
7.3 Operator controlled PLMN selector handling 173
7.3.1 UE recognising the priority order of the Operator controlled PLMN selector list. 173
7.3.1.1 Definition and applicability 173
7.3.1.2 Conformance requirement 173
7.3.1.3 Test purpose 173
7.3.1.4 Method of test 173
7.3.1.4.1 Initial conditions 173
7.3.1.4.2 Procedure 175
7.3.1.5 Acceptance criteria 176

7.3.2 UE recognising the priority order of the User controlled PLMN selector over the Operator controlled PLMN selector list. 177
7.3.2.1 Definition and applicability 177
7.3.2.2 Conformance requirement 177
7.3.2.3 Test purpose 177
7.3.2.4 Method of test 178
7.3.2.4.1 Initial conditions 178
7.3.2.4.2 Procedure 179
7.3.2.5 Acceptance criteria 180
7.3.3 UE recognising the priority order of the Operator controlled PLMN selector list when accessing E-UTRAN 181
7.3.3.1 Definition and applicability 181
7.3.3.2 Conformance requirement 181
7.3.3.3 Test purpose 181
7.3.3.4 Method of test 181
7.3.3.4.1 Initial conditions 181
7.3.3.4.2 Procedure 183
7.3.3.5 Acceptance criteria 183
7.3.4 UE recognising the priority order of the User controlled PLMN selector over the Operator controlled PLMN selector list – E-UTRAN 183
7.3.4.1 Definition and applicability 183
7.3.4.2 Conformance requirement 183
7.3.4.3 Test purpose 184
7.3.4.4 Method of test 184
7.3.4.4.1 Initial conditions 184
7.3.4.4.2 Procedure 184
7.3.4.5 Acceptance criteria 185
7.4 Higher priority PLMN search handling 185
7.4.1 UE recognising the search period of the Higher priority PLMN 185
7.4.1.1 Definition and applicability 185
7.4.1.2 Conformance requirement 185
7.4.1.3 Test purpose 185
7.4.1.4 Method of test 186
7.4.1.4.1 Initial conditions 186
7.4.1.4.2 Procedure 186
7.4.1.5 Acceptance criteria 189
7.4.2 GSM/UMTS dual mode UEs recognising the search period of the Higher priority PLMN 190
7.4.2.1 Definition and applicability 190
7.4.2.2 Conformance requirement 190
7.4.2.3 Test purpose 190
7.4.2.4 Method of test 190
7.4.2.4.1 Initial conditions 190
7.4.2.4.2 Procedure 191
7.4.2.5 Acceptance criteria 192
7.4.3 UE recognising the search period of the Higher priority PLMN – E-UTRAN 193
7.4.3.1 Definition and applicability 193
7.4.3.2 Conformance requirement 193
7.4.3.3 Test purpose 194
7.4.3.4 Method of test 194
7.4.3.4.1 Initial conditions 194
7.4.3.4.2 Procedure 194
7.4.3.5 Acceptance criteria 195
7.4.4 E-UTRAN/EPC capable UEs recognising the search period of the Higher priority PLMN – GSM/E-UTRAN 195
7.4.4.1 Definition and applicability 195
7.4.4.2 Conformance requirement 195
7.4.4.3 Test purpose 195
7.4.4.4 Method of test 196
7.4.4.4.1 Initial conditions 196
7.4.4.4.2 Procedure 197
7.4.4.5 Acceptance criteria 197

7.4.5 E-UTRAN/EPC capable UEs recognising the search period of the Higher priority PLMN – UTRAN/E-UTRAN 198
7.4.5.1 Definition and applicability 198
7.4.5.2 Conformance requirement 198
7.4.5.3 Test purpose 198
7.4.5.4 Method of test 198
7.4.5.4.1 Initial conditions 198
7.4.5.4.2 Procedure 199
7.4.5.5 Acceptance criteria 200
7.5 Void 200

8 Subscription independent tests 201
8.1 Phone book procedures 201
8.1.1 Recognition of a previously changed phonebook 201
8.1.1.1 Definition and applicability 201
8.1.1.2 Conformance requirement 201
8.1.1.3 Test purpose 201
8.1.1.4 Method of test 201
8.1.1.4.1 Initial conditions 201
8.1.1.4.2 Procedure 202
8.1.1.5 Acceptance criteria 202
8.1.2 Update of the Phonebook Synchronisation Counter (PSC) 202
8.1.2.1 Definition and applicability 202
8.1.2.2 Conformance requirement 202
8.1.2.3 Test purpose 203
8.1.2.4 Method of test 203
8.1.2.4.1 Initial conditions 203
8.1.2.4.2 Procedure 203
8.1.2.5 Acceptance criteria 204
8.1.3 Phonebook content handling 204
8.1.3.1 Handling of BCD number/ SSC content extension 204
8.1.3.1.1 Definition and applicability 204
8.1.3.1.2 Conformance requirement 204
8.1.3.1.3 Test purpose 204
8.1.3.1.4 Method of test 204
8.1.3.1.5 Acceptance criteria 207
8.1.4 Phonebook selection 208
8.1.4.1 Definition and applicability 208
8.1.4.2 Conformance requirement 208
8.1.4.3 Test purpose 208
8.1.4.4 Method of test 209
8.1.4.4.1 Initial conditions 209
8.1.4.4.2 Procedure 211
8.1.4.5 Acceptance criteria 212
8.1.5 Local Phonebook handling 212
8.1.5.1 Definition and applicability 212
8.1.5.2 Conformance requirement 213
8.1.5.3 Test purpose 213
8.1.5.4 Method of test 213
8.1.5.4.1 Initial conditions 213
8.1.5.4.2 Procedure 214
8.1.5.5 Acceptance criteria 214
8.2 Short message handling report 215
8.2.1 Correct storage of a SM on the USIM 215
8.2.1.1 Definition and applicability 215
8.2.1.2 Conformance requirement 215
8.2.1.3 Test purpose 215
8.2.1.4 Method of test 215
8.2.1.4.1 Initial conditions 215
8.2.1.4.2 Procedure 216
8.2.1.5 Acceptance criteria 216
8.2.2 Correct reading of a SM on the USIM 216

8.2.2.1 Definition and applicability....216
8.2.2.2 Conformance requirement....216
8.2.2.3 Test purpose....216
8.2.2.4 Method of test....217
8.2.2.4.1 Initial conditions....217
8.2.2.4.2 Procedure....218
8.2.2.5 Acceptance criteria....218
8.2.3 SM memory capacity exceeded handling....218
8.2.3.1 Definition and applicability....218
8.2.3.2 Conformance requirement....218
8.2.3.3 Test purpose....218
8.2.3.4 Method of test....219
8.2.3.4.1 Initial conditions....219
8.2.3.4.2 Procedure....221
8.2.3.5 Acceptance criteria....221
8.2.4 Correct storage of an SM on the UICC....223
8.2.4.1 Definition and applicability....223
8.2.4.2 Conformance requirement....223
8.2.4.3 Test purpose....223
8.2.4.4 Method of test....223
8.2.4.4.1 Initial conditions....223
8.2.4.4.2 Procedure....225
8.2.4.5 Acceptance criteria....226
8.2.5 Correct reading of a SM on the USIM if USIM and ISIM are present....227
8.2.5.1 Definition and applicability....227
8.2.5.2 Conformance requirement....227
8.2.5.3 Test purpose....227
8.2.5.4 Method of test....228
8.2.5.4.1 Initial conditions....228
8.2.5.4.2 Procedure....229
8.2.5.5 Acceptance criteria....229
8.2.6 Correct reading of a SM on the ISIM if USIM and ISIM are present....229
8.2.6.1 Definition and applicability....229
8.2.6.2 Conformance requirement....229
8.2.6.3 Test purpose....230
8.2.6.4 Method of test....230
8.2.6.4.1 Initial conditions....230
8.2.6.4.2 Procedure....231
8.2.6.5 Acceptance criteria....231
8.3 MMS related tests....232
8.3.1 UE recognising the priority order of MMS Issuer Connectivity Parameters....232
8.3.1.1 Definition and applicability....232
8.3.1.2 Conformance requirement....232
8.3.1.3 Test purpose....232
8.3.1.4 Method of test....232
8.3.1.4.1 Initial conditions....232
8.3.1.4.2 Procedure....237
8.3.1.5 Acceptance criteria....237
8.3.2 UE recognising the priority order of MMS User Connectivity Parameters....237
8.3.2.1 Definition and applicability....237
8.3.2.2 Conformance requirement....237
8.3.2.3 Test purpose....238
8.3.2.4 Method of test....238
8.3.2.4.1 Initial conditions....238
8.3.2.4.2 Procedure....243
8.3.2.5 Acceptance criteria....243
8.3.3 UE recognising the priority order of MMS Issuer Connectivity Parameters over the MMS User Connectivity Parameters....243
8.3.3.1 Definition and applicability....243
8.3.3.2 Conformance requirement....244
8.3.3.3 Test purpose....244
8.3.3.4 Method of test....244

8.3.3.4.1 Initial conditions 244
8.3.3.4.2 Procedure 250
8.3.3.5 Acceptance criteria 250
8.3.4 Usage of MMS notification 250
8.3.4.1 Definition and applicability 250
8.3.4.2 Conformance requirement 250
8.3.4.3 Test purpose 251
8.3.4.4 Method of test 251
8.3.4.4.1 Initial conditions 251
8.3.4.4.2 Procedure 255
8.3.4.5 Acceptance criteria 255
8.4 UICC presence detection 256
8.4.1 Definition and applicability 256
8.4.2 Conformance requirement 256
8.4.3 Test purpose 256
8.4.4 Method of test 257
8.4.4.1 Initial conditions 257
8.4.4.2 Procedure 257
8.4.5 Acceptance criteria 257
8.5 UICC presence detection when connected to E-UTRAN/EPC 257
8.5.1 Definition and applicability 257
8.5.2 Conformance requirement 257
8.5.3 Test purpose 257
8.5.4 Method of test 258
8.5.4.1 Initial conditions 258
8.5.4.2 Procedure 258
8.5.5 Acceptance criteria 258

9 USIM service handling 258
9.1 Access Point Name Control List handling 258
9.1.1 Access Point Name Control List handling for terminals supporting ACL 258
9.1.1.1 Definition and applicability 258
9.1.1.2 Conformance requirement 258
9.1.1.3 Test purpose 259
9.1.1.4 Method of test 259
9.1.1.4.1 Initial conditions 259
9.1.1.4.2 Procedure 259
9.1.1.5 Acceptance criteria 260
9.1.2 Network provided APN handling for terminals supporting ACL 260
9.1.2.1 Definition and applicability 260
9.1.2.2 Conformance requirement 260
9.1.2.3 Test purpose 260
9.1.2.4 Method of test 261
9.1.2.4.1 Initial conditions 261
9.1.2.4.2 Procedure 261
9.1.2.5 Acceptance criteria 262
9.1.3 Access Point Name Control List handling for terminals not supporting ACL 262
9.1.3.1 Definition and applicability 262
9.1.3.2 Conformance requirement 262
9.1.3.3 Test purpose 262
9.1.3.4 Method of test 262
9.1.3.4.1 Initial conditions 262
9.1.3.4.2 Procedure 263
9.1.3.5 Acceptance criteria 263
9.1.4 Access Point Name Control List handling for terminals supporting ACL connected to E-UTRAN/EPC 263
9.1.4.1 Definition and applicability 263
9.1.4.2 Conformance requirement 263
9.1.4.3 Test purpose 264
9.1.4.4 Method of test 264
9.1.4.4.1 Initial conditions 264
9.1.4.4.2 Procedure 264

9.1.4.5 Acceptance criteria 265
9.1.5 Network provided APN handling for terminals supporting ACL connected to E-UTRAN/EPC 265
9.1.5.1 Definition and applicability 265
9.1.5.2 Conformance requirement 265
9.1.5.3 Test purpose 266
9.1.5.4 Method of test 266
9.1.5.4.1 Initial conditions 266
9.1.5.4.2 Procedure 266
9.1.5.5 Acceptance criteria 267
9.1.6 Void 267
9.2 Service Dialling Numbers handling 267
9.2.1 Definition and applicability 267
9.2.2 Conformance requirement 267
9.2.3 Test purpose 267
9.2.4 Method of test 268
9.2.4.1 Initial conditions 268
9.2.4.2 Procedure 270
9.2.5 Acceptance criteria 270

10 CSG list handling 271
10.1 CSG list handling for E-UTRA 271
10.1.1 Automatic CSG selection in E-UTRA with CSG list on USIM, success 271
10.1.1.1 Definition and applicability 271
10.1.1.2 Conformance requirement 271
10.1.1.3 Test purpose 271
10.1.1.4 Method of test 271
10.1.1.4.1 Initial conditions 271
10.1.1.4.2 Procedure 272
10.1.1.5 Acceptance criteria 272
10.1.2 Automatic CSG selection in E-UTRA with CSG list on USIM, removal of CSG ID from the USIM 273
10.1.2.1 Definition and applicability 273
10.1.2.2 Conformance requirement 273
10.1.2.3 Test purpose 273
10.1.2.4 Method of test 273
10.1.2.4.1 Initial conditions 273
10.1.2.4.2 Procedure 274
10.1.2.5 Acceptance criteria 274
10.1.3 Manual CSG selection in E-UTRA with CSG list on USIM, success 275
10.1.3.1 Definition and applicability 275
10.1.3.2 Conformance requirement 275
10.1.3.3 Test purpose 275
10.1.3.4 Method of test 275
10.1.3.4.1 Initial conditions 275
10.1.3.4.2 Procedure 276
10.1.3.5 Acceptance criteria 276
10.1.4 Manual CSG selection in E-UTRA with CSG list on USIM, rejected 278
10.1.4.1 Definition and applicability 278
10.1.4.2 Conformance requirement 278
10.1.4.3 Test purpose 278
10.1.4.4 Method of test 278
10.1.4.4.1 Initial conditions 278
10.1.4.4.2 Procedure 279
10.1.4.5 Acceptance criteria 279
10.1.5 CSG selection in E-UTRA with no CSG list on USIM, no IMSI change 280
10.1.5.1 Definition and applicability 280
10.1.5.2 Conformance requirement 280
10.1.5.3 Test purpose 280
10.1.5.4 Method of test 281
10.1.5.4.1 Initial conditions 281
10.1.5.4.2 Procedure 281
10.1.5.5 Acceptance criteria 282
10.1.6 CSG selection in E-UTRA with no CSG list on USIM, with IMSI change 283

10.1.6.1 Definition and applicability....283
10.1.6.2 Conformance requirement....283
10.1.6.3 Test purpose....283
10.1.6.4 Method of test....283
10.1.6.4.1 Initial conditions....283
10.1.6.4.2 Procedure....284
10.1.6.5 Acceptance criteria....285

11 NAS security context parameter handling....285
11.1 NAS security context parameter handling when service "EMM Information" is available....285
11.1.1 Definition and applicability....285
11.1.2 Conformance requirement....285
11.1.3 Test purpose....286
11.1.4 Method of test....286
11.1.4.1 Initial conditions....286
11.1.4.2 Procedure....286
11.1.5 Acceptance criteria....287
11.2 NAS security context parameter handling when service "EMM Information" is not available, no IMSI change....287
11.2.1 Definition and applicability....287
11.2.2 Conformance requirement....287
11.2.3 Test purpose....288
11.2.4 Method of test....288
11.2.4.1 Initial conditions....288
11.2.4.2 Procedure....288
11.2.5 Acceptance criteria....289
11.3 NAS security context parameter handling when service "EMM Information" is not available, IMSI changed....289
11.3.1 Definition and applicability....289
11.3.2 Conformance requirement....289
11.3.3 Test purpose....290
11.3.4 Method of test....290
11.3.4.1 Initial conditions....290
11.3.4.2 Procedure....290
11.3.5 Acceptance criteria....291

Annex A (informative): Change history....292

History....294

Foreword

This Technical Specification (TS) 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.

Introduction

The present document defines the application test specification.

The aim of the present document is to ensure interoperability between an UICC and a terminal independently of the respective manufacturer, card issuer or operator. 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 reflected over the interface.

Application specific details for applications residing on an UICC are specified in the respective application specific documents. The logical and physical Characteristics of the UICC Terminal interface is specified in document ETSI TS 102 221 [5]. The Universal Subscriber Identity Module (USIM)-application for 3G telecommunication networks is specified in document TS 31.102 [4].

1 Scope

The present document provides the UICC –Terminal Interface Conformance Test Specification between a 2G, 3G or 3G E-UTRAN terminal and the USIM (Universal Subscriber Identity Module) as an application on the UICC and the Terminal for a 2G, 3G or 3G E-UTRAN network operation:

- the default setting of the USIM;
- the applicability of each test case;
- the test configurations;
- the conformance requirement and reference to the core specifications;
- the test purposes; and
- a brief description of the test procedure and the specific acceptance criteria.

For the avoidance of doubt, references to clauses of ETSI TS 102 221 [5] include all the subclauses of that clause, unless specifically mentioned.

ETSI TS 102 221 [5] contains material that is outside of the scope of 3GPP requirements. 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 for features defined in ETSI TS 102 221 [5] which are out of 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 in same release as the implementation release of the terminal under test applies.

[1] Void

[2] Void

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

[4] 3GPP TS 31.102: "Characteristics of the USIM application".

[5] If the device under test is a
- R99 ME: ETSI TS 102 221 v3.18.0: "UICC-Terminal interface; Physical and logical characteristics",
- Rel-4 ME: ETSI TS 102 221 v4.16.0: "UICC-Terminal interface; Physical and logical characteristics",
- Rel-5 ME: ETSI TS 102 221 v5.10.0: "UICC-Terminal interface; Physical and logical characteristics",
- Rel-6 ME: ETSI TS 102 221 v6.15.0: "UICC-Terminal interface; Physical and logical characteristics",
- Rel-7 ME: ETSI TS 102 221 v7.17.0: "UICC-Terminal interface; Physical and logical characteristics",
- Rel-8 ME: ETSI TS 102 221 v8.4.0: "UICC-Terminal interface; Physical and logical characteristics",
- Rel-9 ME: ETSI TS 102 221 v9.0.0: "UICC-Terminal interface; Physical and logical characteristics".

[6] 3GPP TS 22.011: "Service accessibility".

[7] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[8] 3GPP TS 22.024: "Description of Charge Advice Information (CAI)".

[9] 3GPP TS 23.086: "Advice of Charge (AoC) Supplementary Service – Stage 2".

[10] 3GPP TS 24.086: "Advice of Charge (AoC) Supplementary Service – Stage 3".

[11] 3GPP TS 22.101: "Service aspects; Service principles".

[12] 3GPP TS 22.030: "Man-Machine Interface (MMI) of the User Equipment (UE)".

[13] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS)".

[14] 3GPP TS 23.003: "Numbering, Addressing and Identification".

[15] 3GPP TS 44.018: "Mobile radio interface layer 3 specification; Radio Resource Control Protocol".

[16] 3GPP TS 24.008: "Mobile radio interface Layer 3 specification; Core Network protocols; Stage 3".

[17] 3GPP TS 24.080: "Mobile radio Layer 3 supplementary service specification; Formats and coding".

[18] 3GPP TS 22.086: "Advice of Charge (AoC) supplementary services; Stage 1".

[19] 3GPP TS 21.111: "USIM and IC card requirements".

[20] 3GPP TS 25.331 "Radio Resource Control (RRC); Protocol Specification".

[21] 3GPP TS 34.108 "Common test environments for User Equipment (UE) conformance testing".

[22] 3GPP TS 51.010-1 "Mobile Station (MS) conformance specification; Part1: Conformance specification".

[23] 3GPP TS 23.140 Release 6 "Multimedia Messaging Service (MMS); Functional description; Stage 2".

[24] 3GPP TS 24.002 "GSM – UMTS Public Land Mobile Network (PLMN) Access Reference Configuration".

[25] 3GPP TS 23.060 "General Packet Radio Service (GPRS); Service description; Stage 2".

[26] 3GPP TS 24.301: "Technical Specification Group Core Network and Terminals; Non-Access-Stratum (NAS) protocol for Evolved Packet Systems (EPS): Stage 3".

[27] 3GPP TS 33.401: "3GPP System Architecture Evolution (SAE); Security architecture".

[28] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA) Radio Resource Control (RRC); Protocol specification".

[29] 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"

[30] 3GPP TS 36.523-2 " Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC);User Equipment (UE) conformance specification;Part 2: Implementation Conformance Statement (ICS) proforma specification"

[31] 3GPP TS 23.122: "Non-Access-Stratum functions related to Mobile Station (MS) in idle mode".

[32] 3GPP TS 31.103: "Characteristics of the IP Multimedia Services Identity Module (ISIM) application".

[33] 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".

3 Definitions, symbols, abbreviations and coding

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply.

Application DF (ADF): entry point to an application

access conditions: set of security attributes associated with a file

access technology: Radio Access Technology of the Terminal (e.g. E-UTRAN, UTRAN or GSM)

application: consists of a set of security mechanisms, files, data and protocols (excluding transmission protocols)

application protocol: set of procedures required by the application

card session: link between the card and the external world starting with the ATR and ending with a subsequent reset or a deactivation of the card

current directory: latest MF or DF or ADF selected

current EF: latest EF selected

data object: information coded as TLV objects, i.e. consisting of a Tag, a Length and a Value part

Dedicated File (DF): file containing access conditions and, optionally, Elementary Files (Efs) or other Dedicated Files (DFs)

directory: general term for MF, DF and ADF

Elementary File (EF): file containing access conditions and data and no other files

file: directory or an organised set of bytes or records in the UICC

file identifier: 2 bytes which address a file in the UICC

function: function contains a command and a response pair

GSM session: that part of the card session dedicated to the GSM operation

Master File (MF): unique mandatory file containing access conditions and optionally DFs and/or Efs

MMS Relay/Server: MMS-specific network entity/application that is under the control of the MMS service provider

NOTE: An MMS Relay/Server transfers messages, provides operations of the MMS that are specific or required by the mobile environment and provides (temporary and/or persistent) storage services to the MMS

MMS User Agent: application residing on a UE or an external device that performs MMS-specific operations on a user"s behalf

normal USIM operation: relating to general, PIN related, LTE and/or 3G and/or GSM security and subscription related procedures

record: string of bytes within an EF handled as a single entity

record number: number, which identifies a record within an EF

record pointer: pointer, which addresses one record in an EF

terminal: device into which a UICC can be inserted and which is capable of providing access to 3GPP system services to users, either alone or in conjunction with a UICC

User Equipment (UE): terminal with a UICC inserted with one or several Universal Subscriber Identity Module(s) (USIM) available for access either E-UTRANor UTRAN or GERAN or any combination.

USIM session: USIM session is a selectable application session for a USIM application

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 following abbreviations apply:

2G	2nd Generation
3G	3rd Generation
3GPP	3rd Generation Partnership Project
ACC	Access Class
ACL	APN Control List
ACM	Accumulated Call Meter
ACMmax	ACM maximal value
ACT	Access Technology
ADF	Application Dedicated File
AoC	Advice of Charge
AoCC	Advice of Charge Charging
APN	Access Point Name
ASME	Access Security Management Entity
ATR	Answer To Reset
BCCH	Broadcast Control Channel
BCD	Binary Coded Decimal
BDN	Barred Dialling Number
CCI	Capability / Configuration1 Identifier
CCI2	Capability / Configuration(2) Identifier
CCM	Current Call Meter
CK	Cipher key
CN	Core Network
CS	Circuit switched
CSG	Closed Subscriber Group
DF	Dedicated File
EPC	Evolved Packet Core
E-USS	Evolved UMTS System Simulator
E-UTRA	Evolved UTRA
EF	Elementary File
eFDD	evolved Frequency Division Duplex
EMM	EPS Mobility Management
EMMI	Electrical Man Machine Interface
EPS	Evolved Packet System
eTDD	evolved Time Division Duplex
Ext n	Extension n
FDD	Frequency Division Duplex
FDN	Fixed Dialling Number
FPLMN	Forbidden PLMN
GSM	Global System for Mobile communications
HNB	Home NodeB
HeNB	Home eNodeB
HPLMN	Home PLMN
ICC	Integrated Circuit Card
ID	Identifier

IEC	International Electrotechnical Commission
IK	Integrity key
IMSI	International Mobile Subscriber Identity
ISO	International Organization for Standardization
KSI	Key Set Identifier
LAC	Location Area Code
LAI	Location Area Information
LSB	Least Significant Bit
MCC	Mobile Country Code
MF	Master File
MM	Multimedia Message
MMI	Man Machine Interface
MMS	Multimedia Messaging Service
MNC	Mobile Network Code
MS	Mobile Station
MSB	Most Significant Bit
NAS	Non Access Stratum
NPI	Numbering Plan Identifier
OFM	Operational Feature Monitor
OSI	Open System Interconnection
P1	Parameter 1
P2	Parameter 2
P3	Parameter 3
PIN	Personal Identification Number
PLMN	Public Land Mobile Network
PS	Packet switched
RACH	Random Access Channel
RFU	Reserved for Future Use
RRC	Radio Resource Control
SFI	Short File Identifier
SM	Short Message
SMS	Short Message Service
SS	System Simulator (GSM)
TDD	Time Division Duplex
TE	Terminal Equipment
TLV	Tag Length Value
TMSI	Temporary Mobile Subscriber Identity
TON	Type Of Number
UE	User Equipment
USIM	Universal Subscriber Identity Module
USS	UMTS System Simulator
UTRA	Universal Terrestrial Radio Access
UTRAN	UMTS Terrestrial Radio Access Network
VPLMN	Visitor PLMN

3.4 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 a GSM or 3G session.

The coding of all data objects in the present document is according to ETSI TS 102 221 [5]. All data objects are BER-TLV except if otherwise defined.

3.5 Generic procedures for E-UTRAN/UTRAN/GERAN/IMS

If a test case contains the statement "This test applies to Terminals accessing E-UTRAN", the procedures defined in TS 36.508 [29] shall be the basis for all performed procedures during the test. The procedures in subclause 4.5 describe the default behaviour of a conformant UE regarding the specified protocols to be used for E-UTRAN and the required procedures from the NAS.

If a test case contains the statement "This test applies to Terminals accessing UTRAN", the procedures defined in TS 34.108 [21], subclause 7.2 shall be the basis for all performed procedures during the test. The procedures in subclause 7 describe the default behaviour of a conformant UE regarding the specified protocols to be used for UTRAN and the required procedures from the NAS.

If a test case contains the statement "This test applies to Terminals accessing GERAN", the procedures defined in TS 51.010-1 [22], subclause 10 shall be the basis for all performed procedures during the test. The procedures in subclause 10 describe the default behaviour of a conformant UE regarding the specified protocols to be used for GERAN and the required procedures from the NAS.

3GPP TS 34.229-1[33], Annex C describes the generic test procedures for IMS.

3.6 Applicability

3.6.1 Applicability of the present document

The present document applies to a terminal equipment supporting the USIM.

3.6.2 Applicability to terminal equipment

The applicability to terminal equipment supporting the USIM is specified in table B.1, unless otherwise specified in the specific clause.

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 table A.1.

The "Release XY ME" 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.

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.

3.7 Table of optional features

Support of several features is optional or release dependent for the terminal equipment. However, if an ME states conformance with a specific 3GPP release, it is mandatory for the ME 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.

Table A.1: Options

Item	Option	Status	Support	Mnemonic
1	Support of CS	O		O_CS
2	Support of a feature requiring PIN2 entry (such as e.g. AoC or FDN)	O		O_PIN2_ENTRY_FEAT
3	Support of UTRAN access	C001		O_UTRAN
4	Support of GERAN access	C002		O_GERAN
5	Support of Fixed Dialling Numbers	O		O_FDN
6	Support of Advice of Charge Charging	O		O_AoCC
7	Support of Higher priority PLMN selector with Access Technology service (Implementation is optional in Rel-6 and onwards)	C003		O_HPLMNwACT
8	Support of local phonebook	C004		O_Local_PB
9	Support of global phonebook	C004		O_Global_PB
10	Support of storing received Class 2 Short Messages in the USIM	O		O_Store_Received_SMS
11	Support of MMS	O		O_MMS
12	Support of usage of MMS related data stored on the USIM	C005		O_MMS_USIM_DATA
13	Supported of unselected user MMS connectivity parameters	O		O_NO_USER_MMS_CONF_SELEC
14	Support of MMS notification storage on the USIM	O		O_MMS_NOTIF_STORAGE
15	Support of ACL	C006		O_ACL
16	Support of SDN	O		O_SDN
17	Support of numerical entry of PLMN codes in EF PLMNwACT	O		O_EFPLMNwACT_numerical entry
18	Terminal does support speech call	O		O_Speech_Calls
19	Terminal support PIN MMI strings	O		O_PIN_MMI_Strings
20	Terminal does support eFDD	O		pc_eFDD
21	Terminal does support eTDD	O		pc_eTDD
22	Terminal does support CSG list handling	O		pc_Allowed_CSG_list
23	Terminal supports SM-over-IP-receiver	O		pc_SM-over-IP receiver
24	Terminal supports reading SMS' stored in EF SMS on the USIM if USIM and ISIM are present	O		pc_USIM_EF_SMS_reading_support_if_USIM_ISIM both present
25	Terminal supports reading SMS' stored in EF SMS on the ISIM if USIM and ISIM are present	O		pc_ISIM_EF_SMS_reading_support_if_USIM_ISIM both present
26	Terminal can store more than 1000 text messages	O		O_LARGE_SMS_STORAGE

C001 If terminal is 3G terminal then M else N/A
C002 If terminal is 2G terminal then M else O
C003 If Higher priority PLMN selector with Access Technology service is implemented according to Rel-6 or later then O else M
C004 If (A.1/18 is supported) AND (terminal is implemented according to Rel-6 or later) then M, else O
C005 If ((A.1/11 is NOT supported) OR (terminal is implemented according to R99)) then N/A else if terminal is implemented according to Rel-4 then O else M
C006 If (A.1/20 is supported or A.1/21 is supported) then M else O

3.8 Applicability table

Table B.1: Applicability of tests

Item	Description	Tested feature defined in Release	Test sequence(s)	R99 ME	Rel-4 ME	Rel-5 ME	Rel-6 ME	Rel-7 ME	Rel-8 ME	Rel-9 ME	Rel-10 ME	Rel-11 ME	Network Dependency	Support	Additional test case execution recommendation

Item	Description	Tested feature defined in Release	Test sequence(s)	R99 ME	Rel-4 ME	Rel-5 ME	Rel-6 ME	Rel-7 ME	Rel-8 ME	Rel-9 ME	Rel-10 ME	Rel-11 ME	Network Dependency	Support	Additional test case execution recommendation
1	UE identification by short IMSI	R99	5.1.1	M	M	M	M	M	M	M	M	M	UMTS System Simulator or System Simulator only		
2	UE identification by short IMSI using 2 digit MNC	R99	5.1.2	M	M	M	M	M	M	M	M	M	UMTS System Simulator or System Simulator only		
3	UE identification by "short" TMSI	R99	5.1.3	C004	C004	C004	C004	C004	C004	C004	C004	C004	UMTS System Simulator or System Simulator only		
4	UE identification by "long" TMSI	R99	5.1.4	C004	C004	C004	C004	C004	C004	C004	C004	C004	UMTS System Simulator or System Simulator only		
5	UE identification by long IMSI, TMSI updating after key set identifier assignment	R99	5.1.5	C004	C004	C004	C004	C004	C004	C004	C004	C004	UMTS System Simulator or System Simulator only		
6	UE identification by short IMSI when accessing E-UTRAN/EPC	Rel-8	5.1.6	N/A	N/A	N/A	N/A	N/A	C027	C027	C027	C027	E-UTRAN System Simulator only		
7	UE identification by short IMSI using 2 digit MNC when accessing E-UTRAN/EPC	Rel-8	5.1.7	N/A	N/A	N/A	N/A	N/A	C027	C027	C027	C027	E-UTRAN System Simulator only		

Item	Description	Tested feature defined in Release	Test sequence(s)	R99 ME	Rel-4 ME	Rel-5 ME	Rel-6 ME	Rel-7 ME	Rel-8 ME	Rel-9 ME	Rel-10 ME	Rel-11 ME	Network Dependency	Support	Additional test case execution recommendation
8	UE identification after changed IMSI with service "EMM Information" not available	Rel-8	5.1.8	N/A	N/A	N/A	N/A	N/A	C027	C027	C027	C027	E-UTRAN System Simulator only		
9	UE identification by GUTI when using USIM with service "EMM Information" not available	Rel-8	5.1.9	N/A	N/A	N/A	N/A	N/A	C027	C027	C027	C027	E-UTRAN System Simulator only		
10	UE identification by GUTI when using USIM with service "EMM Information" available	Rel-8	5.1.10	N/A	N/A	N/A	N/A	N/A	C027	C027	C027	C027	E-UTRAN System Simulator only		
11	Access Control information handling	R99	5.2.1	C024	C024	C024	C024	C024	C024	C024	C024	C024	UMTS System Simulator or System Simulator only		
12	Access Control information handling for E-UTRAN/EPC	Rel-8	5.2.2	N/A	N/A	N/A	N/A	N/A	C027	C027	C027	C027	E-UTRAN System Simulator only		
13	Entry of PIN	R99	6.1.1	M	M	M	M	M	M	M	M	M	No		
14	Change of PIN	R99	6.1.2	M	M	M	M	M	M	M	M	M	No		
15	Unblock PIN	R99	6.1.3	C025	C025	C025	C025	C025	C025	C025	C025	C025	No		
16	Entry of PIN2	R99	6.1.4	C005	C005	C005	C005	C005	C005	C005	C005	C005	No		
17	Change of PIN2	R99	6.1.5	C005	C005	C005	C005	C005	C005	C005	C005	C005	No		
18	Unblock PIN2	R99	6.1.6	C026	C026	C026	C026	C026	C026	C026	C026	C026	No		
19	Replacement of PIN	R99	6.1.7	M	M	M	M	M	M	M	M	M	No		
20	Change of Universal PIN	R99	6.1.8	M	M	M	M	M	M	M	M	M	No		
21	Unblock Univesal PIN	R99	6.1.9	M	M	M	M	M	M	M	M	M	No		
22	Entry of PIN on multi-verification capable UICCs	Rel-4	6.1.10	N/A	M	M	M	M	M	M	M	M	No		

Item	Description	Tested feature defined in Release	Test sequence(s)	R99 ME	Rel-4 ME	Rel-5 ME	Rel-6 ME	Rel-7 ME	Rel-8 ME	Rel-9 ME	Rel-10 ME	Rel-11 ME	Network Dependency	Support	Additional test case execution recommendation
23	Change of PIN on multi-verification capable UICCs	Rel-4	6.1.11	N/A	M	M	M	M	M	M	M	M	No		
24	Unblock PIN on multi-verification capable UICCs	Rel-4	6.1.12	N/A	C025	C025	C025	C025	C025	C025	C025	C025	No		
25	Entry of PIN2 on multi-verification capable UICCs	Rel-4	6.1.13	N/A	C005	C005	C005	C005	C005	C005	C005	C005	No		
26	Change of PIN2 on multi-verification capable UICCs	Rel-4	6.1.14	N/A	C005	C005	C005	C005	C005	C005	C005	C005	No		
27	Unblock PIN2 on multi-verification capable UICCs	Rel-4	6.1.15	NA/	C026	C026	C026	C026	C026	C026	C026	C026	No		
28	Replacement of PIN with key reference "07"	Rel-4	6.1.16	N/A	M	M	M	M	M	M	M	M	No		
29	Terminal and USIM with FDN enabled, EF_{ADN} readable and updateable	R99	6.2.1	C006	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	UMTS System Simulator or System Simulator only		
30	Terminal and USIM with FDN disabled	R99	6.2.2	C006	C006	C006	C006	C006	C006	C006	C006	C006	UMTS System Simulator or System Simulator only		
31	Enabling, disabling and updating FDN	R99	6.2.3	C006	C006	C006	C006	C006	C006	C006	C006	C006	UMTS System Simulator or System Simulator only		
32	Terminal and USIM with FDN enabled, EF_{ADN} readable and updateable (Rel-4 and onwards)	Rel-4	6.2.4	N/A	C006	C006	C006	C006	C006	C006	C006	C006	UMTS System Simulator or System Simulator only		

Item	Description	Tested feature defined in Release	Test sequence(s)	R99 ME	Rel-4 ME	Rel-5 ME	Rel-6 ME	Rel-7 ME	Rel-8 ME	Rel-9 ME	Rel-10 ME	Rel-11 ME	Network Dependency	Support	Additional test case execution recommendation
33	AoC not supported by USIM	R99	6.4.1	C007	C007	C007	C007	C007	C007	C007	C007	C007	UMTS System Simulator or System Simulator only		
34	Maximum frequency of ACM updating	R99	6.4.2	C008	C008	C008	C008	C008	C008	C008	C008	C008	UMTS System Simulator or System Simulator only		
35	Call terminated when ACM greater than ACMmax	R99	6.4.3	C008	C008	C008	C008	C008	C008	C008	C008	C008	UMTS System Simulator or System Simulator only		
36	Response codes of increase command of ACM	R99	6.4.4	C008	C008	C008	C008	C008	C008	C008	C008	C008	UMTS System Simulator or System Simulator only		
37	Adding FPLMN to the forbidden PLMN list	R99	7.1.1	M	M	M	M	M	M	M	M	M	UMTS System Simulator or System Simulator only		
38	UE updating forbidden PLMNs	R99	7.1.2	M	M	M	M	M	M	M	M	M	UMTS System Simulator or System Simulator only		
39	UE deleting forbidden PLMNs	R99	7.1.3	M	M	M	M	M	M	M	M	M	UMTS System Simulator or System Simulator only		

Item	Description	Tested feature defined in Release	Test sequence(s)	R99 ME	Rel-4 ME	Rel-5 ME	Rel-6 ME	Rel-7 ME	Rel-8 ME	Rel-9 ME	Rel-10 ME	Rel-11 ME	Network Dependency	Support	Additional test case execution recommendation
40	Adding FPLMN to the forbidden PLMN list when accessing E-UTRAN	Rel-8	7.1.4	N/A	N/A	N/A	N/A	N/A	C027	C027	C027	C027	E-UTRAN System Simulator only		
41	UE updating forbidden PLMNs when accessing E-UTRAN	Rel-8	7.1.5	N/A	N/A	N/A	N/A	N/A	C027	C027	C027	C027	E-UTRAN System Simulator only		
42	UE deleting forbidden PLMNs when accessing E-UTRAN	Rel-8	7.1.6	N/A	N/A	N/A	N/A	N/A	C027	C027	C027	C027	E-UTRAN System Simulator only		
43	UE updating the User controlled PLMN selector list	R99	7.2.1	C022	C022	C022	C022	C022	C022	C022	C022	C022	No		
44	UE recognising the priority order of the User controlled PLMN selector list with the same access technology	R99	7.2.2	M	M	M	M	M	M	M	M	M	UMTS System Simulator or System Simulator only		
45	UE recognising the priority order of the User controlled PLMN selector list using an ACT preference	R99	7.2.3	C009	C009	C009	C009	C009	C009	C009	C009	C009	UMTS System Simulator and System Simulator		
46	User controlled PLMN selector handling for E-UTRAN	Rel-8	7.2.5	N/A	N/A	N/A	N/A	N/A	C022 AND C027	C022 AND C027	C022 AND C027	C022 AND C027	No		
47	UE recognising the priority order of the User controlled PLMN selector list using an ACT preference – UTRAN/E-UTRAN	Rel-8	7.2.6	N/A	N/A	N/A	N/A	N/A	C022 AND C027	C022 AND C027	C022 AND C027	C022 AND C027	E-UTRAN and UMTS System Simulator		

Item	Description	Tested feature defined in Release	Test sequence(s)	R99 ME	Rel-4 ME	Rel-5 ME	Rel-6 ME	Rel-7 ME	Rel-8 ME	Rel-9 ME	Rel-10 ME	Rel-11 ME	Network Dependency	Support	Additional test case execution recommendation
48	UE recognising the priority order of the User controlled PLMN selector list using an ACT preference – GSM/E-UTRAN	Rel-8	7.2.7	N/A	N/A	N/A	N/A	N/A	C022 AND C027	C022 AND C027	C022 AND C027	C022 AND C027	E-UTRAN and System Simulator		
49	UE recognising the priority order of the Operator controlled PLMN selector list	R99	7.3.1	M	M	M	M	M	M	M	M	M	UMTS System Simulator or System Simulator only		
50	UE recognising the priority order of the User controlled PLMN selector over the Operator controlled PLMN selector list	R99	7.3.2	M	M	M	M	M	M	M	M	M	UMTS System Simulator or System Simulator only		
51	UE recognising the priority order of the Operator controlled PLMN selector list when accessing E-UTRAN	Rel-8	7.3.3	N/A	N/A	N/A	N/A	N/A	C027	C027	C027	C027	E-UTRAN System Simulator only		
52	UE recognising the priority order of the User controlled PLMN selector over the Operator controlled PLMN selector list - E-UTRAN	Rel-8	7.3.4	N/A	N/A	N/A	N/A	N/A	C027	C027	C027	C027	E-UTRAN System Simulator only		
53	UE recognising the search period of the Higher priority PLMN	R99	7.4.1	C010	C010	C010	C010	C010	C010	C010	C010	C010	UMTS System Simulator or System Simulator only		

Item	Description	Tested feature defined in Release	Test sequence(s)	R99 ME	Rel-4 ME	Rel-5 ME	Rel-6 ME	Rel-7 ME	Rel-8 ME	Rel-9 ME	Rel-10 ME	Rel-11 ME	Network Dependency	Support	Additional test case execution recommendation
54	GSM/UMTS dual mode UEs recognising the search period of the Higher priority PLMN	R99	7.4.2	C003	C003	C003	C003	C003	C003	C003	C003	C003	UMTS System Simulator and System Simulator		
55	UE recognising the search period of the Higher priority PLMN – E-UTRAN	Rel-8	7.4.3	N/A	N/A	N/A	N/A	N/A	C010 AND C027	C010 AND C027	C010 AND C027	C010 AND C027	E-UTRAN System Simulator only		
56	E-UTRAN/EPC capable UEs recognising the search period of the Higher priority PLMN – GSM/E-UTRAN	Rel-8	7.4.4	N/A	N/A	N/A	N/A	N/A	C003 AND C027	C003 AND C027	C003 AND C027	C003 AND C027	E-UTRAN and System Simulator		
57	E-UTRAN/EPC capable UEs recognising the search period of the Higher priority PLMN – UTRAN/E-UTRAN	Rel-8	7.4.5	N/A	N/A	N/A	N/A	N/A	C011 AND C027	C011 AND C027	C011 AND C027	C011 AND C027	E-UTRAN and UMTS System Simulator		
58	Recognition of a previously changed phonebook	R99	8.1.1	C012	C012	C012	C012	C012	C012	C012	C012	C012	No		
59	Update of the Phonebook Synchronisation counter (PSC)	R99	8.1.2	C012	C012	C012	C012	C012	C012	C012	C012	C012	No		
60	Handling of BCD number/ SSC content extension	R99	8.1.3.1	N/A	N/A	C013	C013	C013	C013	C013	C013	C013	No		
61	Phonebook selection	R99	8.1.4	N/A	N/A	C014	C014	C014	C014	C014	C014	C014	No		
62	Local Phonebook handling	R99	8.1.5	N/A	N/A	C012	C012	C012	C012	C012	C012	C012	No		
63	Correct storage of a SM on the USIM	R99	8.2.1	C015	C015	C015	C015	C015	C015	C015	C015	C015	UMTS System Simulator or System Simulator only		AER003

Item	Description	Tested feature defined in Release	Test sequence(s)	R99 ME	Rel-4 ME	Rel-5 ME	Rel-6 ME	Rel-7 ME	Rel-8 ME	Rel-9 ME	Rel-10 ME	Rel-11 ME	Network Dependency	Support	Additional test case execution recommendation
64	Correct reading of a SM on the USIM	R99	8.2.2	C015	C015	C015	C015	C015	C015	C015	C015	C015	UMTS System Simulator or System Simulator only		AER004
65	SM memory capacity exceeded handling	R99	8.2.3	C035	C035	C035	C035	C035	C035	C035	C035	C035	UMTS System Simulator or System Simulator only		
66	Correct storage of an SM on the UICC	Rel-7	8.2.4.A					C032	C032	C032	C032	C032	UMTS System Simulator		
67	Correct storage of an SM on the UICC	Rel-8	8.2.4.B						C031	C031	C031	C031	E-UTRAN System Simulator only		
68	Correct reading of a SM on the USIM if USIM and ISIM are present	Rel-7	8.2.5					C033	C033	C033	C033	C033	No		
69	Correct reading of a SM on the ISIM if USIM and ISIM are present	Rel-7	8.2.6					C034	C034	C034	C034	C034	No		
70	UE recognising the priority order of MMS Issuer Connectivity Parameters	Rel-4	8.3.1	N/A	C016	C017	C017	C017	C017	C017	C017	C017	UMTS System Simulator or System Simulator only		
71	UE recognising the priority order of MMS User Connectivity Parameters	Rel-4	8.3.2	N/A	C016	C017	C017	C017	C017	C017	C017	C017	UMTS System Simulator or System Simulator only		

Item	Description	Tested feature defined in Release	Test sequence(s)	R99 ME	Rel-4 ME	Rel-5 ME	Rel-6 ME	Rel-7 ME	Rel-8 ME	Rel-9 ME	Rel-10 ME	Rel-11 ME	Network Dependency	Support	Additional test case execution recommendation
72	UE recognising the priority order of MMS Issuer Connectivity Parameters over the MMS User Connectivity Parameters	Rel-4	8.3.3	N/A	C016	C017	C017	C017	C017	C017	C017	C017	UMTS System Simulator or System Simulator only		
73	Usage of MMS notification	Rel-4	8.3.4	N/A	C018	C018	C018	C018	C018	C018	C018	C018	UMTS System Simulator or System Simulator only		
74	UICC presence detection	Rel-5	8.4	N/A	N/A	M	M	M	M	M	M	M	UMTS System Simulator or System Simulator only		AER001
75	UICC presence detection when connected to E-UTRAN/EPC	Rel-8	8.5	N/A	N/A	N/A	N/A	N/A	C027	C027	C027	C027	E-UTRAN System Simulator only		
76	Access Point Control List handling for terminals supporting ACL	R99	9.1.1	N/A	N/A	C019	C019	C019	C019	C019	C019	C019	UMTS System Simulator or System Simulator only		AER002
77	Network provided APN handling for terminals supporting ACL	R99	9.1.2	N/A	N/A	C019	C019	C019	C019	C019	C019	C019	UMTS System Simulator or System Simulator only		AER002
78	Access Point Control List handling for terminals not supporting ACL	R99	9.1.3	N/A	N/A	C020	C020	C020	C020	C020	C020	C020	UMTS System Simulator or System Simulator only		AER002

Item	Description	Tested feature defined in Release	Test sequence(s)	R99 ME	Rel-4 ME	Rel-5 ME	Rel-6 ME	Rel-7 ME	Rel-8 ME	Rel-9 ME	Rel-10 ME	Rel-11 ME	Network Dependency	Support	Additional test case execution recommendation
79	Access Point Control List handling for terminals supporting ACL connected to E-UTRAN/EPC	Rel-8	9.1.4	N/A	N/A	N/A	N/A	N/A	C029	C029	C029	C029	E-UTRAN System Simulator only		
80	Network provided APN handling for terminals supporting ACL connected to E-UTRAN/EPC	Rel-8	9.1.5	N/A	N/A	N/A	N/A	N/A	C029	C029	C029	C029	E-UTRAN System Simulator only		
81	Void		9.1.6												
82	Service Dialling Numbers handling	R99	9.2	N/A	N/A	N/A	C021	C021	C021	C021	C021	C021	UMTS System Simulator or System Simulator only		
83	Automatic CSG selection in E-UTRA with CSG list on USIM, success	Rel-8	10.1.1	N/A	N/A	N/A	N/A	N/A	C028	C028	C028	C028	E-UTRAN System Simulator only		
84	Automatic CSG selection in E-UTRA with CSG list on USIM, removal of CSG ID from the USIM	Rel-8	10.1.2	N/A	N/A	N/A	N/A	N/A	C028	C028	C028	C028	E-UTRAN System Simulator only		
85	Manual CSG selection in E-UTRA with CSG list on USIM, success	Rel-8	10.1.3	N/A	N/A	N/A	N/A	N/A	C028	C028	C028	C028	E-UTRAN System Simulator only		
86	Manual CSG selection in E-UTRA with CSG list on USIM, rejected	Rel-8	10.1.4	N/A	N/A	N/A	N/A	N/A	C028	C028	C028	C028	E-UTRAN System Simulator only		
87	CSG selection in E-UTRA with no CSG list on USIM, no IMSI change	Rel-8	10.1.5	N/A	N/A	N/A	N/A	N/A	C028	C028	C028	C028	E-UTRAN System Simulator only		

Item	Description	Tested feature defined in Release	Test sequence(s)	R99 ME	Rel-4 ME	Rel-5 ME	Rel-6 ME	Rel-7 ME	Rel-8 ME	Rel-9 ME	Rel-10 ME	Rel-11 ME	Network Dependency	Support	Additional test case execution recommendation
88	CSG selection in E-UTRA with no CSG list on USIM, with IMSI change	Rel-8	10.1.6	N/A	N/A	N/A	N/A	N/A	C028	C028	C028	C028	E-UTRAN System Simulator only		
89	NAS security context parameter handling when service "EMM Information" is available	Rel-8	11.1	N/A	N/A	N/A	N/A	N/A	C027	C027	C027	C027	E-UTRAN System Simulator only		
90	NAS security context parameter handling when service "EMM Information" is not available, no IMSI change	Rel-8	11.2	N/A	N/A	N/A	N/A	N/A	C027	C027	C027	C027	E-UTRAN System Simulator only		
91	NAS security context parameter handling when service "EMM Information" is not available, IMSI changed	Rel-8	11.3	N/A	N/A	N/A	N/A	N/A	C027	C027	C027	C027	E-UTRAN System Simulator only		
92	CSG Type display test	Rel-8											TBD		
93	Home NodeB Name display test	Rel-8											TBD		

Table B.1: Applicability of tests (continued)

C001	(NOT A.1/3) AND A.1/4	-- (NOT O_UTRAN) AND O_GERAN
C002	A.1/1 AND A.1/3	-- O_CS AND O_UTRAN
C003	A.1/3 AND A.1/4	-- O_UTRAN AND O_GERAN
C004	IF (C001 OR C002) THEN M ELSE N/A	-- ((NOT O_UTRAN) AND O_GERAN) OR (O_CS AND O_UTRAN)
C005	IF A.1/2 THEN M ELSE N/A	-- O_PIN2_ENTRY_FEAT
C006	IF (C001 OR C002) AND A.1/5 AND A.1/18 THEN M ELSE N/A	-- (((NOT O_UTRAN) AND O_GERAN) OR (O_CS AND O_UTRAN) AND O_FDN AND O_Speech_Calls
C007	IF (C001 OR C002) AND A.1/6 AND A.1/18 THEN M ELSE N/A	-- (((NOT O_UTRAN) AND O_GERAN) OR (O_CS AND O_UTRAN)) AND O_AoCC AND O_Speech_Calls
C008	IF (C001 OR C002) AND A.1/6 AND A.1/18 THEN O.1 ELSE N/A	-- (((NOT O_UTRAN) AND O_GERAN) OR (O_CS AND O_UTRAN)) AND O_AoCC AND O_Speech_Calls
C009	IF C003 THEN M ELSE N/A	-- O_UTRAN AND O_GERAN
C010	IF (C001 OR (A.1/3 AND (!A.1/4)) OR (C003 AND (!A.1/7))) THEN M ELSE N/A	-- (((NOT O_UTRAN) AND O_GERAN) OR (O_UTRAN AND (NOT O_GERAN)) OR (O_UTRAN AND O_GERAN AND (NOT O_HPLMNwACT)))
C011	IF C003 AND A.1/7 THEN M ELSE O	-- O_UTRAN AND O_GERAN AND O_HPLMNwACT
C012	IF A.1/8 THEN M ELSE N/A	-- O_Local_PB
C013	IF A.1/9 THEN M ELSE N/A	-- O_Global_PB
C014	IF A.1/8 AND A.1/9 THEN M ELSE N/A	-- O_Local_PB AND O_Global_PB
C015	IF A.1/10 THEN M ELSE N/A	-- O_Store_Received_SMS
C016	IF A.1/11 AND A.1/12 AND A.1/13 THEN M ELSE N/A	-- O_MMS AND O_MMS_USIM_DATA AND O_NO_USER_MMS_CONF_SELEC
C017	IF A.1/11 AND A.1/13 THEN M ELSE N/A	-- O_MMS AND O_NO_USER_MMS_CONF_SELEC
C018	IF A.1/11 AND A.1/14 THEN M ELSE N/A	-- O_MMS AND O_MMS_NOTIF_STORAGE
C019	IF A.1/15 THEN M ELSE N/A	-- O_ACL
C020	IF (NOT A.1/15) M ELSE N/A	-- NOT O_ACL
C021	IF A.1/16 THEN M ELSE N/A	-- O_SDN
C022	IF A.1/17 THEN M ELSE N/A	-- O_EFPLMNwACT_numerical entry
C023	IF A.1/18 THEN M ELSE N/A	-- O_Speech_Calls
C024	IF C004 AND A.1/18 THEN M ELSE N/A	-- (((NOT O_UTRAN) AND O_GERAN) OR (O_CS AND O_UTRAN)) AND O_Speech_Calls
C025	IF A.1/19 THEN 'Expected Sequence A' M ELSE 'Expected Sequence B' M	-- O_PIN_MMI_Strings
C026	IF A1/2 AND A.1/19 THEN 'Expected Sequence A' M ELSE IF A.1/2 'Expected Sequence B' M ELSE N/A	-- (O_PIN2_ENTRY_FEAT AND O_PIN_MMI_Strings) OR O_PIN2_ENTRY_FEAT
C027	IF (A.1/20 OR A.1/21) THEN M ELSE N/A	-- pc_eFDD OR pc_eTDD
C028	IF (A.1/20 OR A.1/21) AND A.1/22 THEN M ELSE N/A	-- (pc_eFDD OR pc_eTDD) AND pc_Allowed_CSG_list
C029	IF (A.1/20 OR A.1/21) AND A.1/15 THEN M ELSE N/A	-- (pc_eFDD OR pc_eTDD) AND O_ACL
C030	IF (A.1/20 OR A.1/21) AND NOT A.1/15 THEN M ELSE N/A	-- (pc_eFDD OR pc_eTDD) AND NOT O_ACL
C031	IF (A.1/10 AND A.1/23 AND (A.1/20 OR A.1/21)) THEN M ELSE N/A	-- O_Store_Received_SMS AND pc_SM-over-IP receiver AND (pc_eFDD OR pc_eTDD)
C032	IF (A.1/10 AND AND A.1/23 AND A.1/3) THEN M ELSE	-- O_Store_Received_SMS AND pc_SM-over-IP receiver AND

4 Default Values

All tests defined in the subsequent clauses apply to Terminals using card types specified in ETSI TS 102 221 [5], unless otherwise stated.

The following sequence of tests confirms:

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

b) the correct writing of data to the USIM by the Terminal;

c) the initiation of appropriate procedures by the Terminal;

d) High level protocols.

All tests apply to the USIM application on the UICC.

A USIM simulator will be required as part of the USS. Alternatively, to perform the logical tests, USIMs programmed with specific data may be used. The USIM data is not defined within the initial conditions of the tests unless it differs from the default values defined below.

4.1 Definition of default values for USIM-Terminal interface testing (Default UICC)

A USIM containing the following default values is used for all tests of this present document unless otherwise stated.

For each data item, the logical default values and the coding within the elementary files (EF) of the USIM follow.

NOTE 1: Bx represents byte x of the coding.

NOTE 2: Unless otherwise defined, the coding values are hexadecimal.

4.1.1 Values of the EF's (Default UICC)

4.1.1.1 EF_{IMSI} (IMSI)

Logically: 2460813579

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9
Hex	06	21	64	80	31	75	F9	FF	FF

4.1.1.2 EF_{AD} (Administrative Data)

Logically: Normal operation
OFM to be deactivated by the Terminal
MNC: 3 digit

Coding:	B1	B2	B3	B4
Hex	00	00	00	03

4.1.1.3 EF_{LOCI} (Location Information)

Logically: LAI-MCC: 246
LAI-MNC: 081
LAI-LAC: 0001
TMSI: "FF .. FF"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	FF	FF	FF	FF	42	16	80	00	01	FF	00

4.1.1.4 EF_{Keys} (Ciphering and Integrity Keys)

Logically:
- Key Set Identifier KSI: 0x
- Ciphering Keys CK: xx
- Integrity Keys IK: xx

Coding:	B1	B2	B3	…	B16	B17	B18	…	B30	B31	B32	B33
Hex	0x	xx	xx	…	xx	xx	xx	…	xx	xx	xx	xx

4.1.1.5 EF_{KeysPS} (Ciphering and Integrity Keys for Packet Switched domain)

Logically:
- Key Set Identifier KSI: 0x
- Ciphering Keys CK: xx
- Integrity Keys IK: xx

Coding:	B1	B2	B3	…	B16	B17	B18	…	B31	B32	B33
Hex	0x	xx	xx	…	xx	xx	xx	…	xx	xx	xx

4.1.1.6 EF_{ACC} (Access Control Class)

Logically: One and only one access class from 0 – 9, e.g. class 7 for which the coding is "00 80".

4.1.1.7 EF_{FPLMN} (Forbidden PLMNs)

Besides of the 4 mandatory EF_{FPLMN} 2 optional EF_{FPLMN} are defined according to TS 31.102 [4], subclause 4.2.16.

Logically:
- PLMN1: 234 001 (MCC MNC)
- PLMN2: 234 002
- PLMN3: 234 003
- PLMN4: 234 004
- PLMN5: 234 005
- PLMN6: 234 006

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Hex	32	14	00	32	24	00	32	34	00	32	44	00

	B13	B14	B15	B16	B17	B18
	32	54	00	32	64	00

4.1.1.8 EF_{UST} (USIM Service Table)

Logically:
- Local Phone Book available
- User controlled PLMN selector available
- Fixed dialling numbers available
- Barred dialling numbers available
- The GSM Access available
- The Group Identifier level 1 and level 2 not available
- Service n 33 (Packed Switched Domain) shall be set to '1'
- Enabled Services Table available

Coding:	B1	B2	B3	B4	B5
binary	xx1x xx11	xxxx xxxx	xxxx 1x00	xxxx x1xx	xxxx xx11

The coding of EF_{UST} shall conform with the capabilities of the USIM used.

4.1.1.9 EF_{EST} (Enable Service Table)

Logically: Fixed Dialling Numbers (FDN) disabled.
Barred Dialling Numbers (BDN) disabled.
APN Control list (ACL) disabled

Coding: B1
binary 0000 0000

The coding of EF_{EST} shall conform with the capabilities of the USIM, unused Bits are set to '0'.

4.1.1.10 EF_{ADN} (Abbreviated Dialling Number)

Logically:
At least 10 records, each non empty record unique.

Record 1: Length of alpha identifier: 32 characters;
Alpha identifier: "ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEF";
Length of BCD number: "03";
TON and NPI: Telephony and Unknown;
Dialled number: 123;
CCI: None;
Ext1: None.

Record 1:

Coding:	B1	B2	B3	…	B32	B33	B34	B35	B36	B37	B38	B39	…	B46
Hex	41	42	43	…	46	03	81	21	F3	FF	FF	FF	…	FF

4.1.1.11 $EF_{PLMNwACT}$ (User Controlled PLMN Selector with Access Technology)

Besides of the 8 mandatory PLMNwACT entries 4 optional PLMNwACT entries are defined according to TS 31.102 [4], subclause 4.2.5. The Radio Access Technology identifier for the first two PLMN (1st PLMN and 2nd PLMN) are set to both UTRAN and GSM, all other PLMN to UTRAN only.

Logically:
1st PLMN: 244 081 (MCC MNC)
1st ACT: UTRAN
2nd PLMN: 244 081
2nd ACT: GSM
3rd PLMN: 244 082
3rd ACT: UTRAN
4th PLMN: 244 082
4th ACT: GSM
5th PLMN: 244 003
5th ACT: UTRAN
6th PLMN: 244 004
6th ACT: UTRAN
7th PLMN: 244 005
7th ACT: UTRAN
8th PLMN: 244 006
8th ACT: UTRAN
9th PLMN: 244 007
9th ACT: UTRAN
10th PLMN: 244 008
10th ACT: UTRAN
11th PLMN: 244 009
11th ACT: UTRAN
12th PLMN: 244 010

12th ACT: UTRAN

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15
Hex	42	14	80	80	00	42	14	80	00	80	42	24	80	80	00
	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	42	24	80	00	80	42	34	00	80	00	42	44	00	80	00
	B31	B32	B33	B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45
	42	54	00	80	00	42	64	00	80	00	42	74	00	80	00
	B46	B47	B48	B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60
	42	84	00	80	00	42	94	00	80	00	42	04	10	80	00

4.1.1.12 $EF_{OPLMNwACT}$ (Operator Controlled PLMN Selector with Access Technology)

The Radio Access Technology identifier for the first PLMN is set to both UTRAN and GSM, the other remaining PLMNs to UTRAN only.

Logically:
1st PLMN: 254 001 (MCC MNC)
1st ACT: UTRAN
2nd PLMN: 254 001
2nd ACT: GSM
3rd PLMN: 254 002
3rd ACT: UTRAN
4th PLMN: 254 003
4th ACT: UTRAN
5th PLMN: 254 004
5th ACT: UTRAN
6th PLMN: 254 005
6th ACT: UTRAN
7th PLMN: 254 006
7th ACT: UTRAN
8th PLMN: 254 007
8th ACT: UTRAN

Coding:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Hex	52	14	00	80	00	52	14	00	00	80
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	52	24	00	80	00	52	34	00	80	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	52	44	00	80	00	52	54	00	80	00
	B31	B32	B33	B34	B35	B36	B37	B38	B39	B40
	52	64	00	80	00	52	74	00	80	00

4.1.1.13 Void

4.1.1.14 PIN

Key reference: 01

Logically: 2468

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	32	34	36	38	FF	FF	FF	FF

4.1.1.15 PIN2

Key reference: 81

Logically: 3579

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	33	35	37	39	FF	FF	FF	FF

4.1.1.16 Unblock PIN

Key reference: 01

Logically: 13243546

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	31	33	32	34	33	35	34	36

4.1.1.17 Unblock PIN2

Key reference: 81

Logically: 08978675

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	30	38	39	37	38	36	37	35

4.1.1.18 Other Values of the USIM

All other values of Efs provided by the USIM shall be set to the default values defined in the annex E of TS 31.102 [4]. Some Efs (like the GSM Access files) may necessary for some tests and apply only to those test cases.

4.1.1.19 EF_{PSLOCI} (Packet Switch Location Information)

Logically:
RAI-MCC: 246
RAI-MNC: 081
RAI-LAC: 0001
RAI-RAC: 05
P-TMSI: "FF….FF"
P-TMSI signature value: "FF…FF"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	FF	FF	FF	FF	FF	FF	FF	42	16	80	00

Coding:	B12	B13	B14
Hex	01	05	00

4.1.1.20 Universal PIN

Key reference: 11

Logically: 2839

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	32	38	33	39	FF	FF	FF	FF

4.1.1.21 Unblock Universal PIN

Key reference: 11

Logically: 02030405

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	30	32	30	33	30	34	30	35

4.2 Definition of FDN UICC

The FDN test cases require a different configuration than the one described in subclause 4.1. For that purpose a default FDN UICC is defined. In general the values of the FDN UICC are identical to the default UICC, with the following exceptions.

4.2.1 Values of the EF's (FDN UICC)

4.2.1.1 EF_{UST} (USIM Service Table)

Logically: Local Phone Book available
User controlled PLMN selector available
Fixed dialling numbers available
Barred dialling numbers available
The GSM Access available
The Group Identifier level 1 and level 2 not available.
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available

Coding:	B1	B2	B3	B4	B5
binary	xx1x xx11	xxxx xxxx	xxxx 1x00	xxxx x1xx	xxxx xx11

The coding of EF_{UST} shall conform with the capabilities of the USIM used.

4.2.1.2 EF_{EST} (Enable Service Table)

Logically: Fixed Dialling Numbers enabled.
Barred Dialling Numbers disabled.
APN Control list (ACL) disabled.

Coding:	B1
Binary	0000 0001

The coding of EF_{EST} shall conform with the capabilities of the USIM, unused Bits are set to '0'..

4.2.1.3 EF_{FDN} (Fixed Dialling Numbers)

Logically:
Record 1: Length of alpha identifier: 6 characters;
Alpha identifier: "FDN111";
Length of BCD number: "06";
TON and NPI: Telephony and International;
Dialled number: +1357924680;
CCI2: None;
Ext2: None.

Coding for record 1:

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13
Hex	46	44	4E	31	31	31	06	91	31	75	29	64	08

	B14	B15	B16	B17	B18	B19	B20
	FF	FF	FF	FF	FF	FF	FF

Record 2: Length of alpha identifier: 6 characters;
Alpha identifier: "FDN222";
Length of BCD number: "04";
TON and NPI: Telephony and Unknown;
Dialled number: 24680;
CCI2: None;
Ext2: None.

Coding for record 2:

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13
Hex	46	44	4E	32	32	32	04	81	42	86	F0	FF	FF

	B14	B15	B16	B17	B18	B19	B20
	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;
CCI2: None;
Ext2: None.

Coding for record 3:

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13
Hex	46	44	4E	33	33	33	0B	91	21	43	65	87	09

	B14	B15	B16	B17	B18	B19	B20
	21	43	65	87	09	FF	FF

4.2.1.4 EF_{ECC} (Emergency Call Codes)

Logically: Emergency call code: "122";
Emergency call code alpha identifier: "TEST";
Emergency call Service Category: Mountain Rescue.

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	21	F2	FF	54	45	53	54	10

4.2.1.5 Other Values of the USIM

All other values of Efs provided by the USIM shall be set to the default values defined in the annex E of TS 31.102 [4]. Some Efs (like the GSM Access files) may necessary for some tests and apply only to those test cases.

4.3 Void

4.4 Definition of E-UTRAN/EPC UICC

The E-UTRAN/EPC test cases require a different configuration than the one described in subclause 4.1. For that purpose a default E-UTRAN/EPC UICC is defined. In general the values of the E-UTRAN/EPC UICC are identical to the default UICC, with the following exceptions:

4.4.1 EF_{UST} (USIM Service Table)

Logically: Local Phone Book available

User controlled PLMN selector available
Fixed dialling numbers available
Barred dialling numbers available
The GSM Access available
The Group Identifier level 1 and level 2 not available
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available
EPS Mobility Management Information available
Allowed CSG Lists and corresponding indications

Byte:	B1	B2	B3	B4	B5	B6	B7	B8
Binary:	xx1x xx11	xxxx xxxx	xxxx 1x00	xxxx x1xx	xxxx xx11	xxxx xxxx	xxxx xxxx	xxxx xxxx

B9	B10	B11
xxxx xxxx	xxxx xxxx	xx11 xxxx

The coding of EF_{UST} shall conform with the capabilities of the USIM used.

4.4.2 $EF_{EPSLOCI}$ (EPS Information)

Logically:
GUTI: 24608100010266341122
Last visited registered TAI: 246/081/0001
EPS update status: not updated

Byte:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex:	0B	F6	42	16	80	00	01	02	66	43	11

B12	B13	B14	B15	B16	B17	B18
22	42	16	80	00	01	01

4.4.3 $EF_{PLMNwACT}$ (User Controlled PLMN Selector with Access Technology)

Besides of the 8 mandatory PLMNwACT entries 4 optional PLMNwACT entries are defined according to TS 31.102 [4], subclause 4.2.5. The Radio Access Technology identifiers are set either to E-UTRAN only, UTRAN only or GSM only.

Logically:
1st PLMN: 244 081 (MCC MNC)
1st ACT: E-UTRAN
2nd PLMN: 244 081
2nd ACT: GSM
3rd PLMN: 244 083
3rd ACT: E-UTRAN
4th PLMN: 244 082
4th ACT: GSM
5th PLMN: 244 003
5th ACT: E-UTRAN
6th PLMN: 244 004
6th ACT: UTRAN
7th PLMN: 244 005
7th ACT: UTRAN
8th PLMN: 244 081
8th ACT: UTRAN
9th PLMN: 244 007
9th ACT: UTRAN
10th PLMN: 244 008
10th ACT: E-UTRAN
11th PLMN: 244 009

11th ACT: UTRAN
12th PLMN: 244 010
12th ACT: E-UTRAN

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15
Hex	42	14	80	40	00	42	14	80	00	80	42	34	80	40	00
	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	42	24	80	00	80	42	34	00	40	00	42	44	00	80	00
	B31	B32	B33	B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45
	42	54	00	80	00	42	14	80	80	00	42	74	00	80	00
	B46	B47	B48	B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60
	42	84	00	40	00	42	94	00	80	00	42	04	10	40	00

4.4.4 $EF_{OPLMNwACT}$ (Operator Controlled PLMN Selector with Access Technology)

The Radio Access Technology identifier for the first PLMN is set to both UTRAN and GSM, the other remaining PLMNs to UTRAN only.

Logically:
1st PLMN: 254 001 (MCC MNC)
1st ACT: E-UTRAN
2nd PLMN: 254 001
2nd ACT: GSM
3rd PLMN: 254 002
3rd ACT: E-UTRAN
4th PLMN: 254 003
4th ACT: E-UTRAN
5th PLMN: 254 004
5th ACT: UTRAN
6th PLMN: 254 005
6th ACT: UTRAN
7th PLMN: 254 006
7th ACT: UTRAN
8th PLMN: 254 007
8th ACT: UTRAN

Coding:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Hex	52	14	00	40	00	52	14	00	00	80
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	52	24	00	40	00	52	34	00	40	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	52	44	00	80	00	52	54	00	80	00
	B31	B32	B33	B34	B35	B36	B37	B38	B39	B40
	52	64	00	80	00	52	74	00	80	00

4.4.5 EF_{ACSGL} (Allowed CSG Lists)

For testing 2 CSG lists are defined and stored together in record one.

Logically:

1st CSG list

PLMN:	246 081 (MCC MNC)	
1st CSG list	1st CSG Type indication	02
1st CSG list	1st CSG HNB Name indication	02
1st CSG list	1st CSG CSG ID:	02 (27bit)
1st CSG list	2nd CSG Type indication	03
1st CSG list	2nd CSG HNB Name indication	03
1st CSG list	2nd CSG CSG ID:	03 (27bit)

2nd CSG list

PLMN: 244 081 (MCC MNC)
2nd CSG list 1st CSG Type indication 08
2nd CSG list 1st CSG HNB Name indication 08
2nd CSG list 1st CSG CSG ID: 08 (27bit)

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	A0	15	80	03	42	16	80	81	06	02
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	02	00	00	00	5F	81	06	03	03	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	00	00	7F	A0	0D	80	03	42	14	80
	B31	B32	B33	B34	B35	B36	B37	B38	B39	..
	81	06	08	08	00	00	01	1F	FF	FF
	Bxx									
	FF									

All other records are empty.

4.4.6 EF_{CSGT} (CSG Type)

Record 1:

Logically: Group ONE

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	89	13	80	00	47	00	72	00	6F	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	75	00	70	00	20	00	4F	00	4E	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	45	FF	FF	FF	FF	FF	FF	FF	FF	FF

Record 2:

Logically: Group TWO

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	89	13	80	00	47	00	72	00	6F	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	75	00	70	00	20	00	54	00	57	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	4F	FF	FF	FF	FF	FF	FF	FF	FF	FF

Record 3:

Logically: Group THREE

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	89	17	80	00	47	00	72	00	6F	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	75	00	70	00	20	00	54	00	48	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	52	00	45	00	45	FF	FF	FF	FF	FF

Record 4:

Logically: Group FOUR

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	89	15	80	00	47	00	72	00	6F	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	75	00	70	00	20	00	46	00	4F	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	55	00	52	FF	FF	FF	FF	FF	FF	FF

Record 5:

Logically: Group FIVE

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	89	15	80	00	47	00	72	00	6F	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	75	00	70	00	20	00	46	00	49	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	56	00	45	FF	FF	FF	FF	FF	FF	FF

Record 6:

Logically: Group SIX

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	89	13	80	00	47	00	72	00	6F	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	75	00	70	00	20	00	53	00	49	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	58	FF	FF	FF	FF	FF	FF	FF	FF	FF

Record 7:

Logically: Group SEVEN

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	89	17	80	00	47	00	72	00	6F	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	75	00	70	00	20	00	53	00	45	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	56	00	45	00	4E	FF	FF	FF	FF	FF

Record 8:

Logically: Group EIGHT

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	89	17	80	00	47	00	72	00	6F	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	75	00	70	00	20	00	45	00	49	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	47	00	48	00	54	FF	FF	FF	FF	FF

4.4.7 EF_{HNBN} (Home (e)NodeB Name)

Record 1:

Logically: Home ONE

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	80	11	80	00	48	00	6F	00	6D	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	65	00	20	00	4F	00	4E	00	45	FF
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

Record 2:

Logically: Home TWO

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	80	11	80	00	48	00	6F	00	6D	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	65	00	20	00	54	00	57	00	4F	FF
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

Record 3:

Logically: Home THREE

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	80	15	80	00	48	00	6F	00	6D	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	65	00	20	00	54	00	48	00	52	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	45	00	45	FF	FF	FF	FF	FF	FF	FF

Record 4:

Logically: Home FOUR

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	80	13	80	00	48	00	6F	00	6D	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	65	00	20	00	46	00	4F	00	55	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	52	FF	FF	FF	FF	FF	FF	FF	FF	FF

Record 5:

Logically: Home FIVE

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	80	13	80	00	48	00	6F	00	6D	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	65	00	20	00	46	00	49	00	56	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	45	FF	FF	FF	FF	FF	FF	FF	FF	FF

Record 6:

Logically: Home SIX

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	80	11	80	00	48	00	6F	00	6D	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	65	00	20	00	53	00	49	00	58	FF
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

Record 7:

Logically: Home SEVEN

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	80	15	80	00	48	00	6F	00	6D	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	65	00	20	00	53	00	45	00	56	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	45	00	4E	FF	FF	FF	FF	FF	FF	FF

Record 8:

Logically: Home EIGHT

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	80	15	80	00	48	00	6F	00	6D	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	65	00	20	00	45	00	49	00	47	00
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	48	00	54	FF	FF	FF	FF	FF	FF	FF

4.4.8 EF_{EPSNSC} (EPS NAS Security Context)

Logically:

Key Set Identifier KSI_{ASME}:	'07'(no key available)
ASME Key (KSI_{ASME}) :	'FF' (not available)
Uplink NAS count:	'00'
Downlink NAS count:	'00'
Identifiers of selected NAS integrity and encryption algorithm	'FF'

Coding:	B1	B2	B3	B4	B5	B6	B7	…	…	…	…	Bxx
Hex	A0	xx	80	01	07	81	00	…	…	…	…	xx

4.5 Definition of E-UTRAN/EPC ISIM-UICC

4.5.1 Applications on the E-UTRAN/EPC ISIM-UICC

The E-UTRAN/EPC ISIM-UICC shall contain a USIM as defined in clause 4.5.2 and an ISIM as defined in clause 4.5.3.

4.5.2 Default USIM values on 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 4.4.

4.5.3 Default ISIM values on E-UTRAN/EPC ISIM-UICC

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

4.5.3.1 EF_{AD} (Administrative Data)

Logically: Normal Operation

Byte:	**B1**	**B2**	**B3**
Coding:	00	00	00

4.5.3.2 EF_{IST} (ISIM Service Table)

Logically:

(Service 01) P-CSCF Address: available

(Service 02) Generic Bootstrapping: not available

(Service 03) HTTP Digest: not available

(Service 04) GBA Based Local Key Establishment Mechanism: not available

(Service 05) Support for P-CSCF discovery for IMS local breakout: not available

(Service 06) Short Message Storage (SMS): available

(Service 07) Short Message Status Reports (SMSR): available

(Service 08) Support for SM-over-IP: available

Byte	**B1**
Coding:	111x xxx1

4.5.3.3 EF_{IMPI} (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

4.5.3.4 EF_{DOMAIN} (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

4.5.3.5 EF_{IMPU} (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: sip: user@test.3gpp.com

Byte:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Coding:	80	16	73	69	70	3A	75	73	65	72
	B11	**B12**	**B13**	**B14**	**B15**	**B16**	**B17**	**B18**	**B19**	**B20**
	40	74	65	73	74	2E	33	67	70	70
	B21	**B22**	**B23**	**B24**	**B25**	**B26**	**B27**	**B28**	**B29**	**B30**
	2E	63	6F	6D	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

4.5.3.6 $EF_{P\text{-}CSCF}$ (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.

4.5.3.7 EF_{SMS} (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

4.5.3.8 EF_{SMSR} (Short message status reports)

This EF shall contain as many records as EF_{SMS}.
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

4.5.3.9 EF_{SMSP} (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										

All other records shall be empty.

4.5.3.10 EF_{SMSS} (SMS Status)

Logically: Last used TP-MR set to"00".
Memory capacity available (flag unset b1="1").

Byte:	B1	B2
Coding:	00	FF

4.5.4 Default values at DF_TELECOM

4.5.4.1 $EF_{PSISMSC}$ (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

5 Subscription related tests

5.1 IMSI / TMSI handling

5.1.1 UE identification by short IMSI

5.1.1.1 Definition and applicability

The IMSI is used for unique identification of the UE by UTRAN/ a GERAN. The IMSI is stored in the USIM and read during the UICC-Terminal initialisation procedure.

5.1.1.2 Conformance requirement

After successful completion of the RRC Connection Establishment procedure (in case of Terminals accessing UTRAN) respectively after receipt of an IMMEDIATE ASSIGNMENT message (in case of a Terminal accessing a GERAN) the UE shall send PAGING RESPONSE containing the IMSI of the USIM, which is less than the maximum length.

Reference:

- TS 31.102 [4], subclauses 5.1.1 and 5.2.2;
- TS 24.008 [16], subclause 10.5.1.4;
- ETSI TS 102 221 [5], subclause 14.1.1.

5.1.1.3 Test purpose

1) To verify that the Terminal uses the IMSI of the USIM.
2) To verify that the Terminal can handle an IMSI of less than the maximum length.
3) To verify that the READ EF_{IMSI} command is performed correctly by the terminal

5.1.1.4 Method of test

5.1.1.4.1 Initial conditions

The USS (in case of a Terminal accessing UTRAN) / SS (in case of a Terminal accessing a GERAN) transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.
- Access control: unrestricted.

The default UICC is installed into the Terminal and the UE is powered on.

In case of a Terminal accessing UTRAN "Expected Sequence A" and in case of a Terminal accessing a GERAN "Expected Sequence B" shall be performed.

5.1.1.4.2 Procedure

Expected Sequence A:

a) The USS sends PAGING TYPE 1 to the UE using the IMSI stored in the USIM.
b) After receipt of a RRC CONNECTION REQUEST from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.
c) After receipt of a PAGING RESPONSE from the UE, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

Expected Sequence B:

a) The SS sends PAGING REQUEST to the UE using the IMSI stored in the USIM.
b) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.
c) After receipt of a PAGING RESPONSE from the UE, the SS sends CHANNEL RELEASE to the UE.

5.1.1.5 Acceptance criteria

After step b) the UE shall send PAGING RESPONSE to the USS/SS containing the IMSI stored in the USIM.

5.1.2 UE identification by short IMSI using a 2 digit MNC

5.1.2.1 Definition and applicability

In some networks the IMSI identifying the UTRAN/ GERAN can be consistence of a 2 digit MNC. The IMSI is stored in the USIM and read during the UICC-Terminal initialisation procedure.

5.1.2.2 Conformance requirement

After successful completion of the RRC Connection Establishment procedure (in case of Terminals accessing UTRAN) respectively after receipt of an IMMEDIATE ASSIGNMENT message (in case of a Terminal accessing a GERAN) the UE shall send PAGING RESPONSE containing the IMSI of the USIM.

Reference:

- TS 31.102 [4], subclause 4.2.18;
- TS 24.008 [16], subclause 10.5.1.4.

5.1.2.3 Test purpose

1) To verify that the Terminal can handle an IMSI consistence of a 2 digit MNC.

5.1.2.4 Method of test

5.1.2.4.1 Initial conditions

The USS (in case of a Terminal accessing UTRAN) / SS (in case of a Terminal accessing a GERAN) transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/81/0001.
- Access control: unrestricted.

The default UICC is used with the following exception:

EF_{LOCI} (Location Information)

Logically:
LAI-MCC: 246
LAI-MNC: 81
LAI-LAC: 0001
TMSI: "FF .. FF"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	FF	FF	FF	FF	42	F6	18	00	01	FF	00

EF_{IMSI} (IMSI)

Logically: 246813579

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9
Hex	05	29	64	18	53	97	FF	FF	FF

EF_{AD} (Administrative Data)

Logically:
Normal operation
OFM to be deactivated by the Terminal
MNC: 2 digit

Coding:	B1	B2	B3	B4
Hex	00	00	00	02

The UICC is installed into the Terminal and the UE is powered on.

In case of a Terminal accessing UTRAN "Expected Sequence A" and in case of a Terminal accessing a GERAN "Expected Sequence B" shall be performed.

5.1.2.4.2 Procedure

Expected Sequence A:

a) The USS sends PAGING TYPE 1 to the UE using the IMSI stored in the USIM.

b) After receipt of a RRC CONNECTION REQUEST from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

c) After receipt of a PAGING RESPONSE from the UE, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

Expected Sequence B:

a) The SS sends PAGING REQUEST to the UE using the IMSI stored in the USIM.

b) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.

c) After receipt of a PAGING RESPONSE from the UE, the SS sends CHANNEL RELEASE to the UE.

5.1.2.5 Acceptance criteria

After step b) the UE shall send PAGING RESPONSE to the USS/SS containing the IMSI stored in the USIM.

5.1.3 UE identification by "short" TMSI

5.1.3.1 Definition and applicability

The TMSI is temporarily used for identification of the UE by UTRAN/ a GERAN. It will have been previously assigned by the network. The TMSI is stored in the USIM by the Terminal and read during the USIM-Terminal initialisation procedure.

NOTE: According to TS 23.003 [14], subclause 2.4, a TMSI always consists of 8 digits (4 bytes). With this tests the handling of a TMSI with leading zeros will be tested. The term "short" TMSI is used in order to distinguish between the tests as defined in subclauses 5.1.3 and 5.1.4.

5.1.3.2 Conformance requirement

After successful completion of the RRC Connection Establishment procedure (in case of Terminals accessing UTRAN) respectively after receipt of an IMMEDIATE ASSIGNMENT message (in case of a Terminal accessing a GERAN) the UE shall send PAGING RESPONSE containing the TMSI of the USIM. According to subclause 10.3.1.17 in TS 25.331 [20] the TMSI has a fixed length of 32 bit (8 digits) when used inside the PAGING TYPE 1/ PAGING REQUEST message.

Reference:

- TS 31.102 [4], subclauses 5.1.1 and 5.2.2;
- TS 24.008 [16], subclause 10.5.1.4.
- TS 25.331 [20], subclause 10.3.1.17

5.1.3.3 Test purpose

1) To verify that the Terminal uses the TMSI stored in the USIM.

2) To verify that the Terminal can handle a TMSI of less than maximum length.

5.1.3.4 Method of test

5.1.3.4.1 Initial conditions

The USS (in case of a Terminal accessing UTRAN) / SS (in case of a Terminal accessing a GERAN) transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.
- Access control: unrestricted.

The default UICC is used with the following exception:

EF_{LOCI} (Location Information)

Logically:	LAI-MCC:	246
	LAI-MNC:	081
	LAI-LAC:	0001
	TMSI:	"00002143"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	00	00	21	43	42	16	80	00	01	FF	00

The UICC is installed into the Terminal and the UE is powered on.

In case of a Terminal accessing UTRAN "Expected Sequence A" and in case of a Terminal accessing a GERAN "Expected Sequence B" shall be performed.

5.1.3.4.2 Procedure

Expected Sequence A:

a) The USS sends PAGING TYPE 1 to the UE using the TMSI stored in the USIM matching the required length of 8 digits.

b) After receipt of a RRC CONNECTION REQUEST from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

c) After receipt of a PAGING RESPONSE from the UE, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

Expected Sequence B:

a) The SS sends PAGING REQUEST to the UE using the TMSI stored in the USIM matching the required length of 8 digits.

b) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.

c) After receipt of a PAGING RESPONSE from the UE, the SS sends CHANNEL RELEASE to the UE.

5.1.3.5 Acceptance criteria

After step b) the UE shall send PAGING RESPONSE to the USS/SS containing the TMSI stored in the USIM.

5.1.4 UE identification by "long" TMSI

5.1.4.1 Definition and applicability

The TMSI is temporarily used for identification of the UE by UTRAN/ a GERAN. It will have been previously assigned by the network. The TMSI is stored in the USIM by the Terminal and read during the USIM-Terminal initialisation procedure.

NOTE: According to TS 23.003 [14], subclause 2.4, a TMSI always consists of 8 digits (4 bytes). With this tests the handling of a new assigned TMSI will be tested. The term "long" TMSI is used in order to distinguish between the tests as defined in subclauses 5.1.3 and 5.1.4.

5.1.4.2 Conformance requirement

After successful completion of the RRC Connection Establishment procedure (in case of Terminals accessing UTRAN) respectively after receipt of an IMMEDIATE ASSIGNMENT message (in case of a Terminal accessing a GERAN) the UE shall send PAGING RESPONSE containing the correct TMSI stored in the USIM.

According to subclause 10.3.1.17 in TS 25.331 [20] the TMSI has a fixed length of 32 bit (8 digits) when used inside the PAGING TYPE 1/PAGING REQUEST message.

Reference:

- TS 31.102 [4], subclauses 5.1.1 and 5.2.2;
- TS 24.008 [16], subclause 10.5.1.4.
- TS 25.331 [20], subclause 10.3.1.17

5.1.4.3 Test purpose

1) To verify that the Terminal uses the TMSI stored in the USIM.
2) To verify that the Terminal can handle a TMSI of maximum length.
3) To verify that the Terminal does not respond to page requests containing a previous TMSI.

5.1.4.4 Method of test

5.1.4.4.1 Initial conditions

Prior to this test, the Terminal shall have been operated with a USIM containing TMSI "2143". This may be achieved by executing the previous test (5.1.3) prior to this test. Only under this condition will test purpose 3) be verified.

The USS (in case of a Terminal accessing UTRAN) / SS (in case of a Terminal accessing a GERAN) transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.
- Access control: unrestricted.

The default UICC is used with the following exception:

EF_{LOCI} (Location Information)

Logically:	LAI-MCC:	246
	LAI-MNC:	081
	LAI-LAC:	0001
	TMSI:	"21430000"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	21	43	00	00	42	16	80	00	01	FF	00

The UICC is installed into the Terminal and the UE is powered on.

In case of a Terminal accessing UTRAN "Expected Sequence A" and in case of a Terminal accessing a GERAN "Expected Sequence B" shall be performed.

5.1.4.4.2 Procedure

Expected Sequence A:

a) The USS sends PAGING TYPE 1 to the UE using the TMSI "00002143".

b) The USS sends PAGING TYPE 1 to the UE using the TMSI stored in the USIM.

c) After receipt of a RRC CONNECTION REQUEST from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

d) After receipt of a PAGING RESPONSE from the UE, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

Expected Sequence B:

a) The SS sends PAGING REQUEST to the UE using the TMSI "00002143".

b) The SS sends PAGING REQUEST to the UE using the TMSI stored in the USIM.

c) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.

d) After receipt of a PAGING RESPONSE from the UE, the SS sends CHANNEL RELEASE to the UE.

5.1.4.5 Acceptance criteria

1) After step a) the UE shall not respond to the PAGING TYPE 1 respectively to the PAGING REQUEST.

2) After step c) the UE shall send PAGING RESPONSE to the USS/ SS containing the TMSI stored in the USIM.

5.1.5 UE identification by long IMSI, TMSI updating and key set identifier assignment

5.1.5.1 Definition and applicability

The IMSI and TMSI are used for identification of the UE by UTRAN/ a GERAN. They are read from the USIM during the USIM-Terminal initialisation procedure. Within the authentication procedure the UTRAN sends a key set identifier respectively a GERAN sends a ciphering key sequence number to the UE. In addition the network may allocate a new TMSI to the UE. Key set identifier and TMSI are stored in the USIM after UTRAN call termination and/or at a 3G session termination. Ciphering key sequence number and TMSI are stored in the USIM after GERAN call termination and/or at a 3G session termination.

NOTE: According to TS 24.008 [16] the term KSI may be used instead of the term ciphering key sequence number which is used inside the MM message AUTHENTICATION REQUEST.

5.1.5.2 Conformance requirement

1) After successful completion of the RRC Connection Establishment procedure (in case of Terminals accessing UTRAN) respectively after receipt of an IMMEDIATE ASSIGNMENT message (in case of a Terminal accessing a GERAN) the UE shall send PAGING RESPONSE containing the correct IMSI stored in the USIM.

   Reference:

- TS 31.102 [4], subclauses 5.1.1 and 5.2.2;
- TS 24.008 [16], subclause 10.5.1.4.

2) After call termination the USIM shall contain the key set identifier (ciphering key sequence number) and TMSI received by the UE during the authentication and TMSI reallocation procedures.

   Reference:

- TS 31.102 [4], subclauses 5.1.2, 5.2.5 and 5.2.6;
- TS 21.111 [19], subclause 10.1.
- TS 24.008 [16], subclause 4.3.2.4.

3) After call termination the Terminal shall have updated EFLOCI.

   Reference:

- ETSI TS 102 221 [5], subclause 14.1.2.

5.1.5.3 Test purpose

1) To verify that the Terminal uses the IMSI stored in the USIM.
2) To verify that the Terminal does not respond to page requests containing a previous IMSI.
3) To verify that the Terminal can handle an IMSI of maximum length.
4) To verify that the Terminal correctly updates the key set identifier respectively the ciphering key sequence number at call termination.
5) To verify that the Terminal correctly updates the TMSI at call termination.
6) To verify that the UPDATE EF_{LOCI} command is performed correctly by the terminal

5.1.5.4 Method of test

5.1.5.4.1 Initial conditions

Prior to this test, the Terminal shall have been operated with a USIM containing IMSI "2460813579". This may be achieved by executing the previous test (5.1.4) prior to this test. Only under this condition will test purpose 2) be verified.

The USS (in case of a Terminal accessing UTRAN) / SS (in case of a Terminal accessing a GERAN) transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.
- Access control: unrestricted.

The default UICC is used with the following exception:

EF_{IMSI} (IMSI)

Logically: 246081111111111

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9
Hex	08	29	64	80	11	11	11	11	11

EF_{Kc} (GSM Ciphering Key Kc)

Logically: Ciphering key Kc: xx
Ciphering key sequence number n: 01

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9
Hex	xx	xx	xx	xx	xx	xx	xx	xx	01

The UICC is installed into the Terminal and the UE is powered on.

In case of a Terminal accessing UTRAN "Expected Sequence A" and in case of a Terminal accessing a GERAN "Expected Sequence B" shall be performed.

5.1.5.4.2 Procedure

Expected Sequence A:

a) The USS sends PAGING TYPE 1 to the UE using the IMSI "2460813579".

b) The USS sends PAGING TYPE 1 to the UE using the IMSI stored in the USIM.

c) After receipt of a RRC CONNECTION REQUEST from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

d) After receipt of a PAGING RESPONSE from the UE, the USS sends AUTHENTICATION REQUEST to the UE containing Key Set Identifier KSI (ciphering key sequence number) set to binary 010.

e) After receipt of AUTHENTICATION RESPONSE from the UE and subsequent completion of the security procedure on RRC, the USS sends TMSI REALLOCATION COMMAND to the UE containing TMSI "32547698".

f) Within 5 s after receipt of TMSI REALLOCATION COMPLETE from the UE, the USS sends RRC CONNECTION RELEASE to the UE.

g) To allow examination of the values in the USIM after connection termination the UE shall not be soft powered down. If the test is performed with a USIM simulator, the simulation is stopped. If the test is performed with a USIM, the UICC is removed without soft powering down the UE. If this is not possible, the power supply of the Terminal is removed and then the UICC removed.

Expected sequence B:

a) The SS sends PAGING REQUEST to the UE using the IMSI "2460813579".

b) The SS sends PAGING REQUEST to the UE using the IMSI stored in the USIM.

c) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.

d) After receipt of a PAGING RESPONSE from the UE, the SS sends AUTHENTICATION REQUEST to the UE containing ciphering key sequence number set to binary 010.

e) After receipt of AUTHENTICATION RESPONSE from the UE, the SS sends TMSI REALLOCATION COMMAND to the UE containing TMSI "32547698".

f) Within 5 s after receipt of TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

g) To allow examination of the values in the USIM after connection termination the UE shall not be soft powered down. If the test is performed with a USIM simulator, the simulation is stopped. If the test is performed with a USIM, the UICC is removed without soft powering down the UE. If this is not possible, the power supply of the Terminal is removed and then the UICC removed.

5.1.5.5 Acceptance criteria

1) After step a) the UE shall not respond to the PAGING TYPE 1/ PAGING REQUEST.

2) After step c) the UE shall send PAGING RESPONSE to the USS/SS containing the IMSI stored in the USIM.

3) After step e) the UE shall send TMSI REALLOCATION COMPLETE to the USS/SS.

4) After step g) the USIM shall contain the following values:

EF_{LOCI} (Location Information)

Logically: LAI-MCC: 246
LAI-MNC: 081
TMSI: "32547698"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	32	54	76	98	42	16	80	xx	xx	xx	00

In case of a Terminal accessing UTRAN:

EF_{Keys} (Ciphering and Integrity Keys)

Logically: Key Set Identifier KSI: 02
Ciphering Keys CK: xx (result of the authentication algorithm)
Integrity Keys IK: xx (result of the authentication algorithm)

Coding:	B1	B2	B3	…	B16	B17	B18	…	B31	B32	B33
Hex	02	xx	xx	…	xx	xx	xx	…	xx	xx	xx

In case of a Terminal accessing a GERAN:

EF_{Kc} (GSM Ciphering Key Kc)

Logically: Ciphering key Kc: xx (result of the authentication algorithm)
Ciphering key sequence number n: 02

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9
Hex	xx	xx	xx	xx	Xx	xx	xx	xx	02

5.1.6 UE identification by short IMSI when accessing E-UTRAN/EPC

5.1.6.1 Definition and applicability

Paging for EPS services using IMSI is an abnormal procedure used for error recovery in the network. The IMSI is used for unique identification of the UE by an E-UTRAN/EPC if there is no GUTI available. The IMSI is stored in the USIM and read during the UICC-Terminal initialisation procedure.

5.1.6.2 Conformance requirement

Only after reception of a Paging message containing the IMSI stored in the USIM the UE shall send the *RRCConnectionRequest* message.

Reference:

- TS 31.102 [4], subclauses 5.1.1 and 5.2.2;
- ETSI TS 102 221 [5], subclause 14.1.1;
- TS 24.301 [26], subclause 5.6.2.2.2.

5.1.6.3 Test purpose

1) To verify that the Terminal uses the IMSI of the USIM.

2) To verify that the Terminal can handle an IMSI of less than the maximum length.

3) To verify that the READ EF_{IMSI} command is performed correctly by the terminal.

4) To verify that the terminal does not respond to a Paging message containing an IMSI not stored in the USIM.

5.1.6.4 Method of test

5.1.6.4.1 Initial conditions

The E-USS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 246/081/0001.
- Access control: unrestricted.

The default E-UTRAN UICC is installed into the Terminal and the UE is powered on.

5.1.6.4.2 Procedure

a) The UE performs Attach procedure to E-USS.

b) The E-USS sends *Paging* to the UE using the IMSI 24608122222.

c) The E-USS sends *Paging* to the UE using the IMSI stored in the USIM.

d) After receipt of a *RRCConnectionRequest* message from the UE, the E-USS sends *RRCConnectionSetup* message to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

e) After the EPS attach procedure the E-USS sends *RRCConnectionRelease* to the UE.

5.1.6.5 Acceptance criteria

1) After step b) the UE shall not send *RRCConnectionRequest* to the E-USS.

2) After step c) the UE shall send *RRCConnectionRequest* to the E-USS.

3) After step d) the UE performs the EPS attach procedure.

5.1.7 UE identification by short IMSI using a 2 digit MNC when accessing E-UTRAN/EPC

5.1.7.1 Definition and applicability

In some networks the IMSI identifying the E-UTRAN/EPC can be consistence of a 2 digit MNC. Paging for EPS services using IMSI is an abnormal procedure used for error recovery in the network. The IMSI is used for unique identification of the UE by an E-UTRAN/EPC if there is no GUTI available. The IMSI is stored in the USIM and read during the UICC-Terminal initialisation procedure.

5.1.7.2 Conformance requirement

Only after reception of a Paging message containing the IMSI stored in the USIM the UE shall send the *RRCConnectionRequest* message.

Reference:

- TS 31.102 [4], subclauses 5.1.1 and 5.2.2;
- ETSI TS 102 221 [5], subclause 14.1.1;
- TS 24.301 [26], subclause 5.6.2.2.2.

5.1.7.3 Test purpose

1) To verify that the Terminal uses the IMSI of the USIM.

2) To verify that the Terminal can handle an IMSI consistence of a 2 digit MNC.

3) To verify that the READ EF_{IMSI} command is performed correctly by the terminal.

4) To verify that the terminal does not respond to a Paging message containing an IMSI not stored in the USIM.

5.1.7.4 Method of test

5.1.7.4.1 Initial conditions

The E-USS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 246/81/0001.
- Access control: unrestricted.

The default UICC is used with the following exception:

EF_{IMSI} (IMSI)

Logically: 246813579

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9
Hex	05	29	64	18	53	97	FF	FF	FF

EF_{AD} (Administrative Data)

Logically: Normal operation
OFM to be deactivated by the Terminal
MNC: 2 digit

Coding:	B1	B2	B3	B4
Hex	00	00	00	02

The UICC is installed into the Terminal and the UE is powered on.

5.1.7.4.2 Procedure

a) The UE performs Attach procedure to E-USS.

b) The E-USS sends *Paging* to the UE using the IMSI 24608122222.

c) The E-USS sends *Paging* to the UE using the IMSI stored in the USIM.

d) After receipt of a *RRCConnectionRequest* message from the UE, the E-USS sends *RRCConnectionSetup* message to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

e) After the EPS attach procedure the E-USS sends *RRCConnectionRelease* to the UE.

5.1.7.5 Acceptance criteria

1) After step b) the UE shall not send *RRCConnectionRequest* to the E-USS.

2) After step c) the UE shall send *RRCConnectionRequest* to the E-USS.

3) After step d) the UE performs the EPS attach procedure.

5.1.8 UE identification after changed IMSI with service "EMM Information" not available

The attach procedure is used to attach for packet services in EPS. With a successful attach procedure, a context is established for the UE in the MME, and a default bearer is established between the UE and the PDN GW, thus enabling always-on IP connectivity to the UE. The network may also initiate the activation of dedicated bearers as part of the attach procedure.

5.1.8.2 Conformance requirement

The following EMM parameters shall be stored on the USIM if the corresponding file is present:

- GUTI;
- last visited registered TAI;
- EPS update status.

If the corresponding file is not present on the USIM, these EMM parameters except allowed CSG list are stored in a non-volatile memory in the ME together with the IMSI from the USIM. These EMM parameters can only be used if the IMSI from the USIM matches the IMSI stored in the non-volatile memory; else the UE shall delete the EMM parameters.

Reference:

- TS 31.102 [4], subclauses 5.1.1 and 5.2.2;
- TS 24.301 [26], subclause 5.5.1.2.1, 5.5.1.2.2, 5.5.1.2.4 and Annex C.

5.1.8.3 Test purpose

1) To verify that UE deletes existing EMM parameters from the UE's non-volatile memory in case a different IMSI is activated.

2) To verify that UE includes the IMSI stored in the USIM during the attach procedure.

5.1.8.4 Method of test

5.1.8.4.1 Initial conditions

The E-USS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 246/081/0001.
- Access control: unrestricted.

The default UICC (without the service "EMM Information") is installed into the Terminal and the UE is powered on.

5.1.8.4.2 Procedure

a) The UE is switched on.

b) The UE requests RRC Connection and therefore performs EPS Attach procedure to the E-USS. The E-USS sends *AttachAccept* with the following values:

GUTI: "24608100010266345678"

TAI (MCC/MNC/TAC):246/081/0001

c) The UE send *AttachComplete.*

d) The E-USS requests the release of the RRC Connection.

e) The UE is switched off.

f) A new UICC with the following configuration is activated:

The default UICC with the following exception: The IMSI is set to "246081222233333".

g) The Terminal is switched on.

h) The UE requests RRC Connection and therefore performs EPS Attach procedure to the E-USS.

5.1.8.5 Acceptance criteria

1) After step a) the UE shall read EF_{UST}.

2) During step h) the UE shall include the IMSI "246081222233333", but no GUTI nor TAI in the AttachRequest message.

5.1.9 UE identification by GUTI when using USIM with service "EMM Information" not available

The attach procedure is used to attach for packet services in EPS. With a successful attach procedure, a context is established for the UE in the MME, and a default bearer is established between the UE and the PDN GW, thus enabling always-on IP connectivity to the UE. The network may also initiate the activation of dedicated bearers as part of the attach procedure.

5.1.9.2 Conformance requirement

The following EMM parameters shall be stored on the USIM if the corresponding file is present:

- GUTI;
- last visited registered TAI;
- EPS update status.

If the corresponding file is not present on the USIM, these EMM parameters except allowed CSG list are stored in a non-volatile memory in the ME together with the IMSI from the USIM. These EMM parameters can only be used if the IMSI from the USIM matches the IMSI stored in the non-volatile memory; else the UE shall delete the EMM parameters.

Reference:

- TS 31.102 [4], subclauses 5.1.1 and 5.2.2;
- TS 24.301 [26], subclause 5.5.1.2.1, 5.5.1.2.2, 5.5.1.2.4 and Annex C.

5.1.9.3 Test purpose

1) To verify that UE stores the GUTI and the TAI in the UE's non-volatile memory.

2) To verify that the UE uses the GUTI and the TAI from the UE's non-volatile memory during the attach procedure if the IMSI stored in the USIM has not changed.

5.1.9.4 Method of test

5.1.9.4.1 Initial conditions

The E-USS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 246/081/0001.
- Access control: unrestricted.

The default UICC (without the service "EMM Information") is installed into the Terminal and the UE is powered on.

5.1.9.4.2 Procedure

a) The UE is switched on.

b) The UE requests RRC Connection and therefore performs EPS Attach procedure to the E-USS. The E-USS sends *AttachAccept* with the following values:

GUTI: "24608100010266345699"

TAI (MCC/MNC/TAC):246/081/0001

c) The UE send *AttachComplete.*

d) The E-USS requests the release of the RRC Connection.

e) The UE is switched off.

f) The default UICC remains in use.

g) The Terminal is switched on.

h) The UE requests RRC Connection and therefore performs EPS Attach procedure to the E-USS.

5.1.9.5 Acceptance criteria

1) After step a) the UE shall read EF_{UST}.

2) During step h) the UE shall include the GUTI "24608100010266345699" and the TAI 246/081/0001 in the AttachRequest message.

5.1.10 UE identification by GUTI when using USIM with service "EMM Information" available

5.1.10.1 Definition and applicability

The attach procedure is used to attach for packet services in EPS. With a successful attach procedure, a context is established for the UE in the MME, and a default bearer is established between the UE and the PDN GW, thus enabling always-on IP connectivity to the UE. The network may also initiate the activation of dedicated bearers as part of the attach procedure.

5.1.10.2 Conformance requirement

The following EMM parameters shall be stored on the USIM if the corresponding file is present:

- GUTI;
- last visited registered TAI;
- EPS update status.

The presence and format of corresponding files on the USIM is specified in 3GPP TS 31.102 [4].

Reference:

- TS 31.102 [4], subclauses 5.1.1 and 5.2.2;
- TS 24.301 [26], subclause 5.5.1.2.1, 5.5.1.2.2, 5.5.1.2.4 and Annex C.

5.1.10.3 Test purpose

1) To verify that UE includes the GUTI and TAI stored in $EF_{EPSLOCI}$ in the *AttachRequest* message.
2) To verify that the EMM parameters GUTI, Last Registered TAI sent in the *AttachAccept* message and the related EPS Update Status are correctly stored on the USIM if the corresponding file is present.

5.1.10.4 Method of test

5.1.10.4.1 Initial conditions

The E-USS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 246/081/0002.
- Access control: unrestricted.

The default E-UTRAN UICC is is used with the following exceptions:

EF_{EPSNSC} (EPS NAS Security Context)

Logically:
Key Set Identifier KSI_{ASME}: '01'
ASME Key (KSI_{ASME}) : 32 byte key, any value
Uplink NAS count: 00
Downlink NAS count: 01
Identifiers of selected NAS integrity and encryption algorithm 01

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

5.1.10.4.2 Procedure

a) The UE is switched on.

b) The UE requests RRC Connection and therefore performs EPS Attach procedure to the E-USS. The E-USS sends *AttachAccept* with the following values:

GUTI: "24608100010266436587"

TAI (MCC/MNC/TAC):246/081/0002

c) The UE send *AttachComplete.*

d) The E-USS requests the release of the RRC Connection.

5.1.10.5 Acceptance criteria

1) After step a) the UE shall read EF_{UST} and $EF_{EPSLOCI}$.

2) During step b) the UE shall include the GUTI and the Last visited registered TAI contained in $EF_{EPSLOCI}$ when sending the *AttachRequest* message.

3) After step b) $EF_{EPSLOCI}$ shall contain:

Logically: GUTI: 24608100010266436587
Last visited registered TAI: 246/081/0002
EPS update status: updated

Byte:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex:	0B	F6	42	16	80	00	01	02	66	43	65

B12	B13	B14	B15	B16	B17	B18
87	42	16	80	00	02	00

5.2 Access Control handling

5.2.1 Access Control information handling

5.2.1.1 Definition and applicability

Access Control allows restriction of call access attempts. All User Equipments are assigned to one out of ten randomly allocated classes, and optionally (for priority uses) also to one or more special categories.

An Access Class of the special Categories is only valid in the HPLMN or HPLMN country. Otherwise, the randomly allocated class is used.

The classes are programmed on the USIM. The network controls which classes at any time may be barred.

In addition, there is a separate mechanism for control of network access for emergency call attempts.

5.2.1.2 Conformance requirement

1. The Terminal shall read the access control value as part of the USIM-Terminal initialisation procedure, and subsequently adopt this value.

   Reference:

- TS 31.102 [4], subclause 5.1.1.

2. If the UE is a member of at least one access class which corresponds to the permitted classes as signalled over the air interface, and the access class is applicable in the serving network,access attempts are allowed . Otherwise access attempts are not allowed.

3. If access class 10 is barred, then the Ues of classes 0 – 9 and the Terminals without UICCs shall not make emergency call attempts.

4. UE of classes 11 – 15 are not allowed to make emergency call attempts if access class 10 and the relevant access class(es) between 11 and 15 are barred. Otherwise, emergency call attempts are allowed irrespective of the conditions of access class 10.

   All options are shown in figure 5-1 and are referenced to the tests.

   Reference:

- TS 22.011 [6], subclauses 4.3 and 4.4.

5.2.1.3 Test purpose

1) To verify that the Terminal reads the access control value as part of the USIM-Terminal initialisation procedure, and subsequently adopts this value.

2) To verify that the UE controls its network access in accordance with its access control class and the conditions imposed by the serving network.

The tests verify Terminal performance for the following:

Tests (a) and (b)	No UICC in Terminal.
Tests (c) to (e)	UE with access class 0 to 9.
Test (f)	UE with access class 11 and 15 not in HPLMN, and UE with access class 12,13 and 14 not in HPLMN country.
Test (g) and (h)	UE with access class 11 and 15 in HPLMN, and UE with access class 12,13 and 14 in HPLMN country.

Each of the above are tested against all relevant combinations of access control and emergency call bits signalled by the network, as shown in table 5-1.

5.2.1.4 Method of test

5.2.1.4.1 Initial conditions

The USS (in case of a Terminal accessing UTRAN)/ SS (in case of a GERAN Terminal) transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): MCC, MNC: see table 5-1, LAC="0001".
- Access control: see table 5-1.
- RACH: see table 5-1.

The default UICC is installed in the Terminal containing IMSI and access control values as given in table 5-1 and the UE is powered on.

NOTE: Depending on the initial value of the EF_{LOCI}, the UE may perform a location update. This shall be accepted by the USS/SS.

5.2.1.4.2 Coding details

USIM IMSI EF_{IMSI}: Data Field "6F 07"

Logically: IMSI: "2460813579"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9
Hex	06	21	64	80	31	75	F9	FF	FF

Logically: IMSI: "24608135x9"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9
Hex	06	21	64	80	31	x5	F9	FF	FF

Access Control class EF_{ACC}: Data field "6F 78"

Reference:

7) See TS 31.102 [4].

NETWORK (USS in case of a Terminal accessing UTRAN)

Access Class Barred List in SIB 3 should be set as table 5.1a:

Reference

7) TS 25.331 clause 10.3.2.1

NOTE: The first instance of the parameter corresponds to Access Class 0, the second to Access Class 1 and so on up to Access Class 15.

NETWORK (SS in case of a Terminal accessing GERAN)

RACH: As defined in TS 44.018 subclause 10.5.2.29.

NOTE: TS 44.018 also apply for the Radio Resource management for UMTS (see TS 24.008, subclause 10.5.2).

Octet 1 0111 1000
Octet 2 0000 1000
Octet 3 }
Octet 4 } as table 5-1b

5.2.1.4.3 Procedure

a) Using the MMI or EMMI a normal call set-up is attempted.

b) Using the MMI or EMMI an emergency call set-up is attempted.

c) The test is repeated for each set of values in table 5-1.

5.2.1.5 Acceptance criteria

After steps a) and b) the UE shall access the network, or shall make no access attempt, in accordance with table 5-1.

NOTE 1: For conformance testing, to limit testing, in tests (c), (d) and (e) it is only necessary that one of the access classes is tested. This access class may be chosen randomly.

NOTE 2: In tables 5-1a and 5-1b the following notation is used to describe the Access Class Barred IE: "0" = not barred, "1" =barred.

Table 5-1a

USIM			Network			Test Results	
IMSI			RACH SIB3: Access Class Barred List	Informative: Cell Barred for:	BCCH/ LAI	Normal Call	Emergency Call
		Access Class	AC15-AC08 AC07-AC00	Emergency Call Normal Call	MCC MNC		
Test (a)	No UICC in Terminal	N/A	0000 0100 0000 0000	Yes No	234 001	No	No
Test (b)	No UICC in Terminal	N/A	0000 0000 0000 0000	No No	234 001	No	Yes
Test (c)	"2460813579"	0	0000 0100 0000 0001	Yes No, except for ACC	246 081	No	No
	"2460813579"	1	0000 0100 0000 0010	Yes No, except for ACC	246 081	No	No
	"2460813579"	2	0000 0100 0000 0100	Yes No, except for ACC	246 081	No	No
	"2460813579"	3	0000 0100 0000 1000	Yes No, except for ACC	246 081	No	No
	"2460813579"	4	0000 0100 0001 0000	Yes No, except for ACC	246 081	No	No
	"2460813579"	5	0000 0100 0010 0000	Yes No, except for ACC	246 081	No	No
	"2460813579"	6	0000 0100 0100 0000	Yes No, except for ACC	246 081	No	No
	"2460813579"	7	0000 0100 1000 0000	Yes No, except for ACC	246 081	No	No
	"2460813579"	8	0000 0101 0000 0000	Yes No, except for ACC	246 081	No	No
	"2460813579"	9	0000 0110 0000 0000	Yes No, except for ACC	246 081	No	No
Test (d)	"2460813579"	0	0000 0000 0000 0001	No None, except for ACC	246 081	No	Yes
	"2460813579"	1	0000 0000 0000 0010	No None, except for ACC	246 081	No	Yes
	"2460813579"	2	0000 0000 0000 0100	No None, except for ACC	246 081	No	Yes
	"2460813579"	3	0000 0000	No	246	No	Yes

		0000 1000	None, except for ACC	081		
"2460813579"	4	0000 0000 0001 0000	No None, except for ACC	246 081	No	Yes
"2460813579"	5	0000 0000 0010 0000	No None, except for ACC	246 081	No	Yes
"2460813579"	6	0000 0000 0100 0000	No None, except for ACC	246 081	No	Yes
"2460813579"	7	0000 0000 1000 0000	No None, except for ACC	246 081	No	Yes
"2460813579"	8	0000 0001 0000 0000	No None, except for ACC	246 081	No	Yes
"2460813579"	9	0000 0010 0000 0000	No None, except for ACC	246 081	No	Yes

Test (e)	"2460813579"	0	1111 1011 1111 1110	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	1	1111 1011 1111 1101	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	2	1111 1011 1111 1011	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	3	1111 1011 1111 0111	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	4	1111 1011 1110 1111	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	5	1111 1011 1101 1111	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	6	1111 1011 1011 1111	No All, except ACC on USIM	246 081	Yes	Yes
	"2406813579"	7	1111 1011 0111 1111	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	8	1111 1010 1111 1111	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	9	1111 1001 1111 1111	No All, except ACC on USIM	246 081	Yes	Yes
Test (f)	"24608135x9"	11 & x	0000 0111 1111 1111	Yes All, except ACC greater than 11	246 082	No	No
	"	11 & x	0000 0011 1111 1111	No All, except ACC greater than 11	246 082	No	Yes
	"	11 & x	0000 0000 0000 0000	No None	246 082	Yes	Yes
	"24608135x9"	12 & x	0000 0111 1111 1111	Yes All, except ACC greater than 11	244 001	No	No
	"	12 & x	0000 0011 1111 1111	No All, except ACC greater than 11	244 001	No	Yes
	"	12 & x	0000 0000 0000 0000	No None	244 001	Yes	Yes
	"24608135x9"	13 & x	0000 0111 1111 1111	Yes All, except ACC greater than 11	244 001	No	No
	"	13 & x	0000 0011	No	244	No	Yes

			1111 1111	All, except ACC greater than 11	001		
	"	13 & x	0000 0000 0000 0000	No None	244 001	Yes	Yes
	"24608135x9"	14 & x	0000 0111 1111 1111	Yes All, except ACC greater than 11	244 001	No	No
	"	14 & x	0000 0011 1111 1111	No All, except ACC greater than 11	244 001	No	Yes
	"	14 & x	0000 0000 0000 0000	No None	244 001	Yes	Yes
	"24608135x9"	15 & x	0000 0111 1111 1111	Yes All, except ACC greater than 11	246 082	No	No
	"	15 & x	0000 0011 1111 1111	No All, except ACC greater than 11	246 082	No	Yes
	" Set "x" to an arbitrary value in the range 0 to 9	15 & x	0000 0000 0000 0000	No None	246 082	Yes	Yes
Test (g)	"2460813579"	11 & x	0000 1111 1111 1111	Yes All normal ACC and ACC on USIM	246 081	No	No
	"	11 & x	0000 1011 1111 1111	No All normal ACC and ACC on USIM	246 081	No	Yes
	"2460813579"	12 & x	0001 0111 1111 1111	Yes All normal ACC and ACC on USIM	246 082	No	No
	"	12 & x	0001 0011 1111 1111	No All normal ACC and ACC on USIM	246 082	No	Yes
	"2460813579"	13 & x	0010 0111 1111 1111	Yes All normal ACC and ACC on USIM	246 082	No	No
	"	13 & x	0010 0011 1111 1111	No All normal ACC and ACC on USIM	246 082	No	Yes
	"2460813579"	14 & x	0100 0111 1111 1111	Yes All normal ACC and ACC on USIM	246 082	No	No
	"	14 & x	0100 0011 1111 1111	No All normal ACC and ACC on USIM	246 082	No	Yes
	"2460813579"	15 & x	1000 0111 1111 1111	Yes All normal ACC and ACC on USIM	246 081	No	No

	" Set "x" to an arbitrary value in the range 0 to 9	15 & x	1000 0011 1111 1111	No All normal ACC and ACC on USIM	246 081	No	Yes
Test (h)	"2460813579"	11 & x	1111 0011 1111 1111	No All, except "special" ACC on USIM	246 081	Yes	Yes
	"	11 & x	1111 0111 1111 1111	Yes All, except "special" ACC on USIM	246 081	Yes	Yes
	"2460813579"	12 & x	1110 1011 1111 1111	No All, except "special" ACC on USIM	246 082	Yes	Yes
	"	12 & x	1110 1111 1111 1111	Yes All, except "special" ACC on USIM	246 082	Yes	Yes
	"2460813579"	13 & x	1101 1011 1111 1111	No All, except "special" ACC on USIM	246 082	Yes	Yes
	"	13 & x	1101 1111 1111 1111	Yes All, except "special" ACC on USIM	246 082	Yes	Yes
	"2460813579"	14 & x	1011 1011 1111 1111	No All, except "special" ACC on USIM	246 082	Yes	Yes
	"	14 & x	1011 1111 1111 1111	Yes All, except "special" ACC on USIM	246 082	Yes	Yes
	"2460813579"	15 & x	0111 1011 1111 1111	No All, except "special" ACC on USIM	246 081	Yes	Yes
	" Set "x" to an arbitrary value in the range 0 to 9	15 & x	0111 1111 1111 1111	Yes All, except "special" ACC on USIM	246 081	Yes	Yes

Table 5-1b

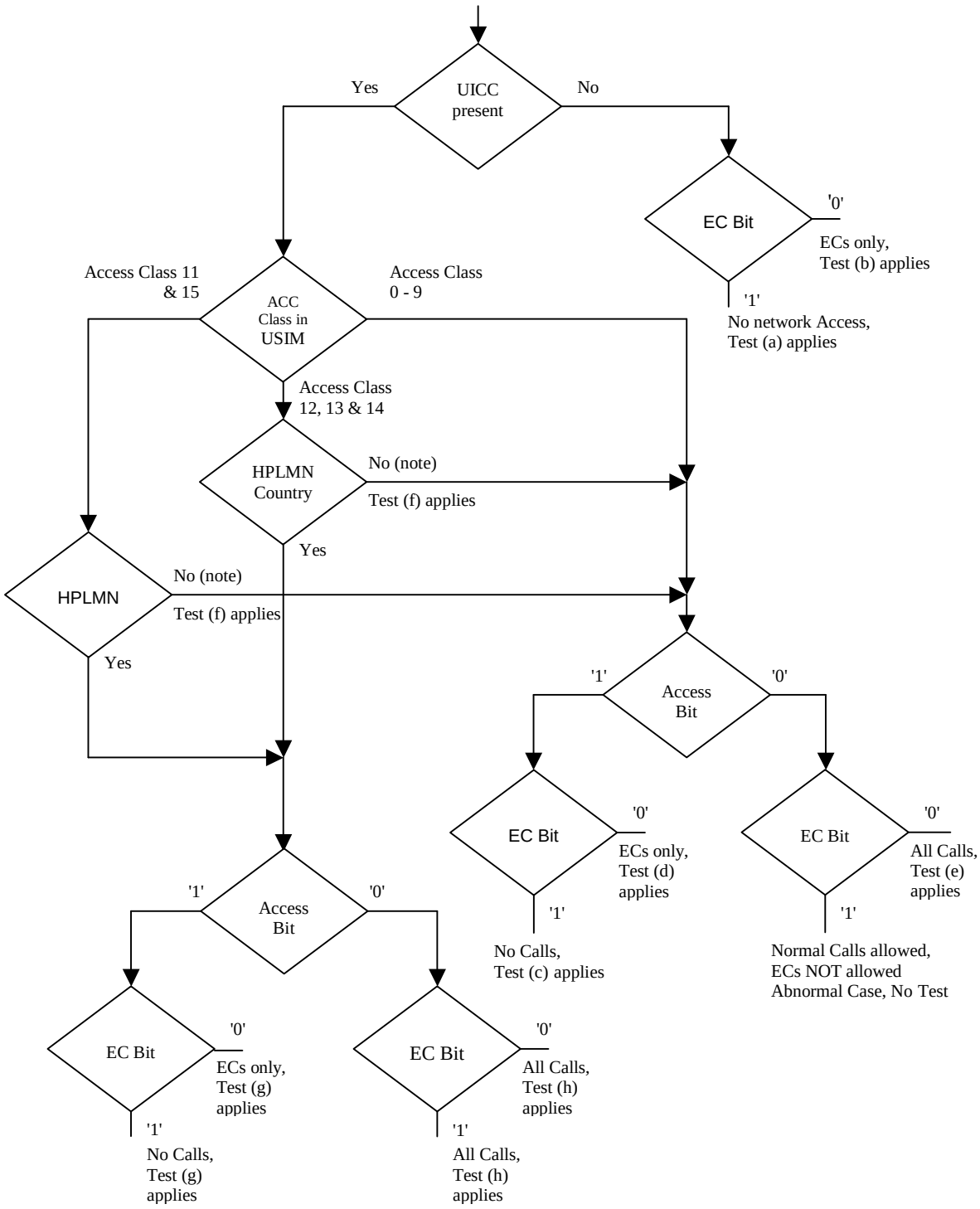
USIM			Network			Test Results	
IMSI			RACH	Informative: Cell Barred for:	BCCH/ LAI	Normal Call	Emergency Call
		Access Class	Octet 3 Octet 4	Emergency Call Normal Call	MCC MNC		
Test (a)	No UICC in Terminal	N/A	0000 0100 0000 0000	Yes No	234 001	No	No
Test (b)	No UICC in Terminal	N/A	0000 0000 0000 0000	No No	234 001	No	Yes
Test (c)	"2460813579"	0	0000 0100 0000 0001	Yes No, except for ACC	246 081	No	No
	"2460813579"	1	0000 0100 0000 0010	Yes No, except for ACC	246 081	No	No
	"2460813579"	2	0000 0100 0000 0100	Yes No, except for ACC	246 081	No	No
	"2460813579"	3	0000 0100 0000 1000	Yes No, except for ACC	246 081	No	No
	"2460813579"	4	0000 0100 0001 0000	Yes No, except for ACC	246 081	No	No
	"2460813579"	5	0000 0100 0010 0000	Yes No, except for ACC	246 081	No	No
	"2460813579"	6	0000 0100 0100 0000	Yes No, except for ACC	246 081	No	No
	"2460813579"	7	0000 0100 1000 0000	Yes No, except for ACC	246 081	No	No
	"2460813579"	8	0000 0101 0000 0000	Yes No, except for ACC	246 081	No	No
	"2460813579"	9	0000 0110 0000 0000	Yes No, except for ACC	246 081	No	No
Test (d)	"2460813579"	0	0000 0000 0000 0001	No None, except for ACC	246 081	No	Yes
	"2460813579"	1	0000 0000 0000 0010	No None, except for ACC	246 081	No	Yes
	"2460813579"	2	0000 0000 0000 0100	No None, except for ACC	246 081	No	Yes
	"2460813579"	3	0000 0000 0000 1000	No None, except for ACC	246 081	No	Yes
	"2460813579"	4	0000 0000 0001 0000	No None, except for ACC	246 081	No	Yes
	"2460813579"	5	0000 0000 0010 0000	No None, except for ACC	246 081	No	Yes

"2460813579"	6	0000 0000 0100 0000	No None, except for ACC	246 081	No	Yes
"2460813579"	7	0000 0000 1000 0000	No None, except for ACC	246 081	No	Yes
"2460813579"	8	0000 0001 0000 0000	No None, except for ACC	246 081	No	Yes
"2460813579"	9	0000 0010 0000 0000	No None, except for ACC	246 081	No	Yes

Test (e)	"2460813579"	0	1111 1011 1111 1110	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	1	1111 1011 1111 1101	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	2	1111 1011 1111 1011	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	3	1111 1011 1111 0111	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	4	1111 1011 1110 1111	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	5	1111 1011 1101 1111	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	6	1111 1011 1011 1111	No All, except ACC on USIM	246 081	Yes	Yes
	"2406813579"	7	1111 1011 0111 1111	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	8	1111 1010 1111 1111	No All, except ACC on USIM	246 081	Yes	Yes
	"2460813579"	9	1111 1001 1111 1111	No All, except ACC on USIM	246 081	Yes	Yes
Test (f)	"24608135x9"	11 & x	0000 0111 1111 1111	Yes All, except ACC greater than 11	246 082	No	No
	"	11 & x	0000 0011 1111 1111	No All, except ACC greater than 11	246 082	No	Yes
	"	11 & x	0000 0000 0000 0000	No None	246 082	Yes	Yes
	"24608135x9"	12 & x	0000 0111 1111 1111	Yes All, except ACC greater than 11	244 001	No	No
	"	12 & x	0000 0011 1111 1111	No All, except ACC greater than 11	244 001	No	Yes
	"	12 & x	0000 0000 0000 0000	No None	244 001	Yes	Yes
	"24608135x9"	13 & x	0000 0111 1111 1111	Yes All, except ACC greater than 11	244 001	No	No
	"	13 & x	0000 0011	No	244	No	Yes

			1111 1111	All, except ACC greater than 11	001		
	"	13 & x	0000 0000 0000 0000	No None	244 001	Yes	Yes
	"24608135x9"	14 & x	0000 0111 1111 1111	Yes All, except ACC greater than 11	244 001	No	No
	"	14 & x	0000 0011 1111 1111	No All, except ACC greater than 11	244 001	No	Yes
	"	14 & x	0000 0000 0000 0000	No None	244 001	Yes	Yes
	"24608135x9"	15 & x	0000 0111 1111 1111	Yes All, except ACC greater than 11	246 082	No	No
	"	15 & x	0000 0011 1111 1111	No All, except ACC greater than 11	246 082	No	Yes
	" Set "x" to an arbitrary value in the range 0 to 9	15 & x	0000 0000 0000 0000	No None	246 082	Yes	Yes
Test (g)	"2460813579"	11 & x	0000 1111 1111 1111	Yes All normal ACC and ACC on USIM	246 081	No	No
	"	11 & x	0000 1011 1111 1111	No All normal ACC and ACC on USIM	246 081	No	Yes
	"2460813579"	12 & x	0001 0111 1111 1111	Yes All normal ACC and ACC on USIM	246 082	No	No
	"	12 & x	0001 0011 1111 1111	No All normal ACC and ACC on USIM	246 082	No	Yes
	"2460813579"	13 & x	0010 0111 1111 1111	Yes All normal ACC and ACC on USIM	246 082	No	No
	"	13 & x	0010 0011 1111 1111	No All normal ACC and ACC on USIM	246 082	No	Yes
	"2460813579"	14 & x	0100 0111 1111 1111	Yes All normal ACC and ACC on USIM	246 082	No	No
	"	14 & x	0100 0011 1111 1111	No All normal ACC and ACC on USIM	246 082	No	Yes
	"2460813579"	15 & x	1000 0111 1111 1111	Yes All normal ACC and ACC on USIM	246 081	No	No

	" Set "x" to an arbitrary value in the range 0 to 9	15 & x	1000 0011 1111 1111	No All normal ACC and ACC on USIM	246 081	No	Yes
Test (h)	"2460813579"	11 & x	1111 0011 1111 1111	No All, except "special" ACC on USIM	246 081	Yes	Yes
	"	11 & x	1111 0111 1111 1111	Yes All, except "special" ACC on USIM	246 081	Yes	Yes
	"2460813579"	12 & x	1110 1011 1111 1111	No All, except "special" ACC on USIM	246 082	Yes	Yes
	"	12 & x	1110 1111 1111 1111	Yes All, except "special" ACC on USIM	246 082	Yes	Yes
	"2460813579"	13 & x	1101 1011 1111 1111	No All, except "special" ACC on USIM	246 082	Yes	Yes
	"	13 & x	1101 1111 1111 1111	Yes All, except "special" ACC on USIM	246 082	Yes	Yes
	"2460813579"	14 & x	1011 1011 1111 1111	No All, except "special" ACC on USIM	246 082	Yes	Yes
	"	14 & x	1011 1111 1111 1111	Yes All, except "special" ACC on USIM	246 082	Yes	Yes
	"2460813579"	15 & x	0111 1011 1111 1111	No All, except "special" ACC on USIM	246 081	Yes	Yes
	" Set "x" to an arbitrary value in the range 0 to 9	15 & x	0111 1111 1111 1111	Yes All, except "special" ACC on USIM	246 081	Yes	Yes



NOTE: UE adopts Access Class 0-9, based on IMSI, see TS 22.011 [6].
Access Class in USIM, See TS 31.102 [4], EF ACC, "6F 78".
Ecs: Emergency Calls.
EC Bit: In case of GERAN:
Bit 3 of Octet 3 of RACH Control Parameters, See TS 44.018 Section 10.5.2.29.
In case of UTRAN
Access Class 10 defined in TS 22.011 clause 4.4.
AC Bit: See Access Class Barred List defined in TS 25.331 clause 10.3.2.1.
HPLMN: Country means that the MCC of the VPLMN is the same as the MCC of the HPLMN.

Figure 5-1: Access control information

5.2.2 Access Control information handling for E-UTRAN/EPC

5.2.2.1 Definition and applicability

Access Control allows restriction of EPS bearer context activation access attempts. All User Equipments are assigned to one out of ten randomly allocated classes, and optionally (for priority uses) also to one or more special categories.

An Access Class of the special categories is only valid in the HPLMN or HPLMN country. Otherwise, the randomly allocated class is used.

The classes are programmed on the USIM. The network controls which classes at any time may be barred.

Emergency call handling is FFS.

5.2.2.2 Conformance requirement

1. The Terminal shall read the access control value as part of the USIM-Terminal initialisation procedure, and subsequently adopt this value.

   Reference:

- TS 31.102 [4], subclause 5.1.1.

2. If the UE is a member of at least one access class which corresponds to the permitted classes as signalled over the air interface, and the access class is applicable in the serving network,access attempts are allowed . Otherwise access attempts are not allowed.

   All options are shown in figure 5-2 and are referenced to the tests.

   Reference:

- TS 22.011 [6], subclauses 4.3 and 4.4,
- TS 24.301 [26], subclause 5.5.1.2.6,

5.2.2.3 Test purpose

1) To verify that the Terminal reads the access control value as part of the USIM-Terminal initialisation procedure, and subsequently adopts this value.

2) To verify that the UE controls its network access in accordance with its access control class and the conditions imposed by the serving network.

The tests verify Terminal performance for the following:

Tests (a) to (b)	UE with access class 0 to 9.
Test (c)	UE with access class 11 and 15 not in HPLMN, and UE with access class 12,13 and 14 not in HPLMN country.
Test (d) and (e)	UE with access class 11 and 15 in HPLMN, and UE with access class 12,13 and 14 in HPLMN country.

Each of the above are tested against all relevant combinations of access control bits signalled by the network, as shown in table 5-2.

5.2.2.4 Method of test

5.2.2.4.1 Initial conditions

The E-USS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): MCC, MNC: see table 5-2, TAC="0001".

- Access control: see table 5-2.

The default UICC is installed in the Terminal containing IMSI and access control values as given in table 5-x and the UE is powered on.

NOTE: Depending on the initial value of the $EF_{EPSLOCI}$, the UE may perform a location update. This shall be accepted by the E-USS.

5.2.2.4.2 Coding details

EF_{IMSI}: Data Field "6F 07"

Logically: IMSI: "2460813579"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9
Hex	06	21	64	80	31	75	F9	FF	FF

Logically: IMSI: "24608135x9"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9
Hex	06	21	64	80	31	x5	F9	FF	FF

Access Control class EF_{ACC}: Data field "6F 78"

Reference:

- See TS 31.102 [4].

NETWORK (E-USS)

ac-BarringInfo in SystemInformationBlockType2 should be set as in table 5-2:

Reference

- TS 36.331 clause 6.3.1

5.2.2.4.3 Procedure

a) The terminal is switched on and performs registration if access is allowed for signalling according to table 5-2.

b) Using the MMI or EMMI a normal EPS bearer context setup is attempted if required by the test.

c) The test is repeated for each set of values in table 5-2.

5.2.2.5 Acceptance criteria

After step a) the UE shall access the network, or shall make no access attempt, in accordance with table 5-2.

In case in tables 5-2 the cell is indicated as

barred = yes, in these sub-sequences, the UE shall not establish a connection

barred = no, the UE shall establish a connection.

NOTE 1: For conformance testing, to limit testing, in tests (a), (b) and (c) it is only necessary that one of the access classes is tested. This access class may be chosen randomly.

Table 5-2

USIM			Network			
	IMSI	**Access class:**	**SIBType2: ac-BarringInfo**	**Cell barred for ATTACH and Default EPS bearer context activation:**	**MCC MNC for BCCH/ LAI**	**Cell barred for second (non-default) EPS bearer context setup:**
Test (a)	"2460813579"	0	**SIBType2_A01**	No	246 081	Yes
	"2460813579"	1	**SIBType2_A01**	No	246 081	Yes
	"2460813579"	2	**SIBType2_A01**	No	246 081	Yes
	"2460813579"	3	**SIBType2_A01**	No	246 081	Yes
	"2460813579"	4	**SIBType2_A01**	No	246 081	Yes
	"2460813579"	5	**SIBType2_A01**	No	246 081	Yes
	"2460813579"	6	**SIBType2_A01**	No	246 081	Yes
	"2460813579"	7	**SIBType2_A01**	No	246 081	Yes
	"2460813579"	8	**SIBType2_A01**	No	246 081	Yes
	"2460813579"	9	**SIBType2_A01**	No	246 081	Yes
Test (b)	"2460813579"	0	**SIBType2_B01**	No	246 081	No
	"2460813579"	1	**SIBType2_B01**	No	246 081	No
	"2460813579"	2	**SIBType2_B01**	No	246 081	No
	"2460813579"	3	**SIBType2_B01**	No	246 081	No
	"2460813579"	4	**SIBType2_B01**	No	246 081	No
	"2460813579"	5	**SIBType2_B01**	No	246 081	No
	"2460813579"	6	**SIBType2_B01**	No	246 081	No
	"2460813579"	7	**SIBType2_B01**	No	246 081	No

"2460813579"	8	**SIBType2_B01**	No	246 081	No
"2460813579"	9	**SIBType2_B01**	No	246 081	No

Test (c)	"24608135x9"	11 & x	**SIBType2_A01**	No	246 082	Yes
	"	11 & x	**SIBType2_C11_01**	No	246 082	Yes
	"	11 & x	**SIBType2_C11_02**	Yes	246 082	N/A (no registration possible as initial condition)
	"24608135x9"	12 & x	**SIBType2_A01**	No	244 001	Yes
	"	12 & x	**SIBType2_C12_01**	No	244 001	Yes
	"	12 & x	**SIBType2_C12_02**	Yes	244 001	N/A (no registration possible as initial condition)
	"24608135x9"	13 & x	**SIBType2_A01**	No	244 001	Yes
	"	13 & x	**SIBType2_C13_01**	No	244 001	Yes
	"	13 & x	**SIBType2_C13_02**	Yes	244 001	N/A (no registration possible as initial condition)
	"24608135x9"	14 & x	**SIBType2_A01**	No	244 001	Yes
	"	14 & x	**SIBType2_C14_01**	No	244 001	Yes
	"	14 & x	**SIBType2_C14_02**	Yes	244 001	N/A (no registration possible as initial condition)
	"24608135x9"	15 & x	**SIBType2_A01**	No	246 082	Yes
	"	15 & x	**SIBType2_C15_01**	No	246 082	Yes
	"	15 & x	**SIBType2_C15_02**	Yes	246 082	N/A (no registration possible as initial condition)
	Set "x" to an arbitrary value in the range 0 to 9					
Test (d)	"2460813579"	11 & x	**SIBType2_C11_01**	No	246 081	Yes
	"	11 & x	**SIBType2_C11_02**	Yes	246 081	N/A

	"2460813579"	12 & x	**SIBType2_C12_01**	No	246 082	Yes
	"	12 & x	**SIBType2_C12_02**	Yes	246 082	N/A
	"2460813579"	13 & x	**SIBType2_C13_01**	No	246 082	Yes
	"	13 & x	**SIBType2_C13_02**	Yes	246 082	N/A
	"2460813579"	14 & x	**SIBType2_C14_01**	No	246 082	Yes
	"	14 & x	**SIBType2_C14_02**	Yes	246 082	N/A
	"2460813579"	15 & x	**SIBType2_C15_01**	No	246 081	Yes
	" Set "x" to an arbitrary value in the range 0 to 9	15 & x	**SIBType2_C15_02**	Yes	246 081	N/A
Test (e)	"2460813579"	11 & x	**SIBType2_C11_03**	No	246 081	No
	"2460813579"	12 & x	**SIBType2_C12_03**	No	246 082	No
	"2460813579"	13 & x	**SIBType2_C13_03**	No	246 082	No
	"2460813579"	14 & x	**SIBType2_C14_03**	No	246 082	No
	"2460813579" Set "x" to an arbitrary value in the range 0 to 9	15 & x	**SIBType2_C15_03**	No	246 081	No

Specific message contents for Table 5-2

SystemInformationBlockType2 configuration **SIBType2_A01**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling	Not present		
ac-BarringForMO-Data SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'00000'B		
}			
}			
}			

SystemInformationBlockType2 configuration **SIBType2_B01**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling	Not present		
ac-BarringForMO-Data	Not present		
}			
}			

SystemInformationBlockType2 configuration **SIBType2_C11_01**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling	Not present		
ac-BarringForMO-Data SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'10000'B		
}			
}			
}			

SystemInformationBlockType2 configuration **SIBType2_C11_02**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'10000'B		
}			
ac-BarringForMO-Data	Not present		
}			
}			

SystemInformationBlockType2 configuration **SIBType2_C11_03**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling	Not present		
ac-BarringForMO-Data SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'01111'B		
}			
}			
}			

SystemInformationBlockType2 configuration **SIBType2_C12_01**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling	Not present		
ac-BarringForMO-Data SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'01000'B		
}			
}			
}			

SystemInformationBlockType2 configuration **SIBType2_C12_02**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'01000'B		
}			
ac-BarringForMO-Data	Not present		
}			
}			

SystemInformationBlockType2 configuration **SIBType2_C12_03**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling	Not present		
ac-BarringForMO-Data SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'10111'B		
}			
}			
}			

SystemInformationBlockType2 configuration **SIBType2_C13_01**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling	Not present		
ac-BarringForMO-Data SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'00100'B		
}			
}			
}			

SystemInformationBlockType2 configuration **SIBType2_C13_02**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'00100'B		
}			
ac-BarringForMO-Data	Not present		
}			
}			

SystemInformationBlockType2 configuration **SIBType2_C13_03**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling	Not present		
ac-BarringForMO-Data SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'11011'B		
}			
}			
}			

SystemInformationBlockType2 configuration **SIBType2_C14_01**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling	Not present		
ac-BarringForMO-Data SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'00010'B		
}			
}			
}			

SystemInformationBlockType2 configuration **SIBType2_C14_02**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'00010'B		
}			
ac-BarringForMO-Data	Not present		
}			
}			

SystemInformationBlockType2 configuration **SIBType2_C14_03**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling	Not present		
ac-BarringForMO-Data SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'11101'B		
}			
}			
}			

SystemInformationBlockType2 configuration **SIBType2_C15_01**

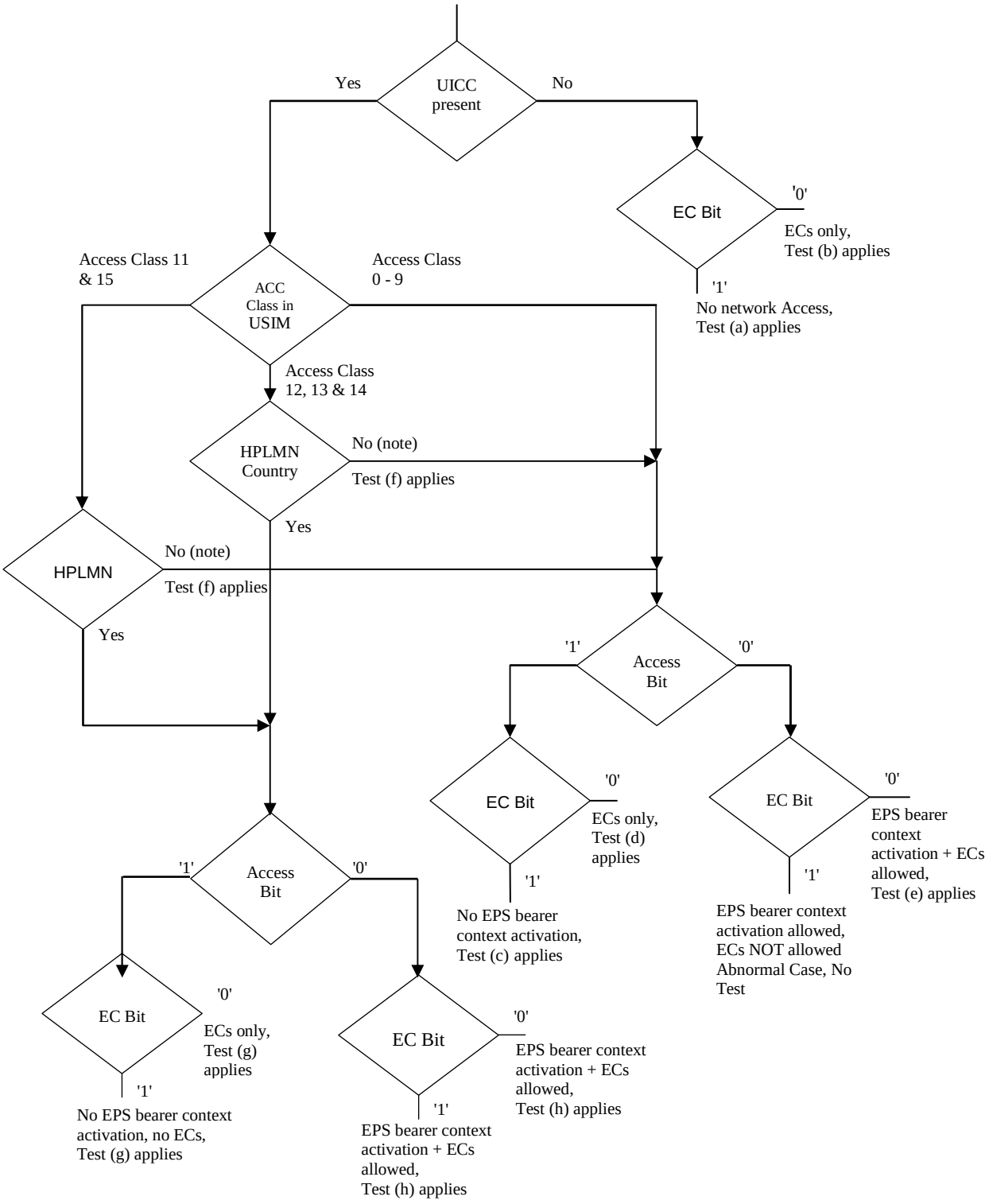
Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling	Not present		
ac-BarringForMO-Data SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'00001'B		
}			
}			
}			

SystemInformationBlockType2 configuration **SIBType2_C15_02**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'00001'B		
}			
ac-BarringForMO-Data	Not present		
}			
}			

SystemInformationBlockType2 configuration **SIBType2_C15_03**

Derivation Path: 36.508, Table 4.4.3.3-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SystemInformationBlockType2 ::= SEQUENCE {			
ac-BarringInfo SEQUENCE {			
ac-BarringForEmergency	FALSE		
ac-BarringForMO-Signalling	Not present		
ac-BarringForMO-Data SEQUENCE {			
ac-BarringFactor	p00		
ac-BarringTime	s512		
ac-BarringForSpecialAC	'11110'B		
}			
}			
}			



Editor's note: the flow chart is currently for information only and has to be updated to be in line with 36.331, this is TBD.

NOTE: UE adopts Access Class 0-9, based on IMSI, see TS 22.011 [6].
Access Class in USIM, See TS 31.102 [4], EF ACC, "6F 78".
ECs: Emergency Calls.
EC Bit: see description in 36.331, clause 6.3.1
Access Class 10 defined in TS 22.011 clause 4.4.
AC Bit: see description in 36.331, clause 6.3.1.
HPLMN: Country means that the MCC of the VPLMN is the same as the MCC of the HPLMN.

Figure 5-2: Access control information

6 Security related Tests

6.1 PIN handling

6.1.1 Entry of PIN

6.1.1.1 Definition and applicability

The PIN is a number used to authenticate the user to the UICC for security. Entry of the correct PIN allows PIN-protected data to be accessed over the UICC-Terminal interface.

6.1.1.2 Conformance requirement

Following insertion of the UICC and switching on the UE, the Terminal shall check the state of the PIN. If the PIN is enabled, the Terminal asks the user for PIN verification.

The VERIFY PIN function verifies the PIN presented by the Terminal to the UICC.

Reference:

- ETSI TS 102 221 [5], subclauses 9 and 11.1.9;
- TS 31.102 [4], clause 6;
- TS 22.030 [12], subclause 6.6.1.

6.1.1.3 Test purpose

1) To verify that the PIN verification procedure is performed by the Terminal correctly.
2) To verify that the basic public MMI string is supported.

6.1.1.4 Method of test

6.1.1.4.1 Initial conditions

The Terminal is connected to a UICC or UICC simulator with the PIN enabled, and powered off.

The default UICC is used.

6.1.1.4.2 Procedure

a) The Terminal is powered on.
b) When the UE is in the "PIN check" mode, the sequence "2468#" shall be entered.

6.1.1.5 Acceptance criteria

1) After step b) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "01".
2) After step b) the UE shall give an indication "OK", following a successful execution of the command.

6.1.2 Change of PIN

6.1.2.1 Definition and applicability

The PIN may be changed by the user, by entering the old and new PIN. The length of the PIN is between 4 and 8 digits.

6.1.2.2 Conformance requirement

The Terminal shall support the change of PIN procedure as defined in ETSI TS 102 221 [5], subclause 11.1.10.

Reference:

- ETSI TS 102 221 [5], subclauses 9 and 11.1.10;
- TS 31.102 [4], clause 6;
- TS 22.030 [12], subclause 6.6.2.

6.1.2.3 Test purpose

1) To verify that the PIN substitution procedure is performed correctly by the Terminal.
2) To verify that the basic public MMI string is supported.

6.1.2.4 Method of test

6.1.2.4.1 Initial conditions

The Terminal is connected to a UICC or UICC simulator with the PIN enabled.

The default UICC is used.

The Terminal is powered-on, with the correct PIN entered.

6.1.2.4.2 Procedure

a) Enter "**04*2468*01234567*01234567#" or initiate an equivalent MMI dependent procedure to change the PIN from '2468' to '01234567'.
b) The UE is switched off and on.
c) When the UE is in the "PIN check" mode, the sequence "2468#" shall be entered.
d) The UE is switched off and on.
e) When the UE is in the "PIN-check", mode the sequence "01234567#" shall be entered.

6.1.2.5 Acceptance criteria

1) After step a), the Terminal shall send a CHANGE PIN command to the UICC, with the parameter P2 set to "01".
2) Following the successful execution of the command, the UE shall give an indication that the new PIN is accepted.
3) After step c), the UE shall give an indication that the entered PIN is not accepted.
4) After step e), the UE shall give an indication "OK".

6.1.3 Unblock PIN

6.1.3.1 Definition and applicability

After three consecutive wrong entries of the PIN, the PIN shall become blocked. The Unblock PIN command is used to unblock the PIN. This function may be performed whether or not the PIN is blocked.

6.1.3.2 Conformance requirement

The Terminal shall support the Unblock PIN command, as defined in ETSI TS 102 221 [5], subclause 11.1.13.

Reference:

- ETSI TS 102 221 [5], subclause 11.1.13;
- TS 31.102 [4], clause 6;
- TS 22.030 [12], subclause 6.6.3.

6.1.3.3 Test purpose

1) To verify that the PIN unblocking procedure is performed correctly.
2) To verify that the basic public MMI string is supported.

6.1.3.4 Method of test

6.1.3.4.1 Initial conditions

The Terminal is connected to the UICC simulator.

The default UICC is used.

6.1.3.4.2 Procedure

Sequence A:

a) The Terminal is powered on and the correct PIN is entered.
b) Enter "**05*13243546*1234*1234#"
c) The Terminal is powered off and on.
d) Enter the new PIN: "1234#".
e) The Terminal is powered off and on.
f) Enter a wrong PIN three times.
g) Enter "**05*13243546*2468*2468#".
h) The Terminal is powered off and on.
i) Enter the new PIN: "2468#".

Sequence B:

a) The Terminal is powered on.
b) Enter a wrong PIN three times.
c) The user shall initiate a MMI dependent procedure to unblock the PIN with unblock code '13243546' and a new PIN '2468'.

d) The Terminal is powered off and on.

e) Enter the new PIN: "2468#".

6.1.3.5 Acceptance criteria

Sequence A:

1) After step b), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "01".

2) After step d), the Terminal shall indicate that the PIN has been accepted.

3) After step f), the Terminal shall indicate that the PIN has been blocked.

4) After step g), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "01".

5) After step i), the Terminal shall indicate that the PIN has been accepted.

Sequence B:

1) After step b), the Terminal shall indicate that the PIN has been blocked.

2) After step c), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "01".

3) After step e), the Terminal shall indicate that the PIN has been accepted.

6.1.4 Entry of PIN2

6.1.4.1 Definition and applicability

The PIN2 is a number used to authenticate the user to the UICC for security. Entry of the correct PIN2 allows PIN2-protected data to be accessed over the UICC-Terminal interface.

6.1.4.2 Conformance requirement

Before allowing the access to PIN2 protected data, the Terminal shall ask the user for PIN2 verification. Only after presenting the PIN2, the user shall get access to these data.

The VERIFY PIN function verifies the PIN2 presented by the Terminal to the UICC.

Reference:

- ETSI TS 102 221 [5], subclauses 9 and 11.1.9;
- TS 31.102 [4], clause 6;
- TS 22.030 [12], subclause 6.6.1.

6.1.4.3 Test purpose

1) To verify that the PIN2 verification procedure is performed by the Terminal correctly.

2) To verify that the basic public MMI string is supported.

6.1.4.4 Method of test

6.1.4.4.1 Initial conditions

The Terminal is connected to a UICC or UICC simulator with the PIN enabled, and powered off.

The default UICC is used.

NOTE: To perform the UPDATE FDN data (as described in the procedure below), the default FDN UICC may be used.

6.1.4.4.2 Procedure

a) The Terminal is powered on and the correct PIN is entered.

b) The access to a PIN2 protected data field shall be performed (e.g. UPDATE FDN)

c) When the UE is in the "PIN2 check" mode, the sequence "3579#" shall be entered.

6.1.4.5 Acceptance criteria

1) After step c) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "81".

2) After step c) the UE shall give an indication "OK", following a successful execution of the command.

6.1.5 Change of PIN2

6.1.5.1 Definition and applicability

The PIN2 may be changed by the user, by entering the old and new PIN2. The length of the PIN2 is between 4 and 8 digits.

6.1.5.2 Conformance requirement

The Terminal shall support the change of PIN2 procedure as defined in ETSI TS 102 221 [5], subclause 11.1.10.

Reference:

- ETSI TS 102 221 [5], subclauses 9 and 11.1.10;
- TS 31.102 [4], clause 6;
- TS 22.030 [12], subclause 6.6.2.

6.1.5.3 Test purpose

1) To verify that the PIN2 substitution procedure is performed correctly by the Terminal.

2) To verify that the basic public MMI string is supported.

6.1.5.4 Method of test

6.1.5.4.1 Initial conditions

The Terminal is connected to a UICC or UICC simulator with the PIN2 enabled.

The default UICC is used.

NOTE: To perform the UPDATE FDN data (as described in the procedure below), the default FDN UICC may be used.

The Terminal is powered-on, with the correct PIN entered.

6.1.5.4.2 Procedure

a) Enter "**042*3579*12345678*12345678#" or initiate an equivalent MMI dependent procedure to change PIN2 from '3579' to '12345678'.

b) The UE is switched off and on and the correct PIN is entered.

c) The access to a PIN2 protected data field shall be performed (e.g. UPDATE FDN).

d) When the UE is in the "PIN2 check" mode, the sequence "3579#" shall be entered.

e) The UE is switched off and on and the correct PIN is entered.

f) The access to a PIN2 protected data field shall be performed (e.g. UPDATE FDN).

g) When the UE is in the "PIN2 check", mode the sequence "12345678#" shall be entered.

6.1.5.5 Acceptance criteria

1) After step a), the Terminal shall send a CHANGE PIN2 command to the UICC, with the parameter P2 set to "81".

2) Following the successful execution of the command, the UE shall give an indication that the new PIN2 is accepted.

3) After step d), the UE shall give an indication that the entered PIN2 is not accepted.

4) After step g), the UE shall give an indication "OK".

6.1.6 Unblock PIN2

6.1.6.1 Definition and applicability

After three consecutive wrong entries of the PIN2, the PIN2 shall become blocked. The Unblock PIN2 command is used to unblock the PIN2. This function may be performed whether or not the PIN2 is blocked.

6.1.6.2 Conformance requirement

The Terminal shall support the Unblock PIN2 command, as defined in ETSI TS 102 221 [5], subclause 11.1.13.

Reference:

- ETSI TS 102 221 [5], subclauses 9 and 11.1.13;
- TS 31.102 [4], clause 6;
- TS 22.030 [12], subclause 6.6.3.

6.1.6.3 Test purpose

1) To verify that the PIN2 unblocking procedure is performed correctly.

2) To verify that the basic public MMI string is supported.

6.1.6.4 Method of test

6.1.6.4.1 Initial conditions

The Terminal is connected to the UICC simulator.

The default UICC is used.

NOTE: To perform the UPDATE FDN data (as described in the procedure below), the default FDN UICC may be used.

6.1.6.4.2 Procedure

Sequence A:

a) The Terminal is powered on and the correct PIN is entered.

b) Enter "**052*08978675*1234*1234#"

c) The Terminal is powered off and on and the correct PIN is entered.

d) The access to a PIN2 protected data field shall be performed (e.g. UPDATE FDN).

e) Enter the new PIN2: "1234#".

f) The Terminal is powered off and on and the correct PIN is entered.

g) The access to a PIN2 protected data field shall be performed (e.g. UPDATE FDN).

h) Enter a wrong PIN2 three times.

i) Enter "**052*08978675*3579*3579#".

j) The Terminal is powered off and on and the correct PIN is entered.

k) The access to a PIN2 protected data field shall be performed (e.g. UPDATE FDN).

l) Enter the new PIN2: "3579#".

Sequence B:

a) The Terminal is powered on.

b) Enter a wrong PIN2 three times.

c) The user shall initiate a MMI dependent procedure to unblock the PIN2 with unblock code '08978675' and a new PIN '3579'.

d) The Terminal is powered off and on and the correct PIN is entered.

e) The access to a PIN2 protected data field shall be performed (e.g. UPDATE FDN).

f) Enter the new PIN2: "3579#".

6.1.6.5 Acceptance criterias

Sequence A:

1) After step b), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "81".

2) After step e), the Terminal shall indicate that the PIN2 has been accepted.

3) After step h), the Terminal shall indicate that the PIN2 has been blocked.

4) After step i), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "81".

5) After step l), the Terminal shall indicate that the PIN2 has been accepted.

Sequence B:

1) After step b), the Terminal shall indicate that the PIN2 has been blocked.

2) After step c), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "81".

3) After step f), the Terminal shall indicate that the PIN2 has been accepted.

6.1.7 Replacement of PIN

6.1.7.1 Definition and applicability

The Universal PIN may be used to replace a PIN used to authenticate the user to the UICC for security. In this case entry of the correct Universal PIN allows PIN-protected data to be accessed over the UICC-Terminal interface. ETSI TS 102 221 [5] defines the range of "01" to "08" as key reference of the PIN on a multi-verification capable UICC.

6.1.7.2 Conformance requirement

The Terminal shall support the usage of the Universal PIN as replacement PIN and the replacement procedure as defined in ETSI TS 102 221 [5], subclause 11.1.11, as well as the procedure to disable the replacement defined in ETSI TS 102 221 [5], subclause 11.1.12.

Reference:

- ETSI TS 102 221 [5], subclauses 9, 11.1.11 and 11.1.12;
- TS 31.102 [4], clause 6.

6.1.7.3 Test purpose

1) To verify that the PIN replacement is supported by the Terminal correctly.
2) To verify that the PIN replacement procedure is performed by the Terminal correctly.
3) To verify that the procedure to disable the PIN replacement is performed by the Terminal correctly.

6.1.7.4 Method of test

6.1.7.4.1 Initial conditions

The Terminal is connected to the UICC simulator with the PIN enabled, and powered off.

The default UICC is used.

6.1.7.4.2 Procedure

a) The Terminal is powered on.
b) When the Terminal is in the "PIN check" mode, the sequence "2468#" shall be entered.
c) The user shall initiate an MMI dependent procedure to replace the PIN by the Universal PIN.
d) The Terminal is powered off and on and when the Terminal is in "PIN check" mode the sequence "2468#" shall be entered.
e) The correct Universal PIN is entered.
f) The user shall initiate an MMI dependent procedure to disable the replacement of the PIN by the Universal PIN.
g) The Terminal is powered off and on and when the Terminal is in "PIN check" mode the sequence "2839#" shall be entered.
h) The correct PIN is entered.

6.1.7.5 Acceptance criteria

1) After step b) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "01".

2) After step c), the Terminal shall send a DISABLE PIN command to the UICC, with parameter P1="91" and P2 = "01".

3) After step d) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "11" and after unsuccessful execution of the command the Terminal shall indicate that the PIN has not been accepted.

4) After step e) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "11" and after successful execution of the command the Terminal shall indicate that the PIN has been accepted.

5) After step f), the Terminal shall send an ENABLE PIN command to the UICC, with parameter P2 = "01".

6) After step g) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "01" and after unsuccessful execution of the command the Terminal shall indicate that the PIN has not been accepted.

7) After step e) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "01" and after successful execution of the command the Terminal shall indicate that the PIN has been accepted.

6.1.8 Change of Universal PIN

6.1.8.1 Definition and applicability

The Universal PIN may be changed by the user, by entering the old and new Universal PIN. The length of the Universal PIN is between 4 and 8 digits.

6.1.8.2 Conformance requirement

The Terminal shall support the change of PIN procedure as defined in ETSI TS 102 221 [5], subclause 11.1.10.

Reference:

- ETSI TS 102 221 [5], subclauses 9 and 11.1.10;
- TS 31.102 [4], clause 6.

6.1.8.3 Test purpose

To verify that the PIN substitution procedure is performed correctly by the Terminal.

6.1.8.4 Method of test

6.1.8.4.1 Initial conditions

The Terminal is connected to a UICC or UICC simulator with the PIN enabled.

The default UICC is used with the following exception:

- The Universal PIN is used as a replacement of the PIN.

The Terminal is powered-on, with the correct Universal PIN entered.

6.1.8.4.2 Procedure

a) The user shall initiate an MMI dependent procedure to change the Universal PIN to "01234567".

b) The UE is switched off and on.

c) When the UE is in the "PIN check" mode, the sequence "2839#" shall be entered.

d) The UE is switched off and on.

e) When the UE is in the "PIN check", mode the sequence "01234567#" shall be entered.

6.1.8.5 Acceptance criteria

1) After step a), the Terminal shall send a CHANGE PIN command to the UICC, with the parameter P2 set to "11".

2) Following the successful execution of the command, the UE shall give an indication that the new (Universal) PIN is accepted.

3) After step c), the UE shall give an indication that the entered (Universal) PIN is not accepted.

4) After step e), the UE shall give an indication "OK".

6.1.9 Unblock Universal PIN

6.1.9.1 Definition and applicability

After three consecutive wrong entries of the PIN, the PIN shall become blocked. The Unblock PIN command is used to unblock the PIN. This function may be performed whether or not the PIN is blocked.

6.1.9.2 Conformance requirement

The Terminal shall support the Unblock PIN command, as defined in ETSI TS 102 221 [5], subclause 11.1.13.

Reference:

- ETSI TS 102 221 [5], subclause 11.1.13;
- TS 31.102 [4], clause 6.

6.1.9.3 Test purpose

To verify that the PIN unblocking procedure is performed correctly.

6.1.9.4 Method of test

6.1.9.4.1 Initial conditions

The Terminal is connected to the UICC simulator.

The default UICC is used.

6.1.9.4.2 Procedure

a) The Terminal is powered on and the correct PIN is entered.

b) The user shall initiate an MMI dependent procedure to unblock the Universal PIN and set the new Universal PIN value to "1234"

c) The Terminal is powered off and on.

d) Enter the new PIN: "1234#".

e) The Terminal is powered off and on.

f) Enter a wrong PIN three times.

g) The user shall initiate an MMI dependent procedure to unblock the Universal PIN and set the new Universal PIN value to "2839".

h) The Terminal is powered off and on.

i) Enter the new PIN: "2839#".

6.1.9.5 Acceptance criteria

1) After step b), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "11".
2) After step d), the Terminal shall indicate that the (Universal) PIN has been accepted.
3) After step f), the Terminal shall indicate that the (Universal) PIN has been blocked.
4) After step g), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "11".
5) After step j), the Terminal shall indicate that the (Universal) PIN has been accepted.

6.1.10 Entry of PIN on multi-verification capable UICCs

6.1.10.1 Definition and applicability

The PIN is a number used to authenticate the user to the UICC for security. Entry of the correct PIN allows PIN-protected data to be accessed over the UICC-Terminal interface. ETSI TS 102 221 [5] defines the range of "01" to "08" as key reference of the PIN on a multi-verification capable UICC.

6.1.10.2 Conformance requirement

Following insertion of the UICC and switching on the UE, the Terminal shall check the state of the PIN. If the PIN is enabled, the Terminal asks the user for PIN verification.

The VERIFY PIN function verifies the PIN presented by the Terminal to the UICC.

Reference:

- ETSI TS 102 221 [5], subclauses 9 and 11.1.9;
- TS 31.102 [4], clause 6;
- TS 22.030 [12], subclause 6.6.1.

6.1.10.3 Test purpose

1) To verify that the PIN verification procedure is performed by the Terminal correctly.
2) To verify that the basic public MMI string is supported.
3) To verify that the Terminal supports key references in the range of "01" to "08" as PIN.

6.1.10.4 Method of test

6.1.10.4.1 Initial conditions

The Terminal is connected to the UICC simulator with the PIN enabled, and powered off.

The default UICC is used with the following exceptions:

The UICC shall be configured to use "07" as the key reference of the PIN and "87" as key reference of the PIN2 with the following values:

PIN

Key reference: 07

Logically: 8642

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	38	36	34	32	FF	FF	FF	FF

Unblock PIN

Key reference 07

Logically: 64534231

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	36	34	35	33	34	32	33	31

PIN2

Key reference 87

Logically: 9753

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	39	37	35	33	FF	FF	FF	FF

Unblock PIN2

Key reference 87

Logically: 57687980

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	35	37	36	38	37	39	38	30

6.1.10.4.2 Procedure

a) The Terminal is powered on.

b) When the UE is in the "PIN check" mode, the sequence "8642#" shall be entered.

6.1.10.5 Acceptance criteria

1) After step b) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "07".

2) After step b) the UE shall give an indication "OK", following a successful execution of the command.

6.1.11 Change of PIN on multi-verification capable UICCs

6.1.11.1 Definition and applicability

The PIN may be changed by the user, by entering the old and new PIN. The length of the PIN is between 4 and 8 digits. ETSI TS 102 221 [5] defines the range of "01" to "08" as key reference of the PIN on a multi-verification capable UICC.

6.1.11.2 Conformance requirement

The Terminal shall support the change of PIN procedure as defined in TS 102 221 [5], subclause 11.1.10.

Reference:

- ETSI TS 102 221 [5], subclauses 9 and 11.1.10;
- TS 31.102 [4], clause 6;
- TS 22.030 [12], subclause 6.6.2.

6.1.11.3 Test purpose

1) To verify that the PIN substitution procedure is performed correctly by the Terminal.

2) To verify that the basic public MMI string is supported.

3) To verify that the Terminal supports key references in the range of "01" to "08" as PIN.

6.1.11.4 Method of test

6.1.11.4.1 Initial conditions

The Terminal is connected to the UICC simulator with the PIN enabled.

The default UICC is used with the following exceptions:

The UICC shall be configured to use "07" as the reference of the PIN and "87" as reference of the PIN2 with the following values:

PIN

Key reference: 07

Logically: 8642

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	38	36	34	32	FF	FF	FF	FF

Unblock PIN

Key reference 07

Logically: 64534231

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	36	34	35	33	34	32	33	31

PIN2

Key reference 87

Logically: 9753

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	39	37	35	33	FF	FF	FF	FF

Unblock PIN2

Key reference 87

Logically: 57687980

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	35	37	36	38	37	39	38	30

The Terminal is powered-on, with the correct PIN entered.

6.1.11.4.2 Procedure

a) Enter "**04*8642*01234567*01234567#" or initiate an equivalent MMI dependent procedure to change the PIN from '8642' to '01234567'..

b) The UE is switched off and on.

c) When the UE is in the "PIN check" mode, the sequence "8642#" shall be entered.

d) The UE is switched off and on.

e) When the UE is in the "PIN check", mode the sequence "01234567#" shall be entered.

6.1.11.5 Acceptance criteria

1) After step a), the Terminal shall send a CHANGE PIN command to the UICC, with the parameter P2 set to "07".

2) Following the successful execution of the command, the UE shall give an indication that the new PIN is accepted.

3) After step c), the UE shall give an indication that the entered PIN is not accepted.

3) After step e), the UE shall give an indication "OK".

6.1.12 Unblock PIN on multi-verification capable UICCs

6.1.12.1 Definition and applicability

After three consecutive wrong entries of the PIN, the PIN shall become blocked. The Unblock PIN command is used to unblock the PIN. This function may be performed whether or not the PIN is blocked. ETSI TS 102 221 [5] defines the range of "01" to "08" as key reference of the PIN on a multi-verification capable UICC.

6.1.12.2 Conformance requirement

The Terminal shall support the Unblock PIN command, as defined in ETSI TS 102 221 [5], subclause 11.1.13.

Reference:

- ETSI TS 102 221 [5], subclauses 9 and 11.1.13;
- TS 31.102 [4], clause 6;
- TS 22.030 [12], subclause 6.6.3.

6.1.12.3 Test purpose

1) To verify that the PIN unblocking procedure is performed correctly.

2) To verify that the basic public MMI string is supported.

3) To verify that the Terminal supports key references in the range of "01" to "08" as PIN.

6.1.12.4 Method of test

6.1.12.4.1 Initial conditions

The Terminal is connected to the UICC simulator.

The default UICC is used with the following exceptions:

The UICC shall be configured to use "07" as the reference of the PIN and "87" as reference of the PIN2 with the following values:

PIN

Key reference: 07

Logically: 8642

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	38	36	34	32	FF	FF	FF	FF

Unblock PIN

Key reference 07

Logically: 64534231

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	36	34	35	33	34	32	33	31

PIN2

Key reference 87

Logically: 9753

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	39	37	35	33	FF	FF	FF	FF

Unblock PIN2

Key reference 87

Logically: 57687980

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	35	37	36	38	37	39	38	30

6.1.12.4.2 Procedure

Sequence A:

a) The Terminal is powered on and the correct PIN is entered.

b) Enter "**05*64534231*1234*1234#"

c) The Terminal is powered off and on.

d) Enter the new PIN: "1234#".

e) The Terminal is powered off and on.

f) Enter a wrong PIN three times.

g) Enter "**05*64534231*8642*8642#".

h) The Terminal is powered off and on.

i) Enter the new PIN: "8642#".

Sequence B:

a) The Terminal is powered on.

b) Enter a wrong PIN three times.

c) The user shall initiate a MMI dependent procedure to unblock the PIN with unblock code '64534231' and a new PIN '8642'.

d) The Terminal is powered off and on.

e) Enter the new PIN: "8642#".

6.1.12.5 Acceptance criteria

Sequence A:

1) After step b), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "07".
2) After step d), the Terminal shall indicate that the PIN has been accepted.
3) After step f), the Terminal shall indicate that the PIN has been blocked.
4) After step g), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "07".
5) After step j), the Terminal shall indicate that the PIN has been accepted.

Sequence B:

1) After step b), the Terminal shall indicate that the PIN has been blocked.
2) After step c), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "07".
3) After step e), the Terminal shall indicate that the PIN has been accepted.

6.1.13 Entry of PIN2 on multi-verification capable UICCs

6.1.13.1 Definition and applicability

The PIN2 is a number used to authenticate the user to the UICC for security. Entry of the correct PIN2 allows PIN2-protected data to be accessed over the UICC-Terminal interface. ETSI TS 102 221 [5] defines the range of "81" to "88" as key reference of the PIN2 on a multi-verification capable UICC.

6.1.13.2 Conformance requirement

Before allowing the access to PIN2 protected data, the Terminal shall ask the user for PIN2 verification. Only after presenting the PIN2, the user shall get access to these data.

The VERIFY PIN function verifies the PIN2 presented by the Terminal to the UICC.

Reference:

- ETSI TS 102 221 [5], 9 and subclause 11.1.9;
- TS 31.102 [4], clause 6;
- TS 22.030 [12], subclause 6.6.1.

6.1.13.3 Test purpose

1) To verify that the PIN2 verification procedure is performed by the Terminal correctly.
2) To verify that the basic public MMI string is supported.
3) To verify that the Terminal supports key references in the range of "81" to "88" as PIN2.

6.1.13.4 Method of test

6.1.13.4.1 Initial conditions

The Terminal is connected to the UICC simulator with the PIN enabled, and powered off.

The default UICC is used with the following exceptions:

The UICC shall be configured to use "07" as the reference of the PIN and "87" as reference of the PIN2 with the following values:

PIN

Key reference: 07

Logically: 8642

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	38	36	34	32	FF	FF	FF	FF

Unblock PIN

Key reference 07

Logically: 64534231

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	36	34	35	33	34	32	33	31

PIN2

Key reference 87

Logically: 9753

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	39	37	35	33	FF	FF	FF	FF

Unblock PIN2

Key reference 87

Logically: 57687980

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	35	37	36	38	37	39	38	30

NOTE: To perform the UPDATE FDN data (as described in the procedure below), the default FDN UICC may be used. In this case the above mentioned exceptions shall apply.

6.1.13.4.2 Procedure

a) The Terminal is powered on and the correct PIN is entered.

b) The access to a PIN2 protected data field shall be performed (e.g. UPDATE FDN)

c) When the UE is in the "PIN2 check" mode, the sequence "9753#" shall be entered.

6.1.13.5 Acceptance criteria

1) After step b) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "87".

2) After step b) the UE shall give an indication "OK", following a successful execution of the command.

6.1.14 Change of PIN2 on multi-verification capable UICCs

6.1.14.1 Definition and applicability

The PIN2 may be changed by the user, by entering the old and new PIN2. The length of the PIN2 is between 4 and 8 digits. ETSI TS 102 221 [5] defines the range of "81" to "88" as key reference of the PIN2 on a multi-verification capable UICC.

6.1.14.2 Conformance requirement

The Terminal shall support the change of PIN2 procedure as defined in ETSI TS 102 221 [5], subclause 11.1.10.

Reference:

- ETSI TS 102 221 [5], subclauses 9 and 11.1.10;
- TS 31.102 [4], clause 6;
- TS 22.030 [12], subclause 6.6.2.

6.1.14.3 Test purpose

1) To verify that the PIN2 substitution procedure is performed correctly by the Terminal.
2) To verify that the basic public MMI string is supported.
3) To verify that the Terminal supports key references in the range of "81" to "88" as PIN2.

6.1.14.4 Method of test

6.1.14.4.1 Initial conditions

The Terminal is connected to the UICC simulator with the PIN2 enabled.

The default UICC is used with the following exceptions:

The UICC shall be configured to use "07" as the reference of the PIN and "87" as reference of the PIN2 with the following values:

PIN

Key reference: 07

Logically: 8642

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	38	36	34	32	FF	FF	FF	FF

Unblock PIN

Key reference 07

Logically: 64534231

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	36	34	35	33	34	32	33	31

PIN2

Key reference 87

Logically: 9753

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	39	37	35	33	FF	FF	FF	FF

Unblock PIN2

Key reference 87

Logically: 57687980

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	35	37	36	38	37	39	38	30

NOTE: To perform the UPDATE FDN data (as described in the procedure below), the default FDN UICC may be used. In this case the above mentioned exceptions shall apply.

The Terminal is powered-on, with the correct PIN entered.

6.1.14.4.2 Procedure

a) Enter "**042*9753*12345678*12345678#" or initiate an equivalent MMI dependent procedure to change PIN2 from '9753' to '12345678'.

b) The UE is switched off and on and the correct PIN is entered.

c) The access to a PIN2 protected data field shall be performed (e.g. UPDATE FDN).

d) When the UE is in the "PIN2 check" mode, the sequence "9753#" shall be entered.

e) The UE is switched off and on and the correct PIN is entered.

f) The access to a PIN2 protected data field shall be performed (e.g. UPDATE FDN).

g) When the UE is in the "PIN2-check", mode the sequence "12345678#" shall be entered.

6.1.14.5 Acceptance criteria

1) After step a), the Terminal shall send a CHANGE PIN2 command to the UICC, with the parameter P2 set to "87".

2) Following the successful execution of the command, the UE shall give an indication that the new PIN2 is accepted.

3) After step d), the UE shall give an indication that the entered PIN2 is not accepted.

3) After step g), the UE shall give an indication "OK".

6.1.15 Unblock PIN2 on multi-verification capable UICCs

6.1.15.1 Definition and applicability

After three consecutive wrong entries of the PIN2, the PIN2 shall become blocked. The Unblock PIN2 command is used to unblock the PIN2. This function may be performed whether or not the PIN2 is blocked. ETSI TS 102 221 [5] defines the range of "81" to "88" as key reference of the PIN2 on a multi-verification capable UICC.

6.1.15.2 Conformance requirement

The Terminal shall support the Unblock PIN2 command, as defined in ETSI TS 102 221 [5], subclause 11.1.13.

Reference:

- ETSI TS 102 221 [5],subclauses 9 and 11.1.13;
- TS 31.102 [4], clause 6;
- TS 22.030 [12], subclause 6.6.3.

6.1.15.3 Test purpose

1) To verify that the PIN2 unblocking procedure is performed correctly.
2) To verify that the basic public MMI string is supported.
3) To verify that the Terminal supports key references in the range of "81" to "88" as PIN2.

6.1.15.4 Method of test

6.1.15.4.1 Initial conditions

The Terminal is connected to the UICC simulator.

The default UICC is used with the following exceptions:

The UICC shall be configured to use "07" as the reference of the PIN and "87" as reference of the PIN2 with the following values:

PIN

Key reference: 07

Logically: 8642

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	38	36	34	32	FF	FF	FF	FF

Unblock PIN

Key reference 07

Logically: 64534231

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	36	34	35	33	34	32	33	31

PIN2

Key reference 87

Logically: 9753

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	39	37	35	33	FF	FF	FF	FF

Unblock PIN2

Key reference 87

Logically: 57687980

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	35	37	36	38	37	39	38	30

NOTE: To perform the UPDATE FDN data (as described in the procedure below), the default FDN UICC may be used. In this case the above mentioned exceptions shall apply.

6.1.15.4.2 Procedure

Sequence A:

a) The Terminal is powered on and the correct PIN is entered.

b) Enter "**052*57687980*1234*1234#"

c) The Terminal is powered off and on and the correct PIN is entered.

d) The access to a PIN2 protected data field shall be performed (e.g. UPDATE FDN).

e) Enter the new PIN2: "1234#".

f) The Terminal is powered off and on and the correct PIN is entered.

g) The access to a PIN2 protected data field shall be performed (e.g. UPDATE FDN).

h) Enter a wrong PIN2 three times.

i) Enter "**052*57687980*9753*9753#".

j) The Terminal is powered off and on and the correct PIN is entered.

k) The access to a PIN2 protected data field shall be performed (e.g. UPDATE FDN).

l) Enter the new PIN2: "9753#".

Sequence B:

a) The Terminal is powered on .

b) Enter a wrong PIN2 three times.

c) The user shall initiate a MMI dependent procedure to unblock the PIN2 with unblock code '57687980' and a new PIN2 '9753'.

d) The Terminal is powered off and on and the correct PIN is entered.

e) The access to a PIN2 protected data field shall be performed (e.g. UPDATE FDN).

f) Enter the new PIN2: "9753#".

6.1.15.5 Acceptance criterias

Sequence A:

1) After step b), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "87".

2) After step e), the Terminal shall indicate that the PIN2 has been accepted.

3) After step h), the Terminal shall indicate that the PIN2 has been blocked.

4) After step i), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "87".

5) After step l), the Terminal shall indicate that the PIN2 has been accepted.

Sequence B:

1) After step b), the Terminal shall indicate that the PIN2 has been blocked.

2) After step c), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "87".

3) After step f), the Terminal shall indicate that the PIN2 has been accepted.

6.1.16 Replacement of PIN with key reference "07"

6.1.16.1 Definition and applicability

The Universal PIN may be used to replace a PIN used to authenticate the user to the UICC for security. In this case entry of the correct Universal PIN allows PIN-protected data to be accessed over the UICC-Terminal interface.

6.1.16.2 Conformance requirement

The Terminal shall support the usage of the Universal PIN as replacement PIN and the replacement procedure as defined in ETSI TS 102 221 [5], subclause 11.1.11, as well as the procedure to disable the replacement defined in ETSI TS 102 221 [5], subclause 11.1.12.

Reference:

- ETSI TS 102 221 [5], subclauses 9, 11.1.11 and 11.1.12;
- TS 31.102 [4], clause 6.

6.1.16.3 Test purpose

1) To verify that the PIN replacement is supported by the Terminal correctly.
2) To verify that the PIN replacement procedure is performed by the Terminal correctly.
3) To verify that the procedure to disable the PIN replacement is performed by the Terminal correctly.
4) To verify that the Terminal supports key references in the range of "01" to "08" as PIN.

6.1.16.4 Method of test

6.1.16.4.1 Initial conditions

The Terminal is connected to the UICC simulator with the PIN enabled, and powered off.

The default UICC is used with the following exceptions:

The UICC shall be configured to use "07" as the reference of the PIN and "87" as reference of the PIN2 with the following values:

PIN

Key reference: 07

Logically: 8642

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	38	36	34	32	FF	FF	FF	FF

Unblock PIN

Key reference 07

Logically: 64534231

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	36	34	35	33	34	32	33	31

PIN2

Key reference 87

Logically: 9753

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	39	37	35	33	FF	FF	FF	FF

Unblock PIN2

Key reference 87

Logically: 57687980

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	35	37	36	38	37	39	38	30

6.1.16.4.2 Procedure

a) The Terminal is powered on.

b) When the Terminal is in the "PIN check" mode, the sequence "8642#" shall be entered.

c) The user shall initiate an MMI dependent procedure to replace the PIN by the Universal PIN.

d) The Terminal is powered off and on and when the Terminal is in "PIN check" mode the sequence "8642#" shall be entered.

e) The correct Universal PIN is entered.

f) The user shall initiate an MMI dependent procedure to disable the replacement of the PIN by the Universal PIN.

g) The Terminal is powered off and on and when the Terminal is in "PIN check" mode the sequence "2839#" shall be entered.

h) The correct PIN is entered.

6.1.16.5 Acceptance criteria

1) After step b) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "07".

2) After step c), the Terminal shall send a DISABLE PIN command to the UICC, with parameter P1="91" and P2 = "07".

3) After step d) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "11" and after unsuccessful execution of the command the Terminal shall indicate that the PIN has not been accepted.

4) After step e) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "11" and after successful execution of the command the Terminal shall indicate that the PIN has been accepted.

5) After step f), the Terminal shall send an ENABLE PIN command to the UICC, with parameter P2 = "07".

6) After step g) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "07" and after unsuccessful execution of the command the Terminal shall indicate that the PIN has not been accepted.

7) After step h) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "07" and after successful execution of the command the Terminal shall indicate that the PIN has been accepted.

6.2 Fixed Dialling Numbers (FDN) handling

6.2.1 Terminal and USIM with FDN enabled, EF_{ADN} readable and updateable

6.2.1.1 Definition and applicability

Fixed Dialling Numbers (FDN) is a service defined for the USIM. An enabled FDN service results in call restrictions for the UE. The call restrictions are controlled by the Terminal. To ascertain the type of USIM and state of FDN the UE runs the FDN capability request procedure during UICC-Terminal initialisation. During the initialisation the Terminal shall request the Emergency call codes of the USIM EF_{ECC}. At the time an emergency call is setup using the emergency call code read from the EF_{ECC}, the UE shall use the category of the emergency service indicated.

6.2.1.2 Conformance requirement

1) Recognising the state of the USIM (FDN enabled) the UE shall perform the UICC initialisation procedure as specified.

2) The UE allows call set-up to a directory number as stored in EF_{FDN}.

3) The UE allows call set-up to a directory number as stored in EF_{FDN} and extended by digits in the end.

4) The UE does not allow call set-up to a directory number stored in EF_{FDN} but with missing digits at the end.

5) The UE does not allow call set-up to a directory number having no reference in EF_{FDN}.

6) The UE does not allow call set-up of an emergency call using the emergency numbers stored in the Terminal except "112", "911", the emergency numbers stored on the SIM/USIM and emergency numbers downloaded from the serving network (if any).

7) The UE allows call set-up of an emergency call using the emergency number stored in the USIM.

Reference:

- TS 22.101 [11], clauses 8 and A.24;
- TS 31.102 [4], subclauses 4.4.2, 4.2.24, 5.1.1 and 5.3.2;
- TS 24.008 [16], subclause 10.5.4.33.

6.2.1.3 Test purpose

1) To verify that the Terminal allows call set-up to a FDN number.

2) To verify that the Terminal allows call set-up to a FDN number extended by some digits in the end.

3) To verify that the Terminal rejects call set-up to number having no reference in EF_{FDN}.

4) To verify that the Terminal rejects call set-up to a FDN number not completely corresponding to an entry in EF_{FDN}.

5) To verify that the Terminal does not allow emergency call set-up using the emergency number stored in the Terminal except "112", "911", the emergency numbers stored on the SIM/USIM and emergency numbers downloaded from the serving network (if any).

6) To verify that the Terminal allows emergency call set-up using the emergency number stored in the UISM.

6.2.1.4 Method of test

6.2.1.4.1 Initial conditions

The USS (in case of a Terminal accessing UTRAN)/ SS (in case of a Terminal accessing GERAN) transmits on the BCCH, with the following network parameters

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.
- Access control: unrestricted.

The default FDN UICC with FDN service enabled and EF_{ADN} readable and updateable is installed into the Terminal.

The following expection applies:

EF_{ECC} (Emergency Call Codes)

Logically:	Emergency call code:	"122";
	Emergency call code alpha identifier:	"TEST";
	Emergency call Service Category:	RFU.

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Hex	21	F2	FF	54	45	53	54	00

6.2.1.4.2 Procedure

a) The UE is powered on and PIN is entered.

b) Using the MMI a call set-up to the fixed dialling number 1 (record 1) is attempted.

c) Using the MMI a call set-up to the fixed dialling number 2 (record 2) extended by "123" in the end is attempted.

d) Using the MMI a call set-up to a number which is equal to the fixed dialling number 3 (record 3) without the last digit is attempted, e.g. by recalling the fixed dialling number 3 and deleting the last digit (only in display).

e) Using the MMI a call set-up to the number "1234567" is attempted.

f) Using the MMI an emergency call set-up is attempted using an emergency call code stored in the Terminal, but not "112", "911" nor one of the emergency numbers stored on the SIM/USIM emergency numbers downloaded from the serving network (if any).

g) Using the MMI an emergency call set-up is attempted using either "112", "911" or an emergency number downloaded from the serving network (if any).

h) Using the MMI an emergency call set-up is attempted using the emergency call code stored in the USIM (i.e. "122").

NOTE: For step f) one of the emergency call codes according to TS 22.101 [11], subclause 10.1, except "112" and "911", shall be used (i.e. "000", "08", "110", "118", "119" or "999").

6.2.1.5 Acceptance criteria

1) After step a) the UE is registered and in idle state.

2) After steps b) and c) the UE shall allow call set-up and send the requested number across the air interface.

3) After steps d), e) and f) the UE shall prevent call set-up.

4) After steps g) and h) the UE shall allow emergency call by indicating the call setup as "Emergency Call".

6.2.2 Terminal and USIM with FDN disabled

6.2.2.1 Definition and applicability

Fixed Dialling Numbers (FDN) is a service defined for the USIM. An enabled FDN service results in call restrictions for the UE. Only directory numbers which are stored in the EF_{FDN} may be dialled by the UE. The call restrictions are controlled by the Terminal. To ascertain the type of USIM and state of FDN the UE runs the FDN capability request procedure during UICC-Terminal initialisation. Deactivation of the service by the subscriber is possible under the control of PIN2 and switches the USIM into a "normal", non restrictive USIM.

6.2.2.2 Conformance requirement

1) Recognising the state of the USIM (FDN disabled) the UE correctly performs the UICC initialisation procedure.

2) The UE allows call set-up to a directory number as stored in EF_{FDN}.

3) The UE allows call set-up to a directory number as stored in EF_{ADN}.

4) The UE allows call set-up to a directory number given in manually.

Reference:

- R99: TS 22.101 [11], clauses 8 and A.24
- Rel-4: TS 22.101 [11], clauses 9 and A.25
- Rel-5, Rel-6: TS 22.101 [11], clauses 10 and A.25;
- TS 31.102 [4], subclauses 4.4.2.3, 4.2.24, 4.2.47, 5.1.1 and 5.3.2.

6.2.2.3 Test purpose

1) To verify that the Terminal as a result of the state of the USIM correctly performs the UICC-Terminal initialisation procedure.

2) To verify that the Terminal allows call set-up to a FDN number.

3) To verify that the Terminal allows call set-up to a ADN number.

4) To verify that the Terminal allows call set-up to manually given number.

6.2.2.4 Method of test

6.2.2.4.1 Initial conditions

The USS (in case of a Terminal accessing UTRAN) /SS (in case of a Terminal accessing GERAN) transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.
- Access control: unrestricted.

The default FDN UICC is used with the following exception:

EF_{EST} (Enable Service Table)

Logically: Fixed Dialling Numbers disabled.
Barred Dialling Numbers disabled.
APN Control list (ACL) disabled.

Coding: B1
binary 0000 0000

The UICC is installed into the Terminal and the UE is powered on.

6.2.2.4.2 Procedure

a) Using the MMI a call set-up to the fixed dialling number 1 is attempted.

b) Using the MMI a call set-up to the abbreviated dialling number 1 is attempted.

c) Using the MMI a call set-up to the number "1234567" is attempted.

6.2.2.5 Acceptance criteria

After steps a), b) and c) the UE shall allow call set-up and send the requested number across the air interface.

6.2.3 Enabling, disabling and updating of FDN

6.2.3.1 Definition and applicability

FDN may be enabled and disabled by the subscriber under control of PIN2. Fixed dialling numbers are read with PIN and updated under control of PIN2.

6.2.3.2 Conformance requirement

1) Recognising the state of the USIM (FDN enabled) the UE shall perform the UICC initialisation procedure as specified.

2) The UE shall allow updating of EF_{FDN} by the use of PIN2.

3) The UE provides means to disable the FDN service by the use of PIN2.

4) The UE shall allow the use of EF_{ADN} after disabling of FDN.

Reference:

- R99: TS 22.101 [11], clauses 8 and A.24
- Rel-4: TS 22.101 [11], clauses 9 and A.25
- Rel-5, Rel-6: TS 22.101 [11], clause 10 and A.25;
- TS 31.102 [4], subclauses 4.4.2.3, 4.2.24, 4.2.47, 5.1.1 and 5.3.2.

6.2.3.3 Test purpose

1) To verify that the Terminal correctly performs the update of a number in EF_{FDN}.

2) To verify that the Terminal correctly disables FDN service.

3) To verify that the Terminal recognises disabling of FDN and allows access to EF_{ADN}.

6.2.3.4 Method of test

6.2.3.4.1 Initial conditions

The USS (in case of a Terminal accessing UTRAN)/SS (in case of a Terminal accessing GERAN) transmits on the BCCH, with the following network parameters

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.
- Access control: unrestricted.

The default FDN UICC with FDN service enabled is installed into the Terminal.

6.2.3.4.2 Procedure

a) The UE is powered on and PIN is entered.

b) Using the MMI the directory number "+876543210" is stored in EF_{FDN} as fixed dialling number 1 (record 1). The alpha identifier is not changed. On request of the UE PIN2 is entered.

c) Using the MMI the FDN disabling procedure is performed. On request of the UE PIN2 is entered.

d) Using the MMI a call set-up to the abbreviated dialling number 1 (record 1) is attempted.

e) The UE is soft-powered down.

6.2.3.5 Acceptance criteria

1) After step a) the UE is registered and in idle state.

2) After step c) the UE shall indicate that the FDN disabling procedure has been successful.

3) After step d) the UE shall allow call set-up and send the requested number across the air interface.

4) After step e) record 1 in EF_{FDN} , shall contain the following values:

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13
Hex	46	44	4E	31	31	31	06	91	78	56	34	12	F0

	B14	B15	B16	B17	B18	B19	B20
	FF	FF	FF	FF	FF	FF	FF

6.2.4 Terminal and USIM with FDN enabled, EF_{ADN} readable and updateable (Rel-4 and onwards)

6.2.4.1 Definition and applicability

Fixed Dialling Numbers (FDN) is a service defined for the USIM. An enabled FDN service results in call restrictions for the UE. The call restrictions are controlled by the Terminal. To ascertain the type of USIM and state of FDN the UE runs the FDN capability request procedure during UICC-Terminal initialisation. During the initialisation the Terminal shall request the Emergency call codes of the USIM EF_{ECC}. At the time an emergency call is setup using the emergency call code read from the EF_{ECC}, the UE shall use the category of the emergency service indicated.

6.2.4.2 Conformance requirement

1) Recognising the state of the USIM (FDN enabled) the UE shall perform the UICC initialisation procedure as specified.

2) The UE allows call set-up to a directory number as stored in EF_{FDN}.

3) The UE allows call set-up to a directory number as stored in EF_{FDN} and extended by digits in the end.

4) The UE does not allow call set-up to a directory number stored in EF_{FDN} but with missing digits at the end.

5) The UE does not allow call set-up to a directory number having no reference in EF_{FDN}.

6) The UE does not allow call set-up of an emergency call using the emergency numbers stored in the Terminal except "112", "911", the emergency numbers stored on the SIM/USIM and emergency numbers downloaded from the serving network (if any).

7) The UE allows call set-up of an emergency call using the emergency number stored in the USIM.

8) The UE shall indicate the emergency service category as "Mountain Rescue", when using the emergency number stored in the USIM.

Reference:

- Rel-4: TS 22.101 [11], clauses 9 and A.25
- Rel-5, Rel-6: TS 22.101 [11], clauses 10 and A.25;
- TS 31.102 [4], subclauses 4.4.2, 4.2.24, 5.1.1 and 5.3.2;
- TS 24.008 [16], subclause 10.5.4.33.

6.2.4.3 Test purpose

1) To verify that the Terminal allows call set-up to a FDN number.

2) To verify that the Terminal allows call set-up to a FDN number extended by some digits in the end.

3) To verify that the Terminal rejects call set-up to number having no reference in EF_{FDN}.

4) To verify that the Terminal rejects call set-up to a FDN number not completely corresponding to an entry in EF_{FDN}.

5) To verify that the Terminal does not allow emergency call set-up using the emergency number stored in the Terminal except "112", "911", the emergency numbers stored on the SIM/USIM and emergency numbers downloaded from the serving network (if any).

6) To verify that the Terminal allows emergency call set-up using the emergency number stored in the UISM.

7) To verify that the Terminal reads correctly the emergency service category.

6.2.4.4 Method of test

6.2.4.4.1 Initial conditions

The USS (in case of a Terminal accessing UTRAN)/ SS (in case of a Terminal accessing GERAN) transmits on the BCCH, with the following network parameters

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.
- Access control: unrestricted.

The default FDN UICC with FDN service enabled and EF_{ADN} readable and updateable is installed into the Terminal.

6.2.4.4.2 Procedure

a) The UE is powered on and PIN is entered.

b) Using the MMI a call set-up to the fixed dialling number 1 (record 1) is attempted.

c) Using the MMI a call set-up to the fixed dialling number 2 (record 2) extended by "123" in the end is attempted.

d) Using the MMI a call set-up to a number which is equal to the fixed dialling number 3 (record 3) without the last digit is attempted, e.g. by recalling the fixed dialling number 3 and deleting the last digit (only in display).

e) Using the MMI a call set-up to the number "1234567" is attempted.

f) Using the MMI an emergency call set-up is attempted using an emergency call code stored in the Terminal, but not "112", "911" nor one of the emergency numbers stored on the SIM/USIM emergency numbers downloaded from the serving network (if any).

g) Using the MMI an emergency call set-up is attempted using either "112", "911" or an emergency number downloaded from the serving network (if any).

h) Using the MMI an emergency call set-up is attempted using the emergency call code stored in the USIM (i.e. "122").

NOTE: For step f) one of the emergency call codes according to TS 22.101 [11], subclause 10.1, except "112" and "911", shall be used (i.e. "000", "08", "110", "118", "119" or "999").

6.2.4.5 Acceptance criteria

1) After step a) the UE is registered and in idle state.

2) After steps b) and c) the UE shall allow call set-up and send the requested number across the air interface.

3) After steps d), e) and f) the UE shall prevent call set-up.

4) After steps g) and h) the UE shall allow emergency call by indicating the call setup as "Emergency Call".

5) After step h) the UE shall send the emergency service category correctly as "Mountain Rescue".

6.3 Void

6.4 Advice of charge (AoC) handling

6.4.1 AoC not supported by USIM

6.4.1.1 Definition and applicability

If the Terminal under test supports Advice of Charge Charging, it shall still look at the capability of the USIM, before responding to any AoCC information from the network.

6.4.1.2 Conformance requirement

1) An UE not supporting AoCC and in the outgoing call / U4 call delivered state, on receipt of a CONNECT message containing AoCC information shall acknowledge the CONNECT message but ignore and not acknowledge the AoCC information sent within the CONNECT.

2) An UE not supporting AoCC and in the outgoing call / U4 call delivered state, on receipt of a FACILITY message containing AoCC information shall ignore and not acknowledge the AoCC information sent within the FACILITY.

3) An UE not supporting AoCC and in the incoming call / U9 call confirmed state, on receipt of a FACILITY message containing AoCC information shall ignore and not acknowledge the AoCC information sent within the FACILITY.

4) An UE not supporting AoCC and in the U10 call active state, on receipt of a FACILITY message containing AoCC information, shall ignore and not acknowledge the AoCC information sent within the FACILITY.

References:

- TS 24.008 [16], subclause 5.1.2.1;
- TS 23.086 [9], subclauses 1.2, 1.3, 2.2 and 2.3;
- TS 24.086 [10], clause 2.

6.4.1.3 Test purpose

1) To verify that an UE not supporting AoCC (where the Terminal does support AoCC but the USIM does not) and in the outgoing call / U4 call delivered state, on receipt of a CONNECT message containing AoCC information shall acknowledge the CONNECT message but ignore and not acknowledge the AoCC information sent within the CONNECT.

2) To verify that an UE not supporting AoCC (where the Terminal does support AoCC but the USIM does not) and in the outgoing call / U4 call delivered state, on receipt of a FACILITY message containing AoCC information shall ignore and not acknowledge the AoCC information sent within the FACILITY.

3) To verify that an UE not supporting AoCC (where the Terminal does support AoCC but the USIM does not) and in the incoming call / U9 call confirmed state, on receipt of a FACILITY message containing AoCC information shall ignore and not acknowledge the AoCC information sent within the FACILITY.

4) To verify that an UE not supporting AoCC (where the Terminal does support AoCC but the USIM does not) and in the U10 call active state, on receipt of a FACILITY message containing AoCC information, shall ignore and not acknowledge the AoCC information sent within the FACILITY.

6.4.1.4 Method of test

6.4.1.4.1 Initial conditions

The Terminal shall be installed with a UICC or USIM simulator, with all elementary files coded as for the default UICC, with the exception of:

EF_{UST} (USIM Service Table)

Logically: Local Phone Book available;
User controlled PLMN selector available;
Fixed dialling numbers available;
The GSM Access available;
The Group Identifier level 1 and level 2 not available;
AoC not available.
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available

Coding:	B1	B2	B3	B4	B5
binary	xxxx xx11	xxx0 xxxx	xxxx 1x00	xxxx x1xx	xxxx xx11

The coding of EF_{UST} shall conform with the capabilities of the USIM used.

The generic call set up procedures for UTRAN defined in TS 34.108 [21], subclause 7.2.3.2.3 and 7.2.3.1.3 and defined in TS 51.010-1 [22], clause 10 for GERAN are followed up to and including the reception, or transmission of the ALERTING message by the UE.

6.4.1.4.2 Procedure

a) For an MO call in the U4 state the USS/SS transmits CONNECT containing AoCC information.

b) For an MO call in the U4 state the USS/SS transmits FACILITY containing AoCC information.

c) For an MT call in the U9 state the USS/SS transmits FACILITY containing AoCC information.

d) For an MO call in the U10 state the USS/SS transmits FACILITY containing AoCC information.

6.4.1.5 Acceptance criteria

In all cases, the UE shall ignore the AoCC information sent to it in the Facility information elements as part of the CONNECT/FACILITY messages and not send any AoCC information acknowledgement. It shall be checked for 15 s that the UE does not transmit any AoCC information acknowledgement after the receipt of AoCC information.

6.4.2 Maximum frequency of ACM updating

6.4.2.1 Definition and applicability

During a call, the ACM shall be updated at the end of every interval. The interval length is the greater of either 5 s or the value given by parameter e2 (part of the Facility Information Element).

6.4.2.2 Conformance requirement

The ACM shall be incremented when the CCM is incremented or once every 5 s, whichever is the longer period.

When used the value '1C' shall be used as SFI for EF_{ACM}, for compatibility reasons the terminal shall accept other values.

Reference:

- TS 22.024 [8], subclause 4.3, part h;
- TS 31.102 [4], subclauses 4.2.9, 5.3.4 and Annex H.1.

6.4.2.3 Test purpose

1) To verify that the Terminal, during a call, increments the ACM every 5 s when e2 is less or equal to 5 s.

2) To verify that the Terminal is able to handle other values than '1C' as SFI of EF_{ACM}.

6.4.2.4 Method of test

6.4.2.4.1 Initial conditions

The Terminal shall be connected to the USIM simulator, with all elementary files coded as default with the exception of:

EF_{UST} (USIM Service Table)

Logically: Local Phone Book available;
User controlled PLMN selector available;
Fixed dialling numbers available;
The GSM Access available;
The Group Identifier level 1 and level 2 not available;
AoC available.
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available

Coding:	B1	B2	B3	B4	B5
binary	xxxx xx11	xxx1 xxxx	xxxx 1x00	xxxx x1xx	xxxx xx11

The coding of EF_{UST} shall conform with the capabilities of the USIM used.

EF_{ACM} (Accumulated call meter)

Logically: 50 units

The SFI of EF_{ACM} shall be set to '18'.

EF_{ACMmax} (Accumulated call meter maximum)

Logically: 150 units

The USS (in case of a Terminal accessing UTRAN)/ SS (in case of a Terminal accessing a GERAN) transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.
- Access control: unrestricted.

User Equipment:

The UE is in MM-state "idle, updated".

In case of a Terminal accessing UTRAN "Expected Sequence A" and in case of a Terminal accessing a GERAN "Expected Sequence B" shall be performed.

6.4.2.4.2 Procedure

a) The UE is made to initiate a call. The call establishment shall be performed according to the procedures defined in TS 34.108 [21], subclause 7.2.3.2.3 extended by the messages of the AoCC. The call is established with AoCC e-parameters sent in a Facility IE in the CONNECT message, as given below. The UE returns the AoCC acknowledgement after the reception of the CONNECT message. It is an implementation option whether the AoCC acknowledge is sent by the UE before or after the CONNECT ACKNOWLEDGE.

b) The call is maintained for 90 s, then terminated by the USS. During the call, the USIM-simulator monitors the time intervals between successive INCREMENT commands. As the final INCREMENT command will have occurred as a result of call termination, the time interval calculated since the prior INCREMENT command shall be ignored.

Maximum Duration of Test:

2 minutes.

Expected Sequence A:

Step	Direction	Message	Comments
1	UE		The UE is made to initiate a call
2	UE -> USS	RRC CONNECTION REQUEST	
3	USS -> UE	RRC CONNECTION SETUP	
4	UE -> USS	RRC CONNECTION SETUP COMPLETE	
5	UE -> USS	CM SERVICE REQUEST	
6	USS -> UE	AUTHENTICATION REQUEST	MM procedure, to ensure the successful start of integrity in step 8
7	UE -> USS	AUTHENTICATION RESPONSE	
8	USS -> UE	SECURITY MODE COMMAND	RRC procedure, start of integrity is mandatory during call setup
9	UE -> USS	SECURITY MODE COMPLETE	
10	UE -> USS	SETUP	
11	USS -> UE	CALL PROCEEDING	
12	USS -> UE	RADIO BEARER SETUP	To a supported channel type
13	UE -> USS	RADIO BEARER SETUPCOMPLETE	
14	USS -> UE	ALERTING	
15	USS -> UE	CONNECT	As default message except contains Facility IE with contents as indicated in i) below
			Either A or B branch is taken
A16	UE -> USS	CONNECT ACKNOWLEDGE	
A17	UE -> USS	FACILITY	As default message except contains Facility IE with contents as indicated in ii) below
B16	UE -> USS	FACILITY	As default message except contains Facility IE with contents as indicated in ii) below
B17	UE -> USS	CONNECT ACKNOWLEDGE	
18			call duration 90 s after CAI information sent by USS,
19	USS -> UE	DISCONNECT	
20	UE -> USS	RELEASE	
21	USS -> UE	RELEASE COMPLETE	
22	USS -> UE	RRC CONNECTION RELEASE	All connections of RRC are released.
23	UE -> USS	RRC CONNECTION RELEASE COMPLETE	

Expected Sequence B:

Step	Direction	Message	Comments
1	UE		The UE is made to initiate a call
2	UE -> SS	CHANNEL REQUEST	
3	SS -> UE	IMMEDIATE ASSIGNMENT	
4	UE -> SS	CM SERVICE REQUEST	
5	SS -> UE	CM SERVICE ACCEPT	
6	UE -> SS	SETUP	
7	SS -> UE	CALL PROCEEDING	
8	SS -> UE	ASSIGNMENT COMMAND	To a supported channel type
9	UE -> SS	ASSIGNMENT COMPLETE	
10	SS -> UE	ALERTING	
11	SS -> UE	CONNECT	As default message except contains Facility IE with contents as indicated in i) below
			Either A or B branch is taken
A12	UE -> SS	CONNECT ACKNOWLEDGE	
A13	UE -> SS	FACILITY	As default message except contains Facility IE with contents as indicated in ii) below
B12	UE -> SS	FACILITY	As default message except contains Facility IE with contents as indicated in ii) below
B13	UE -> SS	CONNECT ACKNOWLEDGE	
14			call duration 90 s after CAI information sent by SS,
15	SS -> UE	DISCONNECT	
16	UE -> SS	RELEASE	
17	SS -> UE	RELEASE COMPLETE	
18	SS -> UE	CHANNEL RELEASE	The main signalling link is released.

Specific Message Contents:

7) **FACILITY Information Element** with **Invoke = ForwardChargeInformation** component type as defined in TS 24.080 [17], subclause 3.6.1 table 3.3.

For ASN.1 description see default message contents in TS 51.010-1 [22], subclause 31.6.4.

The values of the e-parameters within the parameter part of the Facility Information Element shall be set as below:

e-parameters:

parameter:	e1	e2	e3	e4	e5	e6	E7
value	1	1	1	0	0	0	0

Values shown in table are in the format and have units as in TS 22.024 [8], clause 3.

ii) FACILITY Information Element with **Return Result** component type as defined in TS 24.080 [17], subclause 3.6.1 table 3.4.

For ASN.1 description see default message contents in TS 51.010-1 [22], subclause 31.6.4.

6.4.2.5 Acceptance criteria

The UE shall, during a call, send INCREMENT commands to the USIM every 5 s.

6.4.3 Call terminated when ACM greater than ACMmax

6.4.3.1 Definition and applicability

ACMmax gives the maximum value of ACM, at which the current chargeable calls shall be terminated and no further calls may be made (except emergency calls).

6.4.3.2 Conformance requirement

ACM shall be incremented by the value of CCM.

If the ACMmax is valid, and the ACM becomes equal to or exceeds the value of the ACMmax, then all calls in progress, chargeable to the user, shall be terminated by the UE, once the chargeable interval determined by the CAI has elapsed, (except emergency calls).

When used the value '1C' shall be used as SFI for EF_{ACM}, for compatibility reasons the terminal shall accept other values.

Reference:

- TS 22.024 [8], subclauses 4.2.2 and 4.3 (part h);
- ETSI TS 102 221 [5], subclause 14.1.3;
- TS 31.102 [4], subclause 4.2.9, 5.3.4 and Annex H.1.

6.4.3.3 Test purpose

1) To verify that the Terminal increments the ACM by the correct number of units, even though this may take ACM above ACMmax.

2) To verify that the Terminal terminates the call.

3) To verify that the INCREMENT EF_{ACM} command is performed correctly by the terminal.

4) To verify that the Terminal is able to handle other values than '1C' as SFI of EF_{ACM}.

6.4.3.4 Method of test

6.4.3.4.1 Initial conditions

The Terminal shall be connected to a UICC or the USIM simulator, with all elementary files coded as default with the exception of:

EF_{UST} (USIM Service Table)

Logically: Local Phone Book available;
User controlled PLMN selector available;
Fixed dialling numbers available;
The GSM Access available;
The Group Identifier level 1 and level 2 not available;
AoC available.
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available

Coding:	B1	B2	B3	B4	B5
binary	xxxx xx11	xxx1 xxxx	xxxx 1x00	xxxx x1xx	xxxx xx11

The coding of EF_{UST} shall conform with the capabilities of the USIM used.

EF_{ACM} (Accumulated call meter)

Logically: 80 units

Coding:	B1	B2	B3
binary	0000 0000	0000 0000	0101 0000

The SFI of EF_{ACM} shall be set to '18'.

EF_{ACMmax} (Accumulated call meter maximum)

Logically: 94 units

Coding:	B1	B2	B3
binary	0000 0000	0000 0000	0101 1110

The USS transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.
- Access control: unrestricted.

User Equipment:

The UE is in MM-state "idle, updated".

In case of a Terminal accessing UTRAN "Expected Sequence A" and in case of a Terminal accessing a GERAN "Expected Sequence B" shall be performed.

6.4.3.4.2 Procedure

a) The UE is made to initiate a call. The call establishment shall be performed according to the procedures defined in TS 34.108 [21], subclause 7.2.3.2.3 extended by the messages of the AoCC. The call is established with AoCC e-parameters sent in a Facility IE in the CONNECT message, as given below. The UE returns the AoCC acknowledgement after the reception of the CONNECT message. It is an implementation option whether the AoCC acknowledge is sent by the UE before or after the CONNECT ACKNOWLEDGE.

b) The call is maintained until cleared by the UE (after 30 s).

c) The contents of ACM are checked.

Maximum Duration of Test:

2 minutes.

Expected Sequence A:

Step	Direction	Message	Comments
1	UE		The UE is made to initiate a call
2	UE -> USS	RRC CONNECTION REQUEST	
3	USS -> UE	RRC CONNECTION SETUP	
4	UE -> USS	RRC CONNECTION SETUP COMPLETE	
5	USS -> UE	AUTHENTICATION REQUEST	MM procedure, to ensure the successful start of integrity in step 8
6	UE -> USS	AUTHENTICATION RESPONSE	
7	USS -> UE	SECURITY MODE COMMAND	RRC procedure, start of integrity is mandatory during call setup
8	UE -> USS	SECURITY MODE COMPLETE	
9	UE -> USS	SETUP	
10	USS -> UE	CALL PROCEEDING	
11	USS -> UE	RADIO BEARER SETUP	To a supported channel type
12	UE -> USS	RADIO BEARER SETUP COMPLETE	
13	USS -> UE	ALERTING	
14	USS -> UE	CONNECT	As default message except contains Facility IE with contents as indicated in i) below
			Either A or B branch is taken
A15	UE -> USS	CONNECT ACKNOWLEDGE	
A16	UE -> USS	FACILITY	As default message except contains Facility IE with contents as indicated in ii) below
B15	UE -> USS	FACILITY	As default message except contains Facility IE with contents as indicated in ii) below
B16	UE -> USS	CONNECT ACKNOWLEDGE	
17			call duration 30 s after CAI information sent by USS
18	UE -> USS	DISCONNECT	
19	USS -> UE	RELEASE	
20	UE -> USS	RELEASE COMPLETE	
21	USS -> UE	RRC CONNECTION RELEASE	All connections of RRC are released.
22	UE -> USS	RRC CONNECTION RELEASE COMPLETE	

Expected Sequence B:

Step	Direction	Message	Comments
1	UE		The UE is made to initiate a call
2	UE -> SS	CHANNEL REQUEST	
3	SS -> UE	IMMEDIATE ASSIGNMENT	
4	UE -> SS	CM SERVICE REQUEST	
5	SS -> UE	CM SERVICE ACCEPT	
6	UE -> SS	SETUP	
7	SS -> UE	CALL PROCEEDING	
8	SS -> UE	ASSIGNMENT COMMAND to a supported channel type	
9	UE -> SS	ASSIGNMENT COMPLETE	
10	SS -> UE	ALERTING	
11	SS -> UE	CONNECT	As default message except contains Facility IE with contents as indicated in i) below
			Either A or B branch is taken
A12	UE -> SS	CONNECT ACKNOWLEDGE	
A13	UE -> SS	FACILITY	As default message except contains Facility IE with contents as indicated in ii) below
B12	UE -> SS	FACILITY	As default message except contains Facility IE with contents as indicated in ii) below
B13	UE -> SS	CONNECT ACKNOWLEDGE	
14			call duration 30 s after CAI information sent by SS
15	UE -> SS	DISCONNECT	
16	SS -> UE	RELEASE	
17	UE -> SS	RELEASE COMPLETE	
18	SS -> UE	CHANNEL RELEASE	The main signalling link is released.

Specific Message Contents:

7) **FACILITY Information Element** with **Invoke = ForwardChargeInformation** component type as defined in TS 24.080 [17], subclause 3.6.1 table 3.3.

For ASN.1 description see default message contents in TS 51.010-1 [22], subclause 31.6.4.

The values of the e-parameters within the parameter part of the Facility Information Element shall be set as below:

e-parameters:

parameter:	e1	e2	e3	e4	e5	e6	e7
value	10	10	1	0	0	0	0

Values shown in table are in the format and have units as in TS 22.024 [8], clause 3.

ii) FACILITY Information Element with **Return Result** component type as defined in TS 24.080 [17], subclause 3.6.1 table 3.4.

For ASN.1 description see default message contents in TS 51.010-1 [22], subclause 31.6.4.

6.4.3.5 Acceptance criteria

1) The UE shall terminate the call correctly 30 s after CAI was sent.

2) The value of ACM shall be 100 units.

6.4.4 Response codes of increase command of ACM

6.4.4.1 Definition and applicability

ACM has a maximum value in terms of coding, and an attempt by the Terminal to exceed that value by sending an INCREASE command shall result in an error message from the USIM. As the maximum of the ACM is equal to the maximum value of ACMmax, all current chargeable calls shall be terminated and no further calls may be made (except emergency calls).

6.4.4.2 Conformance requirement

The Terminal shall perform the increasing procedure, sending the amount to be increased.

The running accumulated charge shall be stored in the ACM of the USIM.

Where this charge cannot be stored in the UE, use of the telecommunications service shall be prevented.

At the time ACM exceeds it's maximum value, then all calls in progress, chargeable to the user, shall be terminated by the UE, once the chargeable interval determined by the CAI has elapsed, (except emergency calls).

When used the value '1C' shall be used as SFI for EF_{ACM}, for compatibility reasons the terminal shall accept other values.

References:

- TS 31.102 [4], subclauses 4.2.9, 5.3.4 and Annex H.1;
- TS 22.086 [18], subclauses 2.1 and 2.2.1.

6.4.4.3 Test purpose

1) To verify that the Terminal clears a charged call if the USIM indicates that the ACM cannot be increased.

2) To verify that the Terminal is able to handle other values than "1C" as SFI of EF_{ACM}.

6.4.4.4 Method of test

6.4.4.4.1 Initial conditions

The Terminal shall be connected to the USIM simulator, with all elementary files coded as default with the exception of:

EF_{UST} (USIM Service Table)

Logically: Local Phone Book available;
User controlled PLMN selector available;
Fixed dialling numbers available;
The GSM Access available;
The Group Identifier level 1 and level 2 not available;
AoC available.
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available

Coding:	B1	B2	B3	B4	B5
binary	xxxx xx11	xxx1 xxxx	xxxx 1x00	xxxx x1xx	xxxx xx11

The coding of EF_{UST} shall conform with the capabilities of the USIM used.

EF_{ACM} (Accumulated call meter)

Logically: (Maximum value – 10) units

Coding:	B1	B2	B3
binary	1111 1111	1111 1111	1111 0101

The SFI of EF_{ACM} shall be set to "18".

EF_{ACMmax} (Accumulated call meter maximum)

Logically: (Maximum value – 2) units

Coding:	B1	B2	B3
binary	1111 1111	1111 1111	1111 1101

The USS transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.
- Access control: unrestricted.

User Equipment:

The UE is in MM-state "idle, updated".

In case of a Terminal accessing UTRAN "Expected Sequence A" and in case of a Terminal accessing a GERAN "Expected Sequence B" shall be performed.

6.4.4.4.2 Procedure

a) The UE is made to initiate a call. The call establishment shall be performed according to the procedures defined in TS 34.108 [21], subclause 7.2.3.2.3 extended by the messages of the AoCC. The call is established with AoCC e-parameters sent in a Facility IE in the CONNECT message, as given below. The UE returns the AoCC acknowledgement after reception of the CONNECT message. It is an implementation option whether the AoCC acknowledge is sent by the UE before or after the CONNECT ACKNOWLEDGE.

b) After an interval has elapsed, the Terminal increments the ACM. When an INCREASE command is received, the USIM-simulator sends back the error "98 50".

c) Conditions are reset to those described in the initial conditions. Steps a) and b) of the test are repeated, except that the error code sent by the USIM simulator at step b) is now "6F xx".

d) Conditions are reset to those described in the initial conditions. Steps a) and b) of the test are repeated, except that the error code sent by the USIM simulator at step b) is now "65 81".

References:

- ETSI TS 102 221 [5], subclause 10.2.1.

Maximum Duration of Test:

3 minutes.

Expected Sequence A:

Step	Direction	Message	Comments
1	UE		The UE is made to initiate a call
2	UE -> USS	RRC CONNECTION REQUEST	
3	USS -> UE	RRC CONNECTION SETUP	
4	UE -> USS	RRC CONNECTION SETUP COMPLETE	
5	USS -> UE	AUTHENTICATION REQUEST	MM procedure, to ensure the successful start of integrity in step 8
6	UE -> USS	AUTHENTICATION RESPONSE	
7	USS -> UE	SECURITY MODE COMMAND	RRC procedure, start of integrity is mandatory during call setup
8	UE -> USS	SECURITY MODE COMPLETE	
9			
10	UE -> USS	SETUP	
11	USS -> UE	CALL PROCEEDING	
12	USS -> UE	RADIO BEARER SETUP	To a supported channel type
13	UE -> USS	RADIO BEARER SETUP COMPLETE	
14	USS -> UE	ALERTING	
15	USS -> UE	CONNECT	As default message except contains Facility IE with contents as indicated in i) below
			Either A or B branch is taken
A16	UE -> USS	CONNECT ACKNOWLEDGE	
A17	UE -> USS	FACILITY	As default message except contains Facility IE with contents as indicated in ii) below
B16	UE -> USS	FACILITY	As default message except contains Facility IE with contents as indicated in ii) below
B17	UE -> USS	CONNECT ACKNOWLEDGE	
18			call duration 10s after CAI information sent by USS
19	UE -> USS	DISCONNECT	
20	USS -> UE	RELEASE	
21	UE -> USS	RELEASE COMPLETE	
22	USS -> UE	RRC CONNECTION RELEASE	All connections of RRC are released.
23	UE -> USS	RRC CONNECTION RELEASE COMPLETE	

Expected Sequence B:

Step	Direction	Message	Comments
1	UE		The UE is made to initiate a call
2	UE -> SS	CHANNEL REQUEST	
3	SS -> UE	IMMEDIATE ASSIGNMENT	
4	UE -> SS	CM SERVICE REQUEST	
5	SS -> UE	CM SERVICE ACCEPT	
6	UE -> SS	SETUP	
7	SS -> UE	CALL PROCEEDING	
8	SS -> UE	ASSIGNMENT COMMAND to a supported channel type	
9	UE -> SS	ASSIGNMENT COMPLETE	
10	SS -> UE	ALERTING	
11	SS -> UE	CONNECT	As default message except contains Facility IE with contents as indicated in i) below
			Either A or B branch is taken
A12	UE -> SS	CONNECT ACKNOWLEDGE	
A13	UE -> SS	FACILITY	As default message except contains Facility IE with contents as indicated in ii) below
B12	UE -> SS	FACILITY	As default message except contains Facility IE with contents as indicated in ii) below
B13	UE -> SS	CONNECT ACKNOWLEDGE	
14			call duration 10s after CAI information sent by SS
15	UE -> SS	DISCONNECT	
16	SS -> UE	RELEASE	
17	UE -> SS	RELEASE COMPLETE	
18	SS -> UE	CHANNEL RELEASE	The main signalling link is released.

Specific Message Contents:

7) **FACILITY Information Element** with **Invoke = ForwardChargeInformation** component type as defined in TS 24.080 [17], subclause 3.6.1 table 3.3.

For ASN.1 description see default message contents in TS 51.010-1 [22], subclause 31.6.4.

The values of the e-parameters within the parameter part of the Facility Information Element shall be set as below:

e-parameters:

parameter:	e1	e2	e3	e4	e5	e6	e7
value	20	10	1	0	0	0	0

Values shown in table are in the format and have units as in TS 22.024 [8], clause 3.

ii) FACILITY Information Element with **Return Result** component type as defined in TS 24.080 [17], subclause 3.6.1 table 3.4.

For ASN.1 description see default message contents in TS 51.010-1 [22], subclause 31.6.4.

6.4.4.5 Acceptance criteria

1) The UE shall terminate the call correctly 10 s after CAI was sent.

2) In each of the three cases, as described in steps b), c) and d) of the procedure, the UE shall terminate the call correctly when it receives an indication from the USIM that the ACM cannot be incremented.

7 PLMN related tests

7.1 FPLMN handling

7.1.1 Adding FPLMN to the Forbidden PLMN list

7.1.1.1 Definition and applicability

A list of forbidden PLMNs stored in the USIM and providing storage for at least 4 entries is managed by the UE. In automatic PLMN selection mode the UE controls registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a registration reject with the cause "PLMN not allowed" the UE stores the PLMN which rejected the update request in the USIM.

The registration attempts initiated by the 3G UE depends on Ues capabilities and can be one of the following:

7) registration procedures for Ues supporting CS or

II. registration procedures for Ues supporting PS or

III. registration procedures for Ues supporting CS/PS

7.1.1.2 Conformance requirement

In case of a 2G terminal:

1) In automatic PLMN selection mode the UE shall only attempt a LOCATION UPDATE if it receives a BCCH containing a LAI that is not indicated in the EF_{FPLMN} in the USIM.

   Reference:

- TS 22.011 [6], subclause 2.3;
- TS 31.102 [4], subclauses 5.1.1 and 5.2.7.

2) After receipt of a LOCATION UPDATING REJECT message with the cause "PLMN not allowed" the Terminal shall update the EF_{FPLMN} in the USIM.

   Reference:

- TS 22.011 [6], subclause 2.3;
- TS 31.102 [4], subclauses 5.1.1 and 5.2.7.

3) After call termination the USIM shall contain the correct Key Set Identifier.

   Reference:

- TS 31.102 [4], subclauses 5.1.2, 5.2.5 and 5.2.6;
- TS 21.111 [19], subclause 10.1.

4) After call termination the USIM shall contain the correct TMSI and location information received by the UE.

   Reference:

- TS 31.102 [4], subclauses 5.1.2, 5.2.5 and 5.2.6;
- TS 21.111 [19], subclause 10.1.

In case of a 3G terminal:

1) Depending on which domain the UE is going to be registered on, one of the following requirements should be fulfilled:

   I. In automatic PLMN selection mode the UE shall only attempt a LOCATION UPDATING REQUEST during registration on CS if it receives a BCCH containing a PLMN(MCC,MNC) that is not indicated in the EF $_{FPLMN}$ in the USIM or

   II. in automatic PLMN selection mode the UE shall only attempt a ATTACH REQUEST during registration on PS if it receives a BCCH containing a PLMN(MCC,MNC) that is not indicated in the EF_{FPLMN} in the USIM or

   III. in automatic PLMN selection mode the UE shall only attempt a LOCATION UPDATING REQUEST and/or ATTACH REQUEST during registration on CS/PS if it receives a BCCH containing a PLMN(MCC,MNC) that is not indicated in the EF_{FPLMN} in the USIM.

   Reference:

   - TS 22.011 [6], subclause 2.3;
   - TS 31.102 [4], subclauses 5.1.1 and 5.2.7.

2) Depending on which domain the UE is going to be on, one of the following requirements should be fulfilled:

   I. After after receipt of a LOCATION UPDATING REJECT message during registration on CS with the cause "PLMN not allowed" the Terminal shall update the EF $_{FPLMN}$ in the USIM or.

   II. after receipt of a ATTACH REJECT message during registration on PS with the cause "PLMN not allowed" the Terminal shall update the EF_{FPLMN} in the USIM or

   III. after receipt of a LOCATION UPDATING REJECT and/or ATTACH REJECT message during registration on CS/PS with the cause "PLMN not allowed" the Terminal shall update the EF_{FPLMN} in the USIM.

   Reference:

   - TS 22.011 [6], subclause 3.2.2 2.3;
   - TS 31.102 [4], subclauses 5.1.1 and 5.2.7.

3) After call termination the USIM shall contain the correct Key Set Identifier.

4) Depending on which domain the UE is going to be registered on, one of the following requirements should be fulfilled:

   I. after registration on CS the USIM shall contain the correct TMSI and location information received by the UE or

   II. after registration on PS the USIM shall contain the correct P-TMSI and routing information received by the UE or

   III. after registration on CS/PS the USIM shall contain the correct TMSI, P-TMSI, location information and routing information received by the UE.

   Reference:

   - TS 31.102 [4], subclauses 5.1.2, 5.2.5 and 5.2.6;
   - TS 21.111 [6], subclause 10.1.

5) After call termination the USIM shall contain the correct TMSI and location information received by the UE.

   Reference:

   - TS 31.102 [4], subclauses 5.1.2, 5.2.5 and 5.2.6;
   - TS 21.111 [6], subclause 10.1.

7.1.1.3 Test purpose

In case of a 2G terminal:

1) To verify that in automatic PLMN selection mode the UE does not attempt to access PLMNs stored in EF_{FPLMN} on the USIM.

2) To verify that the EF_{FPLMN} is correctly updated by the Terminal after receipt of a LOCATION UPDATING REJECT message with cause "PLMN not allowed".

3) To verify that the EF_{Keys} has been correctly updated by the Terminal.

4) To verify that the EF_{LOCI} has been correctly updated by the Terminal.

In case of a 3G terminal:

1) To verify that in automatic PLMN selection mode the UE does not attempt to access PLMNs stored in EF_{FPLMN} on the USIM.

2) To verify that the EF_{FPLMN} is correctly updated by the Terminal after receipt of a

   I. LOCATION UPDATING REJECT message with cause "PLMN not allowed" during registration on CS or.

   II. ATTACH REJECT message with cause "PLMN not allowed" during registration on PS or.

   III. LOCATION UPDATING REJECT and/or ATTACH REJECT message with cause "PLMN not allowed" during registration on CS/PS.

3) To verify that

   I. the EF_{LOCI} has been correctly updated by the Terminal during registration on CS or.

   II. the EF_{PSLOCI} has been correctly updated by the Terminal during registration on PS or.

   III. the the EF_{LOCI} and EF_{PSLOCI} have been correctly updated by the Terminal during registration on CS/PS.

7.1.1.4 Method of test

7.1.1.4.1 Initial conditions

The USS (in case of a Terminal accessing UTRAN)/ SS (in case of a Terminal accessing a GERAN) transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 234/002/0001.
- RAI (MCC/MNC/LAC/RAC): 234/002/0001/05. (only for UTRAN cell)
- Access control: unrestricted.

NOTE: In case of a GERAN no packet system information is transmitted

The default UICC is used with the following exception:

EF_{IMSI} (IMSI)

Logically: 246081111111111

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9
Hex	08	29	64	80	11	11	11	11	11

EF_{LOCI} (Location Information)

Logically: LAI-MCC: 234

LAI-MNC: 007
LAI-LAC: 0000
TMSI: "32547698"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	32	54	76	98	32	74	00	00	00	FF	00

EF_{PSLOCI} (Packet Switched location Information)

Logically: RAI-MCC: 234
RAI-MNC: 007
RAI-LAC: 0000
RAI-RAC: 05
P-TMSI: "32547698"

P-TMSI signature value:"112233"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	32	54	76	98	11	22	33	32	74	00	00

B12	B13	B14
00	05	00

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

In case of a Terminal accessing GERAN:

EF_{Keys} (Ciphering and Integrity Keys)

Logically: Key Set Identifier KSI: 02
Ciphering Keys CK: undefined
Integrity Keys IK: undefined

Coding:	B1	B2	B3	…	B16	B17	B18	…	B31	B32	B33
Hex	02	xx	xx	…	xx	xx	xx	…	xx	xx	xx

In case of a Terminal accessing UTRAN "Expected Sequence A" shall be performed and in case of a Terminal accessing a GERAN "Expected Sequence B" shall be performed.

7.1.1.4.2 Procedure

Expected Sequence A:

a) The UE is powered on.

b) The USS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/003

The USS then resumes RF output on the BCCH.

7) The USS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/004

The USS then resumes RF output on the BCCH.

7) The USS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/005

The USS then resumes RF output on the BCCH.

7) The USS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

LAI (MCC/MNC/LAC):234/007/0001

RAI (MCC/MNC/LAC/RAC): 234/007/0001/05

The USS then resumes RF output on the BCCH.

f) After receipt of a RRC CONNECTION REQUEST from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

g) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS sends LOCATION UPDATING REJECT to the UE with cause "PLMN Not Allowed", followed by RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS sends ATTACH REJECT to the UE with cause "PLMN Not Allowed", followed by RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or

7) During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS sends LOCATION UPDATING REJECT and/or ATTACH REJECT to the UE with cause "PLMN Not Allowed", followed by RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

The USS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

LAI (MCC/MNC): 234/008/0001

RAI (MCC/MNC/LAC/RAC): 234/008/0001/05

The USS then resumes RF output on the BCCH.

h) After receipt of a RRC CONNECTION REQUEST from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

i) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC/LAC):234/008/0001

TMSI: "43658709"

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ATTACH ACCEPT to the UE with :

RAI (MCC/MNC/LAC/RAC): 234/008/0001/05

P-TMSI: "43658709"

P-TMSI signature value "443322"

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT and/or ATTACH ACCEPT with some of the following values to the UE with :

LAI (MCC/MNC/LAC):234/008/0001

TMSI: "43658709"

RAI (MCC/MNC/LAC/RAC): 234/008/0001/05

P-TMSI: "43658709"

P-TMSI signature value "443322"

j) After passing through the authentication procedure and after receipt of

I. TMSI REALLOCATION COMPLETE during registration on CS from the UE the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

II. ATTACH COMPLETE during registration on PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE during registration on CS/PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

k) The UE is soft powered down.

Expected Sequence B:

a) The UE is powered on.

b) The SS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/003

The SS then resumes RF output on the BCCH.

7) The SS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/004

The SS then resumes RF output on the BCCH.

7) The SS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/005

The SS then resumes RF output on the BCCH.

7) The SS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/007/0001

RAI (MCC/MNC/LAC/RAC): 234/007/0001/05

The SS then resumes RF output on the BCCH.

f) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.

g) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING REJECT to the UE with cause "PLMN Not Allowed", followed by CHANNEL RELEASE.

The SS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/008/0001

RAI (MCC/MNC/LAC/RAC): 234/008/0001/05

The SS then resumes RF output on the BCCH.

h) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.

i) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC/LAC): 234/008/0001

TMSI: "43658709"

to the UE.

j) After receipt of a TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

k) The UE is soft powered down.

7.1.1.5 Acceptance criteria

1) After each of the steps a) to d) the UE shall not attempt a LOCATION UPDATING and not a ATTACH procedure.

2) After step f) the 2G UE shall send LOCATION UPDATING REQUEST to the SS and a 3G terminal shall send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

3) After step h) the 2G UE shall send LOCATION UPDATING REQUEST to the SS and a 3G terminal shall send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

4) After step i) the 2G UE shall respond with TMSI REALLOCATION COMPLETE to the SS and a 3G terminal shall respond with

I. TMSI REALLOCATION COMPLETE to the USS during registration on CS or

II. ATTACH COMPLETE during registration on PS or

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE to the USS during registration on CS/PS..

7) After step k) the USIM shall contain the following values:

EF_{FPLMN} (Forbidden PLMNs)

Logically:	PLMN1:	234 002 (MCC MNC)
	PLMN2:	234 003
	PLMN3:	234 004
	PLMN4:	234 005
	PLMN5:	234 006
	PLMN6:	234 007

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Hex	32	24	00	32	34	00	32	44	00	32	54	00

	B13	B14	B15	B16	B17	B18
	32	64	00	32	74	00

For 2G terminals and 3G terminals supporting (CS and PS) or (CS only):

EF_{LOCI} (Location Information)

Logically: LAI-MCC: 234
LAI-MNC: 008
TMSI: "43658709"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	43	65	87	09	32	84	00	xx	xx	xx	00

For 3G terminals supporting (CS and PS) or (PS only):

EF_{PSLOCI} (Location Information)

Logically: RAI-MCC: 234
RAI-MNC: 008
P-TMSI: "43658709"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	43	65	87	09	xx	xx	xx	32	84	00	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

In case of a Terminal accessing GERAN:

EF_{Keys} (Ciphering and Integrity Keys)

Logically: Key Set Identifier KSI: 07 (not available)
Ciphering Keys CK: xx
Integrity Keys IK: xx

Coding:	B1	B2	B3	…	B16	B17	B18	…	B31	B32	B33
Hex	07	xx	xx	…	xx	xx	xx	…	xx	xx	Xx

7.1.2 UE updating forbidden PLMNs

7.1.2.1 Definition and applicability

A list of forbidden PLMNs stored in the USIM provides storage for at least 4 entries, and is managed by the UE. In automatic PLMN selection mode the UE controls registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a registration reject with the cause "PLMN not allowed" the UE stores the PLMN which rejected the update request in the USIM.

The registration attempts initiated by the 3G UE depends on Ues capabilities and can be one of the following:

7) registration procedures for Ues supporting CS or

II. registration procedures for Ues supporting PS or

III. registration procedures for Ues supporting CS/PS

7.1.2.2 Conformance requirement

In case of a 2G terminal:

After the receipt of a LOCATION UPDATING REJECT message with the cause "PLMN not allowed" the UE shall update the EF_{FPLMN} in the USIM.

Reference:

- TS 22.011 [6], subclause 3.2.2.4.
- TS 31.102 [4], subclauses 5.1.1 and 5.2.7.

In case of a 3G terminal:

Depending on which domain the UE will be registered on, one of the following requirements should be fulfilled:

7) After the receipt of a LOCATION UPDATING REJECT message during registration on CS with the cause "PLMN not allowed" the UE shall update the EF_{FPLMN} in the USIM or

II. after receipt of a ATTACH REJECT message during registration on PS with the cause "PLMN not allowed" the Terminal shall update the EF_{FPLMN} in the USIM or

III. after receipt of a LOCATION UPDATING REJECT and/or ATTACH REJECT message during registration on CS/PS with the cause "PLMN not allowed" the Terminal shall update the EF_{FPLMN} in the USIM.

Reference:

- TS 22.011 [6], subclause 3.2.2.4.
- TS 31.102 [4], subclauses 5.1.1 and 5.2.7.

7.1.2.3 Test purpose

To verify that the UE correctly updates the EF_{FPLMN}, i.e. fill up existing gaps in the elementary file before overwriting any existing entries.

7.1.2.4 Method of test

7.1.2.4.1 Initial conditions

The USS (in case of a Terminal accessing UTRAN)/ SS (in case of a Terminal accessing a GERAN) transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 234/002/0001.
- RAI (MCC/MNC/LAC/RAC): 234/002/0001/05 (only for UTRAN cell)
- Access control: unrestricted.

NOTE: In case of a GERAN no packet system information is transmitted

The default UICC is used with the following exception:

EF_{FPLMN} (Forbidden PLMNs)

Logically:	PLMN1:	234 001 (MCC MNC)
	PLMN2:	empty
	PLMN3:	234 003
	PLMN4:	234 004
	PLMN5:	234 005
	PLMN6:	234 006

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Hex	32	14	00	FF	FF	FF	32	34	00	32	44	00
	B13	B14	B15	B16	B17	B18						
	32	54	00	32	64	00						

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

In case of a Terminal accessing UTRAN "Expected Sequence A" and in case of a Terminal accessing a GERAN "Expected Sequence B" shall be performed.

7.1.2.4.2 Procedure

Expected Sequence A:

a) The UE is powered on.

b) After receipt of a RRC CONNECTION REQUEST from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

c) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS sends LOCATION UPDATING REJECT to the UE with the cause "PLMN not allowed", followed by RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS sends ATTACH REJECT to the UE with cause "PLMN Not Allowed", followed by RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS sends LOCATION UPDATING REJECT and/or ATTACH REJECT to the UE with cause "PLMN Not Allowed", followed by RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

d) The UE is soft powered down.

Expected Sequence B:

a) The UE is powered on.

b) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.

c) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING REJECT to the UE with cause "PLMN Not Allowed", followed by CHANNEL RELEASE.

d) The UE is soft powered down.

7.1.2.5 Acceptance criteria

1) After step b) the 2G UE shall send LOCATION UPDATING REQUEST to the SS and the 3G terminal shall send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

7) After step d) the USIM shall contain:

EF_{FPLMN} (Forbidden PLMNs)

Logically: PLMN1: 234 001 (MCC MNC)
PLMN2: 234 002
PLMN3: 234 003
PLMN4: 234 004
PLMN5: 234 005
PLMN6: 234 006

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Hex	32	14	00	32	24	00	32	34	00	32	44	00

	B13	B14	B15	B16	B17	B18
	32	54	00	32	64	00

or

EF_{FPLMN} (Forbidden PLMNs)

Logically: PLMN1: 234 001 (MCC MNC)
PLMN2: 234 003
PLMN3: 234 004
PLMN4: 234 005
PLMN5: 234 006
PLMN6: 234 002

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Hex	32	14	00	32	34	00	32	44	00	32	54	00

	B13	B14	B15	B16	B17	B18
	32	64	00	32	24	00

7.1.3 UE deleting forbidden PLMNs

7.1.3.1 Definition and applicability

In manual PLMN selection mode the UE allows registration attempts to all available PLMNs, including forbidden PLMNs (as indicated by the forbidden PLMN list on the USIM). As a result of a successful registration procedure onto a PLMN which is in the forbidden PLMN list, the forbidden PLMN list is automatically updated by the UE.

The registration attempts initiated by the 3G UE depends on Ues capabilities and can be one of the following:

7) registration procedures for Ues supporting CS or

II. registration procedures for Ues supporting PS or

III. registration procedures for Ues supporting CS/PS

7.1.3.2 Conformance requirement

In case of a 2G terminal:

1) In manual PLMN selection mode the UE shall be able to perform a LOCATION UPDATING attempt to a PLMN which is in the forbidden PLMN list.

- TS 22.011 [6], subclause 3.2.2.2.

2) After receipt of LOCATION UPDATING ACCEPT the UE shall delete the forbidden PLMN from the forbidden PLMN list.

- TS 22.011 [6], subclause 3.2.2.4.

In case of a 3G terminal:

1) Depending on which domain the UE will be registered on, one of the following requirements should be fulfilled:

   7) In manual PLMN selection mode the UE shall be able to perform a LOCATION UPDATING attempt during registration on CS to a PLMN which is in the forbidden PLMN list or

   II. In manual PLMN selection mode the UE shall be able to perform a ATTACH attempt during registration on PS to a PLMN which is in the forbidden PLMN list or

   III. In manual PLMN selection mode the UE shall be able to perform a LOCATION UPDATING and/or ATTACH attempt during registration on CS/PS to a PLMN which is in the forbidden PLMN list.

   - TS 22.011 [6], subclause 3.2.2.2.

   - TS 31.102 [4], subclauses 5.1.1 and 5.2.7.

2) Depending on which domain the UE is going to be registered on, one of the following requirements should be fulfilled:

   7) After receipt of LOCATION UPDATING ACCEPT message during registration on CS the UE shall delete the forbidden PLMN from the forbidden PLMN list OR

   II. after receipt of ATTACH ACCEPT message during registration on PS the UE shall delete the forbidden PLMN from the forbidden PLMN list or

   III. after receipt of LOCATION UPDATING ACCEPT and/or ATTCH ACCEPT message during registration on CS/PS the UE shall delete the forbidden PLMN from the forbidden PLMN list.

   - TS 22.011 [6], subclause 3.2.2.4.

7.1.3.3 Test purpose

1) To verify that the 2G UE is able to perform a LOCATION UPDATING on a forbidden PLMN in manual PLMN selection mode or to verify that the 3G UE is able to perform

   I. a LOCATION UPDATING REQUEST during registration on CS on a forbidden PLMN in manual PLMN selection mode or

   II. a ATTACH REQUEST during registration on PS on a forbidden PLMN in manual PLMN selection mode or

   III. a LOCATION UPDATING REQUEST and/or ATTACH REQUEST during registration on CS/PS on a forbidden PLMN in manual PLMN selection mode.

2) To verify that the UE after a successful registration attempt deletes the PLMN in the EF_{FPLMN} on the USIM.

7.1.3.4 Method of test

7.1.3.4.1 Initial conditions

The USS (in case of a Terminal accessing UTRAN)/ SS (in case of Terminal accessing a GERAN) transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 234/005/0001.
- RAI (MCC/MNC/LAC/RAC): 234/005/0001/05 (only for UTRAN cell).
- Access control: unrestricted.

NOTE: In case of a GERAN no packet system information is transmitted

The default UICC is used with the following exception:

EF_{FPLMN} (Forbidden PLMNs)

Logically:	PLMN1:	empty
	PLMN2:	empty
	PLMN3:	empty
	PLMN4:	empty
	PLMN5:	234 005 (MCC MNC)
	PLMN6:	empty

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Hex	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

B13	B14	B15	B16	B17	B18
32	54	00	FF	FF	FF

The UICC is installed into the Terminal and the UE is set to manual PLMN selection mode.

In case of a Terminal accessing UTRAN "Expected Sequence A" and in case of a Terminal accessing a GERAN "Expected Sequence B" shall be performed.

7.1.3.4.2 Procedure

Expected Sequence A:

a) The UE is powered on.

b) PLMN with MCC/MNC of 234/005 is manually selected.

c) After receipt of a RRC CONNECTION REQUEST from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

d) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT with to the UE:

LAI (MCC/MNC/LAC): 234/005/0001

TMSI: "12345678"

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ATTACH ACCEPT with to the UE:

RAI (MCC/MNC/LAC): 234/005/0001/05

P-TMSI: "12345678"

P-TMSI signature value "AB1234"

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT and/or ATTACH ACCEPT with some of the following values to the UE with:

LAI (MCC/MNC/LAC): 234/005/0001

TMSI: "12345678"

RAI (MCC/MNC/LAC): 234/005/0001/05

P-TMSI: "12345678"

P-TMSI signature value "AB1234"

e) After passing through the authentication procedure and after receipt of

I. TMSI REALLOCATION COMPLETE during registration on CS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or

II. ATTACH COMPLETE during registration on PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE during registration on CS/PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

f) The UE is soft powered down.

Expected Sequence B:

a) The UE is powered on.

b) PLMN with MCC/MNC of 234/005 is manually selected.

c) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.

d) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC): 234/005

TMSI: "12345678"

to the UE.

e) After receipt of TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE.

f) The UE is soft powered down.

7.1.3.5 Acceptance criteria

1) After step c) the 2G UE shall send LOCATION UPDATING REQUEST to the SS and the 3G terminal shall send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

2) After step d) the 2G UE shall respond with TMSI REALLOCATION COMPLETE and the 3G terminal shall respond with

I. TMSI REALLOCATION COMPLETE to the USS during registration on CS or

II. ATTACH COMPLETE during registration on PS or

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE to the USS during registration on CS/PS.

7) After step f) the USIM shall contain the following values:

EF_{FPLMN} (Forbidden PLMNs)

Logically:	PLMN1:	empty
	PLMN2:	empty
	PLMN3:	empty
	PLMN4:	empty
	PLMN5:	empty
	PLMN6:	empty

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Hex	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

	B13	B14	B15	B16	B17	B18
	FF	FF	FF	FF	FF	FF

For 2G terminals and 3G terminals supporting CS only or CS/PS :

EF_{LOCI} (Location Information)

Logically:	LAI-MCC:	234
	LAI-MNC:	005
	TMSI:	"12345678"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	32	54	00	xx	xx	xx	00

For Ues supporting PS only or CS/PS :

EF_{PSLOCI} (Location Information)

Logically:	RAI-MCC:	234
	RAI-MNC:	005
	P-TMSI:	"12345678"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	xx	xx	xx	32	54	00	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

7.1.4 Adding FPLMN to the forbidden PLMN list when accessing E-UTRAN

7.1.4.1 Definition and applicability

A list of forbidden PLMNs stored in the USIM and providing storage for at least 4 entries is managed by the UE. In automatic PLMN selection mode the UE controls registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a registration reject with the cause "PLMN not allowed" the UE stores the PLMN which rejected the update request in the USIM.

7.1.4.2 Conformance requirement

1) In automatic PLMN selection mode the UE shall only attempt a *AttachRequest* during registration on E-UTRAN/EPS if it receives a BCCH containing a PLMN (MCC,MNC) that is not indicated in the EF_{FPLMN} in the USIM

Reference:

- TS 22.011 [6], subclause 2.3;
- TS 31.102 [4], subclauses 5.1.1 and 5.2.7.

2) After receipt of an *AttachReject* message during registration on E-UTRAN/EPS with the EMM cause "PLMN not allowed" the Terminal shall update the EF_{FPLMN} in the USIM.

Reference:

- TS 22.011 [6], subclause 3.2.2 2.3;
- TS 31.102 [4], subclauses 5.1.1 and 5.2.7

3) After receipt of an *AttachReject* message during registration on E-UTRAN/EPS with the EMM cause "PLMN not allowed" the Terminal shall update the $EF_{EPSLOCI}$ in the USIM.

Reference:

- TS 24.301 [26], subclause 5.5.1.2.5;
- TS 31.102 [4], subclauses 5.1.1 and 4.2.9.1.

3) After registration on E-UTRAN/EPS the USIM shall contain the correct GUTI and TAI received by the UE.

Reference:

- TS 31.102 [4], subclauses 5.1.2 and 4.2.9.1;
- TS 21.111 [6], subclause 10.1.

7.1.4.3 Test purpose

1) To verify that in automatic PLMN selection mode the UE does not attempt to access PLMNs stored in EF_{FPLMN} on the USIM.

2) To verify that the EF_{FPLMN} is correctly updated by the Terminal after receipt of a *AttachReject* message with cause "PLMN not allowed" during registration.

3) To verify that the $EF_{EPSLOCI}$ has been correctly updated by the Terminal during registration.

7.1.4.4 Method of test

7.1.4.4.1 Initial conditions

The E-USS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 234/002/0001.
- Access control: unrestricted.

The default E-UTRAN UICC is used.

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

7.1.4.4.2 Procedure

a) The UE is powered on.

b) The E-USS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/003

The E-USS then resumes RF output on the BCCH.

c) The E-USS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/004

The E-USS then resumes RF output on the BCCH.

d) The E-USS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/005

The E-USS then resumes RF output on the BCCH.

e) The E-USS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

TAI (MCC/MNC/TAC):234/007/0001

The E-USS then resumes RF output on the BCCH.

f) After receipt of an *RRCConnectionRequest* from the UE, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

g) During registration and after receipt of an *AttachRequest* from the UE, the E-USS sends *AttachReject* to the UE with cause "PLMN Not Allowed", followed by *RRCConnectionRelease*.

h) The E-USS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

TAI (MCC/MNC/TAC): 234/008/0001

The E-USS then resumes RF output on the BCCH.

h) After receipt of an *RRCConnectionRequest* from the UE, the USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the USS.

i) During registration and after receipt of an *AttachRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* to the UE with:

TAI (MCC/MNC/TAC):234/008/ 0001

GUTI: "23400800010266436587"

j) After receipt of *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*.

k) The UE is soft powered down.

7.1.4.5 Acceptance criteria

1) After each of the steps a) to d) the terminal shall not attempt an Attach procedure.

2) After step f) the terminal shall send *AttachRequest* during registration.

3) After step h) the terminal shall send *AttachRequest* during registration.

4) After step i) the terminal shall respond with *AttachComplete* during registration.

5) After step k) the USIM shall contain the following values:

EF_{FPLMN} (Forbidden PLMNs)

Logically:	PLMN1:	234 002 (MCC MNC)
	PLMN2:	234 003
	PLMN3:	234 004

PLMN4: 234 005
PLMN5: 234 006
PLMN6: 234 007

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Hex	32	24	00	32	34	00	32	44	00	32	54	00
	B13	B14	B15	B16	B17	B18						
	32	64	00	32	74	00						

$EF_{EPSLOCI}$ (EPS Information)

Logically: GUTI: 23400800010266436587
Last visited registered TAI: 234/008/0001
EPS update status: updated

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	0B	F6	32	84	00	00	01	02	66	43	65
	B12	B13	B14	B15	B16	B17	B18				
	87	32	84	00	00	01	00				

7.1.5 UE updating forbidden PLMNs when accessing E-UTRAN

7.1.5.1 Definition and applicability

A list of forbidden PLMNs stored in the USIM provides storage for at least 4 entries, and is managed by the UE. In automatic PLMN selection mode the UE controls registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a registration reject with the cause "PLMN not allowed" the UE stores the PLMN which rejected the update request in the USIM.

7.1.5.2 Conformance requirement

After receipt of a *AttachReject* message during registration with the cause "PLMN not allowed" the Terminal shall update the EF_{FPLMN} in the USIM.

Reference:

- TS 22.011 [6], subclause 3.2.2.4.
- TS 31.102 [4], subclauses 5.1.1 and 5.2.7.

7.1.5.3 Test purpose

To verify that the UE correctly updates the EF_{FPLMN}, i.e. fill up existing gaps in the elementary file before overwriting any existing entries.

7.1.5.4 Method of test

7.1.5.4.1 Initial conditions

The E-USS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 234/002/0001.
- Access control: unrestricted.

The default E-UTRAN UICC is used with the following exception:

EF_{FPLMN} (Forbidden PLMNs)

Logically:	PLMN1:	234 001 (MCC MNC)
	PLMN2:	empty
	PLMN3:	234 003
	PLMN4:	234 004
	PLMN5:	234 005
	PLMN6:	234 006

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Hex	32	14	00	FF	FF	FF	32	34	00	32	44	00

	B13	B14	B15	B16	B17	B18
	32	54	00	32	64	00

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

7.1.5.4.2 Procedure

a) The UE is powered on.

b) After receipt of a *RRCConnectionRequest* from the UE, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of a *AttachRequest* from the UE, the E-USS sends *AttachReject* to the UE with cause "PLMN Not Allowed", followed by *RRCConnectionRelease*.

d) The UE is soft powered down.

7.1.5.5 Acceptance criteria

1) After step b) the terminal shall send *AttachRequest* during registration.

2) After step d) the USIM shall contain:

EF_{FPLMN} (Forbidden PLMNs)

Logically:	PLMN1:	234 001 (MCC MNC)
	PLMN2:	234 002
	PLMN3:	234 003
	PLMN4:	234 004
	PLMN5:	234 005
	PLMN6:	234 006

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Hex	32	14	00	32	24	00	32	34	00	32	44	00

	B13	B14	B15	B16	B17	B18
	32	54	00	32	64	00

or

EF_{FPLMN} (Forbidden PLMNs)

Logically:	PLMN1:	234 001 (MCC MNC)
	PLMN2:	234 003
	PLMN3:	234 004
	PLMN4:	234 005
	PLMN5:	234 006
	PLMN6:	234 002

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Hex	32	14	00	32	34	00	32	44	00	32	54	00
	B13	B14	B15	B16	B17	B18						
	32	64	00	32	24	00						

7.1.6 UE deleting forbidden PLMNs when accessing E-UTRAN

7.1.6.1 Definition and applicability

In manual PLMN selection mode the UE allows registration attempts to all available PLMNs, including forbidden PLMNs (as indicated by the forbidden PLMN list on the USIM). As a result of a successful registration procedure onto a PLMN which is in the forbidden PLMN list, the forbidden PLMN list is automatically updated by the UE.

7.1.6.2 Conformance requirement

a) In manual PLMN selection mode the UE shall be able to perform a ATTACH attempt during registration to a PLMN which is in the forbidden PLMN list or

- TS 22.011 [6], subclause 3.2.2.2.

- TS 31.102 [4], subclauses 5.1.1 and 5.2.7.

b) After receipt of *AttachAccept* message during registration the UE shall delete the forbidden PLMN from the forbidden PLMN list or

- TS 22.011 [6], subclause 3.2.2.4.

7.1.6.3 Test purpose

1) To verify that the terminal is able to perform an *AttachRequest* during registration on a forbidden PLMN in manual PLMN selection mode.

2) To verify that the UE after a successful registration attempt deletes the PLMN in the EF_{FPLMN} on the USIM.

7.1.6.4 Method of test

7.1.6.4.1 Initial conditions

The E-USS transmits on the BCCH, with the following network parameters:

- LAI (MCC/MNC/LAC): 234/005/0001.

- Access control: unrestricted.

The default E-UTRAN UICC is used with the following exception:

EF_{FPLMN} (Forbidden PLMNs)

Logically:	PLMN1:	empty
	PLMN2:	empty
	PLMN3:	empty
	PLMN4:	empty
	PLMN5:	234 005 (MCC MNC)
	PLMN6:	empty

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Hex	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

B13	B14	B15	B16	B17	B18
32	54	00	FF	FF	FF

The UICC is installed into the Terminal and the UE is set to manual PLMN selection mode.

7.1.6.4.2 Procedure

a) The UE is powered on.

b) PLMN with MCC/MNC of 234/005 is manually selected.

c) After receipt of a *RRCConnectRequest* from the UE, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

d) During registration and after receipt of a *AttachRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC):234/005/ 0001

GUTI: "23400500010266436587"

e) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*.

f) The UE is soft powered down.

7.1.6.5 Acceptance criteria

1) After step c) the terminal shall send *AttachRequest* during registration

2) After step d) the terminal shall respond with *AttachComplete* during registration

3) After step f) the USIM shall contain the following values:

EF_{FPLMN} (Forbidden PLMNs)

Logically:	PLMN1:	empty
	PLMN2:	empty
	PLMN3:	empty
	PLMN4:	empty
	PLMN5:	empty
	PLMN6:	empty

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Hex	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

B13	B14	B15	B16	B17	B18
FF	FF	FF	FF	FF	FF

$EF_{EPSLOCI}$ (EPS Information)

Logically: GUTI: 23400500010266436587
Last visited registered TAI: 234/005/0001
EPS update status: updated

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	0B	F6	32	54	00	00	01	02	66	43	65
	B12	B13	B14	B15	B16	B17	B18				
	87	32	54	00	00	01	00				

7.2 User controlled PLMN selector handling

7.2.1 UE updating the User controlled PLMN selector list

7.2.1.1 Definition and applicability

The User controlled PLMN selector list gives in priority order the preferred UPLMNs on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the $EF_{PLMNwACT}$. Update and deletion of PLMNs may be performed by the subscriber.

7.2.1.2 Conformance requirement

The UE shall correctly replace the selected UPLMN in the User controlled PLMN selector list.

- TS 31.102 [4], subclause 5.3.6.

7.2.1.3 Test purpose

To verify that the UE correctly updates the $EF_{PLMNwACT}$.

7.2.1.4 Method of test

7.2.1.4.1 Initial conditions

No USS/SS is required for this test.

The default UICC is used.

The UICC is installed into the Terminal and the UE is powered on.

7.2.1.4.2 Procedure

a) The user shall initiate an MMI dependent procedure to change the second UPLMN in the User controlled PLMN selector list to MCC/MNC of 567/02, the ACT identifier shall set to UTRAN only.

b) The UE is soft powered down.

7.2.1.5 Acceptance criteria

After step b) the USIM shall contain the following values:

$EF_{PLMNwACT}$ (UPLMN Selector)

Logically: 1st PLMN: 244 081 (MCC MNC)

1st ACT:	UTRAN
2nd PLMN:	567 02
2nd ACT	UTRAN
3rd PLMN:	244 082
3rd ACT	UTRAN
4th PLMN:	244 082
4th ACT	GSM
5th PLMN:	244 003
5th ACT	UTRAN
6th PLMN:	244 004
6th ACT	UTRAN
7th PLMN:	244 005
7th ACT	UTRAN
8th PLMN:	244 006
8th ACT	UTRAN
9th PLMN:	244 007
9th ACT	UTRAN
10th PLMN:	244 008
10th ACT	UTRAN
11th PLMN:	244 009
11th ACT	UTRAN
12th PLMN:	244 010
12th ACT	UTRAN

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15
Hex	42	14	80	80	00	65	F7	20	80	00	42	24	80	80	00
	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	42	24	80	00	80	42	34	00	80	00	42	44	00	80	00
	B31	B32	B33	B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45
	42	54	00	80	00	42	64	00	80	00	42	74	00	80	00
	B46	B47	B48	B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60
	42	84	00	80	00	42	94	00	80	00	42	04	10	80	00

7.2.2 UE recognising the priority order of the User controlled PLMN selector list with the same access technology.

7.2.2.1 Definition and applicability

The User controlled PLMN selector list gives in priority order the preferred UPLMNs on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the $EF_{PLMNwACT}$. Update and deletion of UPLMNs may be performed by the subscriber by the use of the PIN.

The registration attempts initiated by the terminal accessing UTRAN depends on terminal"s capabilities and can be one of the following:

7) registration procedures for Ues supporting CS or

II. registration procedures for Ues supporting PS or

III. registration procedures for Ues supporting CS/PS

7.2.2.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority order of the UPLMNs in the preferred list on the USIM.

- TS 22.011 [6], subclause 3.2.2.

7.2.2.3 Test purpose

To verify that the UPLMN with the higher priority (defined by its position in $EF_{PLMNwACT}$) takes precedence over the UPLMN with the lower priority when the UE performs a network selection.

7.2.2.4 Method of test

7.2.2.4.1 Initial conditions

The USS (in case of a Terminal accessing UTRAN)/ SS (in case of a Terminal accessing a GERAN) transmits on two BCCHs, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/033/0001.
- RAI (MCC/MNC/LAC/RAC): 244/033/0001/05 (only for UTRAN cell).
- Access control: unrestricted.
- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/034/0001.
- RAI (MCC/MNC/LAC/RAC): 244/034/0001/05 (only for UTRAN cell).
- Access control: unrestricted.

NOTE: In case of a GERAN no packet system information is transmitted

The default UICC is used with the following exception:

$EF_{PLMNwACT}$ (UPLMN Selector with Access Technology)

Logically:	1st PLMN:	244 081 (MCC MNC)
	1st ACT:	UTRAN
	2nd PLMN:	244 081
	2nd ACT	GSM
	3rd PLMN:	244 082
	3rd ACT	UTRAN
	3rd PLMN:	244 082
	3rd ACT	GSM
	….....	
	….....	
	8th PLMN:	244 034
	8th ACT	GSM
	9th PLMN:	244 033
	9th ACT	GSM
	10th PLMN:	244 008
	10th ACT	UTRAN
	11th PLMN:	244 034
	11th ACT	UTRAN
	12th PLMN:	244 033
	12th ACT	UTRAN

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15
Hex	42	14	80	80	00	42	14	80	00	80	42	24	80	80	00
	B16	B17	B18	B19	B20	…..	…..	…..	…..						
	42	24	80	00	80	…..	…..	…..	…..						
				…..	…..	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45
				…..	…..	42	44	30	00	80	42	34	30	00	80
	B46	B47	B48	B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60
	42	84	00	80	00	42	44	30	80	00	42	34	30	80	00

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

In case of a Terminal accessing UTRAN "Expected Sequence A" and in case of a Terminal accessing a GERAN "Expected Sequence B" shall be performed.

7.2.2.4.2 Procedure

Expected Sequence A:

a) The UE is powered on.

b) After receipt on the cell related to the BCCH transmitting MCC/MNC 244/034 of a RRC CONNECTION REQUEST from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

c) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT to the UE with the following values:

LAI (MCC/MNC/LAC): 244/034/0001

TMSI:"34567890"

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ATTACH ACCEPT to the UE with the following values :

RAI (MCC/MNC/LAC/RAC) 244/034/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT and/or ATTACH ACCEPT to the UE with some of the following values :

LAI (MCC/MNC/LAC): 244/034/0001

TMSI:"34567890"

RAI (MCC/MNC/LAC/RAC) 244/034/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

d) After passing through the authentication procedure and after receipt of

I. TMSI REALLOCATION COMPLETE during registration on CS from the UE, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or

II. ATTACH COMPLETE during registration on PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE during registration on CS/PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

e) The UE is soft powered down.

Expected Sequence B:

a) The UE is powered on.

b) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.

c) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC): 244/034

TMSI: "34567890"

to the UE

d) After receipt of a TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

e) The UE is soft powered down.

7.2.2.5 Acceptance criteria

1) After step a) the UE accessing a GERAN shall send CHANNEL REQUEST on the cell related to the BCCH transmitting MCC/MNC 244/034 to the SS and the UE accessing UTRAN shall send an RRC CONNECTION REQUEST on the cell related to the BCCH transmitting MCC/MNC 244/034 to the USS.

2) After step b) the UE accessing a GERAN shall send LOCATION UPDATING REQUEST to the SS and the UE accessing UTRAN shall send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST to the USS during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

3) After step c) the UE accessing a GERAN shall respond with TMSI REALLOCATION COMPLETE and the UE accessing UTRAN shall respond with

I. TMSI REALLOCATION COMPLETE to the USS during registration on CS or

II. ATTACH COMPLETE during registration on PS or

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE to the USS during registration on CS/PS.

7) After step e) the USIM shall contain the following values:

For Ues accessing GERAN and Ues accessing UTRAN and supporting (CS and PS) or (CS only):

EF_{LOCI} (Location Information)

Logically: LAI-MCC: 244

LAI-MNC: 034
TMSI: "34567890"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	34	56	78	90	42	44	30	xx	xx	xx	00

For Ues accessing UTRAN and supporting (CS and PS) or (PS only):

EF_{PSLOCI} (Location Information)

Logically: RAI-MCC: 244
RAI-MNC: 034
P-TMSI: "34567890"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	34	56	78	90	xx	xx	xx	42	44	30	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

7.2.3 UE recognising the priority order of the User controlled PLMN selector list using an ACT preference.

7.2.3.1 Definition and applicability

The User controlled PLMN selector list gives in priority order the preferred PLMNs of the User on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the $EF_{PLMNwACT}$. Update and deletion of User controlled PLMNs may be performed by the subscriber by the use of the PIN.

7.2.3.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of the ACT identifier in the preferred list on the USIM.

- TS 22.011 [6], subclause 3.2.2;
- TS 31.102 [4], subclauses 4.2.5 and 5.1.2.

7.2.3.3 Test purpose

To verify that the ACT with the higher priority (defined by its position in $EF_{PLMNwACT}$) takes precedence over the UPLMN with the lower priority when the UE performs a network selection.

7.2.3.4 Method of test

7.2.3.4.1 Initial conditions

For this test both a GSM SS and an UTRAN USS is needed.

The GSM SS transmits on BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/081/0001.
- Access control: unrestricted.

The UMTS USS transmits on BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/082/0001.
- Access control: unrestricted.

The default UICC is used.

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

7.2.3.4.2 Procedure

a) The UE is powered on.

b) After receipt of a CHANNEL REQUEST from the UE on the GSM-cell related to the BCCH transmitting MCC/MNC 244/081, the SS sends IMMEDIATE ASSIGNMENT to the UE.

c) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC): 244/081

TMSI: "34567890"

to the UE.

d) After receipt of a TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

e) The UE is soft powered down.

7.2.3.5 Acceptance criteria

1.) After step a) the UE shall send a CHANNEL REQUEST on the GSM-cell related to the BCCH transmitting MCC/MNC 244/081 to the SS.

2) After step b) the UE shall send LOCATION UPDATING REQUEST to the SS.

3) After step c) the UE shall respond with TMSI REALLOCATION COMPLETE.

4) After step e) the USIM shall contain the following values:

EF_{LOCI} (Location Information)

Logically: LAI-MCC: 244
LAI-MNC: 081
TMSI: "34567890"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	34	56	78	90	42	14	80	xx	xx	xx	00

7.2.4 Void

7.2.5 UE updating the User controlled PLMN selector list for E-UTRAN

7.2.5.1 Definition and applicability

The User controlled PLMN selector list gives in priority order the preferred UPLMNs on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the $EF_{PLMNwACT}$. Update and deletion of PLMNs may be performed by the subscriber.

7.2.5.2 Conformance requirement

The UE shall correctly replace the selected UPLMN in the User controlled PLMN selector list.

- TS 31.102 [4], subclause 5.3.6 and 4.2.5.

7.2.5.3 Test purpose

To verify that the UE correctly updates the $EF_{PLMNwACT}$.

7.2.5.4 Method of test

7.2.5.4.1 Initial conditions

No USS/SS is required for this test.

The default E-UTRAN UICC is used.

The UICC is installed into the Terminal and the UE is powered on.

7.2.5.4.2 Procedure

a) The user shall initiate an MMI dependent procedure to change the second UPLMN in the User controlled PLMN selector list to MCC/MNC of 567/04, the ACT identifier shall set to E-UTRAN only.

b) The UE is soft powered down.

7.2.5.5 Acceptance criteria

After step b) the USIM shall contain the following values:

$EF_{PLMNwACT}$ (UPLMN Selector)

Logically:	1st PLMN:	244 081 (MCC MNC)
	1st ACT:	E-UTRAN
	2nd PLMN:	567 04
	2nd ACT	E-UTRAN
	3rd PLMN:	244 083
	3rd ACT:	E-UTRAN
	4th PLMN:	244 082
	4th ACT:	GSM
	5th PLMN:	244 003
	5th ACT:	E-UTRAN
	6th PLMN:	244 004
	6th ACT:	UTRAN
	7th PLMN:	244 005
	7th ACT:	UTRAN
	8th PLMN:	244 081
	8th ACT:	UTRAN
	9th PLMN:	244 007
	9th ACT:	UTRAN
	10th PLMN:	244 008
	10th ACT:	E-UTRAN
	11th PLMN:	244 009
	11th ACT:	UTRAN
	12th PLMN:	244 010
	12th ACT:	E-UTRAN

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15
Hex	42	14	80	40	00	65	F7	40	40	00	42	34	80	40	00
	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	42	24	80	00	80	42	34	00	40	00	42	44	00	80	00
	B31	B32	B33	B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45
	42	54	00	80	00	42	14	80	80	00	42	74	00	80	00
	B46	B47	B48	B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60
	42	84	00	40	00	42	94	00	80	00	42	04	10	40	00

7.2.6 UE recognising the priority order of the User controlled PLMN selector list using an ACT preference- UTRAN/E-UTRAN

7.2.6.1 Definition and applicability

The User controlled PLMN selector list gives in priority order the preferred PLMNs of the User on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the $EF_{PLMNwACT}$. Update and deletion of User controlled PLMNs may be performed by the subscriber by the use of the PIN.

7.2.6.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of the ACT identifier in the preferred list on the USIM.

- TS 22.011 [6], subclause 3.2.2;
- TS 31.102 [4], subclauses 4.2.5 and 5.1.1.2.

7.2.6.3 Test purpose

To verify that the ACT with the higher priority (defined by its position in $EF_{PLMNwACT}$) takes precedence over the UPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for RAT E-UTRAN has to be handled correctly by the UE.

7.2.6.4 Method of test

7.2.6.4.1 Initial conditions

For this test both a UTRAN USS and an E-UTRAN E-USS is needed.

The USS transmits on BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/004/0001.
- Access control: unrestricted.

The E-USS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 244/003/0001.
- Access control: unrestricted.

The default E-UTRAN UICC is used.

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

7.2.6.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/003, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of a *AttachRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC):244/003/ 0001

GUTI: "24400300010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*.

e) The UE is soft powered down.

7.2.6.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/003 to the E-USS.

2) After step b) the terminal shall send *AttachRequest* to the E-USS.

3) After step c) the terminal shall respond with *AttachComplete* during registration.

4) After step e) the USIM shall contain the following values:

$EF_{EPSLOCI}$ (EPS Information)

Logically: GUTI: 24400300010266436587
Last visited registered TAI: 244/003/0001
EPS update status: updated

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	0B	F6	42	34	00	00	01	02	66	43	65
	B12	B13	B14	B15	B16	B17	B18				
	87	42	34	00	00	01	00				

7.2.7 UE recognising the priority order of the User controlled PLMN selector list using an ACT preference- GSM/E-UTRAN

7.2.7.1 Definition and applicability

The User controlled PLMN selector list gives in priority order the preferred PLMNs of the User on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the $EF_{PLMNwACT}$. Update and deletion of User controlled PLMNs may be performed by the subscriber by the use of the PIN.

7.2.7.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of the ACT identifier in the preferred list on the USIM.

- TS 22.011 [6], subclause 3.2.2;
- TS 31.102 [4], subclauses 4.2.5 and 5.1.1.2.

7.2.7.3 Test purpose

To verify that the ACT with the higher priority (defined by its position in $EF_{PLMNwACT}$) takes precedence over the UPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for RAT E-UTRAN has to be handled correctly by the UE.

7.2.7.4 Method of test

7.2.7.4.1 Initial conditions

For this test both a GSM SS and an E-UTRAN E-USS is needed.

The GSM SS transmits on BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/082/0001.
- Access control: unrestricted.

The E-USS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 244/083/0001.
- Access control: unrestricted.

The default E-UTRAN UICC is used.

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

7.2.7.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/083, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of a *AttachRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC):244/083/ 0001

GUTI: "24408300010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*.

e) The UE is soft powered down.

7.2.7.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/083 to the e-USS.

2) After step b) the terminal shall send *AttachRequest* to the E-USS.

3) After step c) the terminal shall respond with *AttachComplete* during registration.

4) After step e) the USIM shall contain the following values:

$EF_{EPSLOCI}$ (EPS Information)

Logically: GUTI: 24408300010266436587
Last visited registered TAI: 244/083/0001
EPS update status: updated

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	0B	F6	42	34	80	00	01	02	66	43	65
	B12	B13	B14	B15	B16	B17	B18				
	87	42	34	80	00	01	00				

7.3 Operator controlled PLMN selector handling

7.3.1 UE recognising the priority order of the Operator controlled PLMN selector list.

7.3.1.1 Definition and applicability

The Operator controlled PLMN selector list gives in priority order the preferred OPLMNs on which the UE shall register if no network of the User controlled PLMN selector list is available. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the $EF_{OPLMNwACT}$. Update and deletion of OPLMNs shall not be possible by the subscriber by the use of the PIN.

The registration attempts initiated by the UE accessing UTRAN depends on UE"s capabilities and can be one of the following:

7) registration procedures for Ues supporting CS or

II. registration procedures for Ues supporting PS or

III. registration procedures for Ues supporting CS/PS

7.3.1.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of OPLMNs in the preferred list on the USIM.

- TS 22.011 [6], subclause 3.2.2;
- TS 31.102 [4], subclause 4.2.53.

7.3.1.3 Test purpose

To verify that the OPLMN with the higher priority (defined by its position in $EF_{OPLMNwACT}$) takes precedence over the OPLMN with the lower priority when the UE performs a network selection.

7.3.1.4 Method of test

7.3.1.4.1 Initial conditions

For this test a USS (in case of a Terminal accessing UTRAN) or a SS (in case of a Terminal accessing a GERAN) is needed.

The USS (in case of a Terminal accessing UTRAN)/ SS (in case of a Terminal accessing a GERAN)transmits on two BCCHs, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 254/011/0001.
- RAI (MCC/MNC/LAC/RAC): 254/011/0001/05 (for UTRAN cell only).
- Access control: unrestricted.
- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 254/012/0001.
- RAI (MCC/MNC/LAC/RAC): 254/012/0001/05 (for UTRAN cell only).
- Access control: unrestricted.

NOTE: In case of a GERAN no packet system information is transmitted.

The default UICC is used with the following exceptions:

EF_{UST} (USIM Service Table)

Logically: Local Phone Book available
User controlled PLMN selector available
Fixed dialling numbers available
Barred dialling numbers available
The GSM Access available
The Group Identifier level 1 and level 2 not available
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available
Operator controlled PLMN selector available

Coding:	B1	B2	B3	B4	B5	B6
binary	xx1x xx11	xxxx xxxx	xxxx 1x00	xxxx x1xx	xxxx xx11	xxxx xx1x

The coding of EF_{UST} shall conform with the capabilities of the USIM used.

$EF_{OPLMNwACT}$ (OPLMN Selector)

Logically:
1^{st} PLMN: 254 012 (MCC MNC)
1^{st} ACT UTRAN
2^{nd} PLMN: 254 011
2^{nd} ACT UTRAN
3^{rd} PLMN: 254 002
3^{rd} ACT: UTRAN
4^{th} PLMN: 254 012
4^{th} ACT: GSM
5^{th} PLMN: 254 011
5^{th} ACT: GSM
6^{th} PLMN: 254 005
6^{th} ACT: UTRAN
7^{th} PLMN: 254 006
7^{th} ACT: UTRAN
8^{th} PLMN: 254 007
8^{th} ACT: UTRAN

Coding:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Hex	52	24	10	80	00	52	14	10	80	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	52	24	00	80	00	52	24	10	00	80
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	52	14	10	00	80	52	54	00	80	00
	B31	B32	B33	B34	B35	B36	B37	B38	B39	B40
	52	64	00	80	00	52	74	00	80	00

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

In case of a Terminal accessing UTRAN "Expected Sequence A" and in case of a Terminal accessing a GERAN "Expected Sequence B" shall be performed.

7.3.1.4.2 Procedure

Expected Sequence A:

a) The UE is powered on.

b) After receipt on the cell related to the BCCH transmitting MCC/MNC 254/012 of a RRC CONNECTION REQUEST from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

c) Depending on which domain the UE is going to be registered on, one of the following requirements should be fulfilled:

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT to the UE with the following values:

LAI (MCC/MNC/LAC): 254/012/0001

TMSI: "34567890"

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ATTACH ACCEPT to the UE.with following values :

RAI (MCC/MNC/LAC/RAC) 254/012/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT and/or ATTACH ACCEPT to the UE.with some of the following values :

LAI (MCC/MNC): 254/012/0001

TMSI: "34567890"

RAI (MCC/MNC/LAC/RAC) 254/012/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

d) After receipt of a

I. TMSI REALLOCATION COMPLETE during registration on CS from the UE, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

II. ATTACH COMPLETE during registration on PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE during registration on CS/PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

e) The UE is soft powered down.

Expected Sequence B:

a) The UE is powered on.

b) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.

c) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC): 254/012

TMSI: "34567890"

to the UE.

d) After receipt of a TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

e) The UE is soft powered down.

7.3.1.5 Acceptance criteria

1) After step a) the UE accessing a GERAN shall send CHANNEL REQUEST on the cell related to the BCCH transmitting MCC/MNC 254/012 to the SS and the UE accessing UTRAN shall send an RRC CONNECTION REQUEST on the cell related to the BCCH transmitting MCC/MNC 254/012 to the USS.

2) After step b) the UE accessing a GERAN shall send LOCATION UPDATING REQUEST to the SS and the UE accessing UTRAN shall send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST. To the USS during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

3) After step c) the UE accessing GERAN shall respond with TMSI REALLOCATION COMPLETE and the UE accessing UTRAN shall respond with

I. TMSI REALLOCATION COMPLETE during registration on CS or

II. ATTACH COMPLETE during registration on PS or

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE to the USS during registration on CS/PS.

7) After step e) the USIM shall contain the following values:

For Ues accessing GERAN and Ues accessing UTRAN and supporting (CS and PS) or (CS only):

EF_{LOCI} (Location Information)

Logically: LAI-MCC: 254
LAI-MNC: 012
TMSI: "34567890"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	34	56	78	90	52	24	10	xx	xx	xx	00

For Ues supporting (CS and PS) or (PS only):

EF_{PSLOCI} (Location Information)

Logically: RAI-MCC: 254
RAI-MNC: 012
P-TMSI: "34567890"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	34	56	78	90	xx	xx	xx	52	24	10	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

7.3.2 UE recognising the priority order of the User controlled PLMN selector over the Operator controlled PLMN selector list.

7.3.2.1 Definition and applicability

The User controlled PLMN selector list has a higher priority as the OPLMN selector list on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the $EF_{PLMNwACT}$.

The registration attempts initiated by the terminal accessing UTRAN depends on terminal"s capabilities and can be one of the following:

7) registration procedures for Ues supporting CS or

II. registration procedures for Ues supporting PS or

III. registration procedures for Ues supporting CS/PS

7.3.2.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of UPLMNs first before the OPLMNs in the preferred list on the USIM.

- TS 22.011 [6], subclause 3.2.2.2;
- TS 31.102 [4], subclauses 4.2.5 and 4.2.53.

7.3.2.3 Test purpose

To verify that the User controlled PLMN with a lower priority (defined by its position in $EF_{PLMNwACT}$) takes precedence over the OPLMN with a higher priority when the UE performs a network selection.

7.3.2.4 Method of test

7.3.2.4.1 Initial conditions

For this test a USS (in case of a Terminal accessing UTRAN) or a SS (in case of a Terminal accessing a GERAN)is needed.

The USS (in case of a Terminal accessing UTRAN)/ SS (in case of a Terminal accessing a GERAN)transmits on two BCCHs, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 254/001/0001.
- RAI (MCC/MNC/LAC/RAC): 254/001/0001/05 (only for UTRAN cell).- Access control: unrestricted.
- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/010/0001.
- RAI (MCC/MNC/LAC/RAC): 244/010/0001/05 (only for UTRAN cell)..
- Access control: unrestricted.

NOTE: In case of a GERAN no packet system information is transmitted

The default UICC is used with the following exception:

EF_{UST} (USIM Service Table)

Logically: Local Phone Book available
User controlled PLMN selector available
Fixed dialling numbers available
Barred dialling numbers available
The GSM Access available
The Group Identifier level 1 and level 2 not available
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available
Operator controlled PLMN selector available

Coding:	B1	B2	B3	B4	B5	B6
binary	xx1x xx11	xxxx xxxx	xxxx 1x00	xxxx x1xx	xxxx xx11	xxxx xx1x

The coding of EF_{UST} shall conform with the capabilities of the USIM used.

$EF_{PLMNwACT}$ (UPLMN Selector with Access Technology)

Logically:
1st PLMN: 244 081 (MCC MNC)
1st ACT: UTRAN
2nd PLMN: 244 081
2nd ACT: GSM
3rd PLMN: 244 082
3rd ACT: UTRAN
4th PLMN: 244 082
4th ACT: GSM
5th PLMN: 244 003
5th ACT: UTRAN
6th PLMN: 244 004
6th ACT: UTRAN
7th PLMN: 244 005
7th ACT: UTRAN
8th PLMN: 244 006
8th ACT: UTRAN
9th PLMN: 244 007

9th ACT: UTRAN
10th PLMN: 244 008
10th ACT: UTRAN
11th PLMN: 244 010
11th ACT: UTRAN
12th PLMN: 244 010
12th ACT: GSM

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15
Hex	42	14	80	80	00	42	14	80	00	80	42	24	80	80	00
	B16	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	42	24	80	00	80	42	24	00	80	00	42	44	00	80	00
	B31	B32	B33	B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45
	42	54	00	80	00	42	64	00	80	00	42	74	00	80	00
	B46	B47	B48	B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60
	42	84	00	80	00	42	04	10	80	00	42	04	10	00	80

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

In case of a Terminal accessing UTRAN "Expected Sequence A" and in case of a Terminal accessing a GERAN "Expected Sequence B" shall be performed.

7.3.2.4.2 Procedure

Expected Sequence A:

a) The UE is powered on.

b) After receipt of a RRC CONNECTION REQUEST from the UE on the cell related to the BCCH transmitting MCC/MNC 244/010, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

c) Depending on which domain the UE is going to be registered on , one of the following requirements should be fulfilled:

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT to the UE with the following values:

LAI (MCC/MNC/LAC): 244/010/0001

TMSI: "34567890"

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ATTACH ACCEPT with the following values :

RAI (MCC/MNC/LAC/RAC) 244/010/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT and/or ATTACH ACCEPT with some of the following values :

LAI (MCC/MNC/LAC): 244/010/0001

TMSI: "34567890"

RAI (MCC/MNC/LAC/RAC) 244/010/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

d) After receipt of a

I. TMSI REALLOCATION COMPLETE during registration on CS from the UE, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

II. ATTACH COMPLETE during registration on PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE during registration on CS/PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

e) The UE is soft powered down.

Expected Sequence B:

a) The UE is powered on.

b) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.

c) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC): 244/010

TMSI: "34567890"

to the UE.

d) After receipt of a TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

e) The UE is soft powered down.

7.3.2.5 Acceptance criteria

1) After step a) the UE accessing a GERAN shall send CHANNEL REQUEST on the cell related to the BCCH transmitting MCC/MNC 244/010 to the SS and the UE accessing UTRAN shall send an RRC CONNECTION REQUEST on the cell related to the BCCH transmitting MCC/MNC 244/010 to the USS.

2) After step b) the UE accessing a GERAN shall send LOCATION UPDATING REQUEST to the SS and the UE accessing UTRAN shell send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

3) After step c) the UE accessing GERAN shall respond with TMSI REALLOCATION COMPLETE and the UE accessing UTRAN shall respond with

I. TMSI REALLOCATION COMPLETE during registration on CS or

II. ATTACH COMPLETE during registration on PS or

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE to the USS during registration on CS/PS..

7) After step e) the USIM shall contain the following values:

For Ues accessing GERAN and Ues accessing UTRAN and supporting (CS and PS) or (CS only):

EF_{LOCI} (Location Information)

Logically: LAI-MCC: 244
LAI-MNC: 010
TMSI: "34567890"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
	34	56	78	90	42	04	10	xx	xx	xx	00

For Ues supporting (CS and PS) or (PS only):

EF_{PSLOCI} (Location Information)

Logically: RAI-MCC: 244
RAI-MNC: 010
P-TMSI: "34567890"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	34	56	78	90	xx	xx	xx	42	04	10	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

7.3.3 UE recognising the priority order of the Operator controlled PLMN selector list when accessing E-UTRAN

7.3.3.1 Definition and applicability

The Operator controlled PLMN selector list gives in priority order the preferred OPLMNs on which the UE shall register if no network of the User controlled PLMN selector list is available. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the $EF_{OPLMNwACT}$. Update and deletion of OPLMNs shall not be possible by the subscriber by the use of the PIN.

7.3.3.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of OPLMNs in the preferred list on the USIM.

- TS 22.011 [6], subclause 3.2.2;
- TS 31.102 [4], subclause 4.2.53, 4.2.5 and 5.1.1.2.

7.3.3.3 Test purpose

To verify that the OPLMN with the higher priority (defined by its position in $EF_{OPLMNwACT}$) takes precedence over the OPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for RAT E-UTRAN has to be handled correctly by the UE.

7.3.3.4 Method of test

7.3.3.4.1 Initial conditions

For this test an E-USS is required.

The E-USS transmits on two BCCHs, with the following network parameters:

- TAI (MCC/MNC/TAC): 254/011/0001.
- Access control: unrestricted.

- TAI (MCC/MNC/TAC): 254/012/0001.
- Access control: unrestricted.

The default E-UTRAN UICC is used with the following exceptions:

EF_{UST} (USIM Service Table)

Logically:
Local Phone Book available
User controlled PLMN selector available
Fixed dialling numbers available
Barred dialling numbers available
The GSM Access available
The Group Identifier level 1 and level 2 not available
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available
Operator controlled PLMN selector available
EPS Mobility Management Information available
Allowed CSG Lists and corresponding indications not available

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Binary	xx1x xx11	xxxx xxxx	xxxx 1x00	xxxx x1xx	xxxx xx11	xxxx xx1x	xxxx xxxx	xxxx xxxx

B9	B10	B11
xxxx xxxx	xxxx xxxx	xx01 xxxx

The coding of EF_{UST} shall conform with the capabilities of the USIM used.

$EF_{OPLMNwACT}$ (OPLMN Selector)

Logically:
1st PLMN: 254 012 (MCC MNC)
1st ACT E-UTRAN
2nd PLMN: 254 011
2nd ACT E-UTRAN
3rd PLMN: 254 002
3rd ACT: E-UTRAN
4th PLMN: 254 012
4th ACT: GSM
5th PLMN: 254 011
5th ACT: GSM
6th PLMN: 254 005
6th ACT: UTRAN
7th PLMN: 254 006
7th ACT: UTRAN
8th PLMN: 254 007
8th ACT: UTRAN

Coding:	B01	B02	B03	B04	B05	B06	B07	B08	B09	B10
Hex	52	24	10	40	00	52	14	10	40	00
	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
	52	24	00	40	00	52	24	10	00	80
	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30
	52	14	10	00	80	52	54	00	80	00
	B31	B32	B33	B34	B35	B36	B37	B38	B39	B40
	52	64	00	80	00	52	74	00	80	00

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

7.3.3.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 254/012, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of a *AttachRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC):254/012/ 0001

GUTI: "25401200010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*.

e) The UE is soft powered down.

7.3.3.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 254/012 to the e-USS.

2) After step b) the terminal shall send *AttachRequest* to the E-USS.

3) After step c) the terminal shall respond with *AttachComplete* during registration.

4) After step e) the USIM shall contain the following values:

$EF_{EPSLOCI}$ (EPS Information)

Logically: GUTI: 25401200010266436587
Last visited registered TAI: 254/012/0001
EPS update status: updated

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	0B	F6	52	24	10	00	01	02	66	43	65
	B12	B13	B14	B15	B16	B17	B18				
	87	52	24	10	00	01	00				

7.3.4 UE recognising the priority order of the User controlled PLMN selector over the Operator controlled PLMN selector list – E-UTRAN

7.3.4.1 Definition and applicability

The User controlled PLMN selector list has a higher priority as the OPLMN selector list on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the $EF_{PLMNwACT}$.

7.3.4.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of UPLMNs first before the OPLMNs in the preferred list on the USIM.

- TS 22.011 [6], subclause 3.2.2.2;

- TS 31.102 [4], subclauses 4.2.5, 4.2.53 and 5.1.1.2.

7.3.4.3 Test purpose

To verify that the User controlled PLMN with a lower priority (defined by its position in $EF_{PLMNwACT}$) takes precedence over the OPLMN with a higher priority when the UE performs a network selection. Hereby the new coding for RAT E-UTRAN has to be handled correctly by the UE.

7.3.4.4 Method of test

7.3.4.4.1 Initial conditions

For this test an E-USS is required.

The E-USS transmits on two BCCHs, with the following network parameters:

- TAI (MCC/MNC/TAC): 254/001/0001.

-- Access control: unrestricted.

- TAI (MCC/MNC/TAC): 244/010/0001.

- Access control: unrestricted.

The default E-UTRAN UICC is used with the following exception:

EF_{UST} (USIM Service Table)

Logically: Local Phone Book available
User controlled PLMN selector available
Fixed dialling numbers available
Barred dialling numbers available
The GSM Access available
The Group Identifier level 1 and level 2 not available
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available
Operator controlled PLMN selector available
EPS Mobility Management Information available
Allowed CSG Lists and corresponding indications not available

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Binary	xx1x xx11	xxxx xxxx	xxxx 1x00	xxxx x1xx	xxxx xx11	xxxx xx1x	xxxx xxxx	xxxx xxxx

B9	B10	B11
xxxx xxxx	xxxx xxxx	xx01 xxxx

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

7.3.4.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/010, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of a *AttachRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC):244/010/ 0001

GUTI: "24401000010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*.

e) The UE is soft powered down.

7.3.4.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/010 to the e-USS.

2) After step b) the terminal shall send *AttachRequest* to the E-USS.

3) After step c) the terminal shall respond with *AttachComplete* during registration.

4) After step e) the USIM shall contain the following values:

$EF_{EPSLOCI}$ (EPS Information)

Logically: GUTI: 24401000010266436587
Last visited registered TAI: 244/010/0001
EPS update status: updated

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	0B	F6	42	04	10	00	01	02	66	43	65
	B12	B13	B14	B15	B16	B17	B18				
	87	42	04	10	00	01	00				

7.4 Higher priority PLMN search handling

7.4.1 UE recognising the search period of the Higher priority PLMN

7.4.1.1 Definition and applicability

The Higher priority PLMN list gives in priority order the Higher priority PLMN on which the UE shall register first. The Higher priority PLMN search period gives the time interval in which the UE shall search for a possible Higher priority PLMN registration.

The registration attempts initiated by the terminal accessing UTRAN depends on terminal"s capabilities and can be one of the following:

7) registration procedures for Ues supporting CS or

II. registration procedures for Ues supporting PS or

III. registration procedures for Ues supporting CS/PS

7.4.1.2 Conformance requirement

After registered onto a VPLMN the UE shall take into account the Higher priority PLMN search period timer and the priority order of the Higher priority PLMNs in the preferred list on the USIM.

- TS 22.011 [6], subclauses 3.2.2 and 3.2.2.5.
- TS 24.008 [16], subclause 4.7.5

7.4.1.3 Test purpose

To verify that the Higher priority PLMN timer is read and the Higher priority PLMN takes precedence over the VPLMN in which the UE is currently registered in.

7.4.1.4 Method of test

7.4.1.4.1 Initial conditions

For this test an UTRAN USS (in case of a Terminal accessing UTRAN) or a SS (in case of Terminal accessing a GERAN) is needed.

The USS (in case of a Terminal accessing UTRAN)/ SS (in case of Terminal accessing a GERAN) transmits on BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/082/0001.
- RAI (MCC/MNC/LAC/RAC): 244/082/0001/05 (only for UTRAN cell).
- Access control: unrestricted.

After the registration of UE the USS (in case of a Terminal accessing UTRAN) or a SS (in case of Terminal accessing a GERAN) transmits on a second BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/081/0001.
- RAI (MCC/MNC/LAC/RAC): 244/081/0001/05. (only for UTRAN cell)
- Access control: unrestricted.

NOTE: In case of a GERAN no packet system information is transmitted

The default UICC shall be used with the following exception:

EF_{HPPLMN} (Higher Priority PLMN Search period)

Logically: set to 6minutes

Coding: B1
Hex 01

The UICC shall be installed into the Terminal and the UE shall be set to automatic PLMN selection mode.

In case of a Terminal accessing UTRAN "Expected Sequence A" and in case of a Terminal accessing a GERAN "Expected Sequence B" shall be performed.

7.4.1.4.2 Procedure

Expected sequence A:

a) The UE shall be powered on.

b) After receipt of a RRC CONNECTION REQUEST from the UE, the USS shall send RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

c) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

   I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT to the UE with the following values:

      LAI (MCC/MNC/LAC): 244/082/0001

      TMSI: "34567890"

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ATTACH ACCEPT with the following values to the UE:

RAI (MCC/MNC/LAC/RAC): 244/082/0001/05

P-TMSI : "34567890"

P-TMSI signature value: "AB1234"

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT and/or ATTACH ACCEPT with some of the following values to the UE:

LAI (MCC/MNC/LAC): 244/082/0001

TMSI: "34567890"

RAI (MCC/MNC/LAC/RAC)244/082/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

d) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. After receipt of a TMSI REALLOCATION COMPLETE from the UE during registration on CS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

II. After receipt of a ATTACH COMPLETE from the UE during registration on PS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. After receipt of a TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE from the UE during registration on CS/PS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

e) The USS starts to send on the second BCCH with the MCC/MNC 244/081. An internal timer shall start to run.

f) After receipt on the cell related to the BCCH transmitting MCC/MNC 244/081 of a RRC CONNECTION REQUEST from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS. The internal timer is stopped.

g) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT to the UE with following values:

LAI (MCC/MNC/LAC): 244/081/0001

TMSI: "12345678"

II. During registration on PS and after receipt of a ROUTING AREA UPDATE REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ROUTING AREA UPDATE ACCEPT with the following values to the UE:

RAI (MCC/MNC/LAC/RAC): 244/081/0001/05

P-TMSI "12345678"

P-TMSI signature value "AB1234"

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ROUTING AREA UPDATE REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT and/or ROUTING AREA UPDATE ACCEPT with some of the following values to the UE:

LAI (MCC/MNC/LAC): 244/081/0001

TMSI: "12345678"

RAI (MCC/MNC/LAC/RAC) 244/081/0001/05

P-TMSI "12345678"

P-TMSI signature value "AB1234"

h) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. After receipt of a TMSI REALLOCATION COMPLETE from the UE during registration on CS, the USS sends RRC CONNECTION RELEASE to the UE followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or

II. After receipt of a ROUTING AREA UPDATE COMPLETE from the UE during registration on PS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. After receipt of a TMSI REALLOCATION COMPLETE and/or ROUTING AREA UPDATE COMPLETE from the UE during registration on CS/PS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

i) The UE is soft powered down.

Expected sequence B:

a) The UE shall be powered on.

b) After receipt of a CHANNEL REQUEST from the UE, the SS shall send IMMEDIATE ASSIGNMENT to the UE.

c) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC): 244/082

TMSI: "34567890"

to the UE.

d) After receipt of a TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

e) The SS starts to send on the second BCCH with the MCC/MNC 244/081. An internal timer shall start to run.

f) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE. The internal timer is stopped.

g) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC): 244/081

TMSI: "12345678"

to the UE.

h) After receipt of a TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

i) The UE is soft powered down.

7.4.1.5 Acceptance criteria

1) After step e) the UE accessing a GERAN shall send CHANNEL REQUEST on the cell related to the BCCH transmittingMCC/MNC 244/081 to the SS and the UE accessing UTRAN shall send an RRC CONNECTION REQUEST on the cell related to the BCCH transmitting MCC/MNC 244/081 to the USS

2) After.step e) the UE accessing a GERAN shall send LOCATION UPDATING REQUEST to the SS and the UE accessing UTRAN shall send

   I. LOCATION UPDATING REQUEST to the USS during registration on CS or

   II. ROUTING AREA UPDATE REQUEST during registration on PS or

   III. LOCATION UPDATING REQUEST and/or ROUTING AREA UPDATE REQUEST to the USS during registration on CS/PS.

3) After step g) the UE accessing a GERAN shall respond with TMSI REALLOCATION COMPLETE and the UE accessing UTRAN shall respond with

   I. TMSI REALLOCATION COMPLETE to the USS during registration on CS or

   II. ROUTING AREA UPDATE COMPLETE during registration on PS or

   III. TMSI REALLOCATION COMPLETE and/or ROUTING AREA UPDATE COMPLETE to the USS during registration on CS/PS.

4) The value of the internal timer shall not exceed 6 minutes.

NOTE: To take the systems processing time into account, the value of the internal timer may allowed to be a guard time of 10 % greater than the required 6 minutes.

7) After step i) the USIM shall contain the following values:

For Ues accessing GERAN and Ues accessing UTRAN and supporting (CS and PS) or (CS only):

EF_{LOCI} (Location Information)

Logically: LAI-MCC: 244
LAI-MNC: 081
TMSI: "12345678"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	42	14	80	xx	xx	xx	00

For Ues supporting (CS and PS) or (PS only):

EF_{PSLOCI} (Location Information)

Logically: RAI-MCC: 244
RAI-MNC: 081
P-TMSI: "12345678"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	xx	xx	xx	42	14	80	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

7.4.2 GSM/UMTS dual mode UEs recognising the search period of the Higher priority PLMN

7.4.2.1 Definition and applicability

The Higher priority PLMN handling is defined in TS 22.011 [6] . The Higher priority PLMN search period gives the time interval between searches for a higher priority PLMN.

The registration attempts initiated by the UE depends on UEs capabilities and can be one of the following:

7) registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

To avoid a duplication of tests, this test supersede the previous test case (7.4.1).

7.4.2.2 Conformance requirement

After registered onto a VPLMN the UE shall take into account the Higher priority PLMN search period timer and the priority order of the Higher priority PLMNs in the preferred lists on the USIM including the Access Technology Identifier.

- TS 22.011 [6], subclauses 3.2.2 and 3.2.2.5.

7.4.2.3 Test purpose

To verify that the Higher priority PLMN timer is read and the Higher priority PLMN with the higher priority (defined according to the selection order in TS 22.011 [6]) takes precedence over the VPLMN in which the UE is currently registered in.

7.4.2.4 Method of test

7.4.2.4.1 Initial conditions

For this test both a GSM SS and an UTRAN USS are needed.

The GSM SS transmits on BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/082/0001.
- Access control: unrestricted.

After the registration of UE the GSM SS transmits on a second BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/081/0001.
- Access control: unrestricted.

At the same time as the SS sends on a second BCCH, the UMTS USS transmits on BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/081/0001.
- RAI (MCC/MNC/LAC/RAC): 244/081/0001/05.

- Access control: unrestricted.

The default UICC is used with the following exception:

$EF_{HPLMNwACT}$ (HPLMN selector with Access Technology)

Logically: Set to MCC 244 and MNC 081
Set to UTRAN

Coding:	B1	B2	B3	B4	B5
Hex	42	14	80	80	00

EF_{HPPLMN} (Higher Priority HPLMN Search period)

Logically: set to 6minutes

Coding:	B1
Hex	01

EF_{UST} (USIM Service Table)

Logically: Local Phone Book available
User controlled PLMN selector available
Fixed dialling numbers available
Barred dialling numbers available
The GSM Access available
The Group Identifier level 1 and level 2 not available
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available
HPLMN selector with access technology available

Coding:	B1	B2	B3	B4	B5	B6
binary	xx1x xx11	xxxx xxxx	xxxx 1x00	xxxx x1xx	xxxx xx11	xxxx x1xx

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

7.4.2.4.2 Procedure

a) The UE is powered on.

b) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.

c) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC): 244/082

TMSI: "34567890"

to the UE.

d) After receipt of a TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

e) The SS starts to send on the second BCCH with the MCC/MNC 244/081 and the USS starts to send with the Same MCC/MNC. An internal timer shall start to run.

f) After receipt of a RRC CONNECTION REQUEST on the UTRAN-cell related to the BCCH transmitting MCC/MNC 244/081 from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS. The internal timer is stopped.

g) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT with the following values to the UE:

LAI (MCC/MNC/LAC): 244/081/0001

TMSI: "12345678"

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ATTACH ACCEPT with the following values to the UE:

RAI (MCC/MNC/LAC/RAC) 244/081/0001/05

P-TMSI "12345678"

P-TMSI signature value "AB1234"

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT and/or ATTACH ACCEPT with some of the following values to the UE:

LAI (MCC/MNC/LAC): 244/081/0001

TMSI: "12345678"

RAI (MCC/MNC/LAC/RAC) 244/081/0001/05

P-TMSI "12345678"

P-TMSI signature value "AB1234"

h) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. After receipt of a TMSI REALLOCATION COMPLETE from the UE during registration on CS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or

II. After receipt of a ATTACH COMPLETE from the UE during registration on PS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. After receipt of a TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE from the UE during registration on CS/PS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

i) The UE is soft powered down.

7.4.2.5 Acceptance criteria

1) After step e) the UE shall send an RRC CONNECTION REQUEST on the UTRAN-cell related to the BCCH transmitting MCC/MNC 244/081 to the USS.

2) After step e) the UE shall send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

3) After step g) the UE shall respond with

I. TMSI REALLOCATION COMPLETE during registration on CS or

II. ATTACH COMPLETE during registration on PS or

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE to the USS during registration on CS/PS.

4) The value of the internal timer shall not exceed 6 minutes.

NOTE: To take the systems processing time into account, the value of the internal timer may allowed to be a guard time of 10 % greater than the required 6 minutes.

7) After step i) the USIM shall contain the following values:

For Ues supporting (CS and PS) or (CS only):

EF_{LOCI} (Location Information)

Logically: LAI-MCC: 244
LAI-MNC: 081
TMSI: "12345678"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	42	14	80	xx	xx	xx	00

For Ues supporting (CS and PS) or (PS only):

EF_{PSLOCI} (Location Information)

Logically: RAI-MCC: 244
RAI-MNC: 081
P-TMSI: "12345678"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	xx	xx	xx	42	14	80	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

7.4.3 UE recognising the search period of the Higher priority PLMN – E-UTRAN

7.4.3.1 Definition and applicability

The Higher priority PLMN list gives in priority order the Higher priority PLMN on which the UE shall register first. The Higher priority PLMN search period gives the time interval in which the UE shall search for a possible Higher priority PLMN registration.

7.4.3.2 Conformance requirement

After registered onto a VPLMN the UE shall take into account the Higher priority PLMN search period timer and the priority order of the Higher priority PLMNs in the preferred lists on the USIM.

- TS 22.011 [6], subclauses 3.2.2 and 3.2.2.5.

- TS 24.301 [26], subclause 5.5.3.2

7.4.3.3 Test purpose

To verify that the Higher priority PLMN timer is read and the Higher priority PLMN takes precedence over the VPLMN in which the UE is currently registered in. Hereby the new coding for RAT E-UTRAN has to be handled correctly by the UE.

7.4.3.4 Method of test

7.4.3.4.1 Initial conditions

For this test an E-USS is required.

The E-USS transmits on BCCH with the following network parameters:

-- TAI (MCC/MNC/TAC): 244/008/0001.

- Access control: unrestricted.

After the registration of UE the E-USS transmits on a second BCCH with the following network parameters:

- TAI (MCC/MNC/TAC): 244/083/0001.

-- Access control: unrestricted.

The default E-UTRAN UICC shall be used with the following exception:

EF_{HPPLMN} (Higher Priority PLMN Search period)

Logically: set to 6minutes

Coding: B1
Hex 01

The UICC shall be installed into the Terminal and the UE shall be set to automatic PLMN selection mode.

7.4.3.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/008, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of a *AttachRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC):244/008/ 0001

GUTI: "24400800010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*.

e) The USS starts to send on the second BCCH with the MCC/MNC 244/083. An internal timer shall start to run.

f) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/083, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

g) During registration and after receipt of a *TrackingAreaUpdateRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *TrackingAreaUpdateAccept* with to the UE:

TAI (MCC/MNC/TAC):244/083/ 0001

GUTI: "24408300010266436587"

h) After receipt of the *TrackingAreaUpdatComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*.

i) The UE is soft powered down.

7.4.3.5 Acceptance criteria

1.) After step e) the UE shall send a *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/083 to the e-USS.

2) After step f) the terminal shall send *TrackingAreaUpdateReques* to the E-USS.

3) After step g) the terminal shall respond with *TrackingAreaUpdatComplete* during registration.

4) After step i) the USIM shall contain the following values:

$EF_{EPSLOCI}$ (EPS Information)

Logically: GUTI: 24408300010266436587
Last visited registered TAI: 244/083/0001
EPS update status: updated

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	0B	F6	42	34	80	00	01	02	66	43	65
	B12	B13	B14	B15	B16	B17	B18				
	87	42	34	80	00	01	00				

7.4.4 E-UTRAN/EPC capable UEs recognising the search period of the Higher priority PLMN – GSM/E-UTRAN

7.4.4.1 Definition and applicability

The Higher priority PLMN handling is defined in TS 22.011 [6]. The Higher priority PLMN search period gives the time interval between searches for a higher priority PLMN.

To avoid a duplication of tests, this test supersedes the previous test case (7.4.3).

7.4.4.2 Conformance requirement

After registered onto a VPLMN the UE shall take into account the Higher priority PLMN search period timer and the priority order of the Higher priority PLMNs in the preferred lists on the USIM including the Access Technology Identifier.

- TS 22.011 [6], subclauses 3.2.2 and 3.2.2.5.

7.4.4.3 Test purpose

To verify that the Higher priority PLMN timer is read and the Higher priority PLMN with the higher priority (defined according to the selection order in TS 22.011 [6]) takes precedence over the VPLMN in which the UE is currently registered in. Hereby the new coding for RAT E-UTRAN has to be handled correctly by the UE.

7.4.4.4 Method of test

7.4.4.4.1 Initial conditions

For this test both a GSM SS and an E-UTRAN E-USS are needed.

The GSM SS transmits on BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/082/0001.
- RAI (MCC/MNC/LAC/RAC): 244/082/0001/05.
- Access control: unrestricted.

After the registration of UE the GSM SS transmits on a second BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/081/0001.
- RAI (MCC/MNC/LAC/RAC): 244/081/0001/05.
- Access control: unrestricted.

At the same time as the SS sends on a second BCCH, the E- USS transmits on BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 244/081/0001.
-- Access control: unrestricted.

The default E-UTRAN UICC is used with the following exception:

$EF_{HPLMNwACT}$ (HPLMN selector with Access Technology)

Logically: Set to MCC 244 and MNC 081
Set to

E-UTRAN

Coding:	B1	B2	B3	B4	B5
Hex	42	14	80	40	00

EF_{HPPLMN} (Higher Priority HPLMN Search period)

Logically: set to 6minutes

Coding:	B1
Hex	01

EF_{UST} (USIM Service Table)

Logically: Local Phone Book available
User controlled PLMN selector available
Fixed dialling numbers available
Barred dialling numbers available
The GSM Access available
The Group Identifier level 1 and level 2 not available
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available
HPLMN selector with access technology available
EPS Mobility Management Information available

Allowed CSG Lists and corresponding indications not available

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Binary	xx1x xx11	xxxx xxxx	xxxx 1x00	xxxx x1xx	xxxx xx11	xxxx x1xx	xxxx xxxx	xxxx xxxx

B9	B10	B11
xxxx xxxx	xxxx xxxx	xx01 xxxx

The UICC is installed into the Terminal, the UE is set to automatic PLMN selection mode and to auto GPRS attach..

7.4.4.4.2 Procedure

a) The UE is powered on.

b) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.

c) After receipt of an ATTACH REQUEST from the UE, the SS sends ATTACH ACCEPT with:

RAI (MCC/MNC/LAC/RAC): 244/082/0001/05

TMSI: "34567890"

to the UE.

d) After receipt of a ATTACH COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

e) The SS starts to send on the second BCCH with the MCC/MNC 244/081 and the E-USS starts to send with the Same MCC/MNC. An internal timer shall start to run.

f) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/081, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

g) During registration and after receipt of a *TrackingAreaUpdateRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *TrackingAreaUpdateAccept* with to the UE:

TAI (MCC/MNC/TAC):244/081/ 0001

GUTI: "24408100010266436587"

h) After receipt of the *TrackingAreaUpdatComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*.

i) The UE is soft powered down.

7.4.4.5 Acceptance criteria

1.) After step e) the UE shall send a *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/081 to the e-USS.

2) After step f) the terminal shall send *TrackingAreaUpdateReques* to the E-USS.

3) After step g) the terminal shall respond with *TrackingAreaUpdatComplete* during registration.

4) After step i) the USIM shall contain the following values:

$EF_{EPSLOCI}$ (EPS Information)

Logically: GUTI: 24408100010266436587
Last visited registered TAI: 244/081/0001
EPS update status: updated

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	0B	F6	42	14	80	00	01	02	66	43	65
	B12	B13	B14	B15	B16	B17	B18				
	87	42	14	80	00	01	00				

7.4.5 E-UTRAN/EPC capable UEs recognising the search period of the Higher priority PLMN – UTRAN/E-UTRAN

7.4.5.1 Definition and applicability

The Higher priority PLMN list gives in priority order the Higher priority PLMN on which the UE shall register first. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the $EF_{HPLMNwACT}$. The Higher priority PLMN search period gives the time interval in which the UE shall search for a possible Higher priority PLMN registration.

To avoid a duplication of tests, this test supersedes test 7.4.x.

7.4.5.2 Conformance requirement

After registered onto a VPLMN the UE shall take into account the Higher priority PLMN search period timer and the priority order of the Higher priority PLMNs in the preferred list on the USIM including the Access Technology Identifier.

- TS 22.011 [6], subclauses 3.2.2 and 3.2.2.5.

7.4.5.3 Test purpose

To verify that the Higher priority PLMN timer is read and the Higher priority PLMN with the higher priority (defined by its position in $EF_{HPLMNwACT}$) takes precedence over the VPLMN in which the UE is currently registered in. Hereby the new coding for RAT E-UTRAN has to be handled correctly by the UE.

7.4.5.4 Method of test

7.4.5.4.1 Initial conditions

For this test both a UTRAN USS and an E-UTRAN E-USS are needed.

The USS transmits on BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/009/0001.
- RAI (MCC/MNC/LAC/RAC): 244/009/0001/05.
- Access control: unrestricted.

After the registration of UE the USS transmits on a second BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/081/0001.
- RAI (MCC/MNC/LAC/RAC): 244/081/0001/05.
- Access control: unrestricted.

At the same time as the SS sends on a second BCCH, the E- USS transmits on BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 244/081/0001.

-- Access control: unrestricted.

The default E-UTRAN UICC is used with the following exception:

$EF_{HPLMNwACT}$ (HPLMN selector with Access Technology)

Logically: Set to MCC 244 and MNC 081
Set to

E-UTRAN

Coding:	B1	B2	B3	B4	B5
Hex	42	14	80	40	00

EF_{HPPLMN} (Higher Priority HPLMN Search period)

Logically: set to 6minutes

Coding:	B1
Hex	01

EF_{UST} (USIM Service Table)

Logically: Local Phone Book available
User controlled PLMN selector available
Fixed dialling numbers available
Barred dialling numbers available
The GSM Access available
The Group Identifier level 1 and level 2 not available
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available
HPLMN selector with access technology available
EPS Mobility Management Information available
Allowed CSG Lists and corresponding indications not available

Coding:	B1	B2	B3	B4	B5	B6	B7	B8
Binary	xx1x xx11	xxxx xxxx	xxxx 1x00	xxxx x1xx	xxxx xx11	xxxx x1xx	xxxx xxxx	xxxx xxxx

B9	B10	B11
xxxx xxxx	xxxx xxxx	xx01 xxxx

The UICC is installed into the Terminal, the UE is set to automatic PLMN selection mode and to auto GPRS attach.

7.4.5.4.2 Procedure

a) The UE is powered on.

b) After receipt of a RRC CONNECTION REQUEST from the UE, the USS shall send RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

c) After receipt of an ATTACH REQUEST from the UE, the SS sends ATTACH ACCEPT with:

RAI (MCC/MNC/LAC/RAC): 244/009/0001/05

TMSI: "34567890"

to the UE.

d) After receipt of a ATTACH COMPLETE from the UE, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

e) TheUSS starts to send on the second BCCH with the MCC/MNC 244/081 and the E-USS starts to send with the Same MCC/MNC. An internal timer shall start to run.

f) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/081, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

g) During registration and after receipt of a *TrackingAreaUpdateRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *TrackingAreaUpdateAccept* with to the UE:

TAI (MCC/MNC/TAC):244/081/ 0001

GUTI: "24408100010266436587"

h) After receipt of the *TrackingAreaUpdatComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*.

i) The UE is soft powered down.

7.4.5.5 Acceptance criteria

1.) After step e) the UE shall send a *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/081 to the e-USS.

2) After step f) the terminal shall send *TrackingAreaUpdateReques* to the E-USS.

3) After step g) the terminal shall respond with *TrackingAreaUpdatComplete* during registration.

4) After step i) the USIM shall contain the following values:

$EF_{EPSLOCI}$ (EPS Information)

Logically: GUTI: 24408100010266436587
Last visited registered TAI: 244/081/0001
EPS update status: updated

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	0B	F6	42	14	80	00	01	02	66	43	65
	B12	B13	B14	B15	B16	B17	B18				
	87	42	14	80	00	01	00				

7.5 Void

8 Subscription independent tests

8.1 Phone book procedures

8.1.1 Recognition of a previously changed phonebook

8.1.1.1 Definition and applicability

If the UICC is inserted into a GERAN Rel-4 or earlier terminal, the phonebook may have been altered in this GSM session. If the ADN entry has been changed or deleted, the GSM terminal will not be able to change the appropriate additional phonebook entries (e.g. EF_{ANR} Additional Number). In that case the UICC shall set a flag in the appropriate EF_{PBC} (phonebook Control). If the UICC is inserted in a 3G or GERAN Terminal, the 3G or GERAN Terminal shall recognise the flag and the phonebook shall be synchronised by the Terminal. Once the Terminal recognise the set flag in the EF_{PBC}, the Terminal shall update the Change Counter in the EF_{CC}.

8.1.1.2 Conformance requirement

The 3G or GERAN Terminal shall recognise the set flag in the EF_{PBC} and then synchronise the phonebook. The Terminal shall also update EF_{CC} (Change Counter).

- TS 31.102 [4], subclause 4.4.2.

8.1.1.3 Test purpose

1) To verify that the Terminal has recognised that the phonebook has been altered by a GSM Terminal.

2) To verify that the Terminal does the synchronising of the changed phonebook entries.

3) To verify that the Terminal updates the EF_{PBC} and EF_{CC}.

8.1.1.4 Method of test

8.1.1.4.1 Initial conditions

No USS is needed for this test.

The default UICC is used with the following exception:

EF_{ADN} (Abbreviated Dialling Number)

Logically:

Record 1:	Length of alpha identifier:	32 characters;
	Alpha identifier:	"ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEF";
	Length of BCD number:	"03";
	TON and NPI:	Telephony and Unknown;
	Dialled number:	123;
	CCI:	None;
	Ext1:	None.

Record 1:

Coding:	B1	B2	B3	…	B32	B33	B34	B35	B36	B37	B38	B39	…	B46
Hex	41	42	43	…	46	03	81	21	F3	FF	FF	FF	…	FF

EF_{PBC} (Phonebook Control)

Logically:

Record 1:	The ADN Record No. 1 has been hanged by a GSM terminal.

Related ADN record is not hidden.

Coding:	B1	B2
Hex	01	00

EF_{CC} (Change Counter)

Logically: "000F"

Coding:	B1	B2
Hex	00	0F

The UICC is installed into the Terminal

8.1.1.4.2 Procedure

a) The Terminal is powered on.

b) The Terminal shall stay powered on until the phonebook synchronisation procedures are finished. If the synchronisation is indicated by the Terminal, the Terminal shall only powered down after this indication is vanished.

8.1.1.5 Acceptance criteria

After step b) the USIM shall contain the following values:

EF_{PBC} (Phonebook Control)

Logically:
Record 1: The entry control information is reset.
Related ADN record is not hidden.

Coding:	B1	B2
Hex	00	00

EF_{CC} (Change Counter)

Logically: The counter is incremented to "0010"

Coding:	B1	B2
Hex	00	10

8.1.2 Update of the Phonebook Synchronisation Counter (PSC)

8.1.2.1 Definition and applicability

The phonebook synchronisation Counter is used to unambiguously identify the status of the phonebook. Every time the phonebook is reset/deleted or the UID and/or the CC has run out of range, the PSC shall be regenerated.

The PSC is a part of the phonebook identifier.

8.1.2.2 Conformance requirement

Every time either the UID or the CC is incremented by the Terminal, the value of the contend of the appropriate EF shall be tested. If either UID or CC has reached "FF FF", the related EF shall be set to "00 01" and the PSC is incremented.

- TS 31.102 [4], subclause 4.4.2.12.2.

8.1.2.3 Test purpose

1) To verify that the Terminal has recognised that the values of UID and CC has changed.

2) To verify that the Terminal resets the value of EF_{UID} and EF_{CC}.

3) To verify that the Terminal updates EF_{PSC}.

8.1.2.4 Method of test

8.1.2.4.1 Initial conditions

No USS is needed for this test.

The default UICC is used with the following exception:

EF_{UID} (Unique Identifier)

Logically: one record is set to "FF FF"

Coding:	B1	B2
Hex	FF	FF

EF_{PUID} (Previous Unique Identifier)

Logically: is set to "FF FF"

Coding:	B1	B2
Hex	FF	FF

EF_{CC} (Change Counter)

Logically: set to "FF FF"

Coding:	B1	B2
Hex	FF	FF

EF_{PSC} (Phonebook Synchronisation Counter)

Logically: set to "00 00 FF FF"

Coding:	B1	B2	B3	B4
Hex	00	00	FF	FF

At least one phonebook entry shall be empty and available for creating a new entry (e.g. an appropriate ADN record).

The UICC is installed into the Terminal and the UE is powered on and the correct PIN is entered.

8.1.2.4.2 Procedure

a) A new phonebook entry shall be created.

NOTE 1: This may be done by storing a new telephone number in an empty ADN record.

b) The UE shall have given the time to perform the regeneration of the UID records.

NOTE 2: It is assumed that the UE will indicate the time it needs to perform the regeneration by displaying a busy signal to the user.

8.1.2.5 Acceptance criteria

After step b) the USIM shall contain the following values:

The EF_{UID} (Unique Identifier) shall have been regenerated with UID values starting with "00 01". The UID values may be stored in any order, but shall be unique. The entry in EF_{UID} with value FF FF (the maximum value) shall have been replaced by an appropriate value which shall be distinguishable to the maximum value. EF_{PUID} shall contain a UID value (other than FFFF) that is present in $EF_{UID.}$

EF_{CC} (Change Counter)

Logically: set to "00 01"

Coding:	B1	B2
Hex	00	01

EF_{PSC} (Phonebook Synchronisation Counter)

Logically: set to "00 01 00 00"

Coding:	B1	B2	B3	B4
Hex	00	01	00	00

8.1.3 Phonebook content handling

8.1.3.1 Handling of BCD number/ SSC content extension

8.1.3.1.1 Definition and applicability

The length of BCD number/SSC contents in EF_{ADN} byte gives the number of bytes of the following two data items containing actual BCD number/SSC information. This means that the maximum value is 11, even when the actual ADN/SSC information length is greater than 11. When an ADN/SSC has extension, it is indicated by the extension1 identifier being unequal to 'FF'. The remainder is stored in the EF_{EXT1} with the remaining length of the additional data being coded in the appropriate additional record itself.

8.1.3.1.2 Conformance requirement

The terminal shall support the BCD number/ SSC extension for EF_{ADN} as defined in TS 31.102 [4], subclauses 4.4.2.3 and 4.4.2.4.

Reference:

- TS 31.102 [4], subclauses 4.4.2.3 and 4.4.2.4.

8.1.3.1.3 Test purpose

1) To verify that the terminal is able to read and update BCD numbers/ SSC content with and without extension correctly in EF_{ADN} and EF_{EXT1}.

8.1.3.1.4 Method of test

8.1.3.1.4.1 Initial conditions

The terminal is connected to the USIM Simulator.

Prior to the test execution the terminal manufacturer shall state the maximum number of BCD digits (excluding TON/NPI), which are supported by the terminal for global phonebook updating.

The default USIM is used with the following exceptions:

Only the global phonebook is present.

The global phonebook shall contain:

EF_{PBR} (Phonebook reference file)

Logically: Only EF_{ADN} and EF_{EXT1} are present in the global phonebook.

EF_{ADN} (Abbreviated dialling numbers)

Logically:

10 records, each record non-empty and unique. Unless otherwise stated, the ADN records shall not use extended BCD numbers/SSC strings.

Record 1:	Length of alpha identifier:	32 characters;
	Alpha identifier:	"Contact001";
	Length of BCD number:	11;
	TON and NPI:	Telephony and International;
	Dialled number:	"00112233445566778899";
	CCI:	'FF';
	Ext1:	01.

Record 1:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…	B32	B33
Hex	43	6F	6E	74	61	63	74	30	30	31	FF	…	FF	0B

B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45	B46
91	00	11	22	33	44	55	66	77	88	99	FF	01

Record 2:	Length of alpha identifier:	32 characters;
	Alpha identifier:	"Contact002";
	Length of BCD number:	11;
	TON and NPI:	Telephony and International;
	Dialled number:	"01234567890123456789";
	CCI:	'FF';
	Ext1:	'FF'.

Record 2:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…	B32	B33
Hex	43	6F	6E	74	61	63	74	30	30	32	FF	…	FF	0B

B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45	B46
91	10	32	54	76	98	10	32	54	76	98	FF	FF

Record 3:	Length of alpha identifier:	32 characters;
	Alpha identifier:	"Contact003";
	Length of BCD number:	11;
	TON and NPI:	Telephony and International;
	Dialled number:	"99887766554433221100";
	CCI:	'FF';
	Ext1:	'02'.

Record 3:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…	B32	B33
Hex	43	6F	6E	74	61	63	74	30	30	33	FF	…	FF	0B

	B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45	B46
	91	99	88	77	66	55	44	33	22	11	00	FF	02

Record 4: Length of alpha identifier: 32 characters;
Alpha identifier: "Contact004";
Length of BCD number: 9;
TON and NPI: Telephony and International;
Dialled number: "1212121212121212";
CCI: 'FF';
Ext1: 'FF'.

Record 4:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…	B32	B33
Hex	43	6F	6E	74	61	63	74	30	30	34	FF	…	FF	09

	B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45	B46
	91	21	21	21	21	21	21	21	21	FF	FF	FF	FF

Record 7: Length of alpha identifier: 32 characters;
Alpha identifier: "Contact007";
Length of BCD number: 3;
TON and NPI: Telephony and International;
Dialled number: "678";
CCI: 'FF';
Ext1: 'FF'.

Record 7:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…	B32	B33
Hex	43	6F	6E	74	61	63	74	30	30	37	FF	…	FF	03

	B34	B35	B36	B37	B38	B39	B40	B41	B42	B43	B44	B45	B46
	91	76	F8	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

EF_{EXT1} (Extension 1)

Logically: 4 records

Record 1: Record type: '02'
Extension data: "01234567890123456789";
Identifier: 'FF'.

Record 1:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13
Hex	02	0A	10	32	54	76	98	10	32	54	76	98	FF

Record 2: Record type: '02'
Extension data: "99887766554433221100";
Identifier: '03'.

Record 2:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13
Hex	02	0A	99	88	77	66	55	44	33	22	11	00	03

Record 3: Record type: '02'
Extension data: "11p12345";
Identifier: 'FF'.

Record 3:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13
Hex	02	04	11	1C	32	54	FF	FF	FF	FF	FF	FF	FF

Record 4: Record type: '00'
Extension data: empty;
Identifier: 'FF'.

Record 4:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13
Hex	00	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF

8.1.3.1.4.2 Procedure

a) The terminal is switched on and the USIM application shall be activated.

b) The user shall use an MMI dependent procedure to select the global phonebook.

c) The user shall change the BCD number of the entry "Contact002" to "22446622446622446600777888999". If the maximum number of BCD digits supported for the global phonebook update is less than in the requested input BCD number string, then the user shall enter the BCD number string as requested, but only up to the maximum number of BCD digits which are supported for updating.

d) The user shall extend the BCD number of the entry "Contact007" to "012345678901234567897778889999".. If the maximum number of BCD digits supported for the global phonebook update is less than in the requested input BCD number string, then the user shall enter the BCD number string as requested, but only up to the maximum number of BCD digits which are supported for updating.

e) The user shall delete the phonebook entry "Contact001".

f) The user shall set the BCD number of the entry "Contact002" to "22446622446600"

g) The user shall create the new phonebook entry "NewContact" with the BCD number "12345678901234567890123456789012345678901234567890123456789012".. If the maximum number of BCD digits supported for the global phonebook update is less than in the requested input BCD number string, then the user shall enter the BCD number string as requested, but only up to the maximum number of BCD digits which are supported for updating.

h) The user shall delete the phonebook entry "Contact003".

i) The terminal is switched off.

8.1.3.1.5 Acceptance criteria

1) After step a) the terminal shall have activated the USIM application.

2) After step b) the terminal shall have selected the global phonebook and shall have read EF_{PBR} in the global phonebook.

3) After step c) the global phonebook shall contain a record with "22446622446622446600" as BCD number and "04" as extension record identifier. EF_{EXT1} shall contain a record with "Additional data" as record type, the BCD number extension "777888999" and "FF" as identifier to indicate the end of the chain. If the maximum number of BCD digits supported for global phonebook updating is less than in the requested input BCD number, then EF_{ADN} and EF_{EXT1} shall contain the BCD number as entered on the MMI.

4) After step d) the terminal shall have taken action to prevent storage of the extended BCD number, e.g. by giving an indication to the user or not allowing to enter the extended number. EF_{EXT1} shall have not been updated and the extension record identifier of the entry "Contact007"shall remain as "FF".

5) After step e) records of EF_{ADN} and EF_{EXT1} which were used to store the data for the phonebook entry "Contact001" shall be empty, i.e. the EF_{ADN} record shall be "FF… FF" and the EF_{EXT1} record shall be "00FF… FF."

6) After step f) the record of EF_{EXT1} which was used to store the BCD number extension "777888999" shall be empty and the record used for storing the entry with the alpha identifier "Contact002" of EF_{ADN} shall contain the BCD number "22446622446600" and the extension record identifier "FF".

7) After step g) a record of EF_{ADN} shall contain "NewContact" as alpha identifier, "12345678901234567890" as BCD number and shall use an extension record identifier unequal to "FF".

   The EF_{EXT1} record which was indicated in the EF_{ADN} record used in this case shall contain "Additional data" as record type, "12345678901234567890" as BCD number and an extension record identifier unequal to "FF", while the EF_{EXT1} record used to continue the chain inside EF_{EXT1} shall contain "Additional data" as record type, "123456789012" as BCD number and "FF" as extension record identifier.

   If the maximum number of BCD digits supported for global phonebook updating is less than the requested input BCD number, then EF_{ADN} and EF_{EXT1} shall contain the BCD number as entered on the MMI.

8) After step h) the record of EF_{ADN} which was used to store the data for "Contact003" and the related records of EF_{EXT1} shall be empty.

8.1.4 Phonebook selection

8.1.4.1 Definition and applicability

The UICC may contain a global phonebook, or application specific phonebooks, or both in parallel. When both phonebook types co-exist, they are independent and no data is shared. In this case, it shall be possible for the user to select which phonebook the user would like to access.

8.1.4.2 Conformance requirement

The terminal shall support the global and the application specific phonebooks as defined in TS 31.102 [4], subclause 4.4.2.

Reference:

- TS 31.102 [4], subclause 4.4.2.

8.1.4.3 Test purpose

1) To verify that the terminal offers a possibility to select which phonebook the user would like to select if both, the global and the local phonebook, co-exist.

2) To verify that the data contained in the local phonebook can be read and updated correctly.

3) To verify that the data contained in the global phonebook can be read and updated correctly.

8.1.4.4 Method of test

8.1.4.4.1 Initial conditions

The terminal is connected to the USIM Simulator.

The default USIM is used with the following exceptions:

The local and the global phonebook are both present.

The local phonebook shall contain:

EF_{PBR} (Phonebook reference file)

Logically: Only EF_{ADN} and EF_{EXT1} are present in the local phonebook.

EF_{ADN} (Abbreviated dialling numbers)

Logically: 10 records, each record non-empty and unique.

Record 4:	Length of alpha identifier:	32 characters;
	Alpha identifier:	"Contact004";
	Length of BCD number:	"03";
	TON and NPI:	Telephony and International;
	Dialled number:	004;
	CCI:	'FF';
	Ext1:	'FF'.

Record 4:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…	B32	B33
Hex	43	6F	6E	74	61	63	74	30	30	34	FF	…	FF	03

B34	B35	B36	B37	B38	B39	…	B46
91	00	F4	FF	FF	FF	…	FF

Record 5:	Length of alpha identifier:	32 characters;
	Alpha identifier:	"Contact005";
	Length of BCD number:	"03";
	TON and NPI:	Telephony and International;
	Dialled number:	1234;
	CCI:	'FF';
	Ext1:	None.

Record 5:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…	B32	B33
Hex	43	6F	6E	74	61	63	74	30	30	35	FF	…	FF	03

B34	B35	B36	B37	B38	B39	…	B46
91	21	43	FF	FF	FF	…	FF

The global phonebook shall contain:

EF_{PBR} (Phonebook reference file)

Logically: Only EF_{ADN} is present in the global phonebook.

EF_{ADN} (Abbreviated dialling numbers)

Logically: 8 records, records 3 and 6 empty, each non-empty record unique.

Record 1:	Length of alpha identifier:	32 characters;
	Alpha identifier:	"Contact001";
	Length of BCD number:	"03";
	TON and NPI:	Telephony and International;
	Dialled number:	001;
	CCI:	'FF';
	Ext1:	'FF'.

Record 1:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…	B32	B33
Hex	43	6F	6E	74	61	63	74	30	30	31	FF	…	FF	03

B34	B35	B36	B37	B38	B39	…	B46
91	00	F1	FF	FF	FF	…	FF

Record 2:	Length of alpha identifier:	32 characters;
	Alpha identifier:	"Contact002";
	Length of BCD number:	"03";
	TON and NPI:	Telephony and International;
	Dialled number:	002;
	CCI:	'FF';
	Ext1:	'FF'.

Record 2:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…	B32	B33
Hex	43	6F	6E	74	61	63	74	30	30	32	FF	…	FF	03

B34	B35	B36	B37	B38	B39	…	B46
91	00	F2	FF	FF	FF	…	FF

Record 4:	Length of alpha identifier:	32 characters;
	Alpha identifier:	"Contact004";
	Length of BCD number:	"03";
	TON and NPI:	Telephony and International;
	Dialled number:	0041;
	CCI:	'FF';
	Ext1:	'FF'.

Record 4:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…	B32	B33
Hex	43	6F	6E	74	61	63	74	30	30	34	FF	…	FF	03

B34	B35	B36	B37	B38	B39	…	B46
91	00	14	FF	FF	FF	…	FF

Record 5:	Length of alpha identifier:	32 characters;
	Alpha identifier:	"Contact005";
	Length of BCD number:	"03";
	TON and NPI:	Telephony and International;
	Dialled number:	1234;
	CCI:	'FF';
	Ext1:	'FF'.

Record 5:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…	B32	B33
Hex	43	6F	6E	74	61	63	74	30	30	35	FF	…	FF	03

	B34	B35	B36	B37	B38	B39	…	B46
	91	21	43	FF	FF	FF	…	FF

Record 7: Length of alpha identifier: 32 characters;
Alpha identifier: "Contact007";
Length of BCD number: "03";
TON and NPI: Telephony and International;
Dialled number: 007;
CCI: 'FF';
Ext1: 'FF'.

Record 7:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…	B32	B33
Hex	43	6F	6E	74	61	63	74	30	30	37	FF	…	FF	03

	B34	B35	B36	B37	B38	B39	…	B46
	91	00	F7	FF	FF	FF	…	FF

Record 8: Length of alpha identifier: 32 characters;
Alpha identifier: "Contact008";
Length of BCD number: "03";
TON and NPI: Telephony and International;
Dialled number: 008;
CCI: 'FF';
Ext1: 'FF'.

Record 8:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…	B32	B33
Hex	43	6F	6E	74	61	63	74	30	30	38	FF	…	FF	03

	B34	B35	B36	B37	B38	B39	…	B46
	91	00	F8	FF	FF	FF	…	FF

8.1.4.4.2 Procedure

a) The terminal is switched on and the USIM application shall be activated.

b) The user shall use an MMI dependent procedure to select the global phonebook.

c) The global phonebook record with the alpha identifier "Contact005" and the associated dialling number shall be read by the user.

d) The dialling number of the global phonebook record with the alpha identifier "Contact005" shall be set to "+1122330".

e) A new entry with the values "Contact006" as alpha identifier and "+9876543210" as associated dialling number shall be added to the global phonebook.

f) The user shall use an MMI dependent procedure to select the local phonebook.

g) The local phonebook record with the alpha identifier "Contact005" and the associated dialling number shall be read by the user.

h) The dialling number of the local phonebook record with the alpha identifier "Contact005" shall be set to "+11223345".

i) The user shall try to add a new entry with the values "Contact007" as alpha identifier and "+007" as associated dialling number to the local phonebook.

j) The user shall delete the entry "Contact004" from the local phonebook.

k) The user shall add a new entry with the values "Contact007" as alpha identifier and "+007" as associated dialling number to the local phonebook.

l) The user shall use an MMI dependent procedure to select the global phonebook.

m) The user shall delete the entry "Contact007" from the global phonebook.

n) The terminal is switched off.

8.1.4.5 Acceptance criteria

1) After step a) the terminal shall have activated the USIM application, shall have read the status of the local Phonebook in EF_{UST}.

2) After step b) the terminal shall have selected the global phonebook and shall have read EF_{PBR} in the global phonebook.

3) After step c) the terminal shall have read the global phonebook record which is used to store the enrty "Contact005" and shall have presented the alpha identifier "Contact005" and the dialling number "+1234" to the user.

4) After step d) EF_{ADN} in the global phonebook shall contain a record with the alpha identifier "Contact005" with the new dialling number "+1122330" and the terminal shall have given an indication to the user that the phonebook update has been performed successfully.

5) After step e) a new record shall have been added to EF_{ADN} in the global phonebook with the alpha identifier "Contact006" and the dialling number string "+9876543210".

6) After step f) the terminal shall have selected the local phonebook and shall have read EF_{PBR} in the local phonebook.

7) After step g) the terminal shall have read the local phonebook record which is used to store the entry "Contact005" and shall have presented the alpha identifier "Contact005" and the dialling number "+1234" to the user.

8) After step h) EF_{ADN} in the local phonebook shall contain a record with the alpha identifier "Conatct005" and with new dialling number "+11223345" and the terminal shall have given an indication to the user that the phonebook update has been performed successfully.

9) After step i) the terminal shall have given an indication that update of the local phonebook can't be performed. EF_{ADN} shall have not been updated.

10) After step j) the local phonebook record which was used to store the entry "Contact004" shall be empty and the terminal shall have indicated that the deletion of the phonebook entry was performed successfully.

11) After step k) a new record shall have been added to EF_{ADN} in the local phonebook with the alpha identifier "Contact007" and the dialling number string "+007"

12) After step l) the terminal shall have selected the global phonebook and shall have read EF_{PBR} in the global phonebook.

13) After step m) the global phonebook record which was used to store the entry "Contact007" shall be empty and the terminal shall have indicated that the deletion of the phonebook entry was performed successfully.

8.1.5 Local Phonebook handling

8.1.5.1 Definition and applicability

The UICC may contain a global phonebook, or application specific phonebooks, or both in parallel.

8.1.5.2 Conformance requirement

The terminal shall support the local phonebook as defined in TS 31.102 [4], subclause 4.4.2.

Reference:

- TS 31.102 [4], subclause 4.4.2.

8.1.5.3 Test purpose

1) To verify that the terminal supports the local phonebook without existence of the global phonebook.

2) To verify that the data contained in the local phonebook can be read and updated correctly.

8.1.5.4 Method of test

8.1.5.4.1 Initial conditions

The terminal is connected to the USIM Simulator.

The default USIM is used with the following exceptions:

The local phonebook is present, the global phonebook is not present.

The local phonebook shall contain:

EF_{PBR} (Phonebook reference file)

Logically: Only EF_{ADN} and EF_{EXT1} are present in the local phonebook.

EF_{ADN} (Abbreviated dialling numbers)

Logically: 10 records, each record non-empty and unique.

Record 4:	Length of alpha identifier:	32 characters;
	Alpha identifier:	"Contact004";
	Length of BCD number:	"03";
	TON and NPI:	Telephony and International;
	Dialled number:	004;
	CCI:	'FF';
	Ext1:	'FF'.

Record 4:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…	B32	B33
Hex	43	6F	6E	74	61	63	74	30	30	34	FF	…	FF	03

B34	B35	B36	B37	B38	B39	…	B46
91	00	F4	FF	FF	FF	…	FF

Record 5:	Length of alpha identifier:	32 characters;
	Alpha identifier:	"Contact005";
	Length of BCD number:	"03";
	TON and NPI:	Telephony and International;
	Dialled number:	1234;
	CCI:	'FF';
	Ext1:	'FF'.

Record 5:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…	B32	B33
Hex	43	6F	6E	74	61	63	74	30	30	35	FF	…	FF	03

	B34	B35	B36	B37	B38	B39	…	B46
	91	21	43	FF	FF	FF	…	FF

8.1.5.4.2 Procedure

a) The terminal is switched on and the USIM application shall be activated.

b) The user shall use an MMI dependent procedure to select the phonebook on the USIM (local phonebook).

c) The local phonebook record with the alpha identifier "Contact005" and the associated dialling number shall be read by the user.

d) The dialling number of the local phonebook record with the alpha identifier "Contact005" shall be set to "+11223345" and the alpha identifier shall be changed to "Contact8901234567890123456789012".

e) The user shall try to add a new entry with the values "Contact007" as alpha identifier and "+007" as associated dialling number to the local phonebook.

f) The user shall delete the entry "Contact004" from the local phonebook.

g) The user shall add a new entry with the values "Contact007" as alpha identifier and "+007" as associated dialling number to the local phonebook.

h) The terminal is switched off.

8.1.5.5 Acceptance criteria

1) After step a) the terminal shall have activated the USIM application, shall have read the status of the local Phonebook in EF_{UST}.

2) After step b) the terminal shall have selected the local phonebook and shall have read EF_{PBR} in the local phonebook.

3) After step c) the terminal shall have read the local phonebook record which is used to store the entry "Contact005" and shall have presented the alpha identifier "Contact005" and the dialling number "+1234" to the user.

4) After step d) EF_{ADN} in the local phonebook shall contain a record with the new alpha identifier "Contact8901234567890123456789012" and the dialling number "+11223345" and the terminal shall have given an indication to the user that the phonebook update has been performed successfully.

5) After step e) the terminal shall have given an indication that update of the local phonebook can't be performed. EF_{ADN} shall have not been updated.

6) After step f) the local phonebook record which was used to store the entry "Contact004" in the local phonebook shall be empty and the terminal shall have indicated that the deletion of the phonebook entry was performed successfully.

7) After step g) a new record shall have been added to EF_{ADN} in the local phonebook with the alpha identifier "Contact007" and the dialling number string "+007"

8.2 Short message handling report

8.2.1 Correct storage of a SM on the USIM

8.2.1.1 Definition and applicability

Once a SMS is received by the UE, the Terminal shall store the SM on the USIM, if this is indicated by the class 2 of the SMS (USIM specific SM). For this it is assumed, that at least one relevant SMS field are available on the USIM and they are indicated as empty.

8.2.1.2 Conformance requirement

The received class 2 SMS shall be stored on the USIM in EF_{SMS}. The status of a received SMS, which has not been read yet, shall be set to "3" (SMS to be read).

- TS 23.038 [3], clause 4.
- TS 23.040 [13], subclause 10.1, operation 6;
- TS 24.011, subclauses 8.2.2, 8.2.3 and 8.2.5.4, Table 8.4 (part 2)
- TS 31.102 [4], subclauses 4.2.25.

8.2.1.3 Test purpose

1) To verify that the Terminal stored correctly the class 2 SMS on the USIM.
2) To verify that the Terminal sets the status of a received, and not yet read SMS to "3" (SMS to be read)

8.2.1.4 Method of test

8.2.1.4.1 Initial conditions

The default UICC is used with the following exceptions:

1) EF_{UST} (USIM Service Table)

Logically: Local Phone Book available
User controlled PLMN selector available
Fixed dialling numbers available
Barred dialling numbers available
The GSM Access available
The Group Identifier level 1 and level 2 not available
SMS available
SMS Status available
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available

Byte:	B1	B2	B3	B4	B5
Binary	xx1x xx11	xxxx X11x	xxxx 1x00	xxxx x1xx	xxxx xx11

The coding of EF_{UST} shall conform with the capabilities of the USIM used.

2) EF_{SMS} (Short Message Service) and EF_{SMSS} (SMS Status) as defined in 8.2.4.4.1.

The USS (in case of a Terminal accessing UTRAN)/SS (in case of a Terminal accessing a GERAN) transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.
- Access control: unrestricted.

The USS/SS transmits the class 2 short message with the parameters as defined in 8.2.4.4.1.

User Equipment:

The UE is connected to the USIM-Simulator and the USS/SS.

8.2.1.4.2 Procedure

CS related sequence for UTRAN/GERAN

Perform the "CS related procedure" and continue with "Generic Procedure 1" as defined clause 8.2.4.4.2 as test "8.2.1" with the following parameters:

- Applicable Network Simulator (NWS): USS (UMTS System Simulator or System Simulator)
- CS is used to send and receive short messages
- ME supports UTRAN or GERAN

CS related procedure:

a) The ME is switched on and will perform the Profile Download, USIM initialization and network registration.

b) Continue with step c) of the Generic Procedure 1 as defined in 8.2.4.4.2.

8.2.1.5 Acceptance criteria

1) After step c) the record of the USIM EF_{SMS} which was empty, shall contain the values as defined in 8.2.4.5

8.2.2 Correct reading of a SM on the USIM

8.2.2.1 Definition and applicability

A SM which is stored but not yet read, is indicated as Status "3" (SMS to be read) on EF_{SMS}. The Terminal may indicate the user this status. After the SMS is read by the user, the status of the SMS shall be changed to "1" (SMS read).

8.2.2.2 Conformance requirement

A received SM was stored on the USIM in EF_{SMS}. At the time the SMS is read by the user, the status of a received SMS, shall be changed to "1" (SMS read).

- TS 23.038 [3], clause 4.
- TS 23.040 [13];
- TS 31.102 [4], subclauses 4.2.25 and 4.2.28.

8.2.2.3 Test purpose

1) To verify that the Terminal read correctly the SMS on the USIM.
2) To verify that the Terminal changes the status of a read SMS to "1" (SMS read).

8.2.2.4 Method of test

8.2.2.4.1 Initial conditions

The default UICC is used with the following exception:

EF_{UST} (USIM Service Table)

Logically: Local Phone Book available
User controlled PLMN selector available
Fixed dialling numbers available
Barred dialling numbers available
The GSM Access available
The Group Identifier level 1 and level 2 not available
SMS available
SMS Status available
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available

Coding:	B1	B2	B3	B4	B5
binary	xx1x xx11	xxxx X11x	xxxx 1x00	xxxx x1xx	xxxx xx11

The coding of EF_{UST} shall conform with the capabilities of the USIM used.

EF_{SMSS} (SMS Status)

Logically: Last used TP-MR not set.
Memory capacity available (flag unset b1="1").

Coding:	B1	B2
Hex	FF	FF

EF_{SMS} (Short Message Service)

Logically: Status byte set to SMS to be read.
A chosen test is written in the text body of the EF_{SMS}.

Record 1:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex	03	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	…	xx

NOTE: "xx" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.

At least 9 records.
Logically: Status byte set to empty
no text is written (Remainder Bytes set to "FF").

Record:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex	00	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	…	FF

A USS (in case of a Terminal accessing UTRAN) or a SS (in case of a Terminal accessing GERAN) is only needed to bring the UE into a defined idle mode. The USS/SS transmits on the BCCH:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.

- Access control: unrestricted.

User Equipment:

The UE is in MM-state "idle, updated".

8.2.2.4.2 Procedure

a) After the UE has brought in idle state, the SMS shall be read.

b) The UE is powered off.

8.2.2.5 Acceptance criteria

1) After a) the correct text of the SMS shall be read from the UE display.

2) After step b) the EF_{SMS} record 1 shall contains the following values:

Logically: Status byte set to SMS read.
The entire content of the SMS shall be unchanged.

Record 1:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex	01	xx	xx	Xx	xx	xx	xx	xx	xx	xx	xx	xx	…	xx

NOTE: "xx" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.

8.2.3 SM memory capacity exceeded handling

8.2.3.1 Definition and applicability

Once a SMS is received by the UE, the Terminal shall store the SM on the USIM, if this is indicated by the class 2 of the SMS (USIM specific SM). For this it is assumed, that at least one relevant SMS field are available on the USIM and they are indicated as empty. If all SMS data field are full and furthermore all memory capacity reserved for SMS inside the ME is filled up to maximum and a SM was rejected, then this shall be indicated in the SMS Status file.

8.2.3.2 Conformance requirement

The received class 2 SMS shall be stored on the USIM in EF_{SMS}. The status of a received SMS, which has not been read yet, shall be set to "3" (SMS to be read). If the terminal notifies the network that the terminal has been unable to accept a short message because its memory capacity has been exceeded, then the ME shall set the Memory Capacity Exceeded Notification Flag in the EF_{SMSS}.

- TS 23.038 [3], clause 4.

- TS 23.040 [13], subclause 10.1, operation 6;

- TS 24.011, subclauses 8.2.2, 8.2.3 and 8.2.5.4, Table 8.4 (part 2)

- TS 31.102 [4], subclauses 4.2.25 and 4.2.28.

8.2.3.3 Test purpose

1) To verify that the Terminal stored correctly the class 2 SMS on the USIM.

2) To verify that the Terminal sets the status of a received, and not yet read SMS to "3" (SMS to be read).

3) To verify that the Terminal sets the memory full flag in EF_{SMSS} if the terminal notifies the network that the terminal has been unable to accept a short message because its memory capacity has been exceeded.

8.2.3.4 Method of test

8.2.3.4.1 Initial conditions

The default UICC is used with the following exception:

EF_{UST} (USIM Service Table)

Logically: Local Phone Book available
User controlled PLMN selector available
Fixed dialling numbers available
Barred dialling numbers available
The GSM Access available
The Group Identifier level 1 and level 2 not available
SMS available
SMS Status available
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available

Coding:	B1	B2	B3	B4	B5
binary	xx1x xx11	xxxx X11x	xxxx 1x00	xxxx x1xx	xxxx xx11

The coding of EF_{UST} shall conform with the capabilities of the USIM used.

EF_{SMS} (Short Message Service)

At least 10 records.
Record 1 shall be empty.
Logically: Status byte set to empty.

Record 1:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex	00	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	…	FF

All other Record shall be full.
Logically: Status byte set to SMS read.
The text body of the record shall be filled with any appropriate text.

Records:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex	01	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	…	xx

NOTE: "xx" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the received SMS.

EF_{SMSS} (SMS Status)

Logically: Last used TP-MR not defined.
Memory capacity available (flag unset b1="1").

Coding:	B1	B2
Hex	FF	FF

The USS (in case of a Terminal accessing UTRAN) /SS (in case of a Terminal accessing a GERAN) transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.
- Access control: unrestricted.

The USS/ SS transmits the short messages with the following parameters:

Logically:

Class 2 SM:TS-Service Centre Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 112233445566

SMS TPDU:

TP-Message-Type-Indicator: SMS-DELIVER (in the direction SC to MS)

TP-More-Messages-to-Send: No more messages are waiting for the MS in this SC

TP-Reply-Path: TP-Reply-Path parameter is not set in this SMS-DELIVER

TP-User-Data-Header-Indicator: The TP-UD field contains only the short message

TP-Status-Report-Indication: A status report shall be returned to the SME

Bits 4-3: 00

TP-Originating-Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 012344556677

TP-Protocol-Identifier: No interworking, but SME-to-SME protocol

TP-Data-Coding-Scheme:

Bits 8-7: General Data Coding

Bit 6: Text is uncompressed

Bit 5: Bits 2-1 have a message class meaning

Bits 4-3: GSM 7 bit default alphabet

Bits 2-1: Class 2: (U)SIM specific message

TP-Service-Centre-Time-Stamp: 02-03-04 09:13:06 GMT + 1

TP-User-Data-Length: 160

TP-User-Data:

"Once a SMS is received by the UE, the Terminal shall store the SMS on the USIM, if this is indicated by the class 2 of the SMS (USIM specific SMS). For this…"

Class 1 SM:

The same content as for the Class 2 SMS except :

SMS TPDU:

TP-More-Messages-to-Send: More messages are waiting for the MS in this SC

TP-Data-Coding-Scheme:

Bits 2-1: Class 1: default meaning: ME-specific

TP-Service-Centre-Time-Stamp: Always set to current time of the system simulator

User Equipment:

The UE is in MM-state "idle, updated". If there is ME storage capacity available the storage for SMS inside the ME shall be able to allow for at least one more mobile terminated (e.g. Class 1) SM.

8.2.3.4.2 Procedure

a) After the UE is set to idle mode, the defined class 2 SM defined in 8.2.1.4.1 with 160 characters shall be sent to the UE.

b) After the UE has indicated that a SM was received, the SM shall not be read.

c) The USS starts sending Class 1 SMs as defined in 8.2.1.4.1 until the UE sends an RP-ERROR message with cause 'Memory capacity exceeded'.

d) The UE is powered off.

8.2.3.5 Acceptance criteria

1) After step b) the record of the EF_{SMS} which was empty, shall contain the following values:

Logically: Status byte set to SMS to be read
The text of the received SMS shall be present in the record.

Record 1:

Logically:

Status:

RFU bits 8-6: 000

Status: Used space, message received by UE from network, message to be read

TS-Service Centre Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 112233445566

SMS TPDU:

TP-Message-Type-Indicator: SMS-DELIVER (in the direction SC to UE)

TP-More-Messages-to-Send: No more messages are waiting for the UE in this SC

TP-Reply-Path: TP-Reply-Path parameter is not set in this SMS-DELIVER

TP-User-Data-Header-Indicator: The TP-UD field contains only the short message

TP-Status-Report-Indication: A status report shall be returned to the SME

Bits 4-3: 00

TP-Originating-Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 012344556677

TP-Protocol-Identifier: No interworking, but SME-to-SME protocol

TP-Data-Coding-Scheme:

Bits 8-7: General Data Coding

Bit 6: Text is uncompressed

Bit 5: Bits 2-1 have a message class meaning

Bits 4-3: GSM 7 bit default alphabet

Bits 2-1: Class 2: (U)SIM specific message

TP-Service-Centre-Time-Stamp: 02-03-04 09:13:06 GMT + 1

TP-User-Data-Length: 160

TP-User-Data:

"Once a SMS is received by the UE, the Terminal shall store the SMS on the USIM, if this is indicated by the class 2 of the SMS (USIM specific SMS). For this …"

Coding:

Hex	03	07	91	11	22	33	44	55	66	24	0C	91	10	32	44	55
	66	77	00	12	20	30	40	90	31	60	40	A0	4F	F7	B8	0C
	0A	83	A6	CD	29	28	3D	07	C9	CB	E3	72	DA	5E	26	83
	C4	79	10	1D	5D	06	55	8B	2C	10	1D	5D	06	51	CB	F2
	76	DA	1D	66	83	E6	E8	30	9B	0D	9A	D3	DF	F2	32	88
	8E	2E	83	A6	CD	29	E8	ED	06	D1	D1	65	50	75	9A	6C
	B2	40	69	33	88	8E	4E	CF	41	E9	39	28	ED	26	A7	C7
	61	7A	99	0C	12	E7	41	74	74	19	34	66	87	E7	73	90
	0C	F4	36	83	E8	E8	32	68	DA	9C	82	50	D5	69	B2	09
	9A	C3	CB	E3	B4	39	3D	06	4D	9B	D3	94	0B	64	7C	CB
	41	74	74	7A	0E	72	B9	5C								

7) After step d) the Memory Capacity Exceeded Notification Flag in the EF_{SMSS} shall be set to exceeded.

EF_{SMSS} (SMS Status)

Logically: Last used TP-MR shall be set to any appropriate value.
Memory capacity exceeded (flag set b1="0").

Coding:	B1	B2
Hex	xx	FE

8.2.4 Correct storage of an SM on the UICC

8.2.4.1 Definition and applicability

For IMS: When a SIP MESSAGE request including a short message in the "vnd.3gpp.sms" payload is delivered and the extracted RP-DATA payload contains a Class 2 SM (USIM specific SM) the terminal shall store the SM on the USIM or ISIM. For this it is assumed, that at least one relevant SMS field are available on the USIM or ISIM and they are indicated as empty.

That the UE correctly implemented the role of an SMS-over-IP receiver is tested in clause 18.2 of TS 34.229-1 [33].

8.2.4.2 Conformance requirement

As TS 31.103[x] and TS 31.102[4] do not indicate in which of both applications a SM received via IMS shall be stored, the received Class 2 SM received via IMS shall be stored in EF_{SMS} either on the USIM or on the ISIM. The status of a received SMS, which has not been read yet, shall be set to "3" (SMS to be read).

- TS 23.038 [3], clause 4.
- TS 23.040 [13], subclause 10.1, operation 6;
- TS 24.011, subclauses 7.3.1.1, 8.2.2, 8.2.3 and 8.2.5.4, Table 8.4 (part 2)
- TS 31.102 [4], subclauses 4.2.25,
- TS 31.103 [32], subclauses 4.2.12,
- TS 34.229 [33], Annexes C.2, C.18 and 18.2.

8.2.4.3 Test purpose

1) To verify that the Terminal stored correctly the class 2 SMS on the USIM or the ISIM.
2) To verify that the Terminal sets the status of a received, and not yet read SMS to "3" (SMS to be read).

8.2.4.4 Method of test

8.2.4.4.1 Initial conditions

The E-UTRAN/EPC ISIM-UICC is used with the following exception:

Logically: Local Phone Book available
User controlled PLMN selector available
Fixed dialling numbers available
Barred dialling numbers available
The GSM Access available
The Group Identifier level 1 and level 2 not available
SMS available
SMS Status available
Service n 33 (Packed Switched Domain) shall be set to '1'
Enabled Services Table available

Byte:	B1	B2	B3	B4	B5
Binary	xx1x xx11	xxxx X11x	xxxx 1x00	xxxx x1xx	xxxx xx11

The coding of EF_{UST} shall conform with the capabilities of the USIM used.

EF_{SMS} (Short Message Service) – For USIM and ISIM

At least 10 records.
Record 1 shall be empty.
Logically: Status byte set to empty.

Record 1:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex	00	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	…	FF

All other Record shall be full.
Logically: Status byte set to SMS read.
The text body of the record shall be filled with any appropriate text.

Records:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex	01	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	…	xx

NOTE: "xx" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the received SMS.

EF_{SMSS} (SMS Status) – For USIM and ISIM

Logically: Last used TP-MR not defined.
Memory capacity available (flag unset b1="1").

Coding:	B1	B2
Hex	FF	FF

The NWS transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- USS LAI (MCC/MNC/LAC): 246/081/0001 (For UTRAN testing only)
- E-USS TAI (MCC/MNC/TAC) : 246/081/0001 (For E-UTRAN testing only)
- Access control: unrestricted.

The NWS transmits the short messages with the following parameters:

Logically:

Class 2 SM:TS-Service Centre Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 112233445566

SMS TPDU:

TP-Message-Type-Indicator: SMS-DELIVER (in the direction SC to MS)

TP-More-Messages-to-Send: No more messages are waiting for the MS in this SC

TP-Reply-Path: TP-Reply-Path parameter is not set in this SMS-DELIVER

TP-User-Data-Header-Indicator: The TP-UD field contains only the short message

TP-Status-Report-Indication: A status report shall be returned to the SME

Bits 4-3: 00

TP-Originating-Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 012344556677

TP-Protocol-Identifier: No interworking, but SME-to-SME protocol

TP-Data-Coding-Scheme:

Bits 8-7: General Data Coding

Bit 6: Text is uncompressed

Bit 5: Bits 2-1 have a message class meaning

Bits 4-3: GSM 7 bit default alphabet

a) The ME activates the required bearer, discovers the P-CSCF, and registers with the values from the ISIM with the IMS services (see Note 2).

Generic Procedure 1

b) Continue with step c) in the Generic Procedure 1.

Bits 2-1: Class 2: (U)SIM specific message

TP-Service-Centre-Time-Stamp: 02-03-04 09:13:06 GMT + 1

TP-User-Data-Length: 160

TP-User-Data:

"Once a SMS is received by the UE, the Terminal shall store the SMS on the USIM, if this is indicated by the class 2 of the SMS (USIM specific SMS). For this…"

8.2.4.4.2 Procedure

Sequence A for IMS on UTRAN

Sequence B for IMS on E-UTRAN

a) The ME activates the required bearer, discovers the P-CSCF, and registers with the values from the ISIM with the IMS services (see Note 3).

b) Continue with step c) in the Generic Procedure 1.

c) After the UE is set to idle mode, the defined class 2 SM defined in 8.2.1.4.1 with 160 characters shall be sent to the UE (see Note 1) as specified in clause 18.2 of TS 34.229-1 [33] and use the SM payload defined in 8.2.1.4.1 in the Message-body of MESSAGE defined in clause A.7.1 in TS 34.229-1 [33].

d) After the UE has indicated that a SM was received, the SM shall not be read.

e) The UE is powered off.

Note 1: In case of IMS the Short Message is contained in the message body of the SIP MESSAGE.
Note 2: For E-UTRAN: The EPS bearer context activation according to the procedures defined in TS 34.229-1 [33], Annex C.2 and C.18 is performed.
Note 3: For UTRAN: For SMS-over-IP a PDP context activation according to the procedures defined in TS 34.229-1 [33], Annex C.2 and C.17 is performed.

8.2.4.5 Acceptance criteria

1) After step d) the record of the EF_{SMS} (on either the ISIM or USIM) which was empty, shall contain the following values:

Logically: Status byte set to SMS to be read
The text of the received SMS shall be present in the record.

Record 1:

Logically:

Status:

RFU bits 8-6: 000

Status: Used space, message received by UE from network, message to be read

TS-Service Centre Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 112233445566

SMS TPDU:

TP-Message-Type-Indicator: SMS-DELIVER (in the direction SC to UE)

TP-More-Messages-to-Send: No more messages are waiting for the UE in this SC

TP-Reply-Path: TP-Reply-Path parameter is not set in this SMS-DELIVER

TP-User-Data-Header-Indicator: The TP-UD field contains only the short message

TP-Status-Report-Indication: A status report shall be returned to the SME

Bits 4-3: 00

TP-Originating-Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 012344556677

TP-Protocol-Identifier: No interworking, but SME-to-SME protocol

TP-Data-Coding-Scheme:

Bits 8-7: General Data Coding

Bit 6: Text is uncompressed

Bit 5: Bits 2-1 have a message class meaning

Bits 4-3: GSM 7 bit default alphabet

Bits 2-1: Class 2: (U)SIM specific message

TP-Service-Centre-Time-Stamp: 02-03-04 09:13:06 GMT + 1

TP-User-Data-Length: 160

TP-User-Data:

"Once a SMS is received by the UE, the Terminal shall store the SMS on the USIM, if this is indicated by the class 2 of the SMS (USIM specific SMS). For this …"

Coding:

Hex	03	07	91	11	22	33	44	55	66	24	0C	91	10	32	44	55
	66	77	00	12	20	30	40	90	31	60	40	A0	4F	F7	B8	0C
	0A	83	A6	CD	29	28	3D	07	C9	CB	E3	72	DA	5E	26	83
	C4	79	10	1D	5D	06	55	8B	2C	10	1D	5D	06	51	CB	F2
	76	DA	1D	66	83	E6	E8	30	9B	0D	9A	D3	DF	F2	32	88
	8E	2E	83	A6	CD	29	E8	ED	06	D1	D1	65	50	75	9A	6C
	B2	40	69	33	88	8E	4E	CF	41	E9	39	28	ED	26	A7	C7
	61	7A	99	0C	12	E7	41	74	74	19	34	66	87	E7	73	90
	0C	F4	36	83	E8	E8	32	68	DA	9C	82	50	D5	69	B2	09
	9A	C3	CB	E3	B4	39	3D	06	4D	9B	D3	94	0B	64	7C	CB
	41	74	74	7A	0E	72	B9	5C								

2) The UE shall pass the requirements which are verified in the MT SMS test case specified in clause 18.2 of TS 34.229-1 [33].

8.2.5 Correct reading of a SM on the USIM if USIM and ISIM are present

8.2.5.1 Definition and applicability

A SM which is stored but not yet read, is indicated as Status "3" (SMS to be read) on EF_{SMS}. The Terminal may indicate the user this status. After the SMS is read by the user, the status of the SMS shall be changed to "1" (SMS read). This applies to short messages stored on the USIM and to short messages stored on the ISIM.

8.2.5.2 Conformance requirement

A received SM was stored in EF_{SMS} on the ISIM and another SM was stored in EF_{SMS} on the USIM. The user shall be able to read short messages stored on the USIM. At the time the SMS is read by the user, the status of a received SMS, shall be changed to "1" (SMS read).

- TS 23.038 [3], clause 4.
- TS 23.040 [13];
- TS 31.102 [4], subclauses 4.2.25 and 4.2.28,
- TS 31.103 [32], subclauses 4.2.12 and 4.2.13.

8.2.5.3 Test purpose

1) To verify that the Terminal correctly reads the SMS on the USIM if the USIM and ISIM are both present.

2) To verify that the Terminal changes the status of a read SMS to "1" (SMS read) of the message read from the USIM.

8.2.5.4 Method of test

8.2.5.4.1 Initial conditions

The E-UTRAN/EPC ISIM-UICC is used with the following exception:

EF_{UST} (USIM Service Table)

As defined in in clause 4.5.2 with the expection that services n°10 (Short Message Storage) and n°11 (SMS Status Report) are available.

EF_{SMSS} (SMS Status) on the USIM and on the ISIM

Logically: Last used TP-MR not set.
Memory capacity available (flag unset b1="1").

Byte:	B1	B2
Hex:	FF	FF

EF_{SMS} (Short Message Service) on the USIM

Logically: Status byte set to SMS to be read.
A chosen test is written in the text body of the EF_{SMS}. This content shall be different from the content stored in EF_{SMS} in the ISIM.

Record 1:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex	03	xx	xx	xx	Xx	xx	xx	xx	xx	xx	xx	xx	…	xx
NOTE:	"xx" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.													

NOTE: "xx" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.

At least 9 records.
Logically: Status byte set to empty
no text is written (Remainder Bytes set to "FF").

Record:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex	00	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	…	FF

EF_{SMS} (Short Message Service) on the ISIM

Logically: Status byte set to SMS to be read.
A chosen test is written in the text body of the EF_{SMS}. This content shall be different from the content stored in EF_{SMS} in the USIM.

Record 1:

Byte:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex:	03	yy	yy	yy	Yy	yy	yy	yy	yy	yy	yy	yy	…	yy
NOTE:	"yy" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.													

NOTE: "yy" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.

At least 9 records.
Logically: Status byte set to empty
no text is written (Remainder Bytes set to "FF").

Record:

Byte:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex:	00	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	…	FF

EF_{SMS} on the USIM and EF_{SMS} on the ISIM shall not share the same memory.

EF_{SMSS} on the USIM and EF_{SMSS} on the ISIM shall not share the same memory.

User Equipment:

The User Equipment is connected to the E-UTRAN/EPC ISIM-UICC.

8.2.5.4.2 Procedure

a) The UE is switched on.

b) The user shall read the SMS stored on the USIM.

3) After step b) the EFSMS and EFSMSS on the ISIM shall remain unchanged.

c) The UE is switched off

8.2.5.5 Acceptance criteria

1) After b) the correct text of the SMS on the USIM shall be read and be displayed to the user.

2) After step b) the EF_{SMS} record 1 of the USIM shall contains the following values:

Logically: Status byte set to SMS read.
The entire content of the SMS shall be unchanged.

Record 1:

Byte:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex:	01	xx	xx	xx	Xx	xx	xx	xx	xx	xx	xx	xx	…	xx
NOTE:	"xx" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.													

8.2.6 Correct reading of a SM on the ISIM if USIM and ISIM are present

8.2.6.1 Definition and applicability

A SM which is stored but not yet read, is indicated as Status "3" (SMS to be read) on EF_{SMS}. The Terminal may indicate the user this status. After the SMS is read by the user, the status of the SMS shall be changed to "1" (SMS read). This applies to short messages stored on the USIM and to short messages stored on the ISIM.

8.2.6.2 Conformance requirement

A received SM was stored in EF_{SMS} on the ISIM and another SM was stored in EF_{SMS} on the USIM. The user shall be able to read short messages stored on the ISIM. At the time the SMS is read by the user, the status of a received SMS, shall be changed to "1" (SMS read).

- TS 23.038 [3], clause 4.

- TS 23.040 [13];
- TS 31.102 [4], subclauses 4.2.25 and 4.2.28,
- TS 31.103 [32], subclauses 4.2.12 and 4.2.13.

8.2.6.3 Test purpose

1) To verify that the Terminal correctly reads the SMS on the ISIM if the USIM and ISIM are both present.
2) To verify that the Terminal changes the status of a read SMS to "1" (SMS read) of the message read from the ISIM.

8.2.6.4 Method of test

8.2.6.4.1 Initial conditions

The E-UTRAN/EPC ISIM-UICC is used with the following exception:

EF_{UST} (USIM Service Table)

As defined in in clause 4.5.2 with the expection that services n°10 (Short Message Storage) and n°11 (SMS Status Report) are available.

EF_{SMSS} (SMS Status) on the USIM and on the ISIM

Logically: Last used TP-MR not set.
Memory capacity available (flag unset b1="1").

Byte:	B1	B2
Hex:	FF	FF

EF_{SMS} (Short Message Service) on the USIM

Logically: Status byte set to SMS to be read.
A chosen test is written in the text body of the EF_{SMS}. This content shall be different from the content stored in EF_{SMS} in the ISIM.

Record 1:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex	03	xx	xx	xx	Xx	xx	xx	xx	xx	xx	xx	xx	…	xx
NOTE: "xx" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.														

NOTE: "xx" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.

At least 9 records.
Logically: Status byte set to empty
no text is written (Remainder Bytes set to "FF").

Record:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex	00	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	…	FF

EF_{SMS} (Short Message Service) on the ISIM

Logically: Status byte set to SMS to be read.

A chosen test is written in the text body of the EF_{SMS}. This content shall be different from the content stored in EF_{SMS} in the USIM.

Record 1:

Byte:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex:	03	yy	yy	yy	Yy	yy	yy	yy	yy	yy	yy	yy	…	yy
NOTE:	"yy" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.													

NOTE: "yy" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.

At least 9 records.
Logically: Status byte set to empty
no text is written (Remainder Bytes set to "FF").

Record:

Byte:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex:	00	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	…	FF

EF_{SMS} on the USIM and EF_{SMS} on the ISIM shall not share the same memory.

EF_{SMSS} on the USIM and EF_{SMSS} on the ISIM shall not share the same memory.

User Equipment:

The User Equipment is connected to the E-UTRAN/EPC ISIM-UICC.

8.2.6.4.2 Procedure

a) The UE is switched on.

b) The user shall read the SMS stored on the USIM.

c) The UE is switched off

8.2.6.5 Acceptance criteria

1) After b) the correct text of the SMS on the ISIM shall be read and be displayed to the user.

2) After step b) the EF_{SMS} record 1 of the ISIM shall contains the following values:

Logically: Status byte set to SMS read.
The entire content of the SMS shall be unchanged.

Record 1:

Byte:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	…	B176
Hex:	01	yy	yy	yy	yy	yy	yy	yy	yy	yy	yy	yy	…	Yy
NOTE:	"yy" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.													

3) After step b) the EF_{SMS} and EF_{SMSS} on the USIM shall remain unchanged.

8.3 MMS related tests

8.3.1 UE recognising the priority order of MMS Issuer Connectivity Parameters

8.3.1.1 Definition and applicability

An MMS User Agent shall use the MMS related information stored in the USIM, if present, unless otherwise specified by the user. Some of these sets of MMS connectivity parameters are preset by the issuer of the USIM with the first supported set being the default. This information is used to connect to the network for purpose of accessing the MMS Relay/Server.

The MMS connectivity information on the USIM includes preferences for the selection of Interface to Core Network and Bearer parameters. If these are stored on the USIM the MMS-capable UE shall automatically select the Interface to Core Network and Bearer parameters based on their order of precedence defined on the USIM unless otherwise specified by the user.

MMS user preferences information, which is stored on the USIM, shall be used by an MMS User Agent for user assistance in preparation of terminal-originated MMs (e.g. default values for parameters that are often used).

8.3.1.2 Conformance requirement

The Terminal's MMS User Agent shall use the MMS connectivity parameters stored first in the supported parameter sets of EF_{MMSICP} as default parameters to connect to the network for MMS purposes (i.e. sending an User generated MM).

- TS 31.102 [4], subclauses 4.2.69 and 5.3.30;
- TS 23.140 [23], subclause 7.1.14 and Annex F.

MMS user preferences information, which is stored on the USIM, shall be used by an MMS User Agent for user assistance in preparation of terminal-originated MMs.

- TS 31.102 [4], subclauses 4.2.70 and 5.3.31;
- TS 23.140 [23], subclause 7.1.14 and Annex F.

8.3.1.3 Test purpose

1) To verify that the Terminal's MMS User Agent uses the MMS connectivity parameter stored on the USIM to connect to the network for MMS purposes.
2) To verify that the Terminal's MMS User Agent uses the first stored set of supported parameters in EF_{MMSICP} as default.
3) To verify that the Terminal's MMS User Agent uses the MMS user preference information stored on the USIM for user assistance in preparation of terminal-originated MMs.

8.3.1.4 Method of test

8.3.1.4.1 Initial conditions

Four MMS Relays/Servers are available:

MMS Relay/Server 1:

7) MMS Connectivity Parameters
MMS implementation information: "WAP"
MMS Relay/Server
MMS Relay/Server information: "http://mms-operator1.com"
Interface to Core Network and Bearer
Bearer: "GSM-CSD"
Address: "+496998625"
Type of address: "E164"
Speed: "Autobauding"
Call type: "ANALOG_MODEM"
Authentication type: "PAP"
Authentication id: "B2B_OTS1"
Authentication pw: "B2B_password1"
Gateway
Address: "170.187.51.3"
Type of address: "Ipv4"
Port : "9201"
Service: "CO-WSP"
Authentication type: "HTTP BASIC"
Authentication id: "gateway_user1"
Authentication pw: "gateway_password1"

MMS Relay/Server 2:

7) MMS Connectivity Parameters
MMS implementation information: "WAP"
MMS Relay/Server
MMS Relay/Server information: "http://mms-operator1.com"
Interface to Core Network and Bearer
Bearer: "GSM-CSD"
Address: "+496998626"
Type of address: "E164"
Speed: "Autobauding"
Call type: "ANALOG_MODEM"
Authentication type: "PAP"
Authentication id: "B2C_OTS2"
Authentication pw: "B2C_password2"
Gateway
Address: "170.187.51.3"
Type of address: "Ipv4"
Port : "9201"
Service: "CO-WSP"
Authentication type: "HTTP BASIC"
Authentication id: "gateway_user1"
Authentication pw: "gateway_password1"

MMS Relay/Server 3:

7) MMS Connectivity Parameters

MMS implementation information:	"WAP"
MMS Relay/Server	
MMS Relay/Server information:	"http://mms-operator1.com"
Interface to Core Network and Bearer	
Bearer:	"GSM-GPRS"
Address:	"wap.B2B-operator1.com"
Type of address:	"APN"
Call type:	"ANALOG_MODEM"
Delivery of erroneous SDU:	"No"
Residual Bit Error Rate:	"$1*10^{-5}$"
SDU-Error-Ratio:	"$1*10^{-6}$"
Traffic-class:	"Interactive class"
Maximum bit rate for downlink:	"8 kbps"
Authentication type:	"PAP"
Authentication id:	"B2B_OTS1"
Authentication pw:	"B2B_password1"
Gateway	
Address:	"170.187.51.3"
Type of address:	"Ipv4"
Port :	"9201"
Service:	"CO-WSP"
Authentication type:	"HTTP BASIC"
Authentication id:	"gateway_user1"
Authentication pw:	"gateway_password1"

MMS Relay/Server 4:

7) MMS Connectivity Parameters

MMS implementation information:	"WAP"
MMS Relay/Server	
MMS Relay/Server information:	"http://mms-operator1.com"
Interface to Core Network and Bearer	
Bearer:	"GSM-GPRS"
Address:	"wap.B2C-operator1.com"
Type of address:	"APN"
Call type:	"ANALOG_MODEM"
Delivery of erroneous SDU:	"No"
Residual Bit Error Rate:	"$1*10^{-5}$"
SDU-Error-Ratio:	"$1*10^{-6}$"
Traffic-class:	"Interactive class"
Maximum bit rate for downlink:	"8 kbps"
Authentication type:	"PAP"
Authentication id:	"B2C_OTS2"
Authentication pw:	"B2C_password2"
Gateway	
Address:	"170.187.51.3"
Type of address:	"Ipv4"
Port :	"9201"
Service:	"CO-WSP"
Authentication type:	"HTTP BASIC"
Authentication id:	"gateway_user1"
Authentication pw:	"gateway_password1"

The default UICC is used with the following exceptions:

EF_{UST} (USIM Service Table)

Logically: Local Phone Book available
User controlled PLMN selector available
Fixed dialling numbers available
Barred dialling numbers available
The GSM Access available
The Group Identifier level 1 and level 2 not available
SMS available
SMS Status available
Service no. 33 (Packed Switched Domain) shall be set to '1'
Service no. 52 Multimedia Messaging Service available
Service no. 55 MMS User Connectivity Parameters not available

Coding:	B1	B2	B3	B4	B5	B6	B7
Binary	xx1x xx11	x11x xxxx	xxxx 1x00	xxxx x1xx	xxxx xxx1	xxxx xxxx	x0xx 1xxx

EF_{MMSN}

Logically:
MMS Status: Free space
MMS Implementation : "00"
MMS Notification: "FF FF … FF" (251 bytes)
Extension file record number: "FF"

Coding:	B1	B2	B3	B4	B5	…	B254	B255
	00	00	00	FF	FF		FF	FF

EF_{MMSICP}

Logically:
MMS Connectivity Parameters
MMS Implementation
MMS Implementation Information : "WAP"
MMS Relay/Server
MMS Relay/Server Address "http://mms-operator1.com"
1st Interface to Core Network and Bearer
Bearer: "GSM-CSD"
Address: "+496998625"
Type of address: "E164"
Speed: "Autobauding"
Call type: "ANALOG_MODEM"
Authentication type: "PAP"
Authentication id: "B2B_OTS1"
Authentication pw: "B2B_password1"
2nd Interface to Core Network and Bearer
Bearer: "GSM-CSD"
Address: "+496998626"
Type of address: "E164"
Speed: "Autobauding"
Call type: "ANALOG_MODEM"
Authentication type: "PAP"
Authentication id: "B2C_OTS2"
Authentication pw: "B2C_password2"
3rd Interface to Core Network and Bearer
Bearer: "GSM-GPRS"
Address: "wap.B2B-operator1.com"
Type of address: "APN"
Call type: "ANALOG_MODEM"
Delivery of erroneous SDU: "No"
Residual Bit Error Rate: "$1*10^{-5}$"

SDU-Error-Ratio: "1*10^{-6}"
Traffic-class: "Interactive class"
Maximum bit rate for downlink: "8 kbps"
Authentication type: "PAP"
Authentication id: "B2B_OTS1"
Authentication pw: "B2B_password1"

4th Interface to Core Network and Bearer
Bearer: "GSM-GPRS"
Address: "wap.B2C-operator1.com"
Type of address: "APN"
Call type: "ANALOG_MODEM"
Delivery of erroneous SDU: "No"
Residual Bit Error Rate: "1*10^{-5}"
SDU-Error-Ratio: "1*10^{-6}"
Traffic-class: "Interactive class"
Maximum bit rate for downlink: "8 kbps"
Authentication type: "PAP"
Authentication id: "B2C_OTS2"
Authentication pw: "B2C_password2"

Gateway:
Address: "170.187.51.3"
Type of address: "Ipv4"
Port : "9201"
Service: "CO-WSP"
Authentication type: "HTTP BASIC"
Authentication id: "gateway_user1"
Authentication pw: "gateway_password1"

Coding:

AB	82	01	47	80	01	01	81	18	68	74	74
70	3A	2F	2F	6D	6D	73	2E	6F	70	65	72
61	74	6F	72	31	2E	63	6F	6D	82	2F	10
AA	08	2B	34	39	36	39	39	38	36	32	35
00	09	87	25	C5	0A	90	0C	9A	0D	42	32
42	11	4F	54	53	31	00	0E	42	32	42	11
70	61	73	73	77	6F	72	64	31	00	82	2F
10	AA	08	2B	34	39	36	39	39	38	36	32
36	00	09	87	25	C5	0A	90	0C	9A	0D	42
32	43	11	4F	54	53	32	00	0E	42	32	43
11	70	61	73	73	77	6F	72	64	32	00	82
43	10	AB	08	03	77	61	70	0D	42	32	42
2D	6F	70	65	72	61	74	6F	72	31	03	63
6F	6D	00	09	89	0A	90	31	03	37	70	38
06	33	60	36	08	0C	9A	0D	42	32	42	11
4F	54	53	31	00	0E	42	32	42	11	70	61
73	73	77	6F	72	64	31	00	82	43	10	AB
08	03	77	61	70	0D	42	32	43	2D	6F	70
65	72	61	74	6F	72	31	03	63	6F	6D	00
09	89	0A	90	31	03	37	70	38	06	33	60
36	08	0C	9A	0D	42	32	43	11	4F	54	53
32	00	0E	42	32	43	11	70	61	73	73	77
6F	72	64	32	00	83	43	20	31	37	30	2E
31	38	37	2E	35	31	2E	33	00	21	85	23
39	32	30	31	00	24	CB	19	9C	1A	67	61
74	65	77	61	79	11	75	73	65	72	31	00
1B	67	61	74	65	77	61	79	11	70	61	73
73	77	6F	72	64	31	00					

EF_{MMSUP}

Logically:

MMS Implementation
MMS implementation information: "WAP"
MMS User Preference Profile Name: "Greeting cards"
MMS User Information Preference Information
Visibility: "hide"
Delivery report: "yes"
Read-reply: "yes"
Priority: "normal"
Delivery-Time:
Value (absolute): "1-Jan-2003, 12:00:00 AM GMT"
Expiry:
Value (relative): 1104537600 seconds

Coding:	80	01	01	81	0E	47	72	65	65	74	69	6E
	67	20	63	61	72	64	73	82	19	14	80	06
	80	10	80	0F	81	07	07	80	05	00	3E	12
	2F	80	08	06	81	04	41	D5	E8	00		

The UICC is installed into the Terminal and the user has indicated the data stored in EF_{MMSICP} as default.

8.3.1.4.2 Procedure

a) The Terminal is powered on and the PIN shall be entered.

b) When the Terminal is in idle mode the user shall generate an MM using the MMS User Agent on the Terminal with the default MMS connectivity settings provided by the card issuer and the MMS user preference information stored in the card and send it to "+0123456789".

8.3.1.5 Acceptance criteria

1) After step b) the Terminal shall have read the set of supported MMS connectivity parameters stored first in EF_{MMSICP}.

2) After step b) the Terminal shall have sent the MM to "+0123456789" using the MMS connectivity parameters stored first in the supported parameter sets in EF_{MMSICP}.

3) After step b) the Terminal shall have sent the MM to "+0123456789" using the MMS user preference information stored in EF_{MMSUP}.

8.3.2 UE recognising the priority order of MMS User Connectivity Parameters

8.3.2.1 Definition and applicability

An MMS User Agent shall use the MMS related information stored in the USIM, if present, unless otherwise specified by the user. The MMS connectivity parameters determined by the user, with the first supported set being the default, shall be used to connect to the network for purpose of accessing the MMS Relay/Server.

The MMS connectivity information on the USIM includes preferences for the selection of Interface to Core Network and Bearer parameters. If these are stored on the USIM the MMS-capable UE shall automatically select the Interface to Core Network and Bearer parameters based on their order of precedence defined on the USIM unless otherwise specified by the user.

MMS user preferences information, which is stored on the USIM, shall be used by an MMS User Agent for user assistance in preparation of terminal-originated MMs (e.g. default values for parameters that are often used).

8.3.2.2 Conformance requirement

When using the MMS User Connectivity Parameters to connect to the network for MMS purposes (i.e. sending an User generated MM), the Terminal's MMS User Agent shall use the MMS User Connectivity Parameters with the highest priority (as defined by its position in EF_{MMSUCP}) unless otherwise specified by the user.

- TS 31.102 [4], subclauses 4.2.71 and 5.3.32;
- TS 23.140 [23], subclause 7.1.14 and Annex F.

MMS user preferences information, which is stored on the USIM, shall be used by an MMS User Agent for user assistance in preparation of terminal-originated MMs.

- TS 31.102 [4], subclauses 4.2.70 and 5.3.31;
- TS 23.140 [23], subclause 7.1.14 and Annex F.

8.3.2.3 Test purpose

1) To verify that the Terminal's MMS User Agent uses the MMS connectivity parameter stored on the USIM to connect to the network for MMS purposes.
2) To verify that when using the MMS User Connectivity Parameters to connect to the network for MMS purposes the Terminal's MMS User Agent uses the set of supported parameters in EF MMSUCP with the highest priority (as defined by its position in EF_{MMSUCP}).
3) To verify that the Terminal's MMS User Agent uses the MMS user preference information stored on the USIM for user assistance in preparation of terminal-originated MMs.

8.3.2.4 Method of test

8.3.2.4.1 Initial conditions

Four MMS Relays/Servers are available:

MMS Relay/Server 1:

7) MMS Connectivity Parameters

MMS implementation information:	"WAP"
MMS Relay/Server	
MMS Relay/Server information:	"http://mms-operator2.com"
Interface to Core Network and Bearer	
Bearer:	"GSM-CSD"
Address:	"+495251699"
Type of address:	"E164"
Speed:	"Autobauding"
Call type:	"ANALOG_MODEM"
Authentication type:	"PAP"
Authentication id:	"UDO_OTS1"
Authentication pw:	"Udo_password1"
Gateway	
Address:	"170.187.51.4"
Type of address:	"Ipv4"
Port :	"9203"
Service:	"CO-WSP"
Authentication type:	"HTTP BASIC"
Authentication id:	"gateway_user7"
Authentication pw:	"gateway_password7"

MMS Relay/Server 2:

7) MMS Connectivity Parameters

MMS implementation information:	"WAP"
MMS Relay/Server	
MMS Relay/Server information:	"http://mms-operator2.com"
Interface to Core Network and Bearer	
Bearer:	"GSM-CSD"
Address:	"+495251700"
Type of address:	"E164"
Speed:	"Autobauding"
Call type:	"ANALOG_MODEM"
Authentication type:	"PAP"
Authentication id:	"UDO_OTS2"
Authentication pw:	"Udo_password2"
Gateway	
Address:	"170.187.51.4"
Type of address:	"Ipv4"
Port :	"9203"
Service:	"CO-WSP"
Authentication type:	"HTTP BASIC"
Authentication id:	"gateway_user7"
Authentication pw:	"gateway_password7"

MMS Relay/Server 3:

7) MMS Connectivity Parameters

MMS implementation information:	"WAP"
MMS Relay/Server	
MMS Relay/Server information:	"http://mms-operator2.com"
Interface to Core Network and Bearer	
Bearer:	"GSM-GPRS"
Address:	"wap.B2B-operator2.com"
Type of address:	"APN"
Call type:	"ANALOG_MODEM"
Delivery of erroneous SDU:	"No"
Residual Bit Error Rate:	"$1*10^{-5}$"
SDU-Error-Ratio:	"$1*10^{-6}$"
Traffic-class:	"Interactive class"
Maximum bit rate for downlink:	"8 kbps"
Authentication type:	"PAP"
Authentication id:	"UDO_OTS1"
Authentication pw:	"Udo_password1"
Gateway	
Address:	"170.187.51.4"
Type of address:	"Ipv4"
Port :	"9203"
Service:	"CO-WSP"
Authentication type:	"HTTP BASIC"
Authentication id:	"gateway_user7"
Authentication pw:	"gateway_password7"

MMS Relay/Server 4:

7) MMS Connectivity Parameters

MMS implementation information:	"WAP"
MMS Relay/Server	
MMS Relay/Server information:	"http://mms-operator2.com"
Interface to Core Network and Bearer	
Bearer:	"GSM-GPRS"
Address:	"wap.B2C-operator2.com"
Type of address:	"APN"
Call type:	"ANALOG_MODEM"
Delivery of erroneous SDU:	"No"
Residual Bit Error Rate:	"$1*10^{-5}$"
SDU-Error-Ratio:	"$1*10^{-6}$"
Traffic-class:	"Interactive class"
Maximum bit rate for downlink:	"8 kbps"
Authentication type:	"PAP"
Authentication id:	"UDO_OTS2"
Authentication pw:	"Udo_password2"
Gateway	
Address:	"170.187.51.4"
Type of address:	"Ipv4"
Port :	"9203"
Service:	"CO-WSP"
Authentication type:	"HTTP BASIC"
Authentication id:	"gateway_user7"
Authentication pw:	"gateway_password7"

The default UICC is used with the following exceptions:

EF_{UST} (USIM Service Table)

Logically:
- Local Phone Book available
- User controlled PLMN selector available
- Fixed dialling numbers available
- Barred dialling numbers available
- The GSM Access available
- The Group Identifier level 1 and level 2 not available
- SMS available
- SMS Status available
- Service no. 33 (Packed Switched Domain) shall be set to '1'
- Service no. 52 Multimedia Messaging Service available
- Service no. 55 MMS User Connectivity Parameters available

Coding:	B1	B2	B3	B4	B5	B6	B7
Binary	xx1x xx11	x11x xxxx	xxxx 1x00	xxxx x1xx	xxxx xxx1	xxxx xxxx	x1xx 1xxx

EF_{MMSN}

Logically:

MMS Status:	Free space
MMS Implementation :	"00"
MMS Notification:	"FF FF … FF" (251 bytes)
Extension file record number:	"FF"

Coding:	B1	B2	B3	B4	B5	…	B254	B255
	00	00	00	FF	FF		FF	FF

EF_{MMSICP}

Logically: Empty

Coding:	B1	B2	…	Bxx
	FF	FF		FF

EF_{MMSUP}

Logically:

MMS Implementation
MMS implementation information: "WAP"
MMS User Preference Profile Name: "Greeting cards"
MMS User Information Preference Information
Visibility: "hide"
Delivery report: "yes"
Read-reply: "yes"
Priority: "normal"
Delivery-Time:
Value (absolute): "1-Jan-2003, 12:00:00 AM GMT"
Expiry:
Value (relative): 1104537600 seconds

Coding:	80	01	01	81	0E	47	72	65	65	74	69	6E
	67	20	63	61	72	64	73	82	19	14	80	06
	80	10	80	0F	81	07	07	80	05	00	3E	12
	2F	80	08	06	81	04	41	D5	E8	00		

EF_{MMSUCP}

Logically:

MMS Connectivity Parameters

MMS Implementation

MMS Implementation Information :	"WAP"

MMS Relay/Server

MMS Relay/Server Address	"http://mms-operator2.com"

1st Interface to Core Network and Bearer

Bearer:	"GSM-CSD"
Address:	"+495251699"
Type of address:	"E164"
Speed:	"Autobauding"
Call type:	"ANALOG_MODEM"
Authentication type:	"PAP"
Authentication id:	"UDO_OTS1"
Authentication pw:	"Udo_password1"

2nd Interface to Core Network and Bearer

Bearer:	"GSM-CSD"
Address:	"+495251700"
Type of address:	"E164"
Speed:	"Autobauding"
Call type:	"ANALOG_MODEM"
Authentication type:	"PAP"
Authentication id:	"UDO_OTS2"
Authentication pw:	"Udo_password2"

3rd Interface to Core Network and Bearer

Bearer:	"GSM-GPRS"
Address:	"wap.B2B-operator2.com"
Type of address:	"APN"
Call type:	"ANALOG_MODEM"
Delivery of erroneous SDU:	"No"
Residual Bit Error Rate:	"$1*10^{-5}$"
SDU-Error-Ratio:	"$1*10^{-6}$"
Traffic-class:	"Interactive class"
Maximum bit rate for downlink:	"8 kbps"
Authentication type:	"PAP"
Authentication id:	"UDO_OTS1"
Authentication pw:	"Udo_password1"

4th Interface to Core Network and Bearer

Bearer:	"GSM-GPRS"
Address:	"wap.B2C-operator2.com"
Type of address:	"APN"
Call type:	"ANALOG_MODEM"
Delivery of erroneous SDU:	"No"
Residual Bit Error Rate:	"$1*10^{-5}$"
SDU-Error-Ratio:	"$1*10^{-6}$"
Traffic-class:	"Interactive class"
Maximum bit rate for downlink:	"8 kbps"
Authentication type:	"PAP"
Authentication id:	"UDO_OTS2"
Authentication pw:	"Udo_password2"

Gateway:

Address:	"170.187.51.4"
Type of address:	"Ipv4"
Port :	"9203"
Service:	"CO-WSP"
Authentication type:	"HTTP BASIC"
Authentication id:	"gateway_user7"
Authentication pw:	"gateway_password7"

Coding:

AB	82	01	47	80	01	01	81	18	68	74	74
70	3A	2F	2F	6D	6D	73	2E	6F	70	65	72
61	74	6F	72	32	2E	63	6F	6D	82	2F	10
AA	08	2B	34	39	35	32	35	31	36	39	39
00	09	87	25	C5	0A	90	0C	9A	0D	55	44
4F	11	4F	54	53	31	00	0E	55	64	6F	11
70	61	73	73	77	6F	72	64	31	00	82	2F
10	AA	08	2B	34	39	35	32	35	31	37	30
30	00	09	87	25	C5	0A	90	0C	9A	0D	55
44	4F	11	4F	54	53	32	00	0E	55	64	6F
11	70	61	73	73	77	6F	72	64	32	00	82
43	10	AB	08	03	77	61	70	0D	42	32	42
2D	6F	70	65	72	61	74	6F	72	32	03	63
6F	6D	00	09	89	0A	90	31	03	37	70	38
06	33	60	36	08	0C	9A	0D	55	44	4F	11
4F	54	53	31	00	0E	55	64	6F	11	70	61
73	73	77	6F	72	64	31	00	82	43	10	AB
08	03	77	61	70	0D	42	32	43	2D	6F	70
65	72	61	74	6F	72	32	03	63	6F	6D	00
09	89	0A	90	31	03	37	70	38	06	33	60
36	08	0C	9A	0D	55	44	4F	11	4F	54	53
32	00	0E	55	64	6F	11	70	61	73	73	77
6F	72	64	32	00	83	3B	20	31	37	30	2E
31	38	37	2E	35	31	2E	34	00	21	85	23
39	32	30	31	00	24	CB	19	9C	1A	67	61
74	65	77	61	79	11	75	73	65	72	37	00
1B	67	61	74	65	77	61	79	11	70	61	73
73	77	6F	72	64	37	00					

The UICC is installed into the Terminal and the user has indicated the data stored in EF_{MMSUCP}as default.

8.3.2.4.2 Procedure

a) The Terminal is powered on and the PIN shall be entered.

b) When the Terminal is in idle mode the user shall generate an MM using the MMS User Agent on the Terminal with the default MMS User Connectivity Parameters and the MMS user preference information stored in the card and send it to "+0123456789".

8.3.2.5 Acceptance criteria

1) After step b) the Terminal shall have read the first supported set of MMS connectivity parameters stored in EF_{MMSUCP}.

2) After step b) the Terminal shall have sent the MM to "+0123456789" using the MMS User Connectivity Parameter set with the highest priority (as defined by its position in EF_{MMSUCP}), which can be used to access an available MMS Relay/Server.

3) After step b) the Terminal shall have sent the MM to "+0123456789" using the MMS user preference information stored in EF_{MMSUCP}.

8.3.3 UE recognising the priority order of MMS Issuer Connectivity Parameters over the MMS User Connectivity Parameters

8.3.3.1 Definition and applicability

An MMS User Agent shall use the MMS related information stored in the USIM, if present, unless otherwise specified by the user. This information comprises MMS connectivity information, MMS user preferences and MMS notifications.

MMS user preferences information, which is stored on the USIM, shall be used by an MMS User Agent for user assistance in preparation of terminal-originated MMs (e.g. default values for parameters that are often used).

8.3.3.2 Conformance requirement

MMS connectivity information, on the USIM includes a number of sets of MMS connectivity parameters. Some of these sets of MMS connectivity parameters are preset by the issuer of the USIM with the first set being the default. Such default preset MMS connectivity parameter set shall be selected unless otherwise specified by the user.

- TS 31.102 [4], subclauses 4.2.69, 4.7.71, 5.3.30 and 5.3.32;
- TS 23.140 [23], subclause 7.1.14 and Annex F

8.3.3.3 Test purpose

1) To verify that the Terminal's MMS User Agent uses the MMS connectivity parameter stored on the USIM to connect to the network for MMS purposes.
2) To verify that a MMS Issuer Connectivity Parameter set with lower priority (as defined by its position in EF_{MMSICP}) takes precedence over a MMS User Connectivity Parameter set with a higher priority.

8.3.3.4 Method of test

8.3.3.4.1 Initial conditions

Four MMS Relays/Servers are available:

MMS Relay/Server 1:

7) MMS Connectivity Parameters

MMS implementation information:	"WAP"
MMS Relay/Server	
MMS Relay/Server information:	"http://mms-operator3.com"
Interface to Core Network and Bearer	
Bearer:	"GSM-CSD"
Address:	"+495251699"
Type of address:	"E164"
Speed:	"Autobauding"
Call type:	"ANALOG_MODEM"
Authentication type:	"PAP"
Authentication id:	"UDO_OTS1"
Authentication pw:	"Udo_password1"
Gateway	
Address:	"170.187.51.5"
Type of address:	"Ipv4"
Port :	"9201"
Service:	"CO-WSP"
Authentication type:	"HTTP BASIC"
Authentication id:	"gateway_user9"
Authentication pw:	"gateway_password9"

MMS Relay/Server 2:

7) MMS Connectivity Parameters

MMS implementation information:	"WAP"
MMS Relay/Server	
MMS Relay/Server information:	"http://mms-operator3.com"
Interface to Core Network and Bearer	
Bearer:	"GSM-GPRS"
Address:	"wap.B2P-operator3.com"
Type of address:	"APN"
Call type:	"ANALOG_MODEM"
Delivery of erroneous SDU:	"No"
Residual Bit Error Rate:	"$1*10^{-5}$"
SDU-Error-Ratio:	"$1*10^{-6}$"
Traffic-class:	"Interactive class"
Maximum bit rate for downlink:	"8 kbps"
Authentication type:	"PAP"
Authentication id:	"UDO_OTS1"
Authentication pw:	"Udo_password1"
Gateway	
Address:	"170.187.51.5"
Type of address:	"Ipv4"
Port :	"9201"
Service:	"CO-WSP"
Authentication type:	"HTTP BASIC"
Authentication id:	"gateway_user9"
Authentication pw:	"gateway_password9"

MMS Relay/Server 3:

7) MMS Connectivity Parameters

MMS implementation information:	"WAP"
MMS Relay/Server	
MMS Relay/Server information:	"http://mms-operator3.com"
Interface to Core Network and Bearer	
Bearer:	"GSM-CSD"
Address:	"+496998626"
Type of address:	"E164"
Speed:	"Autobauding"
Call type:	"ANALOG_MODEM"
Authentication type:	"PAP"
Authentication id:	"B2C_OTS2"
Authentication pw:	"B2C_password2"
Gateway	
Address:	"170.187.51.5"
Type of address:	"Ipv4"
Port :	"9201"
Service:	"CO-WSP"
Authentication type:	"HTTP BASIC"
Authentication id:	"gateway_user9"
Authentication pw:	"gateway_password9"

MMS Relay/Server 4:

7) MMS Connectivity Parameters

MMS implementation information:	"WAP"
MMS Relay/Server	
MMS Relay/Server information:	"http://mms-operator3.com"
Interface to Core Network and Bearer	
Bearer:	"GSM-GPRS"
Address:	"wap.B2C-operator3.com"
Type of address:	"APN"
Call type:	"ANALOG_MODEM"
Delivery of erroneous SDU:	"No"
Residual Bit Error Rate:	"$1*10^{-5}$"
SDU-Error-Ratio:	"$1*10^{-6}$"
Traffic-class:	"Interactive class"
Maximum bit rate for downlink:	"8 kbps"
Authentication type:	"PAP"
Authentication id:	"B2C_OTS2"
Authentication pw:	"B2C_password2"
Gateway	
Address:	"170.187.51.5"
Type of address:	"Ipv4"
Port :	"9201"
Service:	"CO-WSP"
Authentication type:	"HTTP BASIC"
Authentication id:	"gateway_user9"
Authentication pw:	"gateway_password9"

The default UICC is used with the following exceptions:

EF_{UST} (USIM Service Table)

Logically:
- Local Phone Book available
- User controlled PLMN selector available
- Fixed dialling numbers available
- Barred dialling numbers available
- The GSM Access available
- The Group Identifier level 1 and level 2 not available
- SMS available
- SMS Status available
- Service no. 33 (Packed Switched Domain) shall be set to '1'
- Service no. 52 Multimedia Messaging Service available
- Service no. 55 MMS User Connectivity Parameters available

Coding:	B1	B2	B3	B4	B5	B6	B7
Binary	xx1x xx11	x11x xxxx	xxxx 1x00	xxxx x1xx	xxxx xxx1	xxxx xxxx	x1xx 1xxx

EF_{MMSN}

Logically:

MMS Status:	Free space
MMS Implementation :	"00"
MMS Notification:	"FF FF … FF" (251 bytes)
Extension file record number:	"FF"

Coding:	B1	B2	B3	B4	B5	…	B254	B255
	00	00	00	FF	FF		FF	FF

EF_{MMSICP}

Logically:

MMS Connectivity Parameters

MMS Implementation

MMS Implementation Information :	"WAP"

MMS Relay/Server

MMS Relay/Server Address	"http://mms-operator3.com"

1st Interface to Core Network and Bearer

Bearer:	"GSM-CSD"
Address:	"+496998625"
Type of address:	"E164"
Speed:	"Autobauding"
Call type:	"ANALOG_MODEM"
Authentication type:	"PAP"
Authentication id:	"B2B_OTS1"
Authentication pw:	"B2B_password1"

2nd Interface to Core Network and Bearer

Bearer:	"GSM-CSD"
Address:	"+496998626"
Type of address:	"E164"
Speed:	"Autobauding"
Call type:	"ANALOG_MODEM"
Authentication type:	"PAP"
Authentication id:	"B2C_OTS2"
Authentication pw:	"B2C_password2"

3rd Interface to Core Network and Bearer

Bearer:	"GSM-GPRS"
Address:	"wap.B2B-operator3.com"
Type of address:	"APN"
Call type:	"ANALOG_MODEM"
Delivery of erroneous SDU:	"No"
Residual Bit Error Rate:	"$1*10^{-5}$"
SDU-Error-Ratio:	"$1*10^{-6}$"
Traffic-class:	"Interactive class"
Maximum bit rate for downlink:	"8 kbps"
Authentication type:	"PAP"
Authentication id:	"B2B_OTS1"
Authentication pw:	"B2B_password1"

4th Interface to Core Network and Bearer

Bearer:	"GSM-GPRS"
Address:	"wap.B2C-operator3.com"
Type of address:	"APN"
Call type:	"ANALOG_MODEM"
Delivery of erroneous SDU:	"No"
Residual Bit Error Rate:	"$1*10^{-5}$"
SDU-Error-Ratio:	"$1*10^{-6}$"
Traffic-class:	"Interactive class"
Maximum bit rate for downlink:	"8 kbps"
Authentication type:	"PAP"
Authentication id:	"B2C_OTS2"
Authentication pw:	"B2C_password2"

Gateway:

Address:	"170.187.51.5"
Type of address:	"Ipv4"
Port :	"9201"
Service:	"CO-WSP"
Authentication type:	"HTTP BASIC"
Authentication id:	"gateway_user9"
Authentication pw:	"gateway_password9"

Coding:

AB	82	01	47	80	01	01	81	18	68	74	74
70	3A	2F	2F	6D	6D	73	2E	6F	70	65	72
61	74	6F	72	33	2E	63	6F	6D	82	2F	10
AA	08	2B	34	39	36	39	39	38	36	32	35
00	09	87	25	C5	0A	90	0C	9A	0D	42	32
42	11	4F	54	53	31	00	0E	42	32	42	11
70	61	73	73	77	6F	72	64	31	00	82	2F
10	AA	08	2B	34	39	36	39	39	38	36	32
36	00	09	87	25	C5	0A	90	0C	9A	0D	42
32	43	11	4F	54	53	32	00	0E	42	32	43
11	70	61	73	73	77	6F	72	64	32	00	82
43	10	AB	08	03	77	61	70	0D	42	32	42
2D	6F	70	65	72	61	74	6F	72	33	03	63
6F	6D	00	09	89	0A	90	31	03	37	70	38
06	33	60	36	08	0C	9A	0D	42	32	42	11
4F	54	53	31	00	0E	42	32	42	11	70	61
73	73	77	6F	72	64	31	00	82	43	10	AB
08	03	77	61	70	0D	42	32	43	2D	6F	70
65	72	61	74	6F	72	33	03	63	6F	6D	00
09	89	0A	90	31	03	37	70	38	06	33	60
36	08	0C	9A	0D	42	32	43	11	4F	54	53
32	00	0E	42	32	43	11	70	61	73	73	77
6F	72	64	32	00	83	3B	20	31	37	30	2E
31	38	37	2E	35	31	2E	35	00	21	85	23
39	32	30	31	00	24	CB	19	9C	1A	67	61
74	65	77	61	79	11	75	73	65	72	39	00
1B	67	61	74	65	77	61	79	11	70	61	73
73	77	6F	72	64	39	00					

EF_{MMSUP}

Logically:

MMS Implementation
MMS implementation information: "WAP"
MMS User Preference Profile Name: "Greeting cards"
MMS User Information Preference Information
Visibility: "hide"
Delivery report: "yes"
Read-reply: "yes"
Priority: "normal"
Delivery-Time:
Value (absolute): "1-Jan-2003, 12:00:00 AM GMT"
Expiry:
Value (relative): 1104537600 seconds

Coding:

80	01	01	81	0E	47	72	65	65	74	69	6E
67	20	63	61	72	64	73	82	19	14	80	06
80	10	80	0F	81	07	07	80	05	00	3E	12
2F	80	08	06	81	04	41	D5	E8	00		

EF_{MMSUCP}

Logically:

MMS Connectivity Parameters

MMS Implementation

MMS Implementation Information :	"WAP"

MMS Relay/Server

MMS Relay/Server Address	"http://mms-operator3.com"

1st Interface to Core Network and Bearer

Bearer:	"GSM-CSD"
Address:	"+495251699"
Type of address:	"E164"
Speed:	"Autobauding"
Call type:	"ANALOG_MODEM"
Authentication type:	"PAP"
Authentication id:	"UDO_OTS1"
Authentication pw:	"Udo_password1"

2nd Interface to Core Network and Bearer

Bearer:	"GSM-CSD"
Address:	"+495251700"
Type of address:	"E164"
Speed:	"Autobauding"
Call type:	"ANALOG_MODEM"
Authentication type:	"PAP"
Authentication id:	"UDO_OTS2"
Authentication pw:	"Udo_password2"

3rd Interface to Core Network and Bearer

Bearer:	"GSM-GPRS"
Address:	"wap.B2P-operator3.com"
Type of address:	"APN"
Call type:	"ANALOG_MODEM"
Delivery of erroneous SDU:	"No"
Residual Bit Error Rate:	"$1*10^{-5}$"
SDU-Error-Ratio:	"$1*10^{-6}$"
Traffic-class:	"Interactive class"
Maximum bit rate for downlink:	"8 kbps"
Authentication type:	"PAP"
Authentication id:	"UDO_OTS1"
Authentication pw:	"Udo_password1"

4th Interface to Core Network and Bearer

Bearer:	"GSM-GPRS"
Address:	"wap.B2C-operator3.com"
Type of address:	"APN"
Call type:	"ANALOG_MODEM"
Delivery of erroneous SDU:	"No"
Residual Bit Error Rate:	"$1*10^{-5}$"
SDU-Error-Ratio:	"$1*10^{-6}$"
Traffic-class:	"Interactive class"
Maximum bit rate for downlink:	"8 kbps"
Authentication type:	"PAP"
Authentication id:	"UDO_OTS2"
Authentication pw:	"Udo_password2"

Gateway:

Address:	"170.187.51.5"
Type of address:	"Ipv4"
Port :	"9201"
Service:	"CO-WSP"
Authentication type:	"HTTP BASIC"
Authentication id:	"gateway_user9"
Authentication pw:	"gateway_password9"

Coding:

AB	82	01	47	80	01	01	81	18	68	74	74
70	3A	2F	2F	6D	6D	73	2D	6F	70	65	72
61	74	6F	72	33	2E	63	6F	6D	82	2F	10
AA	08	2B	34	39	35	32	35	31	36	39	39
00	09	87	25	C5	0A	90	0C	9A	0D	55	44
4F	11	4F	54	53	31	00	0E	55	64	6F	11
70	61	73	73	77	6F	72	64	31	00	82	2F
10	AA	08	2B	34	39	35	32	35	31	37	30
30	00	09	87	25	C5	0A	90	0C	9A	0D	55
44	4F	11	4F	54	53	32	00	0E	55	64	6F
11	70	61	73	73	77	6F	72	64	32	00	82
43	10	AB	08	03	77	61	70	0D	42	32	50
2D	6F	70	65	72	61	74	6F	72	33	03	63
6F	6D	00	09	89	0A	90	31	03	37	70	38
06	33	60	36	08	0C	9A	0D	55	44	4F	11
4F	54	53	31	00	0E	55	64	6F	11	70	61
73	73	77	6F	72	64	31	00	82	43	10	AB
08	03	77	61	70	0D	42	32	43	2D	6F	70
65	72	61	74	6F	72	33	03	63	6F	6D	00
09	89	0A	90	31	03	37	70	38	06	33	60
36	08	0C	9A	0D	55	44	4F	11	4F	54	53
32	00	0E	55	64	6F	11	70	61	73	73	77
6F	72	64	32	00	83	3C	20	31	37	30	2E
31	38	37	2E	35	31	2E	35	00	21	85	23
39	32	30	31	00	24	CB	19	9C	1A	67	61
74	65	77	61	79	11	75	73	65	72	39	00
1B	67	61	74	65	77	61	79	11	70	61	73
73	77	6F	72	64	39	00					

The UICC is installed into the Terminal and the user hasn't specified a default MMS connectivity parameter set.

8.3.3.4.2 Procedure

a) The Terminal is powered on and the PIN shall be entered.

b) When the Terminal is in idle mode the user shall generate an MM using the MMS User Agent on the Terminal with the default MMS connectivity parameter set and send it to "+0123456789". If no MMS Relay/Server is available for this parameter set, the next MMS connectivity parameter set offered by the MMS User Agent shall be used to send the MM.

8.3.3.5 Acceptance criteria

After step b) the Terminal shall have sent the MM to "+0123456789" using the first supported MMS connectivity parameter set, which can be used to access an available MMS Relay/Server and is stored in EF_{MMSICP}.

8.3.4 Usage of MMS notification

8.3.4.1 Definition and applicability

An MMS User Agent shall use the MMS related information stored in the USIM, if present, unless otherwise specified by the user. This information comprises MMS connectivity information, MMS user preferences and MMS notifications. MMS notifications should be stored on the USIM together with an associated status by a MMS User Agent according to TS 23.140 [23].

8.3.4.2 Conformance requirement

A Terminal supporting MMS notification storage on the USIM shall store MMS notifications together with an associated status on the USIM.

- TS 31.102 [4], subclauses 4.2.67 and 5.3.29;
- TS 23.140 [23], subclauses 7.1.12, 7.1.14, 8.1.4 and Annex F.

8.3.4.3 Test purpose

To verify that the Terminal stores and updates MMS notifications with the associated status on the USIM correctly.

8.3.4.4 Method of test

8.3.4.4.1 Initial conditions

Two MMS Relays/Servers are available:

MMS Relay/Server 1:

MMS Connectivity Parameters
- MMS implementation information: "WAP"

MMS Relay/Server
- MMS Relay/Server information: "http://mms-operator1.com"

Interface to Core Network and Bearer
- Bearer: "GSM-CSD"
- Address: "+496998625"
- Type of address: "E164"
- Speed: "Autobauding"
- Call type: "ANALOG_MODEM"
- Authentication type: "PAP"
- Authentication id: "B2B_OTS1"
- Authentication pw: "B2B_password1"

Gateway
- Address: "170.187.51.3"
- Type of address: "Ipv4"
- Port: "9201"
- Service: "CO-WSP"
- Authentication type: "HTTP BASIC"
- Authentication id: "gateway_user1"
- Authentication pw: "gateway_password1"

MMS Relay/Server 2:

7) MMS Connectivity Parameters

MMS implementation information:	"WAP"
MMS Relay/Server	
MMS Relay/Server information:	"http://mms-operator1.com"
Interface to Core Network and Bearer	
Bearer:	"GSM-GPRS"
Address:	"wap.B2B-operator1.com"
Type of address:	"APN"
Call type:	"ANALOG_MODEM"
Delivery of erroneous SDU:	"No"
Residual Bit Error Rate:	"1*10^{-5}"
SDU-Error-Ratio:	"1*10^{-6}"
Traffic-class:	"Interactive class"
Maximum bit rate for downlink:	"8 kbps"
Authentication type:	"PAP"
Authentication id:	"B2B_OTS1"
Authentication pw:	"B2B_password1"
Gateway	
Address:	"170.187.51.3"
Type of address:	"Ipv4"
Port:	"9201"
Service:	"CO-WSP"
Authentication type:	"HTTP BASIC"
Authentication id:	"gateway_user1"
Authentication pw:	"gateway_password1"

The default UICC is used with the following exceptions:

EF_{UST} (USIM Service Table)

Logically: Local Phone Book available
User controlled PLMN selector available
Fixed dialling numbers available
Barred dialling numbers available
The GSM Access available
The Group Identifier level 1 and level 2 not available
SMS available
SMS Status available
Service no. 33 (Packed Switched Domain) shall be set to '1'
Service no. 52 Multimedia Messaging Service available
Service no. 53 Extension 8 available
Service no. 55 MMS User Connectivity Parameters not available

Coding:	B1	B2	B3	B4	B5	B6	B7
Binary	xx1x xx11	x11x xxxx	xxxx 1x00	xxxx x1xx	xxxx xxx1	xxxx xxxx	x0x1 1xxx

EF_{MMSN}

Logically:

MMS Status:	Free space
MMS Implementation :	"00"
MMS Notification:	"FF FF … FF" (251 bytes)
Extension file record number:	"FF"

Coding:	B1	B2	B3	B4	B5	…	B254	B255
	00	00	00	FF	FF		FF	FF

EF_{MMSUP}

Logically:

MMS Implementation
MMS implementation information: "WAP"
MMS User Preference Profile Name: "Greeting cards"
MMS User Information Preference Information
Visibility: "hide"
Delivery report: "yes"
Read-reply: "yes"
Priority: "normal"
Delivery-Time:
Value (absolute): "1-Jan-2003, 12:00:00 AM GMT"
Expiry:
Value (relative): 1104537600 seconds

Coding:	80	01	01	81	0E	47	72	65	65	74	69	6E
	67	20	63	61	72	64	73	82	19	14	80	06
	80	10	80	0F	81	07	07	80	05	00	3E	12
	2F	80	08	06	81	04	41	D5	E8	00		

EF_{MMSICP}

Logically:
MMS Connectivity Parameters
MMS Implementation
MMS Implementation Information : "WAP"
MMS Relay/Server
MMS Relay/Server Address "http://mms-operator1.com"
1st Interface to Core Network and Bearer
Bearer: "GSM-CSD"
Address: "+496998625"
Type of address: "E164"
Speed: "Autobauding"
Call type: "ANALOG_MODEM"
Authentication type: "PAP"
Authentication id: "B2B_OTS1"
Authentication pw: "B2B_password1"
2nd Interface to Core Network and Bearer
Bearer: "GSM-CSD"
Address: "+496998626"
Type of address: "E164"
Speed: "Autobauding"
Call type: "ANALOG_MODEM"
Authentication type: "PAP"
Authentication id: "B2C_OTS2"
Authentication pw: "B2C_password2"
3rd Interface to Core Network and Bearer
Bearer: "GSM-GPRS"
Address: "wap.B2B-operator1.com"
Type of address: "APN"
Call type: "ANALOG_MODEM"
Delivery of erroneous SDU: "No"
Residual Bit Error Rate: "$1*10^{-5}$"

SDU-Error-Ratio: "1*10^{-6}"
Traffic-class: "Interactive class"
Maximum bit rate for downlink: "8 kbps"
Authentication type: "PAP"
Authentication id: "B2B_OTS1"
Authentication pw: "B2B_password1"

4th Interface to Core Network and Bearer
Bearer: "GSM-GPRS"
Address: "wap.B2C-operator1.com"
Type of address: "APN"
Call type: "ANALOG_MODEM"
Delivery of erroneous SDU: "No"
Residual Bit Error Rate: "1*10^{-5}"
SDU-Error-Ratio: "1*10^{-6}"
Traffic-class: "Interactive class"
Maximum bit rate for downlink: "8 kbps"
Authentication type: "PAP"
Authentication id: "B2C_OTS2"
Authentication pw: "B2C_password2"

Gateway:
Address: "170.187.51.3"
Type of address: "Ipv4"
Port: "9201"
Service: "CO-WSP"
Authentication type: "HTTP BASIC"
Authentication id: "gateway_user1"
Authentication pw: "gateway_password1"

Coding:

AB	82	01	47	80	01	01	81	18	68	74	74
70	3A	2F	2F	6D	6D	73	2E	6F	70	65	72
61	74	6F	72	31	2E	63	6F	6D	82	2F	10
AA	08	2B	34	39	36	39	39	38	36	32	35
00	09	87	25	C5	0A	90	0C	9A	0D	42	32
42	11	4F	54	53	31	00	0E	42	32	42	11
70	61	73	73	77	6F	72	64	31	00	82	2F
10	AA	08	2B	34	39	36	39	39	38	36	32
36	00	09	87	25	C5	0A	90	0C	9A	0D	42
32	43	11	4F	54	53	32	00	0E	42	32	43
11	70	61	73	73	77	6F	72	64	32	00	82
43	10	AB	08	03	77	61	70	0D	42	32	42
2D	6F	70	65	72	61	74	6F	72	31	03	63
6F	6D	00	09	89	0A	90	31	03	37	70	38
06	33	60	36	08	0C	9A	0D	42	32	42	11
4F	54	53	31	00	0E	42	32	42	11	70	61
73	73	77	6F	72	64	31	00	82	43	10	AB
08	03	77	61	70	0D	42	32	43	2D	6F	70
65	72	61	74	6F	72	31	03	63	6F	6D	00
09	89	0A	90	31	03	37	70	38	06	33	60
36	08	0C	9A	0D	42	32	43	11	4F	54	53
32	00	0E	42	32	43	11	70	61	73	73	77
6F	72	64	32	00	83	3C	20	31	37	30	2E
31	38	37	2E	35	31	2E	33	00	21	85	23
39	32	30	31	00	24	CB	19	9C	1A	67	61
74	65	77	61	79	11	75	73	65	72	31	00
1B	67	61	74	65	77	61	79	11	70	61	73
73	77	6F	72	64	31	00					

EF_{EXT8}

Logically:
At least 10 records.
Record 1 to 10: Free space with 253 bytes for extension data

Record 1:

Coding:	B1	B2	B3	B4	…	…	B255
Hex	00	FF	FF	FF			FF

The UICC is installed into the Terminal and the user hasn't specified a default MMS connectivity parameter set.

8.3.4.4.2 Procedure

a) The terminal is powered on and the PIN shall be entered.

b) When the terminal is in idle mode a MM shall be sent to the terminal via the MMS Relay/Server 1 or 2, dependent on the bearer supported by the terminal. This MMS Relay/Server shall then generate a notification to the Terminal's MMS User Agent. With the MM notification the MMS User Agent shall receive a message reference that can be used for retrieving the MM from this MMS Relay/Server.

The MM shall result in a MMS notification with the following predefined values:

X-Mms Message Type:	"m-notification-ind" (0x82)
X-Mms-Transaction-ID:	"01"
X-Mms-MMS-Version:	"1.0"
From:	not present (hidden)
Subject:	"MM for you"
X-Mms-Content-Location:	"http://mms-operator1/MMBox/ID-007-12345678"

c) The user shall read the MMS notification stored on the USIM.

d) The user shall retrieve the MM stored on the MMS Relay/Server used in step b).

e) The user shall forward the MM to "+0123456789" using the default MMS Issuer Connectivity Parameters stored on the USIM.

f) A MM shall be sent to the terminal via the same MMS Relay/Server as in step b). This MMS Relay/Server shall then generate a notification to the Terminal's MMS User Agent. With the MM notification the MMS User Agent shall receive a message reference that can be used for retrieving the MM from this MMS Relay/Server.

The MM shall result in a MMS notification with the following predefined values:

X-Mms Message Type:	"m-notification-ind" (0x82)
X-Mms-Transaction-ID:	"02"
X-Mms-MMS-Version:	"1.0"
From:	"+0987123654"
Subject:	"Urgent MM"
X-Mms-Content-Location:	"http://mms-operator1/MMBox/ID-007-02468024"

g) The user shall read the MMS notification stored on the USIM.

h) The user shall reject the MM stored on the MMS Relay/Server used in step b).

8.3.4.5 Acceptance criteria

1) After step b) the MMS User Agent on the terminal shall have stored the MMS notification on the USIM with the values defined in step b) of 8.4.4.4.2, the associated status shall have been set to "Used space, notification not read, MM not retrieved" and the MMS User Agent shall indicate to the user that a MMS notification has been received.

2) After step c) the status of the MMS notification stored on the USIM shall have been set to "used space, notification read, MM not retrieved".

3) After step d) the MMS user agent shall have retrieved the MM from the MMS Relay/Server 1 and the status of the MMS notification stored on the USIM shall have either been set to "used space, notification read, MM retrieved" or the MMS notification shall have been deleted and the associated shall have been set to "Free space".

4) After step e) the terminal shall have read the set of MMS Issuer Connectivity Parameters stored first in EF_{MMSICP} and shall have forward the MM to "+0123456789" using the MMS Relay/Server 1. The MMS notification shall have either been set to "used space, notification read, MM forwarded" or the MMS notification shall have been deleted and the associated shall have been set to "Free space".

5) After step f) the MMS User Agent on the terminal shall have stored the MMS notification on the USIM with the values defined in step f) of 8.4.4.4.2, the associated status shall have been set to "Used space, notification not read, MM not retrieved" and the MMS User Agent shall indicate to the user that a MMS notification has been received.

6) After step g) the status of the MMS notification stored on the USIM shall have been set to "used space, notification read, MM not retrieved".

7) After step h) the MMS user agent shall have not retrieved the MM from the MMS Relay/Server 1 and the status of the MMS notification stored on the USIM shall have either been set to "used space, notification read, MM rejected" or the MMS notification shall have been deleted and the associated shall have been set to "Free space".

8.4 UICC presence detection

8.4.1 Definition and applicability

To ensure that the UICC has not been removed during a card session, the Terminal sends in case of inactivity on the UICC-Terminal interface, at frequent intervals, a STATUS command during each call.

This procedure shall be used in addition to a mechanical or other devices used to detect the removal of a UICC.

8.4.2 Conformance requirement

A STATUS command shall be issued within all 30 second periods of inactivity on the UICC-Terminal interface during a call. Inactivity in this case is defined as starting at the end of the last communication or the last issued STATUS command. If no response data is received to this STATUS command, then the call shall be terminated as soon as possible but at least within 5s after the STATUS command has been sent. If the DF indicated in response to a STATUS command is not the same as that which was indicated in the previous response, or accessed by the previous command, then the call shall be terminated as soon as possible but at least within 5 seconds after the response data has been received.

- TS 31.102 [4], subclauses 5.1.9

- ETSI TS 102 221 [5], clause 14.5.2.

8.4.3 Test purpose

1) To verify that there are no periods of inactivity on the UICC-Terminal interface greater than 30 seconds during a call.

2) To verify that the terminal terminates a call within 5 s at the latest after having received an invalid response to the STATUS command.

8.4.4 Method of test

8.4.4.1 Initial conditions

The terminal shall be connected to the UICC simulator. All elementary files shall be coded as default.

8.4.4.2 Procedure

a) A call shall be set up using the generic call setup.

b) The UICC simulator shall monitor the time of periods of inactivity on the UICC-Terminal interface.

c) After 3 minutes, the call shall be cleared.

d) A call shall be set up using the generic call setup.

e) After one minute after the call was successfully set up, the UICC simulator shall respond to a STATUS command with the response data indicating a DF different from the current DF.

8.4.5 Acceptance criteria

1) During step b), the time of periods of inactivity on the UICC-Terminal interface shall not be longer than 30 seconds.

2) After step e), the Terminal shall terminate the call within 5 s at the latest after having received the wrong response to the STATUS command.

8.5 UICC presence detection when connected to E-UTRAN/EPC

8.5.1 Definition and applicability

To ensure that the UICC has not been removed during a card session, the Terminal sends in case of inactivity on the UICC-Terminal interface, at frequent intervals, a STATUS command during each call or active PDP context.

8.5.2 Conformance requirement

A STATUS command shall be issued within all 30 second periods of inactivity on the UICC-Terminal interface during an active PDP context. Inactivity in this case is defined as starting at the end of the last communication or the last issued STATUS command. If no response data is received to this STATUS command, then the active PDP context shall be terminated as soon as possible but at least within 5s after the STATUS command has been sent. If the DF indicated in response to a STATUS command is not the same as that which was indicated in the previous response, or accessed by the previous command, then the active PDP context shall be terminated as soon as possible but at least within 5 seconds after the response data has been received. .

There is 1:1 mapping between one PDP context and one EPS Bearer.

- TS 31.102 [4], subclauses 5.1.9
- ETSI TS 102 221 [5], clause 14.5.2.
- TS 23.060 [25], subclause 9.2.1A.

8.5.3 Test purpose

1) To verify that there are no periods of inactivity on the UICC-Terminal interface greater than 30 seconds during an active PDP context.

2) To verify that the terminal terminates the default EPS Bearer within 5 s at the latest after having received an invalid response to the STATUS command.

8.5.4 Method of test

8.5.4.1 Initial conditions

The terminal is connected to the USIM Simulator and the E-USS.

The default E-UTRAN UICC is used.

8.5.4.2 Procedure

a) The terminal is switched on, performs the Attach procedure to the E-USS and establishes the default EPS bearer.

b) The UICC simulator shall monitor the time of periods of inactivity on the UICC-Terminal interface.

c) Step b) shall be performed for 3 minutes.

d) After one minute after the end of step c), the UICC simulator shall respond to a STATUS command with the response data indicating a DF different from the current DF.

8.5.5 Acceptance criteria

1) During step c), the time of periods of inactivity on the UICC-Terminal interface shall not be longer than 30 seconds.

2) After step d), the Terminal shall terminate the default EPS bearer within 5 s at the latest after having received the wrong response to the STATUS command.

9 USIM service handling

9.1 Access Point Name Control List handling

9.1.1 Access Point Name Control List handling for terminals supporting ACL

9.1.1.1 Definition and applicability

This EF_{ACL} contains the list of allowed APNs (Access Point Names).When the APN Control List service is enabled, the ME shall check that the entire APN of any PDP context is listed in EF_{ACL} before requesting this PDP context activation from the network. If the APN is not present in EF_{ACL}, the ME shall not request the corresponding PDP context activation from the network.

9.1.1.2 Conformance requirement

The terminal shall support the APN Control List service as defined in TS 31.102 [4], subclauses 5.1.1.2 and 5.3.14.

Reference:

- TS 31.102 [4], subclauses 4.2.8, 4.2.48, 5.1.1.2 and 5.3.14;
- TS 23.060 [25], subclause 9.2.

9.1.1.3 Test purpose

1) To verify that the terminal takes into account the status of the APN Control List service as indicated in EF_{UST} and EF_{EST}.

2) To verify that the terminal checks that the entire APN of any PDP context is listed in EF_{ACL} before requesting this PDP context activation from the network if the ACL service is enabled.

3) To verify that the terminal does not request the corresponding PDP context activation from the network if the ACL service is enabled and the APN is not present in EF_{ACL}.

9.1.1.4 Method of test

9.1.1.4.1 Initial conditions

The terminal is connected to the USIM Simulator and the (U)SS.

The default USIM is used with the following exceptions:

The APN Control List (ACL) shall be allocated and activated in the USIM Service Table and enabled in the Enabled Service Table.

EF_{ACL} shall be present with the following values:

EF_{ACL} (Access Point Control List)

Logically: Number of available bytes: 64
Number of APNs: 3
1st APN: test.test
2nd APN: 3gpp.test
3rd APN: 2gpp.test

Byte:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Coding:	03	DD	0A	04	74	65	73	74	04	74	65	73
	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24
	74	DD	0A	04	33	67	70	70	04	74	65	73
	B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36
	74	DD	0A	04	32	67	70	70	04	74	65	73
	B37	B38	…	B64								
	74	FF	…	FF								

9.1.1.4.2 Procedure

a) The terminal is switched on and the USIM application shall be activated.

b) The user shall request a PDP context activation to "1gpp.test".

c) The user shall request a PDP context activation to "3gpp.test".

d) The user shall deactivate the PDP context.

e) The user shall disable the APN Control List service. When prompted to enter PIN2, the user shall present the correct PIN2 value.

f) The user shall request a PDP context activation to "1gpp.test".

g) The user shall deactivate the PDP context and shall switch the terminal off and then switch on again.

h) The user shall enable the APN Control List service. When prompted to enter PIN2, the user shall present the correct PIN2 value.

i) The user shall request a PDP context activation to "1ppp.net".

j) The terminal is switched off and on.

k) The user shall add the APN "1ppp.net" to the APN Control List. When prompted to enter PIN2, the user shall present the correct PIN2 value.

l) The user shall request a PDP context activation to "1ppp.net".

m) The user shall deactivate the PDP context and switch off the terminal.

9.1.1.5 Acceptance criteria

1) After step a) the terminal shall have activated the USIM application, shall have read the status of the ACL service in EF_{UST} and EF_{EST} and be in updated idle mode on the (U)SS.

2) The terminal shall have not requested a PDP context activation in step b).

3) After step c) the PDP context shall have been activated.

4) After step d) the PDP context shall have been deactivated.

5) After step e) the APN Control List service shall have been set to disabled in EF_{EST}.

6) After step f) the PDP context shall have been activated.

7) After step g) the PDP context shall have been deactivated.

8) After step h) the APN Control List service shall have been set to enabled in EF_{EST}.

9) The terminal shall not have requested a PDP context activation in step i).

10) After step k) the APN "1ppp.net" shall have been added to the APN Control List in EF_{ACL}.

11) After step l) the PDP context shall have been activated.

9.1.2 Network provided APN handling for terminals supporting ACL

9.1.2.1 Definition and applicability

This EF_{ACL} contains the list of allowed APNs (Access Point Names).When the APN Control List service is enabled, the ME shall check that the entire APN of any PDP context is listed in EF_{ACL} before requesting this PDP context activation from the network. If the APN is not present in EF_{ACL}, the ME shall not request the corresponding PDP context activation from the network.

In the case that the APN Control List is enabled and no APN is indicated in the PDP context request, indicating that a network provided APN is to be used, then the ME shall only request the PDP context activation if "network provided APN" is contained within EF_{ACL}.

9.1.2.2 Conformance requirement

The terminal shall support the APN Control List service as defined in TS 31.102 [4], subclauses 5.1.1.2 and 5.3.14.

Reference:

- TS 31.102 [4], subclauses 4.2.8, 4.2.48, 5.1.1.2 and 5.3.14;
- TS 23.060 [25], subclause 9.2.

9.1.2.3 Test purpose

1) To verify that if ACL is enabled and if no APN is indicated in the PDP context the terminal request the PDP context activation only if "network provided APN" is contained within EF_{ACL}.

2) To verify that the user is able to set an APN in EF_{ACL} entry to the value "network provided APN".

3) To verify that the minimum set of APN entries in EF_{ACL} is ensured when the user deletes APN entries.

9.1.2.4 Method of test

9.1.2.4.1 Initial conditions

The terminal is connected to the USIM Simulator and the (U)SS.

The default USIM is used with the following exceptions:

The APN Control List (ACL) shall be allocated and activated in the USIM Service Table and enabled in the Enabled Service Table.

EF_{ACL} shall be present with the following values:

EF_{ACL} (Access Point Control List)

Logically: Number of available bytes: 64
Number of APNs: 3
1st APN: test.test
2nd APN: 3gpp.test
3rd APN: 2gpp.test

Byte:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Coding:	03	DD	0A	04	74	65	73	74	04	74	65	73
	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24
	74	DD	0A	04	33	67	70	70	04	74	65	73
	B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36
	74	DD	0A	04	32	67	70	70	04	74	65	73
	B37	B38	…	B64								
	74	FF	…	FF								

9.1.2.4.2 Procedure

a) The terminal is switched on and the USIM application shall be activated.

b) The user shall add "network provided APN" to the APN Control List in EF_{ACL} by using an MMI dependent option in the terminal. When prompted to enter PIN2, the user shall present the correct PIN2 value.

c) The user shall request a PDP context activation to "3gpp.test".

d) The user shall deactivate the PDP context.

e) The user shall request a PDP context activation without indicating an APN.

f) The user shall deactivate the PDP context.

g) The user shall delete "network provided APN" from the APN Control List in EF_{ACL} by using an MMI dependent option in the terminal. When prompted to enter PIN2, the user shall present the correct PIN2 value.

h) The user shall request a PDP context activation to "3gpp.test".

i) The user shall deactivate the PDP context.

j) The user shall request a PDP context activation without indicating an APN.

k) The user shall try to delete all APNs from the APN Control List in EF_{ACL} by using an MMI dependent option in the terminal. When the terminal indicates that at least one APN entry shall remain, the user shall set this entry to "network provided APN". When prompted to enter PIN2, the user shall present the correct PIN2 value.

l) The user shall switch off the terminal.

9.1.2.5 Acceptance criteria

1) After step a) the terminal shall have activated the USIM application, shall have read the status of the ACL service in EF_{UST} and EF_{EST} and be in updated idle mode on the (U)SS.

2) After step b) EF_{ACL} shall contain an entry for "network provided APN".

3) After step c) the PDP context shall have been activated.

4) After step d) the PDP context shall have been deactivated.

5) After step e) the PDP context shall have been activated.

6) After step f) the PDP context shall have been deactivated.

7) After step g) EF_{ACL} shall not contain an entry for "network provided APN".

8) After step h) the PDP context shall have been activated.

9) After step i) the PDP context shall have been deactivated.

10) The terminal shall have not requested a PDP context activation in step j).

11) After step k) EF_{ACL} shall contain one APN entry with the value "network provided APN" and the corresponding number of APNs in EF_{ACL} shall be 1.

9.1.3 Access Point Name Control List handling for terminals not supporting ACL

9.1.3.1 Definition and applicability

This EF_{ACL} contains the list of allowed APNs (Access Point Names).When the APN Control List service is enabled, the ME shall check that the entire APN of any PDP context is listed in EF_{ACL} before requesting this PDP context activation from the network. If the APN is not present in EF_{ACL}, the ME shall not request the corresponding PDP context activation from the network.

If ACL is enabled, an ME which does not support ACL shall not send any APN to the network.

9.1.3.2 Conformance requirement

An ME which does not support ACL shall not send any APN to the network if ACL is enabled.

Reference:

- TS 31.102 [4], 5.1.1.2.

9.1.3.3 Test purpose

To verify that if ACL is enabled, an ME which does not support ACL, does not send any APN to the network to request a PDP context activation.9.1.3.4 Method of test

9.1.3.4 Method of test

9.1.3.4.1 Initial conditions

The terminal is connected to the USIM Simulator and the (U)SS.

The default USIM is used with the following exceptions:

The APN Control List (ACL) shall be allocated and activated in the USIM Service Table and enabled in the Enabled Service Table.

EF_{ACL} shall be present with the following values:

EF_{ACL} (Access Point Control List)

Logically: Number of available bytes: 64
Number of APNs: 3
1st APN: test.test
2nd APN: 3gpp.test
3rd APN: 2gpp.test

Byte:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Coding:	03	DD	0A	04	74	65	73	74	04	74	65	73
	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24
	74	DD	0A	04	33	67	70	70	04	74	65	73
	B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36
	74	DD	0A	04	32	67	70	70	04	74	65	73
	B37	B38	…	B64								
	74	FF	…	FF								

9.1.3.4.2 Procedure

a) The terminal is switched on and the USIM application shall be activated.

b) The user shall request a PDP context activation to "3gpp.test".

c) The terminal shall be switched off.

9.1.3.5 Acceptance criteria

1) After step a) the terminal shall have activated the USIM application, shall have read the status of the ACL service in EF_{UST} and EF_{EST} and be in updated idle mode on the (U)SS.

2) The terminal shall not have sent any APN to the network in step b).

9.1.4 Access Point Name Control List handling for terminals supporting ACL connected to E-UTRAN/EPC

9.1.4.1 Definition and applicability

This EF_{ACL} contains the list of allowed APNs (Access Point Names). If the APN Control List service is enabled and the ME is to provide an APN as part of attach for PDN connectivity, then the ME shall verify that the APN value is present in the EF_{ACL} and if it is not the ME shall not proceed with the attach procedure. If the APN Control List service is enabled and the ME does not indend to provide an APN as part of the attach for PDN connectivity and use a network provided APN, the ME shall not check if "network provided APN" is contained within EF_{ACL}.

There is 1:1 mapping between one PDP context and one EPS Bearer.

9.1.4.2 Conformance requirement

The terminal shall support the APN Control List service as defined in TS 31.102 [4], subclauses 5.1.1.2 and 5.3.14.

Reference:

- TS 31.102 [4], subclauses 4.2.8, 4.2.48, 5.1.1.2 and 5.3.14;
- TS 23.060 [25], subclause 9.2, 9.2.1A.

9.1.4.3 Test purpose

1) To verify that the terminal takes into account the status of the APN Control List service as indicated in EF_{UST} and EF_{EST}.

2) To verify that the terminal checks that the entire APN of any EPS Bearer is listed in EF_{ACL} before requesting this EPS Bearer activation from the network if the ACL service is enabled.

3) To verify that the terminal does not request the corresponding EPS Bearer activation from the network if the ACL service is enabled and the APN is not present in EF_{ACL}.

4) To verify that the terminal does not check that the network provided APN is present in EF_{ACL} during the initial attach procedure.

9.1.4.4 Method of test

9.1.4.4.1 Initial conditions

The terminal is connected to the USIM Simulator and the E-USS.

The terminal is configured to use the network provided APN for the initial attach procedure.

The default E-UTRAN UICC is used with the following exceptions:

The APN Control List (ACL) shall be allocated and activated in the USIM Service Table and enabled in the Enabled Service Table.

EF_{ACL} shall be present with the following values:

EF_{ACL} (Access Point Control List)

Logically: Number of available bytes: 64
Number of APNs: 3
1st APN: test.test
2nd APN: 3gpp.test
3rd APN: 2gpp.test

Byte:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Coding:	03	DD	0A	04	74	65	73	74	04	74	65	73
	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24
	74	DD	0A	04	33	67	70	70	04	74	65	73
	B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36
	74	DD	0A	04	32	67	70	70	04	74	65	73
	B37	B38	…	B64								
	74	FF	…	FF								

9.1.4.4.2 Procedure

a) The terminal is switched on, the USIM application shall be activated and the terminal shall successfully attach the E-UTRAN.

b) The user shall request PDN connectivity to "1gpp.test".

c) The user shall request PDN connectivity to "3gpp.test".

d) The user shall deactivate the PDN connectivity to "3gpp.test".

e) The user shall disable the APN Control List service. When prompted to enter PIN2, the user shall present the correct PIN2 value.

f) The user shall request PDN connectivity to "1gpp.test".

g) The user shall deactivate the PDN connectivity to "1gpp.test" and shall switch the terminal off and then switch on again.

h) The user shall enable the APN Control List service. When prompted to enter PIN2, the user shall present the correct PIN2 value.

i) The user shall request PDN connectivity to "1ppp.net".

j) The terminal is switched off and on.

k) The user shall add the APN "1ppp.net" to the APN Control List. When prompted to enter PIN2, the user shall present the correct PIN2 value.

l) The user shall request PDN connectivity to "1ppp.net".

m) The user shall deactivate the PDN connectivity and switch off the terminal.

9.1.4.5 Acceptance criteria

1) After step a) the terminal shall have activated the USIM application, shall have read the status of the ACL service in EF_{UST} and EF_{EST} and be in updated idle mode on the E-USS.

2) The terminal shall have not requested PDN connectivity in step b).

3) After step c) PDN connectivity shall have been activated.

4) After step d) PDN connectivity shall have been deactivated.

5) After step e) the APN Control List service shall have been set to disabled in EF_{EST}.

6) After step f) PDN connectivity shall have been activated.

7) After step g) PDN connectivity shall have been deactivated.

8) After step h) the APN Control List service shall have been set to enabled in EF_{EST}.

9) The terminal shall not have requested PDN connectivity in step i).

10) After step k) the APN "1ppp.net" shall have been added to the APN Control List in EF_{ACL}.

11) After step l) PDN connectivity shall have been activated.

9.1.5 Network provided APN handling for terminals supporting ACL connected to E-UTRAN/EPC

9.1.5.1 Definition and applicability

This EF_{ACL} contains the list of allowed APNs (Access Point Names). If the APN Control List service is enabled and the ME is to provide an APN as part of attach for PDN connectivity, then the ME shall verify that the APN value is present in the EF_{ACL} and if it is not the ME shall not proceed with the attach procedure. If the APN Control List service is enabled and the ME does not indend to provide an APN as part of the attach for PDN connectivity and use a network provided APN, the ME shall not check if "network provided APN" is contained within $EF_{ACL.}$

There is 1:1 mapping between one PDP context and one EPS Bearer.

9.1.5.2 Conformance requirement

The terminal shall support the APN Control List service as defined in TS 31.102 [4], subclauses 5.1.1.2 and 5.3.14.

Reference:

- TS 31.102 [4], subclauses 4.2.8, 4.2.48, 5.1.1.2 and 5.3.14;
- TS 23.060 [25], subclause 9.2, 9.2.1A.

9.1.5.3 Test purpose

1) To verify that if ACL is enabled and if no APN is indicated in the EPS Bearer the terminal request the EPS Bearer activation only if "network provided APN" is contained within EF_{ACL}.

2) To verify that the user is able to set an APN in EF_{ACL} entry to the value "network provided APN".

3) To verify that the minimum set of APN entries in EF_{ACL} is ensured when the user deletes APN entries.

9.1.5.4 Method of test

9.1.5.4.1 Initial conditions

The terminal is connected to the USIM Simulator and the E-USS.

The terminal is configured to perform the initial attach procedure to E-UTRAN using the APN test.test.

The default E-UTRAN UICC is used with the following exceptions:

The APN Control List (ACL) shall be allocated and activated in the USIM Service Table and enabled in the Enabled Service Table.

EF_{ACL} shall be present with the following values:

EF_{ACL} (Access Point Control List)

Logically: Number of available bytes: 64
Number of APNs: 3
1st APN: test.test
2nd APN: 3gpp.test
3rd APN: 2gpp.test

Byte:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
Coding:	03	DD	0A	04	74	65	73	74	04	74	65	73
	B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24
	74	DD	0A	04	33	67	70	70	04	74	65	73
	B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36
	74	DD	0A	04	32	67	70	70	04	74	65	73
	B37	B38	…	B64								
	74	FF	…	FF								

9.1.5.4.2 Procedure

a) The terminal is switched on, the USIM application shall be activated and the terminal shall successfully attach the E-UTRAN.

b) The user shall add "network provided APN" to the APN Control List in EF_{ACL} by using an MMI dependent option in the terminal. When prompted to enter PIN2, the user shall present the correct PIN2 value.

c) The user shall request PDN connectivity to "3gpp.test".

d) The user shall deactivate the PDN connectivity to "3gpp.test".

e) The user shall request PDN connectivity without indicating an APN.

f) The user shall deactivate the PDN connectivity.

g) The user shall delete "network provided APN" from the APN Control List in EF_{ACL} by using an MMI dependent option in the terminal. When prompted to enter PIN2, the user shall present the correct PIN2 value.

h) The user shall request PDN connectivity to "3gpp.test".

i) The user shall deactivate the PDN connectivity to "3gpp.test".

j) The user shall request PDN connectivity without indicating an APN.

k) The user shall try to delete all APNs from the APN Control List in EF_{ACL} by using an MMI dependent option in the terminal. When the terminal indicates that at least one APN entry shall remain, the user shall set this entry to "network provided APN". When prompted to enter PIN2, the user shall present the correct PIN2 value.

l) The user shall switch off the terminal.

9.1.5.5 Acceptance criteria

1) After step a) the terminal shall have activated the USIM application, shall have read the status of the ACL service in EF_{UST} and EF_{EST} and be in updated idle mode on the E-USS.

2) After step b) EF_{ACL} shall contain an entry for "network provided APN".

3) After step c) PDN connectivity shall have been activated.

4) After step d) PDN connectivity shall have been deactivated.

5) After step e) PDN connectivity shall have been activated.

6) After step f) PDN connectivity shall have been deactivated.

7) After step g) EF_{ACL} shall not contain an entry for "network provided APN".

8) After step h) PDN connectivity shall have been activated.

9) After step i) PDN connectivity shall have been deactivated.

10) The terminal shall have not requested PDN connectivity in step j).

11) After step k) EF_{ACL} shall contain one APN entry with the value "network provided APN" and the corresponding number of APNs in EF_{ACL} shall be 1.

9.1.6 Void

9.2 Service Dialling Numbers handling

9.2.1 Definition and applicability

The Service Dialling Numbers feature allows for the storage of numbers related to services offered by the network operator/service provider in the SIM/USIM (e.g. customer care). The user can use these telephone numbers to make outgoing calls, but the access for updating of the numbers shall be under the control of the operator.

9.2.2 Conformance requirement

The terminal shall support the Service Dialling Numbers service as defined in TS 31.102 [4], subclauses 4.2.8 and 4.2.29.

Reference:

- TS 31.102 [4], subclauses 4.2.8, 4.2.29 and 4.2.31;
- TS 22.101 [11], subclause A.23.

9.2.3 Test purpose

1) To verify that the terminal takes into account the status of the Service Dialling Numbers service as indicated in EF_{UST}.

2) To verify that the user can use the Service Dialling Numbers to make outgoing calls.

3) To verify that the terminal is able to handle SDNs with an extended dialling number string.

4) To verify that the terminal is able to handle an empty alpha identifier in EF_{SDN}.

5) To verify that the terminal is able to handle an alpha identifier of maximum length in EF_{SDN}.

9.2.4 Method of test

9.2.4.1 Initial conditions

The terminal is connected to the USIM Simulator and the (U)SS.

The default USIM is used with the following exceptions:

The Service Dialling Numbers (SDN) shall be allocated and activated in the USIM Service Table.

EF_{SDN} shall be present with the following values:

EF_{SDN} (Service Dialling Numbers)

Logically:

6 records, 1 record shall be empty. Unless otherwise stated, the SDN records shall not use extendend BCD numbers/SSC strings. Access to update EF_{SDN} shall be granted by usage of ADM1 only.

Record 1:	Length of alpha identifier:	241 characters;
	Alpha identifier:	"Hotline00112233445566778 8ABCDEFGHIJKLMNOPQRSTUVW XYZ0123456789abcdefghijklmnopqrstuvwxyz0123456789ABCDEF GHIJKLMNOPQRSTUVWXYZ0123456789abcdefghijklmnopqrstuv wxyz0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456 789abcdefghijklmnopqrstuvwxyz0123456789";
	Length of BCD number:	5;
	TON and NPI:	Telephony and International;
	Dialled number:	"22223333";
	CCP:	'FF';
	Ext3:	'FF'.

Record 1:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…
Hex	48	6F	74	6C	69	6E	65	30	30	31	…	…

	B241	B242	B243	B244	B245	B246	B247	B248	B249	B250	B251	B252
	39	05	91	22	22	33	33	FF	FF	FF	FF	FF

	B253	B254	B255
	FF	FF	FF

Record 2:	Length of alpha identifier:	241 characters;
	Alpha identifier:	"Hotline002";
	Length of BCD number:	5;
	TON and NPI:	Telephony and International;
	Dialled number:	"44554455";
	CCI2:	'FF';
	Ext3:	'FF'.

Record 2:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…
Hex	48	6F	74	6C	69	6E	65	30	30	32	FF	…

B241	B242	B243	B244	B245	B246	B247	B248	B249	B250	B251	B252
FF	05	91	44	55	44	55	FF	FF	FF	FF	FF

B253	B254	B255
FF	FF	FF

Record 3: Length of alpha identifier: 241 characters;
Alpha identifier: "Hotline003";
Length of BCD number: 11;
TON and NPI: Telephony and International;
Dialled number: "01234567890123456789";
CCI2: 'FF';
Ext3: "01".

Record 3:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…
Hex	48	6F	74	6C	69	6E	65	30	30	33	FF	…

B241	B242	B243	B244	B245	B246	B247	B248	B249	B250	B251	B252
FF	0B	91	10	32	54	76	98	10	32	54	76

B253	B254	B255
98	FF	01

Record 4: Length of alpha identifier: 241 characters;
Alpha identifier: empty;
Length of BCD number: 03;
TON and NPI: Telephony and International;
Dialled number: "007";
CCI2: 'FF';
Ext3: 'FF'.

Record 4:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…
Hex	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	…

B241	B242	B243	B244	B245	B246	B247	B248	B249	B250	B251	B252
FF	03	91	00	F7	FF	FF	FF	FF	FF	FF	FF

B253	B254	B255
FF	FF	FF

Record 5: Length of alpha identifier: 241 characters;
Alpha identifier: empty;
Length of BCD number: 3;
TON and NPI: Telephony and International;
Dialled number: "008";
CCI2: 'FF';
Ext3: 'FF'.

Record 5:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	…
Hex	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	…

B241	B242	B243	B244	B245	B246	B247	B248	B249	B250	B251	B252
FF	03	91	00	F8	FF	FF	FF	FF	FF	FF	FF

B253	B254	B255
FF	FF	FF

EF_{EXT3} (Extension 3)

Logically: 5 records, 4 records empty. Access to update EF_{EXT3} shall be granted by usage of ADM1 only.

Record 1:	Record type:	'02'
	Extension data:	"012345";
	Identifier:	'FF'.

Record 1:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13
Hex	02	03	10	32	54	FF	FF	FF	FF	FF	FF	FF	FF

9.2.4.2 Procedure

a) The terminal is switched on and the USIM application shall be activated.

b) The user shall use an MMI dependent procedure to set up a call to the dialling number associated with the alpha identifier "Hotline00112233445566778ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789abcdefghijklmnopqrstuvwxyz0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789abcdefghijklmnopqrstuvwxyz0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789abcdefghijklmnopqrstuvwxyz0123456789" in record 1 of EF_{SDN}.

c) The user shall end the call.

d) The user shall use an MMI dependent procedure to set up a call to the dialling number associated with the "Hotline003" in record 3 of EF_{SDN}.

e) The user shall end the call.

f) The user shall use an MMI dependent procedure to select and to set up a call to the dialling number "+007" stored in record 4 of EF_{SDN}.

g) The user shall end the call and switch the terminal off.

9.2.5 Acceptance criteria

1) After step a) the terminal shall have activated the USIM application and shall have read the status of the SDN service in EF_{UST}.

2) After step b) the terminal shall have read record 1 of EF_{SDN} and a call to "+22223333" shall have been established.

3) After step c) the call shall have been terminated.

4) After step d) the terminal shall have read record 3 of EF_{SDN} and record 1 of EF_{EXT1} and a call to "+012345678901234567890123456789012345" shall have been established.

5) After step e) the call shall have been terminated.

6) After step f) the terminal shall have read record 4 of EF_{SDN} and a call to "+007" shall have been established.

10 CSG list handling

10.1 CSG list handling for E-UTRA

10.1.1 Automatic CSG selection in E-UTRA with CSG list on USIM, success

10.1.1.1 Definition and applicability

A Closed Subscriber Group identifies subscribers of an operator who are permitted to access one or more cells of the PLMN but which have restricted access (CSG cells). A CSG cell is part of the PLMN, broadcasting a CSG indication that is set to TRUE and a specific CSG identity. A CSG cell is accessible by the members of the closed subscriber group for that CSG identity. For a CSG cell, the UE shall check the broadcast CSG ID against the Allowed CSG list provided by NAS to check whether a CSG cell is suitable for the UE.

10.1.1.2 Conformance requirement

When a UE in idle mode detects the presence of a permissible CSG cell (a CSG cell whose CSG identity is in the UE"s white list), the UE shall select the CSG cell.
The ME shall read the allowed CSG IDs from EF_{ACSGL} in order to perform HNB selection procedures. The lists in EF_{ACSGL} shall take precedence over the list stored in the ME non-volatile memory.
If the MS supports CSG, it is provisioned with a list of allowed CSG identities and associated PLMN identities from the USIM if the list is available in the USIM.

- TS 22.011 [6], subclause 8.2.2.1;
- TS 31.102 [4], subclauses 4.4.6.2 and 5.8.1;
- TS 23.122 [31], subclause 3.1A.

10.1.1.3 Test purpose

To verify that the ME only selects a CSG cell if the CSG IDs of the cell is found in the allowed CSG IDs from EF_{ACSGL}

10.1.1.4 Method of test

10.1.1.4.1 Initial conditions

For this test an E-USS is required.

The E-USS transmits on two cells, with the following network parameters:

- TAI (MCC/MNC/TAC): 246/081/0001.
- Access control: unrestricted.
- csg-Indication: TRUE
- csg-Identity: 05

- TAI (MCC/MNC/TAC): 246/081/0002.
- Access control: unrestricted.

- csg-Indication: TRUE
- csg-Identity: 04

The default E-UTRAN UICC is used.

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

10.1.1.4.2 Procedure

a) The UE is powered on.

b) After 2 minutes the E-USS stops all RF output for the first cell with TAI 246/081/0001 on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

- csg-Identity: 03

The E-USS then resumes RF output on the BCCH.

c) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0001, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

d) During registration and after receipt of a *AttachRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC):246/081/ 0001

GUTI: "24608100010266436587"

e) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease to the UE.*

f) The UE is soft powered down.

10.1.1.5 Acceptance criteria

1) After steps a) the terminal shall not attempt an Attach procedure.

2.) After step b) the UE shall send an *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0001 to the e-USS.

3) During step c) the terminal shall send *AttachRequest* to the E-USS.

4) After step d) the terminal shall respond with *AttachComplete* during registration.

5) After step e) the USIM shall contain the following values:

$EF_{EPSLOCI}$ (EPS Information)

Logically: GUTI: 24608100010266436587
Last visited registered TAI: 246/081/0001
EPS update status: updated

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	0B	F6	42	16	80	00	01	02	66	43	65
	B12	B13	B14	B15	B16	B17	B18				
	87	42	16	80	00	01	00				

10.1.2 Automatic CSG selection in E-UTRA with CSG list on USIM, removal of CSG ID from the USIM

10.1.2.1 Definition and applicability

A Closed Subscriber Group identifies subscribers of an operator who are permitted to access one or more cells of the PLMN but which have restricted access (CSG cells). A CSG cell is part of the PLMN, broadcasting a CSG indication that is set to TRUE and a specific CSG identity. A CSG cell is accessible by the members of the closed subscriber group for that CSG identity. For a CSG cell, the UE shall check the broadcast CSG ID against the Allowed CSG list provided by NAS to check whether a CSG cell is suitable for the UE.

10.1.2.2 Conformance requirement

When a UE in idle mode detects the presence of a permissible CSG cell (a CSG cell whose CSG identity is in the UE"s white list), the UE shall select the CSG cell.
The ME shall read the allowed CSG IDs from EF_{ACSGL} in order to perform HNB selection procedures. The lists in EF_{ACSGL} shall take precedence over the list stored in the ME non-volatile memory.
If the MS supports CSG, it is provisioned with a list of allowed CSG identities and associated PLMN identities from the USIM if the list is available in the USIM.

If the UE receives ATTACH REJECT with cause #25 (Not authorized for this CSG), the UE shall remove the CSG ID of the cell where the UE has sent the ATTACH REQUEST message from the Allowed CSG list.

- TS 22.011 [6], subclause 8.2.2.1;
- TS 31.102 [4], subclauses 4.4.6.2 and 5.8.1;
- TS 23.122 [31], subclause 3.1A.
- TS 24.301 [26], subclause 5.5.1.2.5

10.1.2.3 Test purpose

To verify that the ME removes the CSG ID from the Allowed CSG list in EF_{ACSGL} in case this CSG ID belongs to the cell where the ME has sent the ATTACH REQUEST message which was rejected with cause #25 by the E-USS.

10.1.2.4 Method of test

10.1.2.4.1 Initial conditions

For this test an E-USS is required.

The E-USS transmits on two cells, with the following network parameters:

- TAI (MCC/MNC/TAC): 246/081/0001.
- Access control: unrestricted.
- csg-Indication: TRUE
- csg-Identity: 03

- TAI (MCC/MNC/TAC): 246/081/0002.
- Access control: unrestricted.
- csg-Indication: TRUE
- csg-Identity: 04

The default E-UTRAN UICC is used.

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

10.1.2.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0001, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of an *AttachRequest* from the UE, the E-USS sends *AttachReject* to the UE with cause #25 (Not authorized for this CSG), followed by *RRCConnectionRelease.*

d) The UE is soft powered down.

10.1.2.5 Acceptance criteria

1.) After step a) the UE shall send an *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0001 to the E-USS.

2) During step b) the terminal shall send *AttachRequest* to the E-USS.

3) After step c) the USIM shall contain the following values:

$EF_{EPSLOCI}$ (EPS Information)

Logically: GUTI: not checked
Last visited registered TAI: 246/081/0001
EPS update status: ROAMING NOT ALLOWED

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
	B12	B13	B14	B15	B16	B17	B18				
	xx	42	16	80	00	01	02				

EF_{ACSGL} (Allowed CSG Lists)

Logically:

1st CSG list

PLMN: 246 081 (MCC MNC)
1st CSG list 1st CSG Type indication 02
1st CSG list 1st CSG HNB Name indication 02
1st CSG list 1st CSG CSG ID: 02 (27bit)

Coding:	A0	0D	80	03	42	16	80	81	06	02
	02	00	00	00	5F					

2nd CSG list

PLMN: 244 081 (MCC MNC)
2nd CSG list 1st CSG Type indication 08
2nd CSG list 1st CSG HNB Name indication 08
2nd CSG list 1st CSG CSG ID: 08 (27bit)

Coding:	A0	0D	80	03	42	14	80	81	06	08
	08	00	00	01	1F					

Note: the 1st and 2nd CSG list may be stored together or separately in any record in arbitrary order.

10.1.3 Manual CSG selection in E-UTRA with CSG list on USIM, success

10.1.3.1 Definition and applicability

A Closed Subscriber Group identifies subscribers of an operator who are permitted to access one or more cells of the PLMN but which have restricted access (CSG cells). A CSG cell is part of the PLMN, broadcasting a CSG indication that is set to TRUE and a specific CSG identity. A CSG cell is accessible by the members of the closed subscriber group for that CSG identity. For a CSG cell, the UE shall check the broadcast CSG ID against the Allowed CSG list provided by NAS to check whether a CSG cell is suitable for the UE.

A UE supporting CSG selection selects CSG cell either automatically based on the list of allowed CSG identities or manually based on user selection of CSG on indication of list of available CSGs.

10.1.3.2 Conformance requirement

The ME shall read the allowed CSG IDs from EF_{ACSGL} in order to perform HNB selection procedures. The lists in EF_{ACSGL} shall take precedence over the list stored in the ME non-volatile memory.
In manual CSG selection mode, the ME indicates to the user the list of available CSGs in the currently selected PLMN. The list of CSGs presented to the user is not restricted by the allowed CSG list..
If the MS supports CSG, it is provisioned with a list of allowed CSG identities and associated PLMN identities from the USIM if the list is available in the USIM.

If the UE supporting CSG selection has attempted manual CSG selection, the UE, when receiving the TRACKING AREA UPDATE ACCEPT message, shall check if the CSG ID of the cell where the UE has sent the TRACKING AREA UPDATE REQUEST message is contained in the Allowed CSG list. If not, the UE shall add that CSD ID to the Allowed CSG list.

- TS 31.102 [4], subclauses 4.4.6.2 and 5.8.1;
- TS 23.122 [31], subclause 3.1A.
- TS 24.301 [26], subclause 5.5.3.2.4

10.1.3.3 Test purpose

To verify that the ME adds the CSG ID to the Allowed CSG list in EF_{ACSGL} in case this CSG ID belongs to the cell where the ME has sent the TRACKING AREA UPDATE REQUEST message which was accepted by the E-USS.

10.1.3.4 Method of test

10.1.3.4.1 Initial conditions

For this test an E-USS is required.

The E-USS transmits on two cells, with the following network parameters:

- TAI (MCC/MNC/TAC): 246/081/0001.
- Access control: unrestricted.
- csg-Indication: FALSE
- csg-Identity: not present

- TAI (MCC/MNC/TAC): 246/081/0002.
- Access control: unrestricted.
- csg-Indication: TRUE
- csg-Identity: 04

The default E-UTRAN UICC is used.

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

10.1.3.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0001, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of an *AttachRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC):246/081/ 0001

GUTI: "24608100010266345678"

d) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease* to the UE.

e) The MMI of the UE is used to perform manual CSG selection. The UE shall indicate the availability of a cell with csg-Identity 04 for PLMN 246/081. The user shall select this cell by using the MMI.

f) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0002, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

g) During registration and after receipt of a *TrackingAreaUpdateRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *TrackingAreaUpdateAccept* with to the UE:

TAI (MCC/MNC/TAC):246/081/ 0002

GUTI: "24608100010266436599"

h) After receipt of the *TrackingAreaUpdatComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease* to the UE.

i) The UE is soft powered down.

10.1.3.5 Acceptance criteria

1.) After step b) the UE shall send an *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0001 to the e-USS.

3) During step b) the terminal shall send *AttachRequest* to the E-USS.

4) After step c) the terminal shall respond with *AttachComplete* during registration.

5) During step e) the UE shall provide during the manual CSG selection the information for a cell with csg-Identity 04 for PLMN 246/081 to the user.

6.) After step e) the UE shall send an *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0002 to the e-USS.

7) During step f) the terminal shall send *TrackingAreaUpdateRequest* to the E-USS.

8) After step g) the terminal shall respond with *TrackingAreaUpdatComplete* during registration.

9) After step i) the USIM shall contain the following values:

$EF_{EPSLOCI}$ (EPS Information)

Logically: GUTI: 24608100010266436599
Last visited registered TAI: 246/081/0002
EPS update status: updated

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	0B	F6	42	16	80	00	01	02	66	43	65
	B12	B13	B14	B15	B16	B17	B18				
	99	42	16	80	00	02	00				

EF_{ACSGL} (Allowed CSG Lists)

Logically:

1st CSG list

PLMN:	246 081 (MCC MNC)	
1st CSG list	1st CSG Type indication	02
1st CSG list	1st CSG HNB Name indication	02
1st CSG list	1st CSG CSG ID:	02 (27bit)
1st CSG list	2nd CSG Type indication	03
1st CSG list	2nd CSG HNB Name indication	03
1st CSG list	2nd CSG CSG ID:	03 (27bit)
1st CSG list	3rd CSG Type indication	'FF'
1st CSG list	3rd CSG HNB Name indication	'FF'
1st CSG list	3rd CSG CSG ID:	04 (27bit)

Coding:	A0	1D	80	03	42	16	80	81	06	02
	02	00	00	00	5F	81	06	03	03	00
	00	00	7F	81	06	FF	FF	00	00	00
	9F									

2nd CSG list

PLMN:	244 081 (MCC MNC)	
2nd CSG list	1st CSG Type indication	08
2nd CSG list	1st CSG HNB Name indication	08
2nd CSG list	1st CSG CSG ID:	08 (27bit)

Coding:	A0	0D	80	03	42	14	80	81	06	08
	08	00	00	01	1F					

Note: The 1st and 2nd CSG list may be stored together or separately in any record in arbitrary order.

10.1.4 Manual CSG selection in E-UTRA with CSG list on USIM, rejected

10.1.4.1 Definition and applicability

A Closed Subscriber Group identifies subscribers of an operator who are permitted to access one or more cells of the PLMN but which have restricted access (CSG cells). A CSG cell is part of the PLMN, broadcasting a CSG indication that is set to TRUE and a specific CSG identity. A CSG cell is accessible by the members of the closed subscriber group for that CSG identity. For a CSG cell, the UE shall check the broadcast CSG ID against the Allowed CSG list provided by NAS to check whether a CSG cell is suitable for the UE.

A UE supporting CSG selection selects CSG cell either automatically based on the list of allowed CSG identities or manually based on user selection of CSG on indication of list of available CSGs.

10.1.4.2 Conformance requirement

The ME shall read the allowed CSG IDs from EF_{ACSGL} in order to perform HNB selection procedures. The lists in EF_{ACSGL} shall take precedence over the list stored in the ME non-volatile memory.
In manual CSG selection mode, the ME indicates to the user the list of available CSGs in the currently selected PLMN. The list of CSGs presented to the user is not restricted by the allowed CSG list.
If the MS supports CSG, it is provisioned with a list of allowed CSG identities and associated PLMN identities from the USIM if the list is available in the USIM.

If the UE supporting CSG selection has attempted manual CSG selection, the UE, when receiving the TRACKING AREA UPDATE REJECT message with cause #25 (Not authorized for this CSG), shall remove the CSG ID of the cell where the UE has sent the TRACKING AREA UPDATE REQUEST message if the CSG ID is contained in the Allowed CSG list.

- TS 31.102 [4], subclauses 4.4.6.2 and 5.8.1;
- TS 23.122 [31], subclause 3.1A.
- TS 24.301 [26], subclause 5.5.3.2.5

10.1.4.3 Test purpose

To verify that the ME does not add the CSG ID to the Allowed CSG list in EF_{ACSGL} in case this CSG ID belongs to the cell where the ME has sent the TRACKING AREA UPDATE REQUEST message which was rejected by the E-USS.

10.1.4.4 Method of test

10.1.4.4.1 Initial conditions

For this test an E-USS is required.

The E-USS transmits on two cells, with the following network parameters:

- TAI (MCC/MNC/TAC): 246/081/0001.
- Access control: unrestricted.
- csg-Indication: FALSE
- csg-Identity: not present

- TAI (MCC/MNC/TAC): 246/081/0002.
- Access control: unrestricted.
- csg-Indication: TRUE

- csg-Identity: 04

The default E-UTRAN UICC is used.

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

10.1.4.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0001, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of a *AttachRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC):246/081/ 0001

GUTI: "24608100010266345678"

d) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*, to the UE.

e) The MMI of the UE is used to perform manual CSG selection. The UE shall indicate the availability of a cell with csg-Identity 04 for PLMN 246/081. The user shall select this cell by using the MMI.

f) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0002, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

g) During registration and after receipt of an *TrackingAreaUpdateRequest* from the UE, the E-USS sends *TrackingAreaUpdateReject* to the UE with cause #25 (Not authorized for this CSG), followed by *RRCConnectionRelease* to the UE.

h) The UE is soft powered down.

10.1.4.5 Acceptance criteria

1.) After step b) the UE shall send an *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0001 to the e-USS.

3) During step b) the terminal shall send *AttachRequest* to the E-USS.

4) After step c) the terminal shall respond with *AttachComplete* during registration.

5.) During step e) the UE shall provide during the manual CSG selection the information for a cell with csg-Identity 04 for PLMN 246/081 to the user.

6.) After step e) the UE shall send a RRCConnectionRequest on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0002 to the e-USS.

7) During step f) the terminal shall send *TrackingAreaUpdateRequest* to the E-USS.

8) After step h) the USIM shall contain the following values:

$EF_{EPSLOCI}$ (EPS Information)

Logically:	GUTI:	not checked
	Last visited registered TAI:	246/081/0001
	EPS update status:	ROAMING NOT ALLOWED

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
	B12	B13	B14	B15	B16	B17	B18				
	xx	42	16	80	00	01	02				

EF_{ACSGL} (Allowed CSG Lists)

Content not changed, shall be the same as defined in clause 4.4.5.

10.1.5 CSG selection in E-UTRA with no CSG list on USIM, no IMSI change

10.1.5.1 Definition and applicability

A Closed Subscriber Group identifies subscribers of an operator who are permitted to access one or more cells of the PLMN but which have restricted access (CSG cells). A CSG cell is part of the PLMN, broadcasting a CSG indication that is set to TRUE and a specific CSG identity. A CSG cell is accessible by the members of the closed subscriber group for that CSG identity. For a CSG cell, the UE shall check the broadcast CSG ID against the Allowed CSG list provided by NAS to check whether a CSG cell is suitable for the UE.

A UE supporting CSG selection selects CSG cell either automatically based on the list of allowed CSG identities or manually based on user selection of CSG on indication of list of available CSGs.

10.1.5.2 Conformance requirement

In manual CSG selection mode, the ME indicates to the user the list of available CSGs in the currently selected PLMN. The list of CSGs presented to the user is not restricted by the allowed CSG list..
If the MS supports CSG, it is provisioned with a list of allowed CSG identities and associated PLMN identities from the USIM if the list is available in the USIM.

If the UE supporting CSG selection has attempted manual CSG selection, the UE, when receiving the TRACKING AREA UPDATE ACCEPT message, shall check if the CSG ID of the cell where the UE has sent the TRACKING AREA UPDATE REQUEST message is contained in the Allowed CSG list. If not, the UE shall add that CSD ID to the Allowed CSG list.

If the corresponding file is not present on the USIM, these EMM parameters except allowed CSG list are stored in a non-volatile memory in the ME together with the IMSI from the USIM. The allowed CSG list is stored in a non-volatile memory in the ME if the UE supports CSG selection. These EMM parameters can only be used if the IMSI from the USIM matches the IMSI stored in the non-volatile memory; else the UE shall delete the EMM parameters.

- TS 31.102 [4], subclauses 4.4.6.2 and 5.8.1;
- TS 23.122 [31], subclause 3.1A.
- TS 24.301 [26], subclause 5.5.3.2.4 and Annex C.

10.1.5.3 Test purpose

To verify that the ME adds the CSG ID to the Allowed CSG list in a non-volatile memory in the ME together with the IMSI from the USIM in case this CSG ID belongs to the cell where the ME has sent the TRACKING AREA UPDATE REQUEST message which was accepted by the E-USS as the corresponding file is not present on the simulated USIM.

To verify that the ME still has this CSG ID stored in the Allowed CSG list available together with the IMSI after powered down and up in case the IMSI of the USIM has not changed.

To verify that the ME removes the CSG ID from the Allowed CSG list inside the terminal in case this CSG ID belongs to the cell where the ME has sent the ATTACH REQUEST message which was rejected with cause #25 by the E-USS.

10.1.5.4 Method of test

10.1.5.4.1 Initial conditions

For this test an E-USS is required.

The E-USS transmits on two cells, with the following network parameters:

- TAI (MCC/MNC/TAC): 246/081/0001.
- Access control: unrestricted.
- csg-Indication: FALSE
- csg-Identity: not present

- TAI (MCC/MNC/TAC): 246/081/0002.
- Access control: unrestricted.
- csg-Indication: TRUE
- csg-Identity: 04

The default UICC (without the service "Allowed CSG Lists and corresponding indications") is installed into the Terminal.

The ME shall not have csg-ID = 04 in the allowed CSG list stored in a non-volatile memory in the ME and the ME is set to automatic PLMN selection mode.

10.1.5.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0001, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of an *AttachRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with the following parameters to the UE:

TAI (MCC/MNC/TAC):246/081/ 0001

GUTI: "24608100010266345678"

d) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease* to the UE.

e) The MMI of the UE is used to perform manual CSG selection. The UE shall indicate the availability of a cell with csg-Identity 04 for PLMN 246/081. The user shall select this cell by using the MMI.

f) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0002, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

g) During registration and after receipt of a *TrackingAreaUpdateRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *TrackingAreaUpdateAccept* with the following parameters to the UE:

TAI (MCC/MNC/TAC):246/081/TACs: 0002

GUTI: "24608100010266345699"

h) After receipt of the *TrackingAreaUpdateComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease* to the UE.

i) The UE is switched off and performs the *Detach* procedure.

j) The default UICC remains in use.

k) The E-USS shall change the BCCH for the cell transmitting TAI 246/081/0001 to the following network parameters:

- csg-Indication: TRUE

- csg-Identity: 06

l) The UE is powered on.

m) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0002, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

n) During registration and after receipt of an *AttachRequest* from the UE, the E-USS sends *AttachReject* to the UE with cause #25 (Not authorized for this CSG), followed by *RRCConnectionRelease.*

o) The UE is soft powered down.

p) The default UICC remains in use.

q) The UE is powered on.

r) After 2 minutes the UE is soft powered down.

10.1.5.5 Acceptance criteria

1.) After step b) the UE shall send an *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0001 to the e-USS.

3) During step b) the terminal shall send *AttachRequest* to the E-USS.

4) After step c) the terminal shall respond with *AttachComplete* during registration.

5) During step e) the UE shall provide during the manual CSG selection the information for a cell with csg-Identity 04 for PLMN 246/081 to the user.

6.) After step e) the UE shall send an *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0002 to the e-USS.

7) During step f) the terminal shall send *TrackingAreaUpdateRequest* to the E-USS.

8) After step g) the terminal shall respond with *TrackingAreaUpdateComplete* during registration.

9.) After step l) the UE shall send an *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0002 to the e-USS.

10) During step n) the terminal shall send *AttachRequest* to the E-USS.

11) After step q) the terminal shall not try to register to the E-USS.

10.1.6 CSG selection in E-UTRA with no CSG list on USIM, with IMSI change

10.1.6.1 Definition and applicability

A Closed Subscriber Group identifies subscribers of an operator who are permitted to access one or more cells of the PLMN but which have restricted access (CSG cells). A CSG cell is part of the PLMN, broadcasting a CSG indication that is set to TRUE and a specific CSG identity. A CSG cell is accessible by the members of the closed subscriber group for that CSG identity. For a CSG cell, the UE shall check the broadcast CSG ID against the Allowed CSG list provided by NAS to check whether a CSG cell is suitable for the UE.

A UE supporting CSG selection selects CSG cell either automatically based on the list of allowed CSG identities or manually based on user selection of CSG on indication of list of available CSGs.

10.1.6.2 Conformance requirement

In manual CSG selection mode, the ME indicates to the user the list of available CSGs in the currently selected PLMN. The list of CSGs presented to the user is not restricted by the allowed CSG list..
If the MS supports CSG, it is provisioned with a list of allowed CSG identities and associated PLMN identities from the USIM if the list is available in the USIM.

If the UE supporting CSG selection has attempted manual CSG selection, the UE, when receiving the TRACKING AREA UPDATE ACCEPT message, shall check if the CSG ID of the cell where the UE has sent the TRACKING AREA UPDATE REQUEST message is contained in the Allowed CSG list. If not, the UE shall add that CSD ID to the Allowed CSG list.

If the corresponding file is not present on the USIM, these EMM parameters except allowed CSG list are stored in a non-volatile memory in the ME together with the IMSI from the USIM. The allowed CSG list is stored in a non-volatile memory in the ME if the UE supports CSG selection. These EMM parameters can only be used if the IMSI from the USIM matches the IMSI stored in the non-volatile memory; else the UE shall delete the EMM parameters.

- TS 31.102 [4], subclauses 4.4.6.2 and 5.8.1;
- TS 23.122 [31], subclause 3.1A.
- TS 24.301 [26], subclause 5.5.3.2.4 and Annex C.

10.1.6.3 Test purpose

To verify that the ME adds the CSG ID to the Allowed CSG list in a non-volatile memory in the ME together with the IMSI from the USIM in case this CSG ID belongs to the cell where the ME has sent the TRACKING AREA UPDATE REQUEST message which was accepted by the E-USS as the corresponding file is not present on the simulated USIM.

To verify that the ME removes this CSG ID stored in the Allowed CSG list available together with the IMSI after powered down and up in case the IMSI of the USIM has changed.

10.1.6.4 Method of test

10.1.6.4.1 Initial conditions

For this test an E-USS is required.

The E-USS transmits on two cells, with the following network parameters:

- TAI (MCC/MNC/TAC): 246/081/0001.
- Access control: unrestricted.
- csg-Indication: FALSE

- csg-Identity: not present

- TAI (MCC/MNC/TAC): 246/081/0002.
- Access control: unrestricted.
- csg-Indication: TRUE
- csg-Identity: 04

The default UICC (without the service "Allowed CSG Lists and corresponding indications") is installed into the Terminal.

The ME shall not have csg-ID = 04 in the allowed CSG list stored in a non-volatile memory in the ME and the ME is set to automatic PLMN selection mode.

10.1.6.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0001, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of an *AttachRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the following parameters the UE:

TAI (MCC/MNC/TAC):246/081/ 0001

GUTI: "24608100010266345678"

d) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease* to the UE.

e) The MMI of the UE is used to perform manual CSG selection. The UE shall indicate the availability of a cell with csg-Identity 04 for PLMN 246/081. The user shall select this cell by using the MMI.

f) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0002, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

g) During registration and after receipt of a *TrackingAreaUpdateRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *TrackingAreaUpdateAccept* with the following parameters to the UE:

TAI (MCC/MNC/TAC):246/081/ 0002

GUTI: "24608100010266345699"

h) After receipt of the *TrackingAreaUpdateComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease* to the UE.

i) The UE is switched off and performs the *Detach* procedure.

j) A new UICC with the following configuration is activated:

The default UICC with the following exception: The IMSI is set to "246081222233333".

k) The E-USS shall change the BCCH for the cell transmitting TAI 246/081/0001 to the following network parameters:

- csg-Indication: TRUE

- csg-Identity: 06

l) The UE is powered on.

m) After 2 minutes the UE is soft powered down.

10.1.6.5 Acceptance criteria

1.) After step b) the UE shall send an *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0001 to the e-USS.

3) During step b) the terminal shall send *AttachRequest* to the E-USS.

4) After step c) the terminal shall respond with *AttachComplete* during registration.

5) During step e) the UE shall provide during the manual CSG selection the information for a cell with csg-Identity 04 for PLMN 246/081 to the user.

6.) After step e) the UE shall send an *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting TAI 246/081/0002 to the e-USS.

7) During step f) the terminal shall send *TrackingAreaUpdateRequest* to the E-USS.

8) After step g) the terminal shall respond with *TrackingAreaUpdateComplete* during registration.

9) After step l) the terminal shall not try to register to the E-USS.

11 NAS security context parameter handling

11.1 NAS security context parameter handling when service "EMM Information" is available

11.1.1 Definition and applicability

The security parameters for authentication, integrity protection and ciphering are tied together in an EPS security context and identified by a key set identifier for E-UTRAN (eKSI). The relationship between the security parameters is defined in 3GPP TS 33.401 [27].

The EPS security context parameters shall be stored on the USIM if the corresponding file is present. If the corresponding file is not present on the USIM, these EMM parameters except allowed CSG list are stored in a non-volatile memory in the ME together with the IMSI from the USIM.

The EF_{EPSNSC} contains the EPS NAS Security context as defined in TS 33.401 [27]. This file shall contain only one record and shall be updated only when the requirements defined in TS 33.401 [27] are met.

11.1.2 Conformance requirement

EPS AKA is the authentication and key agreement procedure that shall be used over E-UTRAN.

Before security can be activated, the MME and the UE need to establish an EPS security context. Usually, the EPS security context is created as the result of an authentication procedure between MME and UE
The EPS security context parameters shall be stored on the USIM if the corresponding file is present, and shall be updated only when the requirements defined in TS 33.401 [27] are met.
If the corresponding file is not present on the USIM, these EMM parameters except allowed CSG list are stored in a non-volatile memory in the ME together with the IMSI from the USIM.

- TS 24.301 [6], subclause 4.2.2.1 and Annex C;
- TS 31.102 [4], subclause 4.2.92;
- TS 33.401 [27], subclause 6.1.1.

11.1.3 Test purpose

To verify that the ME generates the EPS security context identified by a key set identifier for E-UTRAN (eKSI) and stores all inside EF_{EPSNSC} if this EF is available and when the requirements defined in TS 33.401 [27] are met.

11.1.4 Method of test

11.1.4.1 Initial conditions

For this test an E-USS is required.

The E-USS transmits on one cell, with the following network parameters:

- TAI (MCC/MNC/TAC):246/081/0001.
- Access control: unrestricted.

The default E-UTRAN UICC is used.

11.1.4.2 Procedure

a) The UE is switched on.

b) After receipt of an *RRCConnectionRequest* from the UE the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of an *AttachRequest* (included in the *RRCConnectionSetupComplete*) from the UE, the E-USS initiates the EPS authentication and AKA procedure. The E-USS uses

eKSI: '00'

d) Afterwards the E-USS transmits a (NAS) *SecurityModeCommand* message to activate NAS security, and after receiving (NAS) *SecurityModeComplete* from the UE, the E-USS sends *AttachAccept* to the UE with:

TAI (MCC/MNC/TAC):246/081/ 0001

GUTI: "24608100010266345678"

e) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*, to the UE

f) The UE or the UE's radio interface is switched off to perform the DETACH procedure.

11.1.5 Acceptance criteria

1) After step a) the UE shall read EF_{UST} and EF_{EPSNSC}.

2) During step b) the UE shall indicate in the *AttachRequest* that no key is available

3) During step c) the UE shall send the *AuthenticationResponse* message.

4) During step d) the UE shall send the (NAS) *SecurityModeComplete* message

5) EF_{EPSNSC} shall not be updated during steps b) to e).

6) After step f) the UE shall send DETACH REQUEST to the E-USS.

7) After step f) EF_{EPSNSC} shall contain:

EF_{EPSNSC} (EPS NAS Security Context)

Logically:	Key Set Identifier KSI_{ASME}:	'00'
	ASME Key (KSI_{ASME}) :	32 byte key, value not checked
	Uplink NAS count:	any value
	Downlink NAS count:	any value
	Identifiers of selected NAS integrity and encryption algorithm	any value

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	…	…	…	Bxx
Hex	A0	xx	80	01	00	81	xx	xx	…	…	…	xx

11.2 NAS security context parameter handling when service "EMM Information" is not available, no IMSI change

11.2.1 Definition and applicability

The security parameters for authentication, integrity protection and ciphering are tied together in an EPS security context and identified by a key set identifier for E-UTRAN (eKSI). The relationship between the security parameters is defined in 3GPP TS 33.401 [27].

The EPS security context parameters shall be stored on the USIM if the corresponding file is present. If the corresponding file is not present on the USIM, these EMM parameters except allowed CSG list are stored in a non-volatile memory in the ME together with the IMSI from the USIM.

The EF_{EPSNSC} contains the EPS NAS Security context as defined in TS 33.401 [27]. This file shall contain only one record.

11.2.2 Conformance requirement

EPS AKA is the authentication and key agreement procedure that shall be used over E-UTRAN.

Before security can be activated, the MME and the UE need to establish an EPS security context. Usually, the EPS security context is created as the result of an authentication procedure between MME and UE
The EPS security context parameters shall be stored on the USIM if the corresponding file is present.
If the corresponding file is not present on the USIM, these EMM parameters except allowed CSG list are stored in a non-volatile memory in the ME together with the IMSI from the USIM.

These EMM parameters can only be used if the IMSI from the USIM matches the IMSI stored in the non-volatile memory; else the UE shall delete the EMM parameters.

- TS 24.301 [6], subclause 4.2.2.1 and Annex C;
- TS 31.102 [4], subclause 4.2.92;
- TS 33.401 [27], subclause 6.1.1.

11.2.3 Test purpose

To verify that the ME generates the EPS security context identified by a key set identifier for E-UTRAN (eKSI) and stores all inside a non-volatile memory in the ME as EMM information is not available on the USIM. During the test the IMSI on the USIM remains unchanged.

11.2.4 Method of test

11.2.4.1 Initial conditions

For this test an E-USS is required.

The E-USS transmits on one cell, with the following network parameters:

- TAI (MCC/MNC/TAC):246/081/0001.
- Access control: unrestricted.

The default UICC (without the service "EMM Information") is installed into the Terminal and the UE is powered on.

11.2.4.2 Procedure

a) The UE is switched on.

b) After receipt of an *RRCConnectionRequest* from the UE the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of an *AttachRequest* (included in the *RRCConnectionSetupComplete*) from the UE, the E-USS initiates the EPS authentication and AKA procedure. The E-USS uses

eKSI: 00

d) Afterwards the E-USS transmits a (NAS) *SecurityModeCommand* message to activate NAS security, and after receiving (NAS) *SecurityModeComplete* from the UE, the E-USS sends *AttachAccept* to the UE with:

TAI (MCC/MNC/TAC):246/081/ 0001

GUTI: "24608100010266345678"

e) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*, to the UE

f) The UE is switched off and performs the *Detach* procedure.

g) The default UICC remains in use.

h) The Terminal is switched on.

i) After receipt of an *RRCConnectionRequest* from the UE the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

j) During registration and after receipt of an *AttachRequest* (included in the *RRCConnectionSetupComplete*) from the UE, E-USS transmits a (NAS) *SecurityModeCommand* message to activate NAS security using the last known K_{ASME}, and after receiving (NAS) *SecurityModeComplete* from the UE, the E-USS sends *AttachAccept* to the UE with:

TAI (MCC/MNC/TAC) list: 246/081/TACs: 0001, 0003, 0004

GUTI: "24608100010266345619"

k) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease* to the UE

11.2.5 Acceptance criteria

1) After step a) the UE shall read EF_{UST}

2) During step c) the UE shall send the *AuthenticationResponse* message.

3) During step d) the UE shall send the (NAS) *SecurityModeComplete* message

4) During step j) UE shall indicate in the *AttachRequest* eKSI as 00

5) During step j) the UE shall send the (NAS) *SecurityModeComplete* message

6) During step k) the UE shall send the *AttachComplete* message

11.3 NAS security context parameter handling when service "EMM Information" is not available, IMSI changed

11.3.1 Definition and applicability

The security parameters for authentication, integrity protection and ciphering are tied together in an EPS security context and identified by a key set identifier for E-UTRAN (eKSI). The relationship between the security parameters is defined in 3GPP TS 33.401 [27].

The EPS security context parameters shall be stored on the USIM if the corresponding file is present. If the corresponding file is not present on the USIM, these EMM parameters except allowed CSG list are stored in a non-volatile memory in the ME together with the IMSI from the USIM.

The EF_{EPSNSC} contains the EPS NAS Security context as defined in TS 33.401 [27]. This file shall contain only one record.

11.3.2 Conformance requirement

EPS AKA is the authentication and key agreement procedure that shall be used over E-UTRAN.

Before security can be activated, the MME and the UE need to establish an EPS security context. Usually, the EPS security context is created as the result of an authentication procedure between MME and UE
The EPS security context parameters shall be stored on the USIM if the corresponding file is present.
If the corresponding file is not present on the USIM, these EMM parameters except allowed CSG list are stored in a non-volatile memory in the ME together with the IMSI from the USIM.

These EMM parameters can only be used if the IMSI from the USIM matches the IMSI stored in the non-volatile memory; else the UE shall delete the EMM parameters.

- TS 24.301 [6], subclause 4.2.2.1 and Annex C;

- TS 31.102 [4], subclause 4.2.92;

- TS 33.401 [27], subclause 6.1.1.

11.3.3 Test purpose

1.) To verify that the ME generates the EPS security context identified by a key set identifier for E-UTRAN (eKSI) and stores all inside a non-volatile memory in the ME as EMM information is not available on the USIM.

2.) To verify that UE deletes existing EMM parameters from the ME"s non-volatile memory in case a different IMSI is activated.

11.3.4 Method of test

11.3.4.1 Initial conditions

For this test an E-USS is required.

The E-USS transmits on one cell, with the following network parameters:

- TAI (MCC/MNC/TAC):246/081/0001.
- Access control: unrestricted.

The default UICC (without the service "EMM Information") is installed into the Terminal and the UE is powered on.

11.3.4.2 Procedure

a) The UE is switched on.

b) After receipt of an *RRCConnectionRequest* from the UE the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of an *AttachRequest* (included in the *RRCConnectionSetupComplete*) from the UE, the E-USS initiates the EPS authentication and AKA procedure. The E-USS uses

eKSI: 00

d) Afterwards the E-USS transmits a (NAS) *SecurityModeCommand* message to activate NAS security, and after receiving (NAS) *SecurityModeComplete* from the UE, the E-USS sends *AttachAccept* to the UE with:

TAI (MCC/MNC/TAC):246/081/ 0001

GUTI: "24608100010266345678"

e) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*, to the UE

f) The UE is switched off and performs the *Detach* procedure.

g) A new UICC with the following configuration is activated:

The default UICC with the following exception: The IMSI is set to "246081222233333".

h) The Terminal is switched on.

i) After receipt of an *RRCConnectionRequest* from the UE the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

j) During registration and after receipt of an ATTACH REQUEST (included in the *RRCConnectionSetupComplete*) from the UE, E-USS transmits a (NAS) *SecurityModeCommand* message to activate NAS security using the last known K_{ASME} .

k) The UE responds with (NAS) *SecurityModeReject*.

l) The E-USS sends *RRCConnectionRelease* to the UE

11.3.5 Acceptance criteria

1) After step a) the UE shall read EF_{UST}

2) During step c) the UE shall send the *AuthenticationResponse* message.

3) During step d) the UE shall send the (NAS) *SecurityModeComplete* message

4) During step j) UE shall indicate in the *AttachRequest* that no key is available

5) After step j) the UE shall send the (NAS) *SecurityModeReject* message

Annex A (informative): Change history

TSG #	TSG TD#	WG TD#	CR	Rev	Cat	Subject/Comment	Old	New
CT-28	CP-050139	C6-050394	068	-	B	Introduction of BCD number/ SSC content extension tests	-	6.0.0
CT-28	CP-050139	C6-050396	072	-	B	Introduction of ACL tests	-	6.0.0
CT-28	CP-050139	C6-050436	073	-	B	Introduction of SDN tests	-	6.0.0
CT-28	CP-050139	C6-050452	074	-	B	Introduction of phonebook selection/ local phonebook handling test	-	6.0.0
CT-29	CP-050325	C6-050658	080	-	A	Incorrect PUK2 value used in TC 6.1.6	6.0.0	6.1.0
CT-29	CP-050325	C6-050711	088	-	A	Incorrect value used for EF SMS in TC 8.2.2	6.0.0	6.1.0
CT-29	CP-050331	C6-050654	076	-	A	Incorrect MCC value used in TC 7.4.1	6.0.0	6.1.0
CT-29	CP-050336	C6-050706	083	-	F	Clarification of BCD number/ SSC content extension tests	6.0.0	6.1.0
CT-29	CP-050336	C6-050700	081	-	F	Numbering and minor corrections	6.0.0	6.1.0
CT-30	CP-050494	C6-050853	090	-	F	CR to create combined R99 – Rel-6 version	6.1.0	6.2.0
CT-31	CP-060020	C6-060178	095	-	F	Essential correction of TC 7.2.1	6.2.0	6.3.0
CT-31	-	-	-	-	-	Update of Change History by TB Officer	6.3.0	6.3.1
CT-32	CP-060285	C6-060224	0096	-	F	Essential correction of acceptance criteria in 6.1.3.5 and 6.1.4.5	6.3.1	6.4.0
CT-32	CP-060286	C6-060231	0097	-	F	Essential corrections on ACL TC 9.1.1	6.3.1	6.4.0
CT-33	CP-060507	C6-060517	0098	1	F	Essential corrections on Applicability table	6.4.0	6.5.0
CT-34	CP-060543	C6-060792	0099	1	F	Essential corrections to 8.1.2	6.5.0	6.6.0
CT-34	CP-060543	C6-060793	0100	1	F	Essential correction of EF PLMNwACT coding	6.5.0	6.6.0
CT-35	CP-070064	C6-070098	0101	1	F	Essential correction of UICC presence detection test	6.6.0	6.7.0
CT-36	-	-	-	-	-	Update to Rel-7 version (MCC)	6.7.0	7.0.0
CT-37	CP-070617	C6-070368	0103	-	F	Essential correction of Location Area Information parameter in test 7.3	7.0.0	7.1.0
CT-37	CP-070617	C6-070369	0104	-	F	Essential correction of the applicability of tests 6.4.2, 6.4.3, 6.4.4	7.0.0	7.1.0
CT-38	CP-070846	C6-070526	0105	-	F	Essential correction on test case 7.1.2	7.1.0	7.2.0
CT-38	CP-070846	C6-070567	0106	1	C	Introduction of Rel-7 test case applicability	7.1.0	7.2.0
CT-38	CP-070846	C6-070568	0107	1	F	Essential correction of Location Updating Accept/ Attach Accept parameters in 7.1.1	7.1.0	7.2.0
CT-38	CP-070846	C6-070569	0108	1	F	Essential correction of network parameters and acceptance criteria in 7.4.1	7.1.0	7.2.0
CT-38	CP-070846	C6-070581	0109	1	F	Correction of reference to 3GPP TS 23.140	7.1.0	7.2.0
CT-39	CP-080171	C6-080017	0110	-	F	Sequence indication error in 7.1.2.4.2 fixed after wrong implementation of CR 0105	7.2.0	7.3.0
CT-39	CP-080171	C6-080065	0111	1	F	Essential correction to Access Class Barred IE coding in tables 5-1a and 5-1b	7.2.0	7.3.0
CT-40	CP-080387	C6-080103	0112	-	F	Essential correction to network simulator configuration in test 5.2.1	7.3.0	7.4.0
CT-40	CP-080387	C6-080104	0113	-	F	Essential correction to test 7.3.1	7.3.0	7.4.0
CT-40	CP-080387	C6-080167	0114	1	F	Essential correction of the test case applicability for terminals not supporting speech calls	7.3.0	7.4.0
CT-41	CP-080587	C6-080240	0115	-	F	Essential correction of TC 8.4 applicability	7.4.0	7.5.0
CT-42	------	------	-	-	-	Upgrade to copyright, keywords and logo for LTE	7.5.0	8.0.0
CT-43	CP-090458	C6-090177	0116	1	B	Definition of LTE™ tests	8.0.0	8.1.0
CT-43	CP-090458	C6-090132	0118	-	B	Definition of clause 7.2, 7.3 and 7.4 LTE™ tests	8.0.0	8.1.0
CT-43	CP-090458	C6-090179	0119	1	F	Clarification of class 2 SMS test	8.0.0	8.1.0
CT-43	CP-090458	C6-090187	0120	2	F	Clarification of PIN MMI string test	8.0.0	8.1.0
CT-45	CP-090717	C6-090234	0121	1	B	Definition of CSG related test cases for E-UTRA	8.1.0	8.2.0
CT-45	CP-090717	C6-090320	0122	1	B	Definition of EPS NAS Security Context cases for E-UTRA/EPC	8.1.0	8.2.0
CT-45	CP-090717	C6-090208	0123		F	Essential correction of test 6.1.12	8.1.0	8.2.0
CT-45	CP-090717	C6-090322	0124	1	F	Correction of tests 7.4.2 and 7.4.4	8.1.0	8.2.0
CT-45	CP-090717	C6-090321	0126	1	B	Definition of CSG related test cases for E-UTRA, Part 2	8.1.0	8.2.0
CT-45	CP-090717	C6-090236	0127		F	Essential corrections on LTE related test cases	8.1.0	8.2.0
CT-46	CP-090997	C6-090405	0130		F	Correction of EF UST in clause 4.4.1	8.2.0	8.3.0
CT-46	CP-090998	C6-090463	0133	1	F	Editorial correction of the naming of RRCConnectionRequest	8.2.0	8.3.0
CT-46	CP-090998	C6-090484	0131	3	F	Definition of the UICC presence detection test when connected to E-UTRAN/EPC	8.2.0	8.3.0
CT-46	CP-090998	C6-090485	0132	3	F	Definition of ACL related test cases for E-UTRA	8.2.0	8.3.0

CT-46	CP-090998	C6-090499	0135		F	Update of CGS list tests	8.2.0	8.3.0
CT-46	-	-	-	-	-	Upgrade of the specification to Rel-9	8.3.0	9.0.0
CT-47	CP-100195	C6-100071	0139	1	D	Editorial modifications about missing section numbers	9.0.0	9.1.0
CT-47	CP-100193	C6-100029	0137	-	F	Introduction of Rel-9 applicability and applicability table corrections	9.0.0	9.1.0
CT-48	CP-100394	C6-100211	0141		F	Essential correction of Unblock Universal PIN value description in 4.1.1.21	9.1.0	9.2.0
CT-48	CP-100394	C6-100256	0140	1	F	Essential correction to applicability table	9.1.0	9.2.0
CT-48	CP-100394	C6-100278	0143	1	F	Essential corrections on the initial conditions of E-UTRAN related test cases	9.1.0	9.2.0
CT-48	CP-100394	C6-100279	0144		F	Correction of inconsistent terminology for E-UTRAN-related elements	9.1.0	9.2.0
CT-49	CP-100589	C6-100413	0147	1	F	Addition of CSG Type and Home NodeB Name display test	9.2.0	9.3.0
CT-49	CP-100590	C6-100376	0146	1	F	Essential corrections on E-UTRAN / EPC related test cases	9.2.0	9.3.0
CT-49	CP-100592	C6-100392	0145	1	F	Update of references	9.2.0	9.3.0
CT-50	CP-100831	C6-100597	0150	1	F	Correction of incorrect Expected IMSI value in TC 5.1.8 acceptance criteria	9.3.0	9.4.0
CT-50	CP-100831	C6-100604	0151	1	F	Addition of LTE-related services to EF_UST in LTE test cases	9.3.0	9.4.0
CT-50	CP-100830	C6-100620	0148	1	B	Definition of E-UTRAN/EPC ISIM-UICC for ISIM related testing	9.3.0	9.4.0
CT-51	CP-110264	C6-110196	0153	3	C	Split of test 8.2.1 for independent verification of correct 'Class 2 SM storage on the USIM' and 'SM memory capacity exceeded handling' support	9.4.0	9.5.0
CT-51	CP-110232	C6-110115	0154	7	B	Introduction of ISIM related SMS tests	9.4.0	9.5.0
CT-51	CP-110232	C6-110116	0155		B	Introduction of ISIM and USIM related SMS reading test	9.4.0	9.5.0
CT-51	CP-110264	C6-110197	0156	1	F	Essential correction on TC 5.1.10	9.4.0	9.5.0
SP-51						Automatic upgrade from previous version 9.5.0	9.5.0	10.0.0
CT-52	CP-110502	C6-110268	0158	1	F	Removal of tel URI in EF_IMPU of the default configuration of a E-UTRAN/EPC ISIM UICC	10.0.0	10.1.0
CT-52	CP-110502	C6-110256	0159		F	Essential correction of test 11.1 regarding EF EPSNSC updates	10.0.0	10.1.0
CT-53	CP-110718	C6-110372	0161	2	F	Essential correction of tests 11.2 and 11.3	10.1.0	10.2.0
CT-53	CP-110718	C6-110378	0162	1	F	Essential correction of test 5.2.2	10.1.0	10.2.0
						Correction of formatting of table 5-2	10.2.0	10.2.1
CT-54	CP-110903	C6-110543	0163	1	F	Essential correction of the phonebook and MMS tests applicability	10.2.1	10.3.0
CT-54	CP-110903	C6-110583	0164	1	F	Deletion of test 9.1.6 (Access Point Name Control List handling for terminals not supporting ACL connected to E-UTRAN/EPC)	10.2.1	10.3.0
CT-55	CP-120150	C6-120065	0165	1	F	Essential correction of 5.2.2	10.3.0	10.4.0
CT-56	CP-120390	C6-120214	166		F	Correction of test 6.1.16	10.4.0	10.5.0
CT-56	CP-120390	C6-120264	168	1	F	Test case applicability modification of test 8.2.3 for terminals with large SMS storage capabilities	10.4.0	10.5.0
CT-56	CP-120391	C6-120228	167		F	Changes in test sequences for ACL in E-UTRAN	10.4.0	10.5.0
SP-57						Automatic upgrade to Rel-11	10.0.0	11.0.0

History

Document history		
V11.0.0	November 2012	Publication