3GPP TSG-T (Terminals) Meeting #25
Palm Springs, CA, USA
8 - 10 September 2004

TP-040184

Agenda Item: 5.3.3
Source: T3
Title: CRs to TS 31.121
Document for: approval

This document contains the following change requests that are approved by 3GPP TSG T3 and forwarded to 3GPP TSG T#25 for approval:

Doc-2nd-Level	Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Workitem
T3-040534	31.121	034	-	R99	CR 31.121 R99: alignment with TS 51.010-1 on default EF-ADN configuration	F	3.9.0	3.10.0	TEI
T3-040535	31.121	037	-	R99	CR 31.121 R99: Essential Corrections on section 7	F	3.9.0	3.10.0	TEI
T3-040536	31.121	039	-	R99	CR 31.121 R99: Correction of SMS related test cases	F	3.9.0	3.10.0	TEI
T3-040537	31.121	040	-	Rel-4	CR 31.121 Rel-4: Correction of SMS related test cases	F	4.8.0	4.9.0	TEI
T3-040559	31.121	038	-	Rel-4	CR 31.121 Rel-4: Essential Corrections on section 7	A	4.8.0	4.9.0	TEI
T3-040560	31.121	043	-	Rel-4	CR 31.121, Rel-4: Creation of MMS related tests	B	4.8.0	4.9.0	TEI
T3-040568	31.121	035	-	Rel-4	CR 31.121 Rel-4: alignment with TS 51.010-1 on default EF-ADN configuration	A	4.8.0	4.9.0	TEI
T3-040578	31.121	035	-	R99	CR 31.121 R99: Essential Corrections on sections 2-6	F	3.9.0	3.10.0	TEI
T3-040579	31.121	036	-	Rel-4	CR 31.121 Rel-4: Essential Corrections on sections 2-6	F	4.8.0	4.9.0	TEI
T3-040580	31.121	041	-	R99	CR 31.121 R99: Correction of Access Control handling related test case TC 5.2.1.	F	3.9.0	3.10.0	TEI
T3-040581	31.121	042	-	Rel-4	CR 31.121 Rel-4: Correction of Access Control handling related test case TC 5.2.1.	A	4.8.0	4.9.0	TEI

3GPP TSG T WG3 Meeting #32
New York, USA, 10th – 13th August 2004

T3-040534

CR-Form-v7

CHANGE REQUEST

⌘ **31.121** **CR** **034** ⌘ **rev** **-** ⌘ Current version: **3.9.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [X] ME [ ] Radio Access Network [ ] Core Network [ ]

Title:	⌘	CR TS 31.121 R99: alignment with TS 51.010-1 on default EF-ADN configuration
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	12/08/2004
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	CR to 31.121:Alignment with 51.010-1 on default EF-ADN configuration. At GERAN#20 it was clarified that the entries of the EF-ADN shall be unique to give a more real life testing. This CR aims to harmonize with the decisions taken at GERAN#20
Summary of change:	⌘	Clarification of ch 4.1.1.10 that each non-empty entry in EF-ADN shall be unique
Consequences if not approved:	⌘	Test cases would represent highly unlikely user scenarios.

Clauses affected:	⌘	4.1.1.10

Other specs affected: ⌘	Y	N	
		X	Other core specifications
		X	Test specifications
		X	O&M Specifications

⌘

Other comments:	⌘	The same corrections applies to all later releases

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

---------- Modified section ----------

4.1.1.10 EF_{ADN} (Abbreviated Dialling Number)

Logically:	At least 10 records, each non-empty record unique.	
Record 1 ~~to 10~~:	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

3GPP TSG T WG3 Meeting #32
New York, US, 10th - 13th August 2004

T3-040535
(revised T3-040416)

CR-Form-v7

CHANGE REQUEST

⌘ **31.121** **CR** **037** ⌘ **rev** **-** ⌘ Current version: **3.9.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [X] ME [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	CR 31.121 R99: Essential Corrections on section 7
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	11/08/2004
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
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Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Correction of incorrect codings, test purpose descriptions and acceptance criteria.
Summary of change:	⌘	3.3: Added the absence abbreviation, which was added for the PLMN related tests. 7.1.1; 7.1.2; 7.1.3; 7.2.2; 7.3.1; 7.3.2; 7.4.1; 7.4.2: Considered CS, PS or CS/PS registration procedure because initiated registration on CS and/or PS domain depends on UEs capabilities. 7.1.1 : In UTRAN it is not possible to perform a successful registration without starting integrity which requires a valid key on UE side, details can be found in 3GPP TS 33.102, Sections 6.4.5 - 6.5.1. Therefore the UE has to update the key set identifier before the registration and so the requirement regarding “unchanged key set identifier” is not testable in UTRAN. 7.4.1.4.2: CHANNEL RELEASE procedure in step h) belongs to GSM cell but in this case a UTRAN cell is present thus CHANNEL RELEASE procedure is replaced by RRC CONNECTION RELEASE procedure 7.2.2.4.2, 7.2.2.5, 7.3.1.4.2, 7.3.1.5, 7.3.2.4.2, 7.3.2.5, 7.4.1.4.2, 7.4.1.5, 7.4.2.4.2, 7.4.2.5 : Generic problem in TCs section 7.2 and 7.3 and 7.4: wrong acceptance criteria obviously copied from GSM test 27.9 (TS 51.010, there the TC is considered for CS only) which has been copied to all these TCs:

		A MS/UE always indicates inside the LOCATION UPDATE REQUEST or ATTACH REQUEST the MNC/MCC currently stored on the SIM/USIM and not the MNC/MCC of the cell on which the registration currently is attempted, the detailed description can be found in TS 24.008 section 9.2.15.1 and 9.4.1 ("old routing area identification). In GCF GSM TC 27.9 is still in CAT P (never activated until now) !
Consequences if not approved:	⌘	MEs will fail incorrect tests or tests can't be implemented on any test system due to above listed errors.

Clauses affected:	⌘	3.3, 7.1.1, 7.1.2, 7.1.3, 7.2.2, 7.2.3, 7.2.4, 7.3.1, 7.3.2, 7.4.1, 7.4.2, 7.5.1			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

3.3 Abbreviations

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

3G	3rd Generation
3GPP	3rd Generation Partnership Project
ACC	ACcess Class
ACL	APN Control List
[…]	
CCI	Capability / Configuration Identifier
CCM	Current Call Meter
CK	Cipher key
CN	Core Network
DF	Dedicated File

[…]

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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 ~~location updating~~ registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a ~~location update~~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 UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

~~After a location update, which is not followed by an authentication procedure, the Key Set Identifier indicates that the Key Set Identifier is undefined.~~

~~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.~~

This test applies to Terminals accessing UTRAN.

7.1.1.2 Conformance requirement

1) Depending on which domain the UE is going to be registered on, one of the following requirements should be fulfilled:

I. ~~In~~ in automatic PLMN selection mode the UE shall only attempt a LOCATION UPDATING~~TE~~ REQUEST during registration on CS if it receives a BCCH containing a PLMN(MCC,MNC)~~LAI~~ that is not indicated in the EFFPLMN 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, subclause 2.3;
- TS 31.102, 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 UPDATE REJECT message during registration on CS with the cause "PLMN not allowed" the Terminal shall update the EFFPLMN 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, subclause 3.2.2 ~~2.3~~;
- TS 31.102, subclauses 5.1.1 and 5.2.7.

~~3) After call termination the USIM shall contain the correct Key Set Identifier.~~

3) 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, subclauses 5.1.2, 5.2.5 and 5.2.6;~~
- ~~TS 21.111, 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, subclauses 5.1.2, 5.2.5 and 5.2.6;
- TS 21.111, subclause 10.1.

7.1.1.3 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

   I. LOCATION ~~UPDATE~~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 the EF_{Keys} has been correctly updated by the Terminal.~~

~~4)~~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 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.
- 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_{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.

~~**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~~

7.1.1.4.2 Procedure

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:

~~LAI~~PLMN (MCC/MNC): 234/003

The USS then resumes RF output on the BCCH.

c) 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~~PLMN (MCC/MNC): 234/004

The USS then resumes RF output on the BCCH.

d) 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~~PLMN (MCC/MNC): 234/005

The USS then resumes RF output on the BCCH.

e) 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~~ after receipt of a LOCATION ~~UPDATE~~ UPDATING REQUEST from the UE, the USS sends LOCATION ~~UPDATE~~ 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 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.

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): 234/008/0001

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 ~~A~~after receipt of a LOCATION UPDATING~~E~~ REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING~~E~~ ACCEPT to the UE 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): 234/008/000/05

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): 234/008/000/05

P-TMSI: "43658709"

P-TMSI signature value "443322"

~~to the UE.~~

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.

~~After receipt of a TMSI REALLOCATION 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.~~

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 UPDATE and not a ATTACH procedure.

2) After step f) the UE shall send

I. LOCATION ~~UPDATE~~ 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 UE shall send

I. LOCATION UPDATING~~E~~ 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 UE 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.

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

For UEs 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 UEs supporting (CS and PS) or (PS only):

EF_{PSLOCI} (Location Information)

Logically: RAI-MCC: 234
RAI-MNC: 008
P-TMSI: "43658709"
P-TMSI signature value: "443322"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	43	65	87	09	44	33	22	32	84	00	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

~~**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~~

~~**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: Hex	B1 32	B2 24	B3 00	B4 32	B5 34	B6 00	B7 32	B8 44	B9 00	B10 32	B11 54	B12 00
	B13 32	B14 64	B15 00	B16 32	B17 74	B18 00						

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 location updating registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a location update 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 UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

This test applies to Terminals accessing UTRAN.

7.1.2.2 Conformance requirement

Depending on which domain the UE will be registered on, one of the following requirements should be fulfilled:

I. Afterafter the receipt of a LOCATION UPDATEUPDATING 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, subclause 3.2.2.4.
- TS 31.102, 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 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

-Access control: unrestricted.

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.

7.1.2.4.2 Procedure

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 ~~After~~ receipt of a LOCATION ~~UPDATE~~ UPDATING REQUEST from the UE, the USS sends LOCATION ~~UPDATE~~ 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.

7.1.2.5 Acceptance criteria

1) After step b) the UE shall send

I. LOCATION ~~UPDATE~~ 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 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 ~~location update~~ 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 ~~location update~~ 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 UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

This test applies to Terminals accessing UTRAN.

7.1.3.2 Conformance requirement

1) Depending on which domain the UE will be registered on, one of the following requirements should be fulfilled:

   I. In manual PLMN selection mode the UE shall be able to perform a LOCATION UPDATING~~E~~ 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, subclause 3.2.2.2.
- TS 31.102, 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:

   I. ~~After~~ after receipt of LOCATION ~~UPDATE~~ 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, subclause 3.2.2.4.

7.1.3.3 Test purpose

1) To verify that the UE is able to perform

   I. a LOCATION ~~UPDATE~~ 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 ~~LOCATION UPDATE~~ 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 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.

- Access control: unrestricted.

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.

7.1.3.4.2 Procedure

a) The UE is powered on.

b) PLMN with MCC/MNC of 234/005 is manually selected.

c) After receipt of a 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~~ after receipt of a LOCATION UPDATING~~E~~ REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDAT~~E~~ING 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"

~~to the UE.~~

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.

7.1.3.5 Acceptance criteria

1) After step c) the UE shall send

I. LOCATION ~~UPDATE~~ 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 UE 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.

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

For UEs 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"
P-TMSI signature value: "AB1234"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	AB	12	34	32	54	00	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

~~**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~~

7.2 User controlled PLMN selector handling

[…]

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 UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

This test applies to Terminals accessing UTRAN.

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, 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 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.
- Access control: unrestricted.

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/034/0001.
- RAI (MCC/MNC/LAC/RAC): 244/034/0001/05.
- Access control: unrestricted.

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
	.....	
	.....	
	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	.....	.....	.....	.....						
	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.

7.2.2.4.2 Procedure

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 ~~After~~ receipt of a LOCATION UPDAT~~E~~ING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDAT~~E~~ING 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"

~~to the UE.~~

d) After passing through the authentication procedure and ~~A~~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 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.

7.2.2.5 Acceptance criteria

1) After step a) the UE shall send an RRC CONNECTION REQUEST on the cell related to the BCCH transmitting MCC/MNC 244/034 to the USS.

2~~1~~) After step b) the UE shall send

I. LOCATION UPDAT~~E~~ING REQUEST ~~containing an MCC/MNC of 234/034~~ 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~~2~~) After step c) the UE 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..

3) After step e) 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: 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 supporting (CS and PS) or (PS only):

EF_{PSLOCI} (Location Information)

Logically: RAI-MCC: 244
RAI-MNC: 034
P-TMSI: "34567890"

P-TMSI signature value: "AB1234"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	34	56	78	90	AB	12	34	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 a 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.

This test applies to a GSM/UMTS dual mode UE accessing both UTRAN and GSM using either ID-1 or Plug-in UICC.

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, subclause 3.2.2;
- TS 31.102, subclauses 4.2.5 and 5.1.2.

7.2.3.2.1 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.

7.2.3.3 Method of test

7.2.3.3.1 Initial conditions

For this test both a GSM SS and a UTRAN USS is needed.

The GSM SS transmit on BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/081/0001.
- Access control: unrestricted.

The UMTS USS transmit 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.

7.2.3.3.2 Procedure

a) The UE is powered on.

b) After receipt on the GSM-cell related to the BCCH transmitting MCC/MNC 244/081 of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.

c) After receipt of a LOCATION UPDATING~~E~~ REQUEST from the UE, the SS sends LOCATION UPDATING~~E~~ 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.

7.2.3.4 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~~1~~) After step b) the UE shall send LOCATION UPDATING~~E~~ REQUEST ~~containing an MCC/MNC of 244/081~~ to the SS.

3~~2~~) After step c) the UE shall respond with TMSI REALLOCATION COMPLETE.

4~~3~~) 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

7.3 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 depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

This test applies to Terminals accessing UTRAN.

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, subclause 3.2.2;
- TS 31.102, 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 is needed.

The USS 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.
- Access control: unrestricted.

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): ~~244~~254/012/0001.
- RAI (MCC/MNC/LAC/RAC): 254/012/0001/05.
- Access control: unrestricted.

The default UICC is used with the following exception:

$EF_{OPLMNwACT}$ (OPLMN Selector)

Logically:
1st PLMN: 254 012 (MCC MNC)
1st ACT UTRAN
2nd PLMN: 254 011
2nd ACT UTRAN
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	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	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

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

7.3.1.4.2 Procedure

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~~ after receipt of a LOCATION UPDAT~~E~~ING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDAT~~E~~ING ACCEPT to the UE with 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"

~~to the UE.~~

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.

7.3.1.5 Acceptance criteria

1) After step a) the UE shall send an RRC CONNECTION REQUEST on the cell related to the BCCH transmitting MCC/MNC 254/012 to the USS.

2~~1~~) After step b) the UE shall send

I. LOCATION UPDAT~~E~~ING REQUEST ~~containing an MCC/MNC of 254/012~~ 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~~2~~) After step c) 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~~3~~) After step e) the USIM shall contain the following values:

For UEs 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"
P-TMSI signature value: "AB1234"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	34	56	78	90	AB	12	34	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 UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

This test applies to Terminals accessing UTRAN.

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, subclause 3.2.2.2;
- TS 31.102, 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 is needed.

The USS 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.
- Access control: unrestricted.

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/010/0001.
- RAI (MCC/MNC/LAC/RAC): 244/010/0001/05.
- 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.

7.3.2.4.2 Procedure

a) The UE is powered on.

b) After receipt on the cell related to the BCCH transmitting MCC/MNC 244/010 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~~After~~ receipt of a LOCATION UPDAT~~E~~ING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDAT~~E~~ING ACCEPT 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"

~~to the UE.~~

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.

7.3.2.5 Acceptance criteria

1) After step a) the UE shall send an RRC CONNECTION REQUEST on the cell related to the BCCH transmitting MCC/MNC 244/010 to the USS.

2~~1~~) After step b) the UE shall send

I. LOCATION UPDAT~~E~~ING REQUEST ~~containing an MCC/MNC of 244/010~~ 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~~2~~) After step c) 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~~3~~) After step e) 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: 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"

P-TMSI signature value: "AB1234"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	34	56	78	90	AB	12	34	42	04	10	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

7.4 HPLMN search handling

7.4.1 UE recognising the search period of the HPLMN

7.4.1.1 Definition and applicability

The HPLMN list gives in priority order the Home PLMN on which the UE shall register first. The HPLMN search period gives the time interval in which the UE shall search for a possible HPLMN registration.

The registration attempts initiated by the UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

This test applies to Terminals accessing UTRAN.

7.4.1.2 Conformance requirement

After registered onto a VPLMN the UE shall take into account the HPLMN search period timer and the priority order of the HPLMNs in the preferred list on the USIM.

- TS 22.011, subclauses 3.2.2 and 3.2.2.5.
- TS 24.008, subclause 4.7.5

7.4.1.3 Test purpose

To verify that the HPLMN timer is read and the HPLMN 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 a UTRAN USS is needed.

The 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.

After the registration of UE the USS transmits on a second BCCH, with the following network parameters:

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

- RAI (MCC/MNC/LAC/RAC): 246/081/0001/05.
- Access control: unrestricted.

The default UICC shall be used with the following exception:

EF_{HPLMN} (HPLMN 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.

7.4.1.4.2 Procedure

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 ~~After~~ receipt of a LOCATION UPDAT~~E~~ING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDAT~~E~~ING ACCEPT with the following values to the UE:

LAI (MCC/MNC/LAC): 244/081/0001

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) 244/081/0001/05

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): 244/081/0001

TMSI: "34567890"

RAI (MCC/MNC/LAC/RAC) 244/081/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

~~to the UE.~~

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 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.

e) The USS starts to send on the second BCCH with the MCC/MNC 246/081. An internal timer shall start to run.

f) After receipt on the cell related to the BCCH transmitting MCC/MNC 246/081 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 with the following values to the UE:

LAI (MCC/MNC/LAC): 246/081/0001

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) 246/081/0001/05

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): 246/081/0001

TMSI: "12345678"

RAI (MCC/MNC/LAC/RAC) 246/081/0001/05

P-TMSI "12345678"

P-TMSI signature value "AB1234"

~~After receipt of a LOCATION UPDATE REQUEST from the UE, the USS sends LOCATION UPDATE ACCEPT with :~~

~~LAI (MCC/MNC): 246/081~~

~~TMSI: "12345678"~~

~~to the UE.~~

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.

~~After receipt of a TMSI REALLOCATION COMPLETE from the UE, the USS 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 shall send an RRC CONNECTION REQUEST on the cell related to the BCCH transmitting MCC/MNC 246/081 to the USS.

2~~1~~) After step e) the UE shall send

I. LOCATION UPDAT~~E~~ING REQUEST ~~containing an MCC/MNC of 246/081~~ 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~~2~~) After step g) the UE 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~~3~~) 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 ~~s~~% greater than the required 6 ~~s~~minutes.

54) 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: 246
LAI-MNC: 081
TMSI: "12345678"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	42	16	80	xx	xx	xx	00

For UEs supporting (CS and PS) or (PS only):

EF_{PSLOCI} (Location Information)

Logically: RAI-MCC: 246
RAI-MNC: 081
P-TMSI: "12345678"
P-TMSI signature value: "AB1234"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	AB	12	34	42	16	80	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

7.4.2 GSM/UMTS dual mode UEs recognising the search period of the HPLMN

7.4.2.1 Definition and applicability

The HPLMN list gives in priority order the Home 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 $EF_{HPLMNACT}$. The HPLMN search period gives the time interval in which the UE shall search for a possible HPLMN registration. To avoid a duplication of a test.

This test applies to a GSM/UMTS dual mode UE accessing both UTRAN and GSM using either ID-1 or Plug-in UICC.

To avoid a duplication of tests, this test supersede the previous test case (7.4.1).

The registration attempts initiated by the UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

7.4.2.2 Conformance requirement

After registered onto a VPLMN the UE shall take into account the HPLMN search period timer and the priority order of the HPLMNs in the preferred list on the USIM including the Access Technology Identifier.

- TS 22.011, subclauses 3.2.2 and 3.2.2.5.

7.4.2.3 Test purpose

To verify that the HPLMN timer is read and the HPLMN with the higher priority (defined by its position in $EF_{HPLMNwACT}$) 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 a 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.

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): 246/081/0001.
- Access control: unrestricted.

At the same time as the SS sends on a second BCCH, the UMTS USS transmit on BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.
- RAI (MCC/MNC/LAC/RAC): 246/081/0001/05.
- Access control: unrestricted.

The default UICC is used with the following exception:

$EF_{HPLMNwACT}$ (HPLMN selector with Access Technology)

Logically: Set to MCC 246 and MNC 081
Set to UTRAN

Coding:	B1	B2	B3	B4	B5
Hex	42	16	80	80	00

EF_{HPLMN} (HPLMN Search period)

Logically: set to 6minutes

Coding:	B1
Hex	01

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 UPDATE REQUEST from the UE, the SS sends LOCATION UPDATE 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 SS starts to send on the second BCCH with the MCC/MNC 246/081 and the USS starts to send with the Same MCC/MNC. An internal timer shall start to run.

f) After receipt on the UTRAN-cell related to the BCCH transmitting MCC/MNC 246/081 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 with the following values to the UE:

LAI (MCC/MNC/LAC): 246/081/0001

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) 246/081/0001/05

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): 246/081/0001

TMSI: "12345678"

RAI (MCC/MNC/LAC/RAC) 246/081/0001/05

P-TMSI "12345678"

P-TMSI signature value "AB1234"

~~After receipt of a LOCATION UPDATE REQUEST from the UE, the USS sends LOCATION UPDATE ACCEPT with:~~

~~LAI (MCC/MNC): 246/081~~

~~TMSI: "12345678"~~

~~to the UE.~~

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 246/081 to the USS.

2~~1~~) After step e) the UE shall send

I. LOCATION UPDATING~~E~~ REQUEST ~~containing an MCC/MNC of 246/081~~ 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~~2~~) After step g) the UE 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.

4~~3~~) 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 ~~s~~% greater than the required 6 ~~s~~minutes.

5~~4~~) 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: 246
LAI-MNC: 081
TMSI: "12345678"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	42	16	80	xx	xx	xx	00

For UEs supporting (CS and PS) or (PS only):

EF_{PSLOCI} (Location Information)

Logically: RAI-MCC: 246
RAI-MNC: 081
P-TMSI: "12345678"
P-TMSI signature value: "AB1234"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	AB	12	34	42	16	80	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

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T3-040536
(revised T3-040417)

CR-Form-v7

CHANGE REQUEST

⌘ **31.121** **CR** **039** ⌘**rev** **-** ⌘ Current version: **3.9.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [X] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	CR 31.121 R99: Correction of SMS related test cases
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	12/08/2004
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(addition of feature),*
- ***C*** *(functional modification of feature)*
- ***D*** *(editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change: ⌘

1) Missed abbreviations for Short Message handling reports
2) Testcase 8.2.1 only: Prose and hex coded SM in clause 8.2.1.4.1 do not match. Some mandatory IEs (RP destination address, RP user data length) are missing in the hex coded version of the SM. Furthermore some of these missing IEs could be arbitrary chosen, so it will be impossible to specify the hex coding exactly and it will always be ambiguous.
   The hex coding of the SM stored on the USIM is different from the SM send over the air interface, so there's no need to correct clause 8.2.1.5 (see 3GPP TS 31.102 cl. 4.2.25 "Remainder").
3) The EF_{UST} byte 2 has been coded incorrectly for the SMS services. Services 14 and 15 have been enabled instead of services 10 and 11.
4) Testcase 8.2.1 only: The order of the EF_{SMSS} bytes B1 and B2 are wrong for the acceptance criteria in clause 8.2.1.5. Also the logically explanation was wrong, should indicate "Memory capacity exceeded"
5) The used EF_{UST} was not set to assure that the EF_{EST} is picked up and the indicated services in EF_{EST} are considered in the desired way according to TS 31.102, sections 4.2.8, 4.2.47 and 5.1.1.2
6) Test case 8.2.1 only: the requirement for testing of EF_{SMSS} was not in line with TS 23.040 as this flag is only set if the UE indicates to the network that its memory capacity has been exceeded and as memory capacity also the storage capacity inside the ME has to be considered. Therefore the reference to the requirement and the test procedure for this part of the test case has been updated to enable the testing of this requirement.
7) 8.2.1.4.1: The coding for Record 1 indicating an empty Record was not correct.

Summary of change: ⌘ 1) Added the absence abbreviations, which were added for the "Short message

		handling report" related tests. Correct the use of this abbreviations depending which one is more applicable. 2) The hex coding of the SM in clause 8.2.1.4.1 has been deleted. 3) Byte 2 of the EF_{UST} has been corrected. 4) The content of bytes B1 and B2 have been swapped and the logically explanation changed to "Memory capacity exceeded". 5) The EF_{UST} has been corrected to assure that the EF_{EST} is picked up. 6) All sections inside TC 8.2.1 are updated to assure that the desired requirement is tested according to 23.040, therefore test purpose , test requirement and test procedure have been updated. 7) The coding for Record 1 has been changed to indicate an empty record.
Consequences if not approved:	⌘	Incorrect and insufficient SMS related test cases. Correctly implemented UEs would unfairly fail these test cases.

Clauses affected:	⌘	3.3, 8.2.1, 8.2.2			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request

3.3 Abbreviations

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

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
ATR	Answer To Reset
[…]	
LAC	Location Area Code
LAI	Location Area Information
LSB	Least Significant Bit
[…]	
RACH	Random Access Channel
RFU	Reserved for Future Use
RRC	Radio Resource Control
SFI	Short File Identifier
SS	System Simulator (GSM)
SM	Short Message
SMS	Short Message Service
TE	Terminal Equipment
TLV	Tag Length Value
TMSI	Temporary Mobile Subscriber Identity
TON	Type Of Number
[…]	

8.2 Short message handling report

8.2.1 Correct storage of a SM~~S~~ on the USIM

8.2.1.1 Definition and applicability

Once a SM~~S~~ is received by the UE, the Terminal shall store the SM~~S~~ on the USIM, if this is indicated by the class 2 of the SMS (USIM specific SM~~S~~). 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~~d~~.

This test applies to all 3G Terminal accessing UTRAN and supporting "receive SMS" functionality.

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). ~~After the last empty SMS field is filled with a received SMS,~~ 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 ~~the memory full f~~Flag ~~shall be set~~ in the EF_{SMSS}.

- TS 23.038, clause 4.
- TS 23.040, ~~:~~ subclause 10.1, Operation 6

- TS 24.011, subclause 8.2.2, 8.2.3 and 8.2.5.4, Table 8.4 (part 2)
- TS 31.102, subclauses 4.2.25 and 4.2.28.

8.2.1.3 Test purpose

1) To verify that the 3G Terminal stored correctly the class 2 SMS on the USIM.

2) To verify that the 3G Terminal sets the status of a received, and not yet read SMS to "3" (SMS to be read).

3) To verify that the 3G 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

8.2.1.4 Method of test

8.2.1.4.1 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~~	xxxx 1x00	xxxx x1xx	xxxx xx~~x~~11

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~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	...	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 3G TS 23.038 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 transmits on the BCCH, with the following network parameters:

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

The USS 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..."

~~Coding:~~

~~Hex~~ ~~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~~

Class 1 SM:

The same content as for the Class 2 SM except:

TP-Data-Coding-Scheme:

Bits 2-1: Class 1: default meaning: ME-specific

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.

8.2.1.4.2 Procedure

a) After the UE is set to idle mode, the~~a~~ defined Class 2 SM~~S~~ defined in 8.2.1.4.1 with 160 characters shall be sent~~d~~ to the UE.

b) After the UE has indicated that a SM~~S~~ was received, the SM~~S~~ 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.

8.2.1.5 Acceptance criteria

1) After step b) the record of the EF_{SMS} which was empty, shall contain the following values:

Record 1:

Logically:

Status:

RFU bits 8-6:	000
Status: message to be read	Used space, message received by MS from network,

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..."

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) After step d~~b~~) the Memory Capacity Exceeded Notification Flag ~~memory flag~~ in the EF_{SMSS} shall be set to exceeded. ~~full.~~

EF_{SMSS} (SMS Status)

Logically: Last used TP-MR shall be set to any appropriate value.
Memory capacity exceeded~~available~~ (flag set b1="0").

Coding:	B1	B2
Hex	xx~~F~~	FE~~x~~
	~~E~~	~~x~~

8.2.2 Correct reading of a SM~~S~~ on the USIM

8.2.2.1 Definition and applicability

A SM~~S~~ 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 test applies to all 3G Terminal accessing UTRAN and supporting "receive SMS" functionality.

8.2.2.2 Conformance requirement

A received SM ~~shall be~~ 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, clause 4;
- TS 23.040;
- TS 31.102, subclauses 4.2.25 and 4.2.28.

8.2.2.3 Test purpose

1) To verify that the 3G Terminal read correctly the SMS on the USIM.

2) To verify that the 3G 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~~	xxxx 1x00	xxxx x1xx	xxxx xx~~x~~11

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 3GPPTS 23.038 which represents the stored SMS.

At least 9 records.

Logically: Status byte set to empty
No text is written (Remainder Bytes set to "00").

Record:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	...	B176
Hex	00	00	00	00	00	00	00	00	00	00	00	00	...	FF

A USS is only needed to bring the UE into a defined idle mode. The USS 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 SM~~S~~ 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 ~~text~~ of the SM~~S~~ 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 which represents the stored SMS.

3GPP TSG T WG3 Meeting #32
New York, US, 10th - 13th August 2004

T3-040537
(revised T3-040423)

CR-Form-v7

CHANGE REQUEST

⌘ **31.121** **CR** **040-** ⌘**rev** **-** ⌘ Current version: **4.8.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [X] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	CR 31.121 Rel-4: Correction of SMS related test cases
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	12/08/2004
Category:	⌘	**F**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change: ⌘

1) Missed abbreviations for Short Message handling reports
2) Testcase 8.2.1 only: Prose and hex coded SM in clause 8.2.1.4.1 do not match. Some mandatory IEs (RP destination address, RP user data length) are missing in the hex coded version of the SM. Furthermore some of these missing IEs could be arbitrary chosen, so it will be impossible to specify the hex coding exactly and it will always be ambiguous.
   The hex coding of the SM stored on the USIM is different from the SM send over the air interface, so there's no need to correct clause 8.2.1.5 (see 3GPP TS 31.102 cl. 4.2.25 "Remainder").
3) The EF_{UST} byte 2 has been coded incorrectly for the SMS services. Services 14 and 15 have been enabled instead of services 10 and 11.
4) Testcase 8.2.1 only: The order of the EF_{SMSS} bytes B1 and B2 are wrong for the acceptance criteria in clause 8.2.1.5. Also the logically explanation was wrong, should indicate "Memory capacity exceeded"
5) The used EF_{UST} was not set to assure that the EF_{EST} is picked up and the indicated services in EF_{EST} are considered in the desired way according to TS 31.102, sections 4.2.8, 4.2.47 and 5.1.1.2
6) Test case 8.2.1 only: the requirement for testing of EF_{SMSS} was not in line with TS 23.040 as this flag is only set if the UE indicates to the network that its memory capacity has been exceeded and as memory capacity also the storage capacity inside the ME has to be considered. Therefore the reference to the requirement and the test procedure for this part of the test case has been updated to enable the testing of this requirement.
7) 8.2.1.4.1: The coding for Record 1 indicating an empty Record was not correct.

Summary of change: ⌘ 1) Added the absence abbreviations, which were added for the "Short message

		handling report" related tests. Correct the use of this abbreviations depending which one is more applicable. 2) The hex coding of the SM in clause 8.2.1.4.1 has been deleted. 3) Byte 2 of the EF_{UST} has been corrected. 4) The content of bytes B1 and B2 have been swapped and the logically explanation changed to "Memory capacity exceeded". 5) The EF_{UST} has been corrected to assure that the EF_{EST} is picked up. 6) All sections inside TC 8.2.1 are updated to assure that the desired requirement is tested according to 23.040, therefore test purpose , test requirement and test procedure have been updated. 7) The coding for Record 1 has been changed to indicate an empty record.
Consequences if not approved:	⌘	Incorrect and insufficient SMS related test cases. Correctly implemented UEs would unfairly fail these test cases.

Clauses affected:	⌘	3.3, 8.2.1, 8.2.2			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request

3.3 Abbreviations

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

3G	3rd Generation
3GPP	3rd Generation Partnership Project
ACC	ACcess Class
ACL	APN Control List
ACM	Accumulated Call Meter
ACMmax	ACM maximal value
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ADF	Application Dedicated File
AoC	Advice of Charge
AoCC	Advice of Charge Charging
APN	Access Point Name
ATR	Answer To Reset
[…]	
LAC	Location Area Code
LAI	Location Area Information
LSB	Least Significant Bit
[…]	
RACH	Random Access Channel
RFU	Reserved for Future Use
RRC	Radio Resource Control
SFI	Short File Identifier
SS	System Simulator (GSM)
SM	Short Message
SMS	Short Message Service
TE	Terminal Equipment
TLV	Tag Length Value
TMSI	Temporary Mobile Subscriber Identity
TON	Type Of Number
[…]	

8.2 Short message handling report

8.2.1 Correct storage of a SM~~S~~ on the USIM

8.2.1.1 Definition and applicability

Once a SM~~S~~ is received by the UE, the Terminal shall store the SM~~S~~ on the USIM, if this is indicated by the class 2 of the SMS (USIM specific SM~~S~~). 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~~d~~.

This test applies to all 3G Terminal accessing UTRAN and supporting "receive SMS" functionality.

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). ~~After the last empty SMS field is filled with a received SMS,~~ 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 ~~the memory full f~~Flag ~~shall be set~~ in the EF_{SMSS}.

- TS 23.038, clause 4.
- TS 23.040, ~~;~~ subclause 10.1, Operation 6

- TS 24.011, subclause 8.2.2, 8.2.3 and 8.2.5.4, Table 8.4 (part 2)
- TS 31.102, subclauses 4.2.25 and 4.2.28.

8.2.1.3 Test purpose

1) To verify that the 3G Terminal stored correctly the class 2 SMS on the USIM.

2) To verify that the 3G Terminal sets the status of a received, and not yet read SMS to "3" (SMS to be read).

3) To verify that the 3G 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

8.2.1.4 Method of test

8.2.1.4.1 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~~	xxxx 1x00	xxxx x1xx	xxxx xx~~x~~11

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~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	FF~~0~~ ~~0~~	...	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 3G TS 23.038 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 transmits on the BCCH, with the following network parameters:

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

The USS 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..."

~~Coding:~~

~~Hex~~ ~~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~~

Class 1 SM:

The same content as for the Class 2 SM except:

TP-Data-Coding-Scheme:

Bits 2-1: Class 1: default meaning: ME-specific

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.

8.2.1.4.2 Procedure

a) After the UE is set to idle mode, the~~a~~ defined Class 2 SM~~S~~ defined in 8.2.1.4.1 with 160 characters shall be sent~~d~~ to the UE.

b) After the UE has indicated that a SM~~S~~ was received, the SM~~S~~ 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.

8.2.1.5 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: message to be read	Used space, message received by MS from network,

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..."

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) After step d~~b~~) the Memory Capacity Exceeded Notification Flag ~~memory flag~~ in the EF_{SMSS} shall be set to exceeded. ~~full.~~

EF_{SMSS} (SMS Status)

Logically: Last used TP-MR shall be set to any appropriate value.
Memory capacity exceeded~~available~~ (flag set b1="0").

Coding:	B1	B2
Hex	xx~~F~~	FE~~x~~
	~~E~~	~~x~~

8.2.2 Correct reading of a SM~~S~~ on the USIM

8.2.2.1 Definition and applicability

A SM~~S~~ 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 test applies to all 3G Terminal accessing UTRAN and supporting "receive SMS" functionality.

8.2.2.2 Conformance requirement

A received SM ~~shall be~~ 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, clause 4;
- TS 23.040;
- TS 31.102, subclauses 4.2.25 and 4.2.28.

8.2.2.3 Test purpose

1) To verify that the 3G Terminal read correctly the SMS on the USIM.
2) To verify that the 3G 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~~	xxxx 1x00	xxxx x1xx	xxxx xx~~x~~11

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 3GPPTS 23.038 which represents the stored SMS.

At least 9 records.

Logically: Status byte set to empty
N~~n~~o text is written (Remainder Bytes set to "00").

Record:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	...	B176
Hex	00	00	00	00	00	00	00	00	00	00	00	00	...	FF

A USS is only needed to bring the UE into a defined idle mode. The USS 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 SM~~S~~ 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 ~~text~~ of the SM~~S~~ 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 which represents the stored SMS.

3GPP TSG T WG3 Meeting #32
New York, US, 10th - 13th August 2004

T3-040559
(revised T3-040422)

CR-Form-v7

CHANGE REQUEST

⌘ **31.121** **CR** **038** ⌘ **rev** **-** ⌘ Current version: **4.8.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [X] ME [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	CR 31.121 Rel-4: Essential Corrections on section 7
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	12/08/2004
Category:	⌘	**A**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Correction of incorrect codings, test purpose descriptions and acceptance criteria.
Summary of change:	⌘	3.3: Added the absence abbreviation, which was added for the PLMN related tests. 7.1.1; 7.1.2; 7.1.3; 7.2.2; 7.3.1; 7.3.2; 7.4.1; 7.4.2: Considered CS, PS or CS/PS registration procedure because initiated registration on CS and/or PS domain depends on UEs capabilities. 7.1.1 : In UTRAN it is not possible to perform a successful registration without starting integrity which requires a valid key on UE side, details can be found in 3GPP TS 33.102, Sections 6.4.5 - 6.5.1. Therefore the UE has to update the key set identifier before the registration and so the requirement regarding “unchanged key set identifier” is not testable in UTRAN. 7.4.1.4.2: CHANNEL RELEASE procedure in step h) belongs to GSM cell but in this case a UTRAN cell is present thus CHANNEL RELEASE procedure is replaced by RRC CONNECTION RELEASE procedure 7.2.2.4.2, 7.2.2.5, 7.3.1.4.2, 7.3.1.5, 7.3.2.4.2, 7.3.2.5, 7.4.1.4.2, 7.4.1.5, 7.4.2.4.2, 7.4.2.5 : Generic problem in TCs section 7.2 and 7.3 and 7.4: wrong acceptance criteria obviously copied from GSM test 27.9 (TS 51.010, there the TC is considered for CS only) which has been copied to all these TCs:

		A MS/UE always indicates inside the LOCATION UPDATE REQUEST or ATTACH REQUEST the MNC/MCC currently stored on the SIM/USIM and not the MNC/MCC of the cell on which the registration currently is attempted, the detailed description can be found in TS 24.008 section 9.2.15.1 and 9.4.1 ("old routing area identification). In GCF GSM TC 27.9 is still in CAT P (never activated until now) !
Consequences if not approved:	⌘	MEs will fail incorrect tests or tests can't be implemented on any test system due to above listed errors.

Clauses affected:	⌘	3.3, 7.1.1, 7.1.2, 7.1.3, 7.2.2, 7.2.3, 7.2.4, 7.3.1, 7.3.2, 7.4.1, 7.4.2, 7.5.1			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

3.3 Abbreviations

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

3G	3rd Generation
3GPP	3rd Generation Partnership Project
ACC	ACcess Class
ACL	APN Control List
[…]	
CCI	Capability / Configuration Identifier
CCM	Current Call Meter
CK	Cipher key
CN	Core Network
DF	Dedicated File

[…]

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 ~~location updating~~ registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a ~~location update~~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 UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

~~After a location update, which is not followed by an authentication procedure, the Key Set Identifier indicates that the Key Set Identifier is undefined.~~

~~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.~~

This test applies to Terminals accessing UTRAN.

7.1.1.2 Conformance requirement

1) Depending on which domain the UE is going to be registered on, one of the following requirements should be fulfilled:

I. ~~In~~ in automatic PLMN selection mode the UE shall only attempt a LOCATION UPDATING~~TE~~ REQUEST during registration on CS if it receives a BCCH containing a PLMN(MCC,MNC)~~LAI~~ that is not indicated in the EFFPLMN 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, subclause 2.3;
- TS 31.102, 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 UPDATE REJECT message during registration on CS with the cause "PLMN not allowed" the Terminal shall update the EFFPLMN 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, subclause 3.2.2 ~~2.3~~;
- TS 31.102, subclauses 5.1.1 and 5.2.7.

~~3) After call termination the USIM shall contain the correct Key Set Identifier.~~

3) 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, subclauses 5.1.2, 5.2.5 and 5.2.6;~~
- ~~TS 21.111, 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, subclauses 5.1.2, 5.2.5 and 5.2.6;
- TS 21.111, subclause 10.1.

7.1.1.3 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

   I. LOCATION ~~UPDATE~~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 the EF_{Keys} has been correctly updated by the Terminal.~~

~~4)~~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 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.
- 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_{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.

~~**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~~

7.1.1.4.2 Procedure

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:

~~LAI~~PLMN (MCC/MNC): 234/003

The USS then resumes RF output on the BCCH.

c) 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~~PLMN (MCC/MNC): 234/004

The USS then resumes RF output on the BCCH.

d) 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~~PLMN (MCC/MNC): 234/005

The USS then resumes RF output on the BCCH.

e) 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~~ after receipt of a LOCATION ~~UPDATE~~ UPDATING REQUEST from the UE, the USS sends LOCATION ~~UPDATE~~ 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 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.

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): 234/008/0001

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 ~~A~~after receipt of a LOCATION UPDATING~~E~~ REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING~~E~~ ACCEPT to the UE 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): 234/008/000/05

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): 234/008/000/05

P-TMSI: "43658709"

P-TMSI signature value "443322"

~~to the UE.~~

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.

~~After receipt of a TMSI REALLOCATION 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.~~

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 UPDATE and not a ATTACH procedure.

2) After step f) the UE shall send

I. LOCATION ~~UPDATE~~ 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 UE shall send

I. LOCATION UPDATING~~E~~ 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 UE 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.

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

For UEs 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 UEs supporting (CS and PS) or (PS only):

EF_{PSLOCI} (Location Information)

Logically: RAI-MCC: 234
RAI-MNC: 008
P-TMSI: "43658709"
P-TMSI signature value: "443322"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	43	65	87	09	44	33	22	32	84	00	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

~~**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~~

~~**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: Hex	B1 32	B2 24	B3 00	B4 32	B5 34	B6 00	B7 32	B8 44	B9 00	B10 32	B11 54	B12 00
	B13 32	B14 64	B15 00	B16 32	B17 74	B18 00						

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 location updating registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a location update 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 UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

This test applies to Terminals accessing UTRAN.

7.1.2.2 Conformance requirement

Depending on which domain the UE will be registered on, one of the following requirements should be fulfilled:

I. Afterafter the receipt of a LOCATION UPDATEUPDATING 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, subclause 3.2.2.4.
- TS 31.102, 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 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

-Access control: unrestricted.

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.

7.1.2.4.2 Procedure

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 ~~After~~ receipt of a LOCATION ~~UPDATE~~ UPDATING REQUEST from the UE, the USS sends LOCATION ~~UPDATE~~ 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.

7.1.2.5 Acceptance criteria

1) After step b) the UE shall send

I. LOCATION ~~UPDATE~~ 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 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 ~~location update~~ 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 ~~location update~~ 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 UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

This test applies to Terminals accessing UTRAN.

7.1.3.2 Conformance requirement

1) Depending on which domain the UE will be registered on, one of the following requirements should be fulfilled:

   I. In manual PLMN selection mode the UE shall be able to perform a LOCATION UPDATING~~E~~ 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, subclause 3.2.2.2.
- TS 31.102, 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:

   I. ~~After~~ after receipt of LOCATION ~~UPDATE~~ 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, subclause 3.2.2.4.

7.1.3.3 Test purpose

1) To verify that the UE is able to perform

   I. a LOCATION ~~UPDATE~~ 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 ~~LOCATION UPDATE~~ 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 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.

- Access control: unrestricted.

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.

7.1.3.4.2 Procedure

a) The UE is powered on.

b) PLMN with MCC/MNC of 234/005 is manually selected.

c) After receipt of a 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~~ after receipt of a LOCATION UPDATING~~E~~ REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDAT~~E~~ING 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"

~~to the UE.~~

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.

7.1.3.5 Acceptance criteria

1) After step c) the UE shall send

I. LOCATION ~~UPDATE~~ 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 UE 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.

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

For UEs 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"
P-TMSI signature value: "AB1234"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	AB	12	34	32	54	00	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

~~**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~~

7.2 User controlled PLMN selector handling

[…]

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 UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

This test applies to Terminals accessing UTRAN.

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, 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 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.
- Access control: unrestricted.

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/034/0001.
- RAI (MCC/MNC/LAC/RAC): 244/034/0001/05.
- Access control: unrestricted.

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
	.....	
	.....	
	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	.....	.....	.....	.....						
	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.

7.2.2.4.2 Procedure

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 ~~After~~ receipt of a LOCATION UPDAT~~E~~ING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDAT~~E~~ING 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"

~~to the UE.~~

d) After passing through the authentication procedure and ~~A~~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 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.

7.2.2.5 Acceptance criteria

1) After step a) the UE shall send an RRC CONNECTION REQUEST on the cell related to the BCCH transmitting MCC/MNC 244/034 to the USS.

2~~1~~) After step b) the UE shall send

I. LOCATION UPDAT~~E~~ING REQUEST ~~containing an MCC/MNC of 234/034~~ 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~~2~~) After step c) the UE 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..

3) After step e) 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: 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 supporting (CS and PS) or (PS only):

EF_{PSLOCI} (Location Information)

Logically: RAI-MCC: 244
RAI-MNC: 034
P-TMSI: "34567890"

P-TMSI signature value: "AB1234"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	34	56	78	90	AB	12	34	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 a 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.

This test applies to a GSM/UMTS dual mode UE accessing both UTRAN and GSM using either ID-1 or Plug-in UICC.

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, subclause 3.2.2;
- TS 31.102, subclauses 4.2.5 and 5.1.2.

7.2.3.2.1 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.

7.2.3.3 Method of test

7.2.3.3.1 Initial conditions

For this test both a GSM SS and a UTRAN USS is needed.

The GSM SS transmit on BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/081/0001.
- Access control: unrestricted.

The UMTS USS transmit 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.

7.2.3.3.2 Procedure

a) The UE is powered on.

b) After receipt on the GSM-cell related to the BCCH transmitting MCC/MNC 244/081 of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE.

c) After receipt of a LOCATION UPDATING~~E~~ REQUEST from the UE, the SS sends LOCATION UPDATING~~E~~ 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.

7.2.3.4 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~~1~~) After step b) the UE shall send LOCATION UPDATING~~E~~ REQUEST ~~containing an MCC/MNC of 244/081~~ to the SS.

3~~2~~) After step c) the UE shall respond with TMSI REALLOCATION COMPLETE.

4~~3~~) 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

7.3 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 depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

This test applies to Terminals accessing UTRAN.

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, subclause 3.2.2;
- TS 31.102, 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 is needed.

The USS 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.
- Access control: unrestricted.

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): ~~244~~254/012/0001.
- RAI (MCC/MNC/LAC/RAC): 254/012/0001/05.
- Access control: unrestricted.

The default UICC is used with the following exception:

$EF_{OPLMNwACT}$ (OPLMN Selector)

Logically:
1st PLMN: 254 012 (MCC MNC)
1st ACT UTRAN
2nd PLMN: 254 011
2nd ACT UTRAN
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	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	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

The UICC is installed into the Terminal and the UE is set to automatic PLMN selection mode.

7.3.1.4.2 Procedure

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~~ after receipt of a LOCATION UPDAT~~E~~ING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDAT~~E~~ING ACCEPT to the UE with 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"

~~to the UE.~~

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.

7.3.1.5 Acceptance criteria

1) After step a) the UE shall send an RRC CONNECTION REQUEST on the cell related to the BCCH transmitting MCC/MNC 254/012 to the USS.

2~~1~~) After step b) the UE shall send

I. LOCATION UPDAT~~E~~ING REQUEST ~~containing an MCC/MNC of 254/012~~ 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~~2~~) After step c) 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~~3~~) After step e) the USIM shall contain the following values:

For UEs 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"
P-TMSI signature value: "AB1234"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	34	56	78	90	AB	12	34	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 UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

This test applies to Terminals accessing UTRAN.

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, subclause 3.2.2.2;
- TS 31.102, 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 is needed.

The USS 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.
- Access control: unrestricted.

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 244/010/0001.
- RAI (MCC/MNC/LAC/RAC): 244/010/0001/05.
- 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.

7.3.2.4.2 Procedure

a) The UE is powered on.

b) After receipt on the cell related to the BCCH transmitting MCC/MNC 244/010 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~~After~~ receipt of a LOCATION UPDAT~~E~~ING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDAT~~E~~ING ACCEPT 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"

~~to the UE.~~

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.

7.3.2.5 Acceptance criteria

1) After step a) the UE shall send an RRC CONNECTION REQUEST on the cell related to the BCCH transmitting MCC/MNC 244/010 to the USS.

2~~1~~) After step b) the UE shall send

I. LOCATION UPDAT~~E~~ING REQUEST ~~containing an MCC/MNC of 244/010~~ 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~~2~~) After step c) 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~~3~~) After step e) 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: 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"

P-TMSI signature value: "AB1234"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	34	56	78	90	AB	12	34	42	04	10	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

7.4 HPLMN search handling

7.4.1 UE recognising the search period of the HPLMN

7.4.1.1 Definition and applicability

The HPLMN list gives in priority order the Home PLMN on which the UE shall register first. The HPLMN search period gives the time interval in which the UE shall search for a possible HPLMN registration.

The registration attempts initiated by the UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

This test applies to Terminals accessing UTRAN.

7.4.1.2 Conformance requirement

After registered onto a VPLMN the UE shall take into account the HPLMN search period timer and the priority order of the HPLMNs in the preferred list on the USIM.

- TS 22.011, subclauses 3.2.2 and 3.2.2.5.
- TS 24.008, subclause 4.7.5

7.4.1.3 Test purpose

To verify that the HPLMN timer is read and the HPLMN 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 a UTRAN USS is needed.

The 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.

After the registration of UE the USS transmits on a second BCCH, with the following network parameters:

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

- RAI (MCC/MNC/LAC/RAC): 246/081/0001/05.
- Access control: unrestricted.

The default UICC shall be used with the following exception:

EF_{HPLMN} (HPLMN 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.

7.4.1.4.2 Procedure

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 ~~After~~ receipt of a LOCATION UPDAT~~E~~ING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDAT~~E~~ING ACCEPT with the following values to the UE:

LAI (MCC/MNC/LAC): 244/081/0001

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) 244/081/0001/05

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): 244/081/0001

TMSI: "34567890"

RAI (MCC/MNC/LAC/RAC) 244/081/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

~~to the UE.~~

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 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.

e) The USS starts to send on the second BCCH with the MCC/MNC 246/081. An internal timer shall start to run.

f) After receipt on the cell related to the BCCH transmitting MCC/MNC 246/081 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 with the following values to the UE:

LAI (MCC/MNC/LAC): 246/081/0001

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) 246/081/0001/05

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): 246/081/0001

TMSI: "12345678"

RAI (MCC/MNC/LAC/RAC) 246/081/0001/05

P-TMSI "12345678"

P-TMSI signature value "AB1234"

~~After receipt of a LOCATION UPDATE REQUEST from the UE, the USS sends LOCATION UPDATE ACCEPT with :~~

~~LAI (MCC/MNC): 246/081~~

~~TMSI: "12345678"~~

~~to the UE.~~

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.

~~After receipt of a TMSI REALLOCATION COMPLETE from the UE, the USS 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 shall send an RRC CONNECTION REQUEST on the cell related to the BCCH transmitting MCC/MNC 246/081 to the USS.

2~~1~~) After step e) the UE shall send

I. LOCATION UPDAT~~E~~ING REQUEST ~~containing an MCC/MNC of 246/081~~ 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~~2~~) After step g) the UE 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~~3~~) 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 ~~s~~% greater than the required 6 ~~s~~minutes.

54) 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: 246
LAI-MNC: 081
TMSI: "12345678"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	42	16	80	xx	xx	xx	00

For UEs supporting (CS and PS) or (PS only):

EF_{PSLOCI} (Location Information)

Logically: RAI-MCC: 246
RAI-MNC: 081
P-TMSI: "12345678"
P-TMSI signature value: "AB1234"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	AB	12	34	42	16	80	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

7.4.2 GSM/UMTS dual mode UEs recognising the search period of the HPLMN

7.4.2.1 Definition and applicability

The HPLMN list gives in priority order the Home 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 $EF_{HPLMNACT}$. The HPLMN search period gives the time interval in which the UE shall search for a possible HPLMN registration. To avoid a duplication of a test.

This test applies to a GSM/UMTS dual mode UE accessing both UTRAN and GSM using either ID-1 or Plug-in UICC.

To avoid a duplication of tests, this test supersede the previous test case (7.4.1).

The registration attempts initiated by the UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

7.4.2.2 Conformance requirement

After registered onto a VPLMN the UE shall take into account the HPLMN search period timer and the priority order of the HPLMNs in the preferred list on the USIM including the Access Technology Identifier.

- TS 22.011, subclauses 3.2.2 and 3.2.2.5.

7.4.2.3 Test purpose

To verify that the HPLMN timer is read and the HPLMN with the higher priority (defined by its position in $EF_{HPLMNwACT}$) 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 a 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.

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): 246/081/0001.
- Access control: unrestricted.

At the same time as the SS sends on a second BCCH, the UMTS USS transmit on BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): 246/081/0001.
- RAI (MCC/MNC/LAC/RAC): 246/081/0001/05.
- Access control: unrestricted.

The default UICC is used with the following exception:

$EF_{HPLMNwACT}$ (HPLMN selector with Access Technology)

Logically: Set to MCC 246 and MNC 081
Set to UTRAN

Coding:	B1	B2	B3	B4	B5
Hex	42	16	80	80	00

EF_{HPLMN} (HPLMN Search period)

Logically: set to 6minutes

Coding:	B1
Hex	01

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 UPDATE REQUEST from the UE, the SS sends LOCATION UPDATE 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 SS starts to send on the second BCCH with the MCC/MNC 246/081 and the USS starts to send with the Same MCC/MNC. An internal timer shall start to run.

f) After receipt on the UTRAN-cell related to the BCCH transmitting MCC/MNC 246/081 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 with the following values to the UE:

LAI (MCC/MNC/LAC): 246/081/0001

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) 246/081/0001/05

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): 246/081/0001

TMSI: "12345678"

RAI (MCC/MNC/LAC/RAC) 246/081/0001/05

P-TMSI "12345678"

P-TMSI signature value "AB1234"

~~After receipt of a LOCATION UPDATE REQUEST from the UE, the USS sends LOCATION UPDATE ACCEPT with:~~

~~LAI (MCC/MNC): 246/081~~

~~TMSI: "12345678"~~

~~to the UE.~~

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 246/081 to the USS.

2~~1~~) After step e) the UE shall send

I. LOCATION UPDATING~~E~~ REQUEST ~~containing an MCC/MNC of 246/081~~ 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~~2~~) After step g) the UE 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.

4~~3~~) 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 ~~s~~% greater than the required 6 ~~s~~minutes.

5~~4~~) 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: 246
LAI-MNC: 081
TMSI: "12345678"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	42	16	80	xx	xx	xx	00

For UEs supporting (CS and PS) or (PS only):

EF_{PSLOCI} (Location Information)

Logically: RAI-MCC: 246
RAI-MNC: 081
P-TMSI: "12345678"
P-TMSI signature value: "AB1234"

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11
Hex	12	34	56	78	AB	12	34	42	16	80	xx

Coding:	B12	B13	B14
Hex	xx	xx	00

3GPP TSG-T3 Meeting #32
New York, USA, 10.08.-13.08.2004

Tdoc ⌘T3-040560
(updated T3-040498)

CR-Form-v7

CHANGE REQUEST

⌘ **31.121** **CR** **043** ⌘**rev** **-** ⌘ Current version: **4.8.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR 31.121, Rel-4: Creation of MMS related tests
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	12/08/2004
Category:	⌘	**B**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Creation of MMS related tests
Summary of change:	⌘	MMS related tests created
Consequences if not approved:	⌘	No MMS related tests available

Clauses affected:	⌘	2, 3.1, 3.2, 8

Other specs affected:	⌘	Y	N		⌘
			N	Other core specifications	
			N	Test specifications	
			N	O&M Specifications	

Other comments: ⌘

2 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

[1] ISO/IEC 7816-1 (1998): "Identification cards - Integrated circuit(s) cards with contacts - Part 1: Physical characteristics".

[2] ISO/IEC 7816-6 (1996): "Identification cards - Integrated circuit(s) cards with contacts - Part 6: Interindustry data elements".

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

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

[5] ETSI TS 102 221: "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"

…

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

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. 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

ID-1 UICC: UICC having the format of an ID-1 card (see ISO/IEC 7816-1)

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, 3G and or GSM security and subscription related procedures

plug-in UICC: second format of UICC

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 UMTS services to users, either alone or in conjunction with a UICC

User Equipment (UE): terminal with one or several UMTS Subscriber Identity Module(s) (USIM)

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

3.3 Abbreviations

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

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
ATR	Answer To Reset
BCCH	Broadcast Control Channel
BCD	Binary Coded Decimal
BDN	Barred Dialling Number
CCI	Capability / Configuration Identifier
CCM	Current Call Meter
CK	Cipher key
DF	Dedicated File
EF	Elementary File
EMMI	Electrical Man Machine Interface
Ext n	Extension n
FDN	Fixed Dialling Number
FPLMN	Forbidden PLMN
GSM	Global System for Mobile communications
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
MSB	Most Significant Bit
NAS	Non Acess 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
SS	System Simulator (GSM)
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
UTRAN	UMTS Terrestrial Radio Access Network
VPLMN	Visitor PLMN

8 Subscription independent tests

[..]

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 should 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. Such preset MMS connectivity parameters set should be selected unless otherwise specified by the user.

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 should 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, should 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).

This test applies to Terminals accessing UTRAN, supporting MMS and supporting the usage of MMS related data stored on the USIM and when no user MMS connectivity parameters have been selected.

8.3.1.2 Conformance requirement

The MMS User Agent of a terminal, which supports the usage of MMS related data stored on the USIM, 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 6.1.11 and Annex F.

MMS user preferences information, which is stored on the USIM, shall be used by an MMS User Agent of a terminal, which supports the usage of MMS related data stored on the USIM, 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 6.1.11 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:

- 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:

- 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:

- 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:

- 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 should 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, should 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 should 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, should 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).

This test applies to Terminals accessing UTRAN, supporting MMS and supporting the usage of MMS related data stored on the USIM and when no user MMS connectivity parameters have been selected.

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 MMS User Agent of a terminal, which supports the usage of MMS related data stored on the USIM, 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 6.1.11 and Annex F.

MMS user preferences information, which is stored on the USIM, shall be used by an MMS User Agent of a terminal, which supports the usage of MMS related data stored on the USIM, 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 6.1.11 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:

- 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:

- 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:

- 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:

- 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 MMSUP.

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 should 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, should 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).

This test applies to terminals accessing UTRAN, supporting MMS and supporting the usage of MMS related data stored on the USIM and when no user MMS connectivity parameters have been selected.

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 by a MMS User Agent of a terminal, which supports the usage of MMS related data stored on the USIM, 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 6.1.11 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:

- 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:

- 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:

- 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:

- 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 should 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].

This test applies to terminals accessing UTRAN, supporting MMS notification storage on the USIM.

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 6.1.11 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:

- 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".

3GPP TSG T WG3 Meeting #32
New York, USA, 10th – 13th August 2004

T3-040568

CR-Form-v7

CHANGE REQUEST

⌘ **31.121** **CR** **035** ⌘ **rev** **-** ⌘ Current version: **4.8.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR TS 31.121 Rel-4: alignment with TS 51.010-1 on default EF-ADN configuration
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	12/08/2004
Category:	⌘	**A**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	CR to 31.121:Alignment with 51.010-1 on default EF-ADN configuration. At GERAN#20 it was clarified that the entries of the EF-ADN shall be unique to give a more real life testing. This CR aims to harmonize with the decisions taken at GERAN#20
Summary of change:	⌘	Clarification of ch 4.1.1.10 that each non-empty entry in EF-ADN shall be unique
Consequences if not approved:	⌘	Test cases would represent highly unlikely user scenarios.

Clauses affected:	⌘	4.1.1.10

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments:	⌘	The same corrections applies to all later releases

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

---------- Modified section ----------

4.1.1.10 EF_{ADN} (Abbreviated Dialling Number)

Logically:
At least 10 records, each non-empty record unique.
Record 1~~ to 10~~: 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

3GPP TSG T WG3 Meeting #32
New York, US, 10th - 13th August 2004

T3-040578

CR-Form-v7

CHANGE REQUEST

⌘ **31.121** **CR** **035** ⌘ **rev** **-** ⌘ Current version: **3.9.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [X] ME [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	CR 31.121 R99: Essential Corrections on sections 2-6
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	12/08/2004
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change: ⌘ Correction of incorrect codings, test purpose descriptions and acceptance criteria.

Summary of change: ⌘

5.1.2
The test uses a 2 digit MNC for identifying the UTRAN. The 2 digit MNC=81 is used for the LAI and within the IMSI.
Whereas the default UICC values define an EF LOCI including a 3 digit MNC. Consequently an exceptional value for EF LOCI using also a 2 digit MNC has to be defined in the initial conditions of this test.
Thus an unexpected Location Update procedure initiated from the UE after switch on can be avoided.

5.1.3.4.1
Clarification of the logically representation for the value of the **EF_{LOCI}** (Location Information). 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

3.3
Add the abbreviations CS and PS to the list

2, 3.5, 6.4.2.4.2, 6.4.3.4.2, 6.4.4.4.2:
The given reference to the generic procedures from 34.108 was mixed up in an earlier CR with 24.008, corrections to clarify the correct specification.

6.4.1.4.1, 6.4.2.4.2, 6.4.3.4.2, 6.4.4.4.2:
Add reference to the generic procedures from 34.108 to clarify the procedures

		to be used. 6.4.2.4.2, 6.4.3.4.2, 6.4.4.4.2: Correction of the test procedure to match the conformance requirements in respect of the reception of the AoCC acknowledgement. There is no requirement in 24.008 regarding the reception of the AoCC acknowledgement within 1 second, therefore it can't be tested. Correction of the RRC connection release procedure and RADIO BEARER SETUP procedure inside the expected sequences according to 25.331 Correction of the reference for the ASN.1 description. 5.1.3.1, 5.1.4.1, 5.1.5.1, 6.2.1.1, 6.2.2.1, 6.2.3.1, 6.3.1.1, 6.3.2.1, 6.4.1.1, 6.4.2.1, 6.4.3.1, 6.4.4.1: correct the applicability to include CS. 4.1.1.8, 4.2.1.1, 4.3.1.1, 6.4.1.4.1, 6.4.2.4.1, 6.4.3.4.1, 6.4.4.4.1: correct the used EF_{UST} to assure that the EF_{EST} is picked up and the indicated services in EF_{EST} are considered in the desired way according to TS 31.102, sections 4.2.8, 4.2.47 and 5.1.1.2. 6.3.1.5: Correction of the references to the steps defined in 6.3.1.4.2
Consequences if not approved:	⌘	MEs will fail incorrect tests or tests can't be implemented on any test system due to above listed errors.

Clauses affected:	⌘	2, 3.5, 4.1.1.8, 4.2.1.1, 4.3.1.1, 5.1.2, 5.1.3.4.1, 5.1.3.1, 5.1.4.1, 5.1.5.1, 6.2.1.1, 6.2.2.1, 6.2.3.1, 6.3.1.1, 6.3.1.5, 6.3.2.1, 6.4.1.1, 6.4.2.1, 6.4.3.1, 6.4.4.1, 6.4.1.4.1, 6.4.2.4.1, 6.4.2.4.2, 6.4.3.4.1, 6.4.3.4.2, 6.4.4.4.1, 6.4.4.4.2,
Other specs affected:	⌘	Y / N N: Other core specifications N: Test specifications N: O&M Specifications ⌘
Other comments:	⌘	

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

2 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

[1] ISO/IEC 7816-1 (1998): "Identification cards - Integrated circuit(s) cards with contacts - Part 1: Physical characteristics".

[2] ISO/IEC 7816-6 (1996): "Identification cards - Integrated circuit(s) cards with contacts - Part 6: Interindustry data elements".

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

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

[5] ETSI TS 102 221: "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"

3.3 Abbreviations

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

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
ATR	Answer To Reset
BCCH	Broadcast Control Channel
BCD	Binary Coded Decimal
BDN	Barred Dialling Number
CCI	Capability / Configuration Identifier
CCM	Current Call Meter
CK	Cipher key
CS	Circuit switched
DF	Dedicated File
EF	Elementary File
EMMI	Electrical Man Machine Interface
Ext n	Extension n
FDN	Fixed Dialling Number
FPLMN	Forbidden PLMN
GSM	Global System for Mobile communications
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
MMI	Man Machine Interface
MNC	Mobile Network Code
MSB	Most Significant Bit
NAS	Non Acess Stratum
NPI	Numbering Plan Identifier
OFM	Operational Feature Monitor
OSI	Open System Interconnection
PS	Packet switched
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
SS	System Simulator (GSM)
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
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 Data Objects in the present document is according to ISO/IEC 7816-6 [2].

3.5 Generic procedures for UTRAN

If a test case contains the statement "This test applies to Terminals accessing UTRAN", the procedures defined in 3GPP TS 34.108~~24.008~~ [2~~6~~], subclause 7.2 shall be the basis for all performed procedures during the test. The procedures in subclause 7.2 describe the default behaviour of a conformant UE regarding the specified protocols to be used for UTRAN and the required procedures from the NAS.

4 Default Values

All Test defined in the subsequent clauses applies to Terminal using both type of currently specified UICC (ID-1 UICC or Plug-in UICC) in TS 102 221[5], clause 4 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)

[..]

4.1.1.8 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 xx~~x~~11

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

[…]

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 xx~~x~~11

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'.

[…]

4.3.1 Values of the EF's (BDN UICC)

4.3.1.1 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 xx~~x~~11

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

4.3.1.2 EF_{EST} (Enable Service Table)

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

Coding:	B1
binary	0000 0010

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

[…]

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 can be consistence of a 2 digit MNC. The IMSI is stored in the USIM and read during the UICC-Terminal initialisation procedure.

This test applies to Terminals accessing UTRAN.

5.1.2.2 Conformance requirement

After successful completion of the RRC Connection Establishment procedure the UE shall send PAGING RESPONSE containing the IMSI of the USIM.

Reference:

- TS 31.102, subclause 4.2.18;
- TS 24.008, 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 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.

5.1.2.4.2 Procedure

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.

5.1.2.5 Acceptance criteria

After step b) the UE shall send PAGING RESPONSE to the USS 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. 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, 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.

This test applies to Terminals accessing UTRAN and supporting CS.

5.1.3.2 Conformance requirement

After successful completion of the RRC Connection Establishment procedure the UE shall send PAGING RESPONSE containing the 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 bits (8 digits) when used inside the PAGING TYPE 1 message.

Reference:

- TS 31.102, subclauses 5.1.1 and 5.2.2;
- TS 24.008, subclause 10.5.1.4.
- TS 25.331, 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 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.

5.1.3.4.2 Procedure

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.

5.1.3.5 Acceptance criteria

After step b) the UE shall send PAGING RESPONSE to the USS 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. 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, 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.This test applies to Terminals accessing UTRAN and supporting CS.

5.1.4.2 Conformance requirement

After successful completion of the RRC Connection Establishment procedure 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 bits (8 digits) when used inside the PAGING TYPE 1 message.

Reference:

- TS 31.102, subclauses 5.1.1 and 5.2.2;
- TS 24.008, subclause 10.5.1.4.
- TS 25.331, 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 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.

5.1.4.4.2 Procedure

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.

5.1.4.5 Acceptance criteria

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

2) After step c) the UE shall send PAGING RESPONSE to the USS 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. They are read from the USIM during the USIM-Terminal initialisation procedure. Within the authentication procedure the network sends a key set identifier 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 call termination and/or at a 3G session termination.

This test applies to Terminals accessing UTRAN and supporting CS.

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 the UE shall send PAGING RESPONSE containing the correct IMSI stored in the USIM.

Reference:

- TS 31.102, subclauses 5.1.1 and 5.2.2;
- TS 24.008, 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, subclauses 5.1.2, 5.2.5 and 5.2.6;
- TS 21.111 subclause 10.1.
- TS 24.008 subclause 4.3.2.4.

3) After call termination the Terminal shall have updated EF_{LOCI}.

Reference:

- TS 102 221, 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 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 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

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

5.1.5.4.2 Procedure

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.

5.1.5.5 Acceptance criteria

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

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

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

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

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

[…]

6 Security related Tests

[…]

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 $EF_{ECC.}$

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting FDN and CS.

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 number stored in the Terminal except "112", "911" and the emergency numbers stored on the SIM/USIM.

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.

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" and the emergency numbers stored on the SIM/USIM.

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 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.

6.2.1.4.2 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.

g) Using the MMI an emergency call set-up is attempted using either "112" or "911".

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 8.1, 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.

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting FDN and CS.

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:

- TS 22.101 [11], clauses 8 and A.24;
- 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 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.

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting FDN and CS.

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:

- TS 22.101 [11], clause 8 and A.24;
- 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 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

6.3 Barred Dialling numbers (BDN) handling

6.3.1 Terminal and USIM with BDN enabled

6.3.1.1 Definition and applicability

Barred Dialling Numbers (BDN) is a service defined for the USIM. An enabled BDN 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 BDN the UE runs the BDN capability request procedure during UICC-Terminal initialisation.

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting BDN and CS.

6.3.1.2 Conformance requirement

1) Recognising the state of the USIM (BDN enabled) the UE shall perform the UICC initialisation procedure as specified.

2) The UE shall prevent call set-up to a any number stored in EF_{BDN}.

3) The UE allows call set-up of an emergency call, even if this number is stored in the USIM.

Reference:

- TS 22.101 [11], clause 8 and A.19;
- TS 31.102 [4], subclauses 4.2.44, 4.4.2.3, 5.1.1 and 5.3.2.

6.3.1.3 Test purpose

1) To verify that the Terminal rejects call set-up to any number that has an entry in EF_{BDN}.

2) To verify that the Terminal allows call set-up to any number not stored in EF_{BDN}.

3) To verify that the Terminal allows emergency call set-up even if the number is stored in EF_{BDN}.

6.3.1.4 Method of test

6.3.1.4.1 Initial conditions

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

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

The default BDN UICC with BDN service enabled is installed into the Terminal.

6.3.1.4.2 Procedure

a) The UE is powered on and PIN is entered.

b) Using the MMI a call set-up to the barred dialling number 1 (record 1) is attempted.

c) Using the ADN entry a call set-up to the abbreviated dialling number 1 (record 1) end is attempted.

d) Using the MMI a call set-up to the number "123456" is attempted.

e) Using the MMI an emergency call set-up is attempted using the emergency call code stored in the Terminal

f) 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 e) one of the emergency call codes, which are available when a SIM/USIM is present, according to 22.101 [11], subclause 8 is used (i.e. "112", or "911").

6.3.1.5 Acceptance criteria

1) After step a) the UE is registered and in idle state.

2) After step~~s~~ b) the UE shall prevent call set-up.

3) After steps c) and d) the UE shall allow call set-up and send the requested number across the air interface.

4) After steps e~~f~~) and f~~g~~) the UE shall allow emergency call by indicating the call setup as "Emergency Call".

6.3.2 Terminal and USIM with BDN disabled

6.3.2.1 Definition and applicability

Barred Dialling Numbers (BDN) is a service defined for the USIM. An enabled BDN service results in call restrictions for the UE. No numbers which are stored in the EF_{BDN} may be dialled by the UE. The call restrictions are controlled by the Terminal. To ascertain the type of USIM and state of BDN the UE runs the BDN 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. When the BDN is disabled no special controls are specified. The BDN may be read as if they were normal ADN. However a modification or deletion of the a BDN is under PIN2 control.

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting BDN and CS.

6.3.2.2 Conformance requirement

1) Recognising the state of the USIM (BDN disabled) the UE correctly performs the UICC initialisation procedure.

2) The UE allows call set-up to a directory number as stored in EF_{BDN}.

3) Any change to the EF_{BDN} does requests PIN2.

Reference:

- TS 22.101 [11], clauses 8 and A.19;
- TS 31.102 [4], subclauses 4.2.44, 5.1.1 and 5.3.2.

6.3.2.3 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 BDN number.

3) The UE shall allow updating of EF_{BDN} by the use of PIN2.

6.3.2.4 Method of test

6.3.2.4.1 Initial conditions

The USS 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.

6.3.2.4.2 Procedure

a) Using the MMI a call set-up to the barred dialling number 1 is attempted.

b) Using the MMI the directory number "+876543210" is stored in EF_{BDN} as barred dialling number 1 (record 1). The alpha identifier is not changed. On request of the UE PIN2 is entered.

6.3.2.5 Acceptance criteria

1) After step a) the UE shall allow call set-up and send the requested number across the air interface.

2) After step b) record 1 in EF_{BDN} , shall contain the following values:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13
Hex	42	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						

6.4 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.

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting AoCC and CS.

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 xx~~x~~11

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

The generic call set up procedures defined in TS 34.108 [21], subclause 7.2.3.2.3 and 7.2.3.1.3 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 transmits CONNECT containing AoCC information.

b) For an MO call in the U4 state the USS transmits FACILITY containing AoCC information.

c) For an MT call in the U9 state the USS transmits FACILITY containing AoCC information.

d) For an MO call in the U10 state the USS 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

The ACM shall be updated at the end of every interval, where the interval length is given by parameter e2. The Terminal shall update the ACM not more frequently than once every 5 s, even if the interval is less than 5 s. More frequent updating may affect the USIMs read/write cycles.

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting AoCC and CS.

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 interval between increments is 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 xx~~x~~11

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 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".

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 ~~24.008~~ [21~~16~~], 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 ~~within 1 s of~~ 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.

Maximum Duration of Test:

2 minutes.

Expected Sequence:

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 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 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~~CHANNEL RELEASE~~	All connections of RRC are released.
23	UE -> USS	RRC CONNECTION RELEASE COMPLETE	

Specific Message Contents:

i) **FACILITY Information Element** with **Invoke = ForwardChargeInformation** component type as defined in TS 24.080 [17], subclauses 3.6.1 table 3.3.

For ASN.1 description see default message contents in TS 51.010-1 [22], subclause 31.6.4.~~1.3.~~

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.~~1.3.~~

6.4.2.5 Acceptance criteria

The UE shall 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).

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting AoCC and CS.

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);
- 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 then '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 xx~~x~~11

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".

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 ~~24.008~~34.108 [21~~6~~], 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 ~~within 1 s~~ 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:

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 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 30 s after CAI information sent by USS
19	UE -> USS	DISCONNECT	
20	USS -> UE	RELEASE	
21	UE -> USS	RELEASE COMPLETE	
22	USS~~E~~ -> UE~~SS~~	RRC CONNECTION RELEASE	All connections of RRC are released.
23	UE -> USS	RRC CONNECTION RELEASE COMPLETE	

Specific Message Contents:

i) 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.~~1.3.~~

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.~~1.3.~~

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).

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting AoCC and CS.

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 then '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 xx~~x~~11

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".

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 ~~24.008~~ [21~~16~~], 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 ~~within 1 s 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:

- TS 102 221[5], subclause 10.2.1.

Maximum Duration of Test:

3 minutes.

Expected Sequence:

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~~ASSIGNMENT COMMAND~~	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~~E~~ -> UE~~SS~~	RRC CONNECTION RELEASE	All connections of RRC are released.
23	UE -> USS	RRC CONNECTION RELEASE COMPLETE	

Specific Message Contents:

i) **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.

3GPP TSG T WG3 Meeting #32
New York, US, 10th - 13th August 2004

T3-040579

CR-Form-v7

CHANGE REQUEST

⌘ **31.121** **CR** **036** ⌘ **rev** **-** ⌘ Current version: **4.8.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [X] ME [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	CR 31.121 Rel-4: Essential Corrections on sections 2-6
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	12/08/2004
Category:	⌘	**F**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change: ⌘ Correction of incorrect codings, test purpose descriptions and acceptance criteria.

Summary of change: ⌘

5.1.2
The test uses a 2 digit MNC for identifying the UTRAN. The 2 digit MNC=81 is used for the LAI and within the IMSI.
Whereas the default UICC values define an EF LOCI including a 3 digit MNC. Consequently an exceptional value for EF LOCI using also a 2 digit MNC has to be defined in the initial conditions of this test.
Thus an unexpected Location Update procedure initiated from the UE after switch on can be avoided.

5.1.3.4.1
Clarification of the logically representation for the value of the **EF_{LOCI}** (Location Information). 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

3.3
Add the abbreviations CS and PS to the list

2, 3.5, 6.4.2.4.2, 6.4.3.4.2, 6.4.4.4.2:
The given reference to the generic procedures from 34.108 was mixed up in an earlier CR with 24.008, corrections to clarify the correct specification.

6.4.1.4.1, 6.4.2.4.2, 6.4.3.4.2, 6.4.4.4.2:
Add reference to the generic procedures from 34.108 to clarify the procedures

to be used.

6.4.2.4.2, 6.4.3.4.2, 6.4.4.4.2:
Correction of the test procedure to match the conformance requirements in respect of the reception of the AoCC acknowledgement. There is no requirement in 24.008 regarding the reception of the AoCC acknowledgement within 1 second, therefore it can't be tested.
Correction of the RRC connection release procedure and RADIO BEARER SETUP procedure inside the expected sequences according to 25.331
Correction of the reference for the ASN.1 description.

5.1.3.1, 5.1.4.1, 5.1.5.1, 6.2.1.1, 6.2.2.1, 6.2.3.1, 6.3.1.1, 6.3.2.1, 6.4.1.1, 6.4.2.1, 6.4.3.1, 6.4.4.1: correct the applicability to include CS.

4.1.1.8, 4.2.1.1, 4.3.1.1, 6.4.1.4.1, 6.4.2.4.1, 6.4.3.4.1, 6.4.4.4.1: correct the used EF_{UST} to assure that the EF_{EST} is picked up and the indicated services in EF_{EST} are considered in the desired way according to TS 31.102, sections 4.2.8, 4.2.47 and 5.1.1.2.

6.3.1.5: Correction of the references to the steps defined in 6.3.1.4.2

4.1.1.3, 4.1.1.13: The intention of T3-040338 agreed on T3#31 was to remove the $EF_{RPLMNACT}$ in section 4.1.1.13, unfortunaltely instead of the $EF_{RPLMNACT}$ in 4.1.1.13 the EF_{LOCI} in section 4.1.1.3 has been deleted. Therfore EF_{LOCI} has been re-introduced in 4.1.1.3 and $EF_{RPLMNACT}$ has been deleted.

Consequences if not approved:	⌘	MEs will fail incorrect tests or tests can't be implemented on any test system due to above listed errors.

Clauses affected:	⌘	2, 3.5, 4.1.1.3, 4.1.1.13, 4.1.1.8, 4.2.1.1, 4.3.1.1, 5.1.2, 5.1.3.4.1, 5.1.3.1, 5.1.4.1, 5.1.5.1, 6.2.1.1, 6.2.2.1, 6.2.3.1, 6.3.1.1, 6.3.1.5, 6.3.2.1, 6.4.1.1, 6.4.2.1, 6.4.3.1, 6.4.4.1, 6.4.1.4.1, 6.4.2.4.1, 6.4.2.4.2, 6.4.3.4.1, 6.4.3.4.2, 6.4.4.4.1, 6.4.4.4.2,

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change reque

2 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

[1] ISO/IEC 7816-1 (1998): "Identification cards - Integrated circuit(s) cards with contacts - Part 1: Physical characteristics".

[2] ISO/IEC 7816-6 (1996): "Identification cards - Integrated circuit(s) cards with contacts - Part 6: Interindustry data elements".

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

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

[5] ETSI TS 102 221: "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"

3 Definitions, symbols, abbreviations and coding

[…]

3.3 Abbreviations

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

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
ATR	Answer To Reset
BCCH	Broadcast Control Channel
BCD	Binary Coded Decimal
BDN	Barred Dialling Number
CCI	Capability / Configuration Identifier
CCM	Current Call Meter
CK	Cipher key
CS	Circuit switched
DF	Dedicated File
EF	Elementary File
EMMI	Electrical Man Machine Interface
Ext n	Extension n
FDN	Fixed Dialling Number
FPLMN	Forbidden PLMN
GSM	Global System for Mobile communications
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
MMI	Man Machine Interface
MNC	Mobile Network Code
MSB	Most Significant Bit
NAS	Non Acess Stratum
NPI	Numbering Plan Identifier
OFM	Operational Feature Monitor
OSI	Open System Interconnection
PS	Packet switched
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
SS	System Simulator (GSM)
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
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 Data Objects in the present document is according to ISO/IEC 7816-6 [2].

3.5 Generic procedures for UTRAN

If a test case contains the statement "This test applies to Terminals accessing UTRAN", the procedures defined in 3GPP TS ~~24.00~~34.108 [2~~1~~6], subclause 7.2 shall be the basis for all performed procedures during the test. The procedures in subclause 7.2 describe the default behaviour of a conformant UE regarding the specified protocols to be used for UTRAN and the required procedures from the NAS.

4 Default Values

All Test defined in the subsequent clauses applies to Terminal using both type of currently specified UICC (ID-1 UICC or Plug-in UICC) in TS 102 221[5] clause 4 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)

[..]

4.1.1.3 ~~Void~~ 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

[…]

4.1.1.8 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 xx~~x~~11

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'.

[…]

4.1.1.13 ~~$EF_{RPLMNACT}$ (RPLMN Last used Access Technology)~~Void

~~Logically: No information about the last used ACT available.~~

~~Coding:~~	~~B1~~	~~B2~~
~~Hex~~	~~00~~	~~00~~

[…]

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 xx~~x~~11

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'..

[…]

4.3 Definition of BDN UICC

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

4.3.1 Values of the EF's (BDN UICC)

4.3.1.1 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 xx~~x~~11

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

4.3.1.2 EF_{EST} (Enable Service Table)

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

Coding: B1
binary 0000 0010

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

[…]

5 Subscription related tests

5.1 IMSI / TMSI handling

[…]

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 can be consistence of a 2 digit MNC. The IMSI is stored in the USIM and read during the UICC-Terminal initialisation procedure.

This test applies to Terminals accessing UTRAN.

5.1.2.2 Conformance requirement

After successful completion of the RRC Connection Establishment procedure the UE shall send PAGING RESPONSE containing the IMSI of the USIM.

Reference:

- TS 31.102, subclause 4.2.18;
- TS 24.008, 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 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.

5.1.2.4.2 Procedure

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.

5.1.2.5 Acceptance criteria

After step b) the UE shall send PAGING RESPONSE to the USS 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. 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, 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.

This test applies to Terminals accessing UTRAN and supporting CS.

5.1.3.2 Conformance requirement

After successful completion of the RRC Connection Establishment procedure the UE shall send PAGING RESPONSE containing the 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 message.

Reference:

- TS 31.102, subclauses 5.1.1 and 5.2.2;

- TS 24.008, subclause 10.5.1.4.
- TS 25.331, 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 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.

5.1.3.4.2 Procedure

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.

5.1.3.5 Acceptance criteria

After step b) the UE shall send PAGING RESPONSE to the USS 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. 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, 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.This test applies to Terminals accessing UTRAN and supporting CS.

5.1.4.2 Conformance requirement

After successful completion of the RRC Connection Establishment procedure 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 message.

Reference:

- TS 31.102, subclauses 5.1.1 and 5.2.2;
- TS 24.008, subclause 10.5.1.4.
- TS 25.331, 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 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.

5.1.4.4.2 Procedure

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.

5.1.4.5 Acceptance criteria

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

2) After step c) the UE shall send PAGING RESPONSE to the USS 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. They are read from the USIM during the USIM-Terminal initialisation procedure. Within the authentication procedure the network sends a key set identifier 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 call termination and/or at a 3G session termination.

This test applies to Terminals accessing UTRAN and supporting CS.

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 the UE shall send PAGING RESPONSE containing the correct IMSI stored in the USIM.

Reference:

- TS 31.102, subclauses 5.1.1 and 5.2.2;
- TS 24.008, 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, subclauses 5.1.2, 5.2.5 and 5.2.6;
- TS 21.111 subclause 10.1.
- TS 24.008 subclause 4.3.2.4.

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

Reference:

- TS 102 221, 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 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 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

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

5.1.5.4.2 Procedure

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.

5.1.5.5 Acceptance criteria

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

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

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

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

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

6 Security related Tests

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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.

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting FDN and CS.

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 number stored in the Terminal except "112", "911" and the emergency numbers stored on the SIM/USIM.

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:

- TS 22.101[11], clauses 9 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.

6.2.1.3 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" and the emergency numbers stored on the SIM/USIM.

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.

6.2.1.4 Method of test

6.2.1.4.1 Initial conditions

The USS 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.

6.2.1.4.2 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 the emergency call code stored in the Terminal, but not "112", "911" nor one of the emergency numbers stored on the SIM/USIM..

g) Using the MMI an emergency call set-up is attempted using either "112" or "911".

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 9.1, except "112" and "911", shall be used (i.e. "000", "08", "110", "118", "199", 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".

5) After step g) the UE shall send the emergency service category correctly as "Mountain Rescue".

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.

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting FDN and CS.

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:

- TS 22.101[11], clauses 9 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 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.

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting FDN and CS.

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:

- TS 22.101[11], clause 9 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 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

6.3 Barred Dialling numbers (BDN) handling

6.3.1 Terminal and USIM with BDN enabled

6.3.1.1 Definition and applicability

Barred Dialling Numbers (BDN) is a service defined for the USIM. An enabled BDN 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 BDN the UE runs the BDN capability request procedure during UICC-Terminal initialisation. 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.

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting BDN and CS.

6.3.1.2 Conformance requirement

1) Recognising the state of the USIM (BDN enabled) the UE shall perform the UICC initialisation procedure as specified.

2) The UE shall prevent call set-up to any number stored in EF_{BDN}.

3) The UE allows call set-up of an emergency call, even if this number is stored in the USIM.

Reference:

- TS 22.101[11], clause 9 and A.20;

- TS 31.102[4], subclauses 4.2.44, 4.4.2.3, 5.1.1 and 5.3.2;
- TS 24.008[16], subclause 10.5.4.33.

6.3.1.3 Test purpose

1) To verify that the Terminal rejects call set-up to any number that has an entry in EF_{BDN}.
2) To verify that the Terminal allows call set-up to any number not stored in EF_{BDN}.
3) To verify that the Terminal allows emergency call set-up even if the number is stored in EF_{BDN}.
4) To verify that the Terminal reads correctly the emergency service category stored in $EF_{ECC.}$

6.3.1.4 Method of test

6.3.1.4.1 Initial conditions

The USS transmits on the BCCH, with the following network parameters

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

The default BDN UICC with BDN service enabled is installed into the Terminal.

6.3.1.4.2 Procedure

a) The UE is powered on and PIN is entered.

b) Using the MMI a call set-up to the barred dialling number 1 (record 1) is attempted.

c) Using the ADN entry a call set-up to the abbreviated dialling number 1 (record 1) end is attempted.

d) Using the MMI a call set-up to the number "123456" is attempted.

e) Using the MMI an emergency call set-up is attempted using the emergency call code stored in the Terminal

f) 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 e) one of the emergency call codes, which are available when a SIM/USIM is present, according to TS 22.101[11], subclause 9 is used (i.e. "112", or "911").

6.3.1.5 Acceptance criteria

1) After step a) the UE is registered and in idle state.
2) After step~~s~~ b) the UE shall prevent call set-up.
3) After steps c) and d) the UE shall allow call set-up and send the requested number across the air interface.
4) After steps e) and f) the UE shall allow an emergency call by indicating the call setup as "Emergency Call".
5) After step f) the UE shall send the emergency service category correctly as "Mountain Rescue".

6.3.2 Terminal and USIM with BDN disabled

6.3.2.1 Definition and applicability

Barred Dialling Numbers (BDN) is a service defined for the USIM. An enabled BDN service results in call restrictions for the UE. No numbers which are stored in the EF_{BDN} may be dialled by the UE. The call restrictions are controlled by the Terminal. To ascertain the type of USIM and state of BDN the UE runs the BDN 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. When the BDN is disabled no special controls are specified. The BDN may be read as if they were normal ADN. However a modification or deletion of the a BDN is under PIN2 control.

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting BDN and CS.

6.3.2.2 Conformance requirement

1) Recognising the state of the USIM (BDN disabled) the UE correctly performs the UICC initialisation procedure.

2) The UE allows call set-up to a directory number as stored in EF_{BDN}.

3) Any change to the EF_{BDN} does requests PIN2.

Reference:

- TS 22.101[11], clauses 9 and A.20;
- TS 31.102[4], subclauses 4.2.44, 5.1.1 and 5.3.2.

6.3.2.3 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 BDN number.

3) The UE shall allow updating of EF_{BDN} by the use of PIN2.

6.3.2.4 Method of test

6.3.2.4.1 Initial conditions

The USS 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.

6.3.2.4.2 Procedure

a) Using the MMI a call set-up to the barred dialling number 1 is attempted.

b) Using the MMI the directory number "+876543210" is stored in EF_{BDN} as barred dialling number 1 (record 1). The alpha identifier is not changed. On request of the UE PIN2 is entered.

6.3.2.5 Acceptance criteria

1) After step a) the UE shall allow call set-up and send the requested number across the air interface.

2) After step b) record 1 in EF_{BDN} , shall contain the following values:

Coding:	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13
Hex	42	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

6.4 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.

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting AoCC and CS.

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 xx~~x~~11

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

The generic call set up procedures defined in TS 34.108 [21], subclause 7.2.3.2.3 and 7.2.3.1.3 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 transmits CONNECT containing AoCC information.

b) For an MO call in the U4 state the USS transmits FACILITY containing AoCC information.

c) For an MT call in the U9 state the USS transmits FACILITY containing AoCC information.

d) For an MO call in the U10 state the USS 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

The ACM shall be updated at the end of every interval, where the interval length is given by parameter e2. The Terminal shall update the ACM not more frequently than once every 5 s, even if the interval is less than 5 s. More frequent updating may affect the USIMs read/write cycles.

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting AoCC and CS.

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 interval between increments is 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 xx~~x~~11

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

EF_{ACM} (Accumulated call meter)

Logically: 50 units

EF_{ACMmax} (Accumulated call meter maximum)

Logically: 150 units

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".

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 ~~24.008~~ [21~~16~~], 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 ~~within 1 s~~ 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.

Maximum Duration of Test:

2 minutes.

Expected Sequence:

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 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 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	

Specific Message Contents:

i) **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~~1.3~~.

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 TS 51.010-1 [22], in subclause 31.6.4~~1.3~~.

6.4.2.5 Acceptance criteria

The UE shall 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).

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting AoCC and CS.

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);
- 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 then '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 xx~~x~~11

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".

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 ~~24.008~~ [21~~16~~], 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 ~~within 1 s~~ 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:

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~~E~~ -> UE~~SS~~	RRC CONNECTION RELEASE	All connections of RRC are released.
22	UE -> USS	RRC CONNECTION RELEASE COMPLETE	

Specific Message Contents:

i) **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~~1.3~~.

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~~1.3~~.

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).

This test applies to Terminals accessing UTRAN. Besides of that, this test is applicable only to those Terminals supporting AoCC and CS.

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], subclause 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 then '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 xx~~x~~11

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".

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 ~~24.008~~ [21~~16~~], 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 ~~within 1 s~~ 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:

- TS 102 221[5], subclause 10.2.1.

Maximum Duration of Test:

3 minutes.

Expected Sequence:

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~~E~~ -> UE~~SS~~	RRC CONNECTION RELEASE	All connections of RRC are released.
23	UE -> USS	RRC CONNECTION RELEASE COMPLETE	

Specific Message Contents:

i) **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.

3GPP TSG T WG3 Meeting #32
New York, US, 10th - 13th August 2004

T3-040580

CR-Form-v7

CHANGE REQUEST

⌘ **31.121** **CR** **041** ⌘**rev** **-** ⌘ Current version: **3.9.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR 31.121 R99: Correction of Access Control handling related test case TC 5.2.1.
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	12/08/2004
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Correction of incorrect codings, test purpose descriptions and acceptance criteria
Summary of change:	⌘	5.2.1.1: correct the applicability to include CS. 5.2.1.2: correct requirement to match conformance requirement of TS 22.011. 5.2.1.4.2: correct reference according to 3GPP. 5.2.1.5/ Test (f): correct wording 5.2.1.5/Test (g): correct the coding access class barred list on network side to match the appropriate requirement to allow or prohobit access for AC#10 for Emergency Call.
Consequences if not approved:	⌘	Incorrect and insufficient ACC related test cases. Correctly implemented UEs would unfairly fail these test cases.

Clauses affected:	⌘	5,2.1.1, 5.2.1.2, 5.2.1.4.2, 5.2.1.5

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	

	X	O&M Specifications

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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 Equipment 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.

This test applies to Terminals accessing UTRAN and supporting CS.

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, 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, the UE may make call attempts access attempts are allowed. Otherwise call 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, 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 transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): see table 5-1.
- 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.

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:

- See TS 31.102 [4].

NETWORK (USS)

~~RACH: As defined in GSM 04.18 subclause 10.5.2.29.~~

~~NOTE: GSM 04.18 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 5-1~~

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

Reference

- 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.

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: 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 randomly chosen.

Table 5-1

	USIM		Network			Test Results	
	IMSI		RACH SIB3: Access Class Barred List	Informative: Cell Barred for:	BCCH/ LAI	Normal Call	Emergency Call
		Access Class	~~Octet 3~~ AC15-AC08 ~~Octet 4~~ 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

Table 5-1 (continued)

	USIM		Network			Test Results	
	IMSI		RACH SIB3: Access Class Barred List	Informative: Cell Barred for:	BCCH/ LAI	Normal Call	Emergency Call
		Access Class	~~Octet 3~~ AC15-AC08 ~~Octet 4~~ AC07-AC00	Emergency Call Normal Call	MCC MNC		
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

Table 5-1 (continued)

USIM			Network			Test Results	
	IMSI		RACH SIB3: AccessClass Barred List	Informative: Cell Barred for:	BCCH/ LAI	Normal Call	Emergency Call
		Access Class	~~Octet 3~~ AC15-AC08 ~~Octet 4~~ AC07-AC00	Emergency Call Normal Call	MCC MNC		
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	1101 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

Table 5-1 (continued)

USIM			Network			Test Results	
	IMSI		RACH SIB3: Access Class Barred List	Informative: Cell Barred for:	BCCH/ LAI	Normal Call	Emergency Call
		Access Class	~~Octet 3~~ AC15-AC08 ~~Octet 4~~ AC07-AC00	Emergency Call Normal Call	MCC MNC		
Test (f)	"24608135x9"	11 & x	0000 0111 1111 1111	Yes All, except ACC greater ~~then~~ than 11	246 082	No	No
	"	11 & x	0000 0011 1111 1111	No All, except ACC greater than ~~then~~ 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 ~~then~~ 11	244 001	No	No
	"	12 & x	0000 0011 1111 1111	No All, except ACC greater than ~~then~~ 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 ~~then~~ 11	244 001	No	No
	"	13 & x	0000 0011 1111 1111	No All, except ACC greater than ~~then~~ 11	244 001	No	Yes
	"	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 ~~then~~ 11	244 001	No	No
	"	14 & x	0000 0011 1111 1111	No All, except ACC greater than ~~then~~ 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 ~~then~~ 11	246 082	No	No

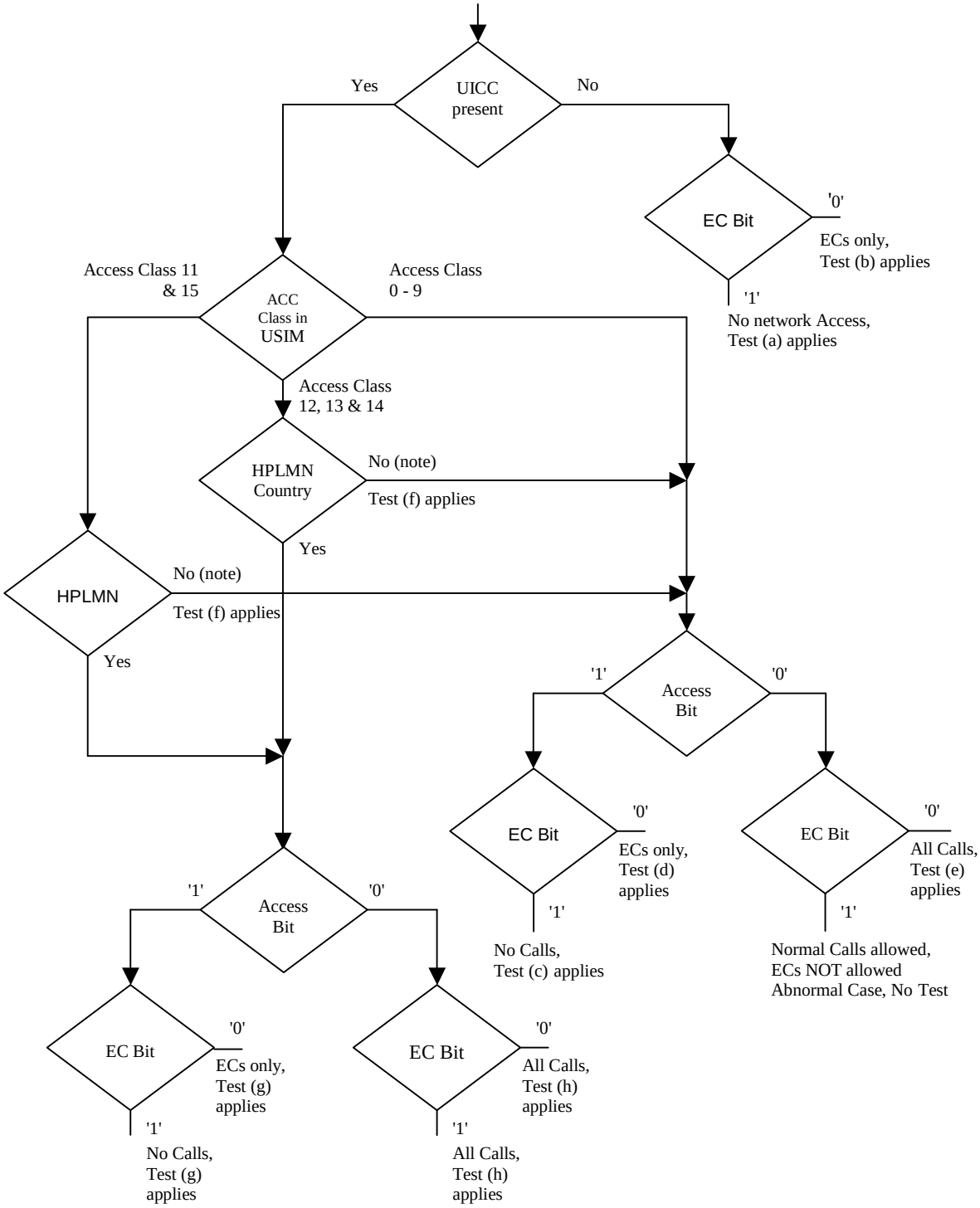
"	15 & x	0000 0011 1111 1111	No All, except ACC greater than ~~then~~ 11	246 082	No	Yes
" Set "x" to an arbitrary value in the range 0 to 9	15 & x	0000 0000 0000 0000	No None	246 082	Yes	Yes

Table 5-1 (continued)

USIM			Network			Test Results	
	IMSI		RACH SIB3: Access Class Barred List	Informative: Cell Barred for:	BCCH/ LAI	Normal Call	Emergency Call
		Access Class	~~Octet 3~~ AC15-AC08 ~~Octet 4~~ AC07-AC00	Emergency Call Normal Call	MCC MNC		
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

Table 5-1 (concluded)

USIM			Network			Test Results	
	IMSI		RACH SIB3: Access Class Barred List	Informative: Cell Barred for:	BCCH/ LAI	Normal Call	Emergency Call
		Access Class	~~Octet 3~~ AC15-AC08 ~~Octet 4~~ AC07-AC00	Emergency Call Normal Call	MCC MNC		
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 1011~~1101 1111 1111 1111	Yes All, except "special" ACC on USIM	246 082	Yes	Yes
	"2460813579"	14 & x	~~1011 1111~~ 1011 1011 1111 1111	No All, except "special" ACC on USIM	246 082	Yes	Yes
	"	14 & x	~~1011 1011~~ 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.
Access Class in USIM, See TS 31.102 EF ACC, "6F 78".
ECs: Emergency Calls.
~~EC Bit: Bit 3 of Octet3 of RACH Control Parameters, See GSM 04.18 subclause 10.5.2.29~~
EC BIT: Access Class 10 defined in TS 22.011 clause 4.4.
AC Bit: See ~~Bytes 3 & 4 of the RACH Control Parameters~~ 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

3GPP TSG T WG3 Meeting #32
New York, US, 10th - 13th August 2004

T3-040581

CR-Form-v7

CHANGE REQUEST

⌘ **31.121** **CR** **042** ⌘ **rev** **-** ⌘ Current version: **4.8.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR 31.121 Rel-4: Correction of Access Control handling related test case TC 5.2.1.
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	12/08/2004
Category:	⌘	**A**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Correction of incorrect codings, test purpose descriptions and acceptance criteria
Summary of change:	⌘	5.2.1.1: correct the applicability to include CS. 5.2.1.2: correct requirement to match conformance requirement of TS 22.011. 5.2.1.4.2: correct reference according to 3GPP. 5.2.1.5/ Test (f): correct wording 5.2.1.5/Test (g): correct the coding access class barred list on network side to match the appropriate requirement to allow or prohobit access for AC#10 for Emergency Call.
Consequences if not approved:	⌘	Incorrect and insufficient ACC related test cases. Correctly implemented UEs would unfairly fail these test cases.

Clauses affected:	⌘	5,2.1.1, 5.2.1.2, 5.2.1.4.2, 5.2.1.5

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	

	X	O&M Specifications

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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 Equipment 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.

This test applies to Terminals accessing UTRAN and supporting CS.

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, 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, the UE may make call attempts access attempts are allowed. Otherwise call 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, 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 transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.
- LAI (MCC/MNC/LAC): see table 5-1.
- 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.

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:

- See TS 31.102 [4].

NETWORK (USS)

~~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 5-1~~

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

Reference

- 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.

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: 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 randomly chosen.

Table 5-1

	USIM		Network			Test Results	
	IMSI		RACH SIB3: Access Class Barred List	Informative: Cell Barred for:	BCCH/ LAI	Normal Call	Emergency Call
		Access Class	~~Octet 3~~ AC15-AC08 ~~Octet 4~~ 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

Table 5-1 (continued)

USIM			Network			Test Results	
	IMSI		RACH SIB3: Access Class Barred List	Informative: Cell Barred for:	BCCH/ LAI	Normal Call	Emergency Call
		Access Class	~~Octet 3~~ AC15-AC08 ~~Octet 4~~ AC07-AC00	Emergency Call Normal Call	MCC MNC		
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

Table 5-1 (continued)

USIM			Network			Test Results	
	IMSI		RACH SIB3: AccessClass Barred List	Informative: Cell Barred for:	BCCH/ LAI	Normal Call	Emergency Call
		Access Class	~~Octet 3~~ AC15-AC08 ~~Octet 4~~ AC07-AC00	Emergency Call Normal Call	MCC MNC		
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	1101 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

Table 5-1 (continued)

USIM			Network			Test Results	
	IMSI		RACH SIB3: Access Class Barred List	Informative: Cell Barred for:	BCCH/ LAI	Normal Call	Emergency Call
		Access Class	~~Octet 3~~ AC15-AC08 ~~Octet 4~~ AC07-AC00	Emergency Call Normal Call	MCC MNC		
Test (f)	"24608135x9"	11 & x	0000 0111 1111 1111	Yes All, except ACC greater ~~then~~ than 11	246 082	No	No
	"	11 & x	0000 0011 1111 1111	No All, except ACC greater than ~~then~~ 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 ~~then~~ 11	244 001	No	No
	"	12 & x	0000 0011 1111 1111	No All, except ACC greater than ~~then~~ 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 ~~then~~ 11	244 001	No	No
	"	13 & x	0000 0011 1111 1111	No All, except ACC greater than ~~then~~ 11	244 001	No	Yes
	"	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 ~~then~~ 11	244 001	No	No
	"	14 & x	0000 0011 1111 1111	No All, except ACC greater than ~~then~~ 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 ~~then~~ 11	246 082	No	No

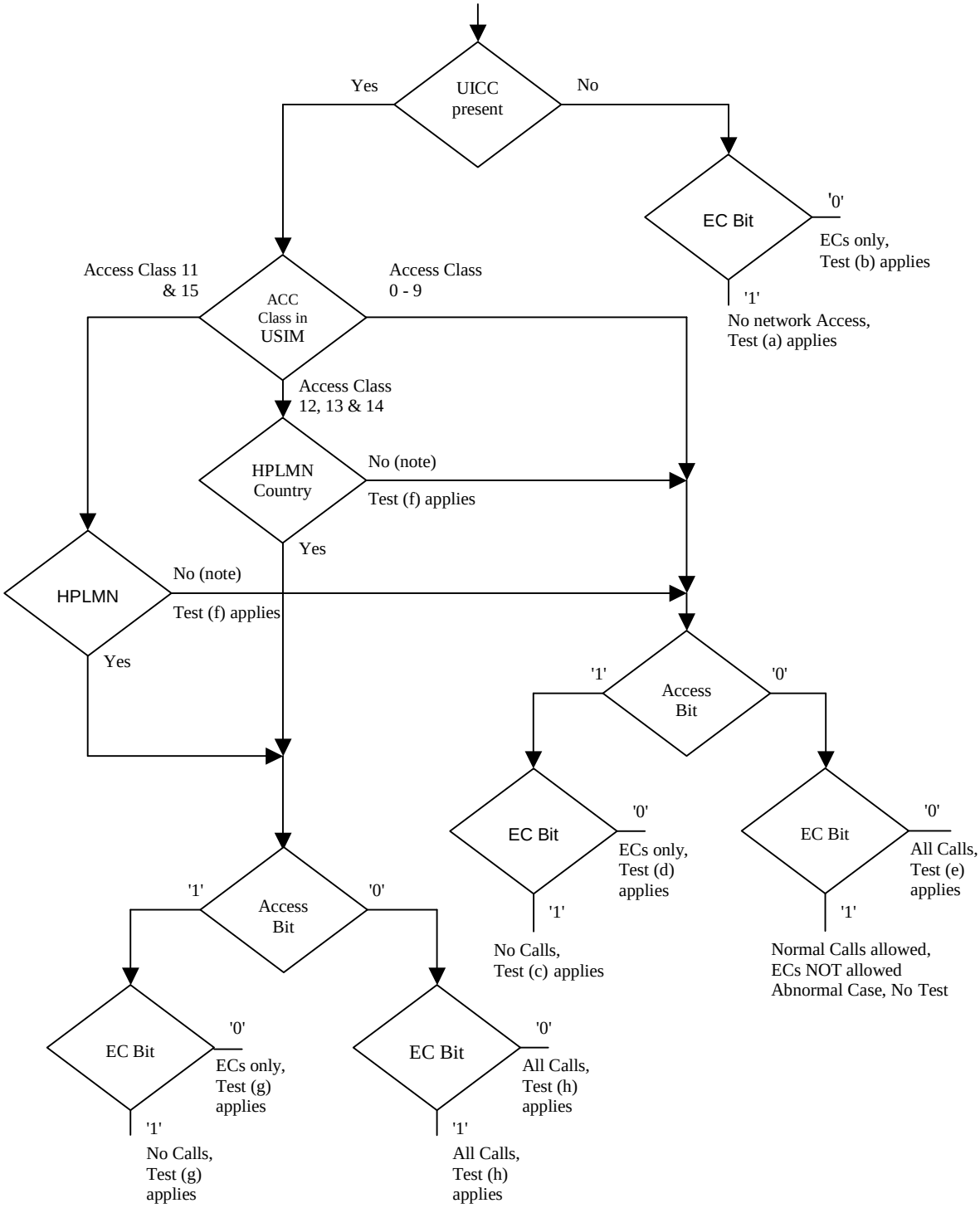
"	15 & x	0000 0011 1111 1111	No All, except ACC greater than ~~then~~ 11	246 082	No	Yes
" Set "x" to an arbitrary value in the range 0 to 9	15 & x	0000 0000 0000 0000	No None	246 082	Yes	Yes

Table 5-1 (continued)

USIM			Network			Test Results	
	IMSI		RACH SIB3: Access Class Barred List	Informative: Cell Barred for:	BCCH/ LAI	Normal Call	Emergency Call
		Access Class	~~Octet 3~~ AC15-AC08 ~~Octet 4~~ AC07-AC00	Emergency Call Normal Call	MCC MNC		
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

Table 5-1 (concluded)

USIM			Network			Test Results	
	IMSI		RACH SIB3: Access Class Barred List	Informative: Cell Barred for:	BCCH/ LAI	Normal Call	Emergency Call
		Access Class	~~Octet 3~~ AC15-AC08 ~~Octet 4~~ AC07-AC00	Emergency Call Normal Call	MCC MNC		
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 1011~~1101 1111 1111 1111	Yes All, except "special" ACC on USIM	246 082	Yes	Yes
	"2460813579"	14 & x	~~1011 1111~~ 1011 1011 1111 1111	No All, except "special" ACC on USIM	246 082	Yes	Yes
	"	14 & x	~~1011 1011~~ 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.
Access Class in USIM, See TS 31.102 EF ACC, "6F 78".
ECs: Emergency Calls.
~~EC Bit: Bit 3 of Octet3 of RACH Control Parameters, See GSM 04.18 Section 10.5.2.29~~
EC BIT: Access Class 10 defined in TS 22.011 clause 4.4.
AC Bit: See ~~Bytes 3 & 4 of the RACH Control Parameters~~ 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