# 6 Security related Tests

## 6.1 PIN handling

### 6.1.1 Entry of PIN

#### 6.1.1.1 Definition and applicability

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

#### 6.1.1.2 Conformance requirement

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

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

Reference:

- ETSI TS 102 221 [5], clauses 9 and 11.1.9;

- TS 31.102 [4], clause 6;

- TS 22.030 [12], clause 6.6.1.

#### 6.1.1.3 Test purpose

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

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

#### 6.1.1.4 Method of test

##### 6.1.1.4.1 Initial conditions

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

The default UICC is used.

##### 6.1.1.4.2 Procedure

a) The Terminal is powered on.

b) When the UE is in the "PIN check" mode, the sequence "2468#" shall be entered.

#### 6.1.1.5 Acceptance criteria

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

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

### 6.1.2 Change of PIN

#### 6.1.2.1 Definition and applicability

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

#### 6.1.2.2 Conformance requirement

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

Reference:

- ETSI TS 102 221 [5], clauses 9 and 11.1.10;

- TS 31.102 [4], clause 6;

- TS 22.030 [12], clause 6.6.2.

#### 6.1.2.3 Test purpose

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

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

#### 6.1.2.4 Method of test

##### 6.1.2.4.1 Initial conditions

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

The default UICC is used.

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

##### 6.1.2.4.2 Procedure

a) Enter "\*\*04\*2468\*01234567\*01234567#" or initiate an equivalent MMI dependent procedure to change the PIN from '2468' to '01234567'.

b) The UE is switched off and on.

c) When the UE is in the "PIN check" mode, the sequence "2468#" shall be entered.

d) The UE is switched off and on.

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

#### 6.1.2.5 Acceptance criteria

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

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

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

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

### 6.1.3 Unblock PIN

#### 6.1.3.1 Definition and applicability

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

#### 6.1.3.2 Conformance requirement

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

Reference:

- ETSI TS 102 221 [5], clause 11.1.13;

- TS 31.102 [4], clause 6;

- TS 22.030 [12], clause 6.6.3.

#### 6.1.3.3 Test purpose

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

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

#### 6.1.3.4 Method of test

##### 6.1.3.4.1 Initial conditions

The Terminal is connected to the UICC simulator.

The default UICC is used.

##### 6.1.3.4.2 Procedure

Sequence A:

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

b) Enter "\*\*05\*13243546\*1234\*1234#"

c) The Terminal is powered off and on.

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

e) The Terminal is powered off and on.

f) Enter a wrong PIN three times.

g) Enter "\*\*05\*13243546\*2468\*2468#".

h) The Terminal is powered off and on.

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

Sequence B:

a) The Terminal is powered on.

b) Enter a wrong PIN three times.

c) The user shall initiate a MMI dependent procedure to unblock the PIN with unblock code '13243546' and a new PIN '2468'.

d) The Terminal is powered off and on.

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

#### 6.1.3.5 Acceptance criteria

Sequence A:

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

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

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

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

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

Sequence B:

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

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

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

### 6.1.4 Entry of PIN2

#### 6.1.4.1 Definition and applicability

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

#### 6.1.4.2 Conformance requirement

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

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

Reference:

- ETSI TS 102 221 [5], clauses 9 and 11.1.9;

- TS 31.102 [4], clause 6;

- TS 22.030 [12], clause 6.6.1.

#### 6.1.4.3 Test purpose

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

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

#### 6.1.4.4 Method of test

##### 6.1.4.4.1 Initial conditions

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

The default UICC is used.

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

##### 6.1.4.4.2 Procedure

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

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

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

#### 6.1.4.5 Acceptance criteria

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

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

### 6.1.5 Change of PIN2

#### 6.1.5.1 Definition and applicability

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

#### 6.1.5.2 Conformance requirement

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

Reference:

- ETSI TS 102 221 [5], clauses 9 and 11.1.10;

- TS 31.102 [4], clause 6;

- TS 22.030 [12], clause 6.6.2.

#### 6.1.5.3 Test purpose

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

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

#### 6.1.5.4 Method of test

##### 6.1.5.4.1 Initial conditions

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

The default UICC is used.

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

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

##### 6.1.5.4.2 Procedure

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

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

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

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

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

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

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

#### 6.1.5.5 Acceptance criteria

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

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

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

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

### 6.1.6 Unblock PIN2

#### 6.1.6.1 Definition and applicability

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

#### 6.1.6.2 Conformance requirement

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

Reference:

- ETSI TS 102 221 [5], clauses 9 and 11.1.13;

- TS 31.102 [4], clause 6;

- TS 22.030 [12], clause 6.6.3.

#### 6.1.6.3 Test purpose

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

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

#### 6.1.6.4 Method of test

##### 6.1.6.4.1 Initial conditions

The Terminal is connected to the UICC simulator.

The default UICC is used.

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

##### 6.1.6.4.2 Procedure

Sequence A:

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

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

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

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

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

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

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

h) Enter a wrong PIN2 three times.

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

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

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

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

Sequence B:

a) The Terminal is powered on.

b) Enter a wrong PIN2 three times.

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

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

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

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

#### 6.1.6.5 Acceptance criterias

Sequence A:

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

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

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

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

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

Sequence B:

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

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

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

### 6.1.7 Replacement of PIN

#### 6.1.7.1 Definition and applicability

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

#### 6.1.7.2 Conformance requirement

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

Reference:

- ETSI TS 102 221 [5], clauses 9, 11.1.11 and 11.1.12;

- TS 31.102 [4], clause 6.

#### 6.1.7.3 Test purpose

1) To verify that the PIN replacement is supported by the Terminal correctly.

2) To verify that the PIN replacement procedure is performed by the Terminal correctly.

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

#### 6.1.7.4 Method of test

##### 6.1.7.4.1 Initial conditions

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

The default UICC is used.

##### 6.1.7.4.2 Procedure

a) The Terminal is powered on.

b) When the Terminal is in the "PIN check" mode, the sequence "2468#" shall be entered.

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

d) The Terminal is powered off and on and when the Terminal is in "PIN check" mode the sequence "2468#" shall be entered.

e) The correct Universal PIN is entered.

f) The user shall initiate an MMI dependent procedure to disable the replacement of the PIN by the Universal PIN.

g) The Terminal is powered off and on and when the Terminal is in "PIN check" mode the sequence "2839#" shall be entered.

h) The correct PIN is entered.

#### 6.1.7.5 Acceptance criteria

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

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

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

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

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

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

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

### 6.1.8 Change of Universal PIN

#### 6.1.8.1 Definition and applicability

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

#### 6.1.8.2 Conformance requirement

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

Reference:

- ETSI TS 102 221 [5], clauses 9 and 11.1.10;

- TS 31.102 [4], clause 6.

#### 6.1.8.3 Test purpose

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

#### 6.1.8.4 Method of test

##### 6.1.8.4.1 Initial conditions

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

The default UICC is used with the following exception:

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

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

##### 6.1.8.4.2 Procedure

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

b) The UE is switched off and on.

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

d) The UE is switched off and on.

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

#### 6.1.8.5 Acceptance criteria

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

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

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

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

### 6.1.9 Unblock Universal PIN

#### 6.1.9.1 Definition and applicability

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

#### 6.1.9.2 Conformance requirement

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

Reference:

- ETSI TS 102 221 [5], clause 11.1.13;

- TS 31.102 [4], clause 6.

#### 6.1.9.3 Test purpose

To verify that the PIN unblocking procedure is performed correctly.

#### 6.1.9.4 Method of test

##### 6.1.9.4.1 Initial conditions

The Terminal is connected to the UICC simulator.

The default UICC is used.

##### 6.1.9.4.2 Procedure

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

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

c) The Terminal is powered off and on.

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

e) The Terminal is powered off and on.

f) Enter a wrong PIN three times.

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

h) The Terminal is powered off and on.

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

#### 6.1.9.5 Acceptance criteria

1) After step b), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "11".

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

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

4) After step g), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "11".

5) After step j), the Terminal shall indicate that the (Universal) PIN has been accepted.

### 6.1.10 Entry of PIN on multi-verification capable UICCs

#### 6.1.10.1 Definition and applicability

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

#### 6.1.10.2 Conformance requirement

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

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

Reference:

- ETSI TS 102 221 [5], clauses 9 and 11.1.9;

- 3GPP TS 31.102 [4], clause 6;

- 3GPP TS 22.030 [12], clause 6.6.1.

6.1.10.3 Test purpose

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

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

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

#### 6.1.10.4 Method of test

##### 6.1.10.4.1 Initial conditions

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

The default UICC is used with the following exceptions:

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

PIN

Key reference: 07

Logically: 8642

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

Unblock PIN

Key reference 07

Logically: 64534231

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

PIN2

Key reference 87

Logically: 9753

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

Unblock PIN2

Key reference 87

Logically: 57687980

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

##### 6.1.10.4.2 Procedure

a) The Terminal is powered on.

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

#### 6.1.10.5 Acceptance criteria

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

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

### 6.1.11 Change of PIN on multi-verification capable UICCs

#### 6.1.11.1 Definition and applicability

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

#### 6.1.11.2 Conformance requirement

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

Reference:

- ETSI TS 102 221 [5], clauses 9 and 11.1.10;

- 3GPP TS 31.102 [4], clause 6;

- 3GPP TS 22.030 [12], clause 6.6.2.

#### 6.1.11.3 Test purpose

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

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

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

#### 6.1.11.4 Method of test

##### 6.1.11.4.1 Initial conditions

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

The default UICC is used with the following exceptions:

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

PIN

Key reference: 07

Logically: 8642

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

Unblock PIN

Key reference 07

Logically: 64534231

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

PIN2

Key reference 87

Logically: 9753

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

Unblock PIN2

Key reference 87

Logically: 57687980

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

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

##### 6.1.11.4.2 Procedure

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

b) The UE is switched off and on.

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

d) The UE is switched off and on.

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

#### 6.1.11.5 Acceptance criteria

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

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

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

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

### 6.1.12 Unblock PIN on multi-verification capable UICCs

#### 6.1.12.1 Definition and applicability

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

#### 6.1.12.2 Conformance requirement

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

Reference:

- ETSI TS 102 221 [5], clauses 9 and 11.1.13;

- TS 31.102 [4], clause 6;

- TS 22.030 [12], clause 6.6.3.

#### 6.1.12.3 Test purpose

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

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

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

#### 6.1.12.4 Method of test

##### 6.1.12.4.1 Initial conditions

The Terminal is connected to the UICC simulator.

The default UICC is used with the following exceptions:

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

PIN

Key reference: 07

Logically: 8642

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

Unblock PIN

Key reference 07

Logically: 64534231

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

PIN2

Key reference 87

Logically: 9753

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

Unblock PIN2

Key reference 87

Logically: 57687980

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

##### 6.1.12.4.2 Procedure

Sequence A:

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

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

c) The Terminal is powered off and on.

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

e) The Terminal is powered off and on.

f) Enter a wrong PIN three times.

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

h) The Terminal is powered off and on.

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

Sequence B:

a) The Terminal is powered on.

b) Enter a wrong PIN three times.

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

d) The Terminal is powered off and on.

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

#### 6.1.12.5 Acceptance criteria

Sequence A:

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

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

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

4) After step g), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "07".

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

Sequence B:

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

2) After step c), the Terminal shall send an UNBLOCK PIN command to the UICC, with parameter P2 = "07".

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

### 6.1.13 Entry of PIN2 on multi-verification capable UICCs

#### 6.1.13.1 Definition and applicability

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

#### 6.1.13.2 Conformance requirement

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

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

Reference:

- ETSI TS 102 221 [5], clause 9 and clause 11.1.9;

- 3GPP TS 31.102 [4], clause 6;

- 3GPP TS 22.030 [12], clause 6.6.1.

#### 6.1.13.3 Test purpose

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

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

3) To verify that the Terminal supports key references in the range of "81" to "88" as PIN2.

#### 6.1.13.4 Method of test

##### 6.1.13.4.1 Initial conditions

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

The default UICC is used with the following exceptions:

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

PIN

Key reference: 07

Logically: 8642

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

Unblock PIN

Key reference 07

Logically: 64534231

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

PIN2

Key reference 87

Logically: 9753

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

Unblock PIN2

Key reference 87

Logically: 57687980

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

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

##### 6.1.13.4.2 Procedure

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

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

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

#### 6.1.13.5 Acceptance criteria

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

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

### 6.1.14 Change of PIN2 on multi-verification capable UICCs

#### 6.1.14.1 Definition and applicability

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

#### 6.1.14.2 Conformance requirement

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

Reference:

- ETSI TS 102 221 [5], clauses 9 and 11.1.10;

- TS 31.102 [4], clause 6;

- TS 22.030 [12], clause 6.6.2.

#### 6.1.14.3 Test purpose

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

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

3) To verify that the Terminal supports key references in the range of "81" to "88" as PIN2.

#### 6.1.14.4 Method of test

##### 6.1.14.4.1 Initial conditions

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

The default UICC is used with the following exceptions:

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

PIN

Key reference: 07

Logically: 8642

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

Unblock PIN

Key reference 07

Logically: 64534231

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

PIN2

Key reference 87

Logically: 9753

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

Unblock PIN2

Key reference 87

Logically: 57687980

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

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

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

##### 6.1.14.4.2 Procedure

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

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

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

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

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

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

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

#### 6.1.14.5 Acceptance criteria

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

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

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

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

### 6.1.15 Unblock PIN2 on multi-verification capable UICCs

#### 6.1.15.1 Definition and applicability

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

#### 6.1.15.2 Conformance requirement

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

Reference:

- ETSI TS 102 221 [5],clauses 9 and 11.1.13;

- TS 31.102 [4], clause 6;

- TS 22.030 [12], clause 6.6.3.

#### 6.1.15.3 Test purpose

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

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

3) To verify that the Terminal supports key references in the range of "81" to "88" as PIN2.

#### 6.1.15.4 Method of test

##### 6.1.15.4.1 Initial conditions

The Terminal is connected to the UICC simulator.

The default UICC is used with the following exceptions:

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

PIN

Key reference: 07

Logically: 8642

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

Unblock PIN

Key reference 07

Logically: 64534231

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

PIN2

Key reference 87

Logically: 9753

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

Unblock PIN2

Key reference 87

Logically: 57687980

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

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

##### 6.1.15.4.2 Procedure

Sequence A:

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

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

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

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

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

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

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

h) Enter a wrong PIN2 three times.

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

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

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

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

Sequence B:

a) The Terminal is powered on .

b) Enter a wrong PIN2 three times.

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

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

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

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

#### 6.1.15.5 Acceptance criterias

Sequence A:

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

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

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

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

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

Sequence B:

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

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

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

### 6.1.16 Replacement of PIN with key reference "07"

#### 6.1.16.1 Definition and applicability

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

#### 6.1.16.2 Conformance requirement

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

Reference:

- ETSI TS 102 221 [5], clauses 9, 11.1.11 and 11.1.12;

- TS 31.102 [4], clause 6.

#### 6.1.16.3 Test purpose

1) To verify that the PIN replacement is supported by the Terminal correctly.

2) To verify that the PIN replacement procedure is performed by the Terminal correctly.

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

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

#### 6.1.16.4 Method of test

##### 6.1.16.4.1 Initial conditions

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

The default UICC is used with the following exceptions:

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

PIN

Key reference: 07

Logically: 8642

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

Unblock PIN

Key reference 07

Logically: 64534231

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

PIN2

Key reference 87

Logically: 9753

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

Unblock PIN2

Key reference 87

Logically: 57687980

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

##### 6.1.16.4.2 Procedure

a) The Terminal is powered on.

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

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

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

e) The correct Universal PIN is entered.

f) The user shall initiate an MMI dependent procedure to disable the replacement of the PIN by the Universal PIN.

g) The Terminal is powered off and on and when the Terminal is in "PIN check" mode the sequence "2839#" shall be entered.

h) The correct PIN is entered.

#### 6.1.16.5 Acceptance criteria

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

2) After step c), the Terminal shall send a DISABLE PIN command to the UICC, with parameter P1="91" and P2 = "07".

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

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

5) After step f), the Terminal shall send an ENABLE PIN command to the UICC, with parameter P2 = "07".

6) After step g) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "07" and after unsuccessful execution of the command the Terminal shall indicate that the PIN has not been accepted.

7) After step h) the Terminal shall send a VERIFY PIN command to the UICC, with parameter P2 = "07" and after successful execution of the command the Terminal shall indicate that the PIN has been accepted.

## 6.2 Fixed Dialling Numbers (FDN) handling

### 6.2.1 Terminal and USIM with FDN enabled, EFADN 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 EFECC. At the time an emergency call is setup using the emergency call code read from the EFECC, the UE shall use the category of the emergency service indicated.

#### 6.2.1.2 Conformance requirement

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

2) The UE allows call set-up to a directory number as stored in EFFDN.

3) The UE allows call set-up to a directory number as stored in EFFDN and extended by digits in the end.

4) The UE does not allow call set-up to a directory number stored in EFFDN but with missing digits at the end.

5) The UE does not allow call set-up to a directory number having no reference in EFFDN.

6) The UE does not allow call set-up of an emergency call using the emergency numbers stored in the Terminal except "112", "911", the emergency numbers stored on the SIM/USIM and emergency numbers downloaded from the serving network (if any).

7) The UE allows call set-up of an emergency call using the emergency number stored in the USIM.

Reference:

- TS 22.101 [11], clauses 8 and A.24;

- TS 31.102 [4], clauses 4.4.2, 4.2.24, 5.1.1 and 5.3.2;

- TS 24.008 [16], clause 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 EFFDN.

4) To verify that the Terminal rejects call set-up to a FDN number not completely corresponding to an entry in EFFDN.

5) To verify that the Terminal does not allow emergency call set-up using the emergency number stored in the Terminal except "112", "911", the emergency numbers stored on the SIM/USIM and emergency numbers downloaded from the serving network (if any).

6) To verify that the Terminal allows emergency call set-up using the emergency number stored in the UISM.

#### 6.2.1.4 Method of test

##### 6.2.1.4.1 Initial conditions

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

- Attach/detach: disabled.

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

- Access control: unrestricted.

The default FDN UICC with FDN service enabled and EFADN readable and updateable is installed into the Terminal.

The following expection applies:

**EFECC (Emergency Call Codes)**

Logically: Emergency call code: "122";

Emergency call code alpha identifier: "TEST";

Emergency call Service Category: RFU.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 |
| Hex | 21 | F2 | FF | 54 | 45 | 53 | 54 | 00 |

##### 6.2.1.4.2 Procedure

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

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

c) Using the MMI a call set-up to the fixed dialling number 2 (record 2) extended by "123" in the end is attempted.

d) Using the MMI a call set-up to a number which is equal to the fixed dialling number 3 (record 3) without the last digit is attempted, e.g. by recalling the fixed dialling number 3 and deleting the last digit (only in display).

e) Using the MMI a call set-up to the number "1234567" is attempted.

f) Using the MMI an emergency call set-up is attempted using an emergency call code stored in the Terminal, but not "112", "911" nor one of the emergency numbers stored on the SIM/USIM emergency numbers downloaded from the serving network (if any).

g) Using the MMI an emergency call set-up is attempted using either "112", "911" or an emergency number downloaded from the serving network (if any).

h) Using the MMI an emergency call set-up is attempted using the emergency call code stored in the USIM (i.e. "122").

NOTE: For step f) one of the emergency call codes according to TS 22.101 [11], clause 10.1, except "112" and "911", shall be used (i.e. "000", "08", "110", "118", "119" or "999").

#### 6.2.1.5 Acceptance criteria

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

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

3) After steps d), e) and f) the UE shall prevent call set-up.

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

### 6.2.2 Terminal and USIM with FDN disabled

#### 6.2.2.1 Definition and applicability

Fixed Dialling Numbers (FDN) is a service defined for the USIM. An enabled FDN service results in call restrictions for the UE. Only directory numbers which are stored in the EFFDN may be dialled by the UE. The call restrictions are controlled by the Terminal. To ascertain the type of USIM and state of FDN the UE runs the FDN capability request procedure during UICC-Terminal initialisation. Deactivation of the service by the subscriber is possible under the control of PIN2 and switches the USIM into a "normal", non restrictive USIM.

#### 6.2.2.2 Conformance requirement

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

2) The UE allows call set-up to a directory number as stored in EFFDN.

3) The UE allows call set-up to a directory number as stored in EFADN.

4) The UE allows call set-up to a directory number given in manually.

Reference:

- R99: TS 22.101 [11], clauses 8 and A.24

- Rel-4: TS 22.101 [11], clauses 9 and A.25

- Rel-5, Rel-6: TS 22.101 [11], clauses 10 and A.25;

- TS 31.102 [4], clauses 4.4.2.3, 4.2.24, 4.2.47, 5.1.1 and 5.3.2.

#### 6.2.2.3 Test purpose

1) To verify that the Terminal as a result of the state of the USIM correctly performs the UICC-Terminal initialisation procedure.

2) To verify that the Terminal allows call set-up to a FDN number.

3) To verify that the Terminal allows call set-up to a ADN number.

4) To verify that the Terminal allows call set-up to manually given number.

#### 6.2.2.4 Method of test

##### 6.2.2.4.1 Initial conditions

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

- Attach/detach: disabled.

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

- Access control: unrestricted.

The default FDN UICC is used with the following exception:

**EFEST (Enable Service Table)**

Logically: Fixed Dialling Numbers disabled.

Barred Dialling Numbers disabled.

APN Control list (ACL) disabled.

|  |  |
| --- | --- |
| Coding: | B1 |
| binary | 0000 0000 |

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

##### 6.2.2.4.2 Procedure

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

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

c) Using the MMI a call set-up to the number "1234567" is attempted.

#### 6.2.2.5 Acceptance criteria

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

### 6.2.3 Enabling, disabling and updating of FDN

#### 6.2.3.1 Definition and applicability

FDN may be enabled and disabled by the subscriber under control of PIN2. Fixed dialling numbers are read with PIN and updated under control of PIN2.

#### 6.2.3.2 Conformance requirement

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

2) The UE shall allow updating of EFFDN 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 EFADN after disabling of FDN.

Reference:

- R99: TS 22.101 [11], clauses 8 and A.24

- Rel-4: TS 22.101 [11], clauses 9 and A.25

- Rel-5, Rel-6: TS 22.101 [11], clause 10 and A.25;

- TS 31.102 [4], clauses 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 EFFDN.

2) To verify that the Terminal correctly disables FDN service.

3) To verify that the Terminal recognises disabling of FDN and allows access to EFADN.

#### 6.2.3.4 Method of test

##### 6.2.3.4.1 Initial conditions

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

- Attach/detach: disabled.

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

- Access control: unrestricted.

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

##### 6.2.3.4.2 Procedure

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

b) Using the MMI the directory number "+876543210" is stored in EFFDN 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 EFFDN , shall contain the following values:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | B13 |
| Hex | 46 | 44 | 4E | 31 | 31 | 31 | 06 | 91 | 78 | 56 | 34 | 12 | F0 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B14 | B15 | B16 | B17 | B18 | B19 | B20 |  |  |  |  |  |  |
|  | FF | FF | FF | FF | FF | FF | FF |  |  |  |  |  |  |

### 6.2.4 Terminal and USIM with FDN enabled, EFADN readable and updateable (Rel-4 and onwards)

#### 6.2.4.1 Definition and applicability

Fixed Dialling Numbers (FDN) is a service defined for the USIM. An enabled FDN service results in call restrictions for the UE. The call restrictions are controlled by the Terminal. To ascertain the type of USIM and state of FDN the UE runs the FDN capability request procedure during UICC-Terminal initialisation. During the initialisation the Terminal shall request the Emergency call codes of the USIM EFECC. At the time an emergency call is setup using the emergency call code read from the EFECC, the UE shall use the category of the emergency service indicated.

#### 6.2.4.2 Conformance requirement

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

2) The UE allows call set-up to a directory number as stored in EFFDN.

3) The UE allows call set-up to a directory number as stored in EFFDN and extended by digits in the end.

4) The UE does not allow call set-up to a directory number stored in EFFDN but with missing digits at the end.

5) The UE does not allow call set-up to a directory number having no reference in EFFDN.

6) The UE does not allow call set-up of an emergency call using the emergency numbers stored in the Terminal except "112", "911", the emergency numbers stored on the SIM/USIM and emergency numbers downloaded from the serving network (if any).

7) The UE allows call set-up of an emergency call using the emergency number stored in the USIM.

8) The UE shall indicate the emergency service category as "Mountain Rescue", when using the emergency number stored in the USIM.

Reference:

- Rel-4: TS 22.101 [11], clauses 9 and A.25

- Rel-5, Rel-6: TS 22.101 [11], clauses 10 and A.25;

- TS 31.102 [4], clauses 4.4.2, 4.2.24, 5.1.1 and 5.3.2;

- TS 24.008 [16], clause 10.5.4.33.

#### 6.2.4.3 Test purpose

1) To verify that the Terminal allows call set-up to a FDN number.

2) To verify that the Terminal allows call set-up to a FDN number extended by some digits in the end.

3) To verify that the Terminal rejects call set-up to number having no reference in EFFDN.

4) To verify that the Terminal rejects call set-up to a FDN number not completely corresponding to an entry in EFFDN.

5) To verify that the Terminal does not allow emergency call set-up using the emergency number stored in the Terminal except "112", "911", the emergency numbers stored on the SIM/USIM and emergency numbers downloaded from the serving network (if any).

6) To verify that the Terminal allows emergency call set-up using the emergency number stored in the UISM.

7) To verify that the Terminal reads correctly the emergency service category.

#### 6.2.4.4 Method of test

##### 6.2.4.4.1 Initial conditions

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

- Attach/detach: disabled.

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

- Access control: unrestricted.

The default FDN UICC with FDN service enabled and EFADN readable and updateable is installed into the Terminal.

##### 6.2.4.4.2 Procedure

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

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

c) Using the MMI a call set-up to the fixed dialling number 2 (record 2) extended by "123" in the end is attempted.

d) Using the MMI a call set-up to a number which is equal to the fixed dialling number 3 (record 3) without the last digit is attempted, e.g. by recalling the fixed dialling number 3 and deleting the last digit (only in display).

e) Using the MMI a call set-up to the number "1234567" is attempted.

f) Using the MMI an emergency call set-up is attempted using an emergency call code stored in the Terminal, but not "112", "911" nor one of the emergency numbers stored on the SIM/USIM emergency numbers downloaded from the serving network (if any).

g) Using the MMI an emergency call set-up is attempted using either "112", "911" or an emergency number downloaded from the serving network (if any).

h) Using the MMI an emergency call set-up is attempted using the emergency call code stored in the USIM (i.e. "122").

NOTE: For step f) one of the emergency call codes according to TS 22.101 [11], clause 10.1, except "112" and "911", shall be used (i.e. "000", "08", "110", "118", "119" or "999").

#### 6.2.4.5 Acceptance criteria

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

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

3) After steps d), e) and f) the UE shall prevent call set-up.

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

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

## 6.3 Void

## 6.4 Advice of charge (AoC) handling

### 6.4.1 AoC not supported by USIM

#### 6.4.1.1 Definition and applicability

If the Terminal under test supports Advice of Charge Charging, it shall still look at the capability of the USIM, before responding to any AoCC information from the network.

#### 6.4.1.2 Conformance requirement

1) An UE not supporting AoCC and in the outgoing call / U4 call delivered state, on receipt of a CONNECT message containing AoCC information shall acknowledge the CONNECT message but ignore and not acknowledge the AoCC information sent within the CONNECT.

2) An UE not supporting AoCC and in the outgoing call / U4 call delivered state, on receipt of a FACILITY message containing AoCC information shall ignore and not acknowledge the AoCC information sent within the FACILITY.

3) An UE not supporting AoCC and in the incoming call / U9 call confirmed state, on receipt of a FACILITY message containing AoCC information shall ignore and not acknowledge the AoCC information sent within the FACILITY.

4) An UE not supporting AoCC and in the U10 call active state, on receipt of a FACILITY message containing AoCC information, shall ignore and not acknowledge the AoCC information sent within the FACILITY.

References:

- TS 24.008 [16], clause 5.1.2.1;

- TS 23.086 [9], clauses 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:

**EFUST (USIM Service Table)**

Logically: Local Phone Book available;

User controlled PLMN selector available;

Fixed dialling numbers available;

The GSM Access available;

The Group Identifier level 1 and level 2 not available;

AoC not available.

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 |
| binary | xxxx xx11 | xxx0 xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 |

The coding of EFUST shall conform with the capabilities of the USIM used.

The generic call set up procedures for UTRAN defined in TS 34.108 [21], clause 7.2.3.2.3 and 7.2.3.1.3 and defined in TS 51.010‑1 [22], clause 10 for GERAN are followed up to and including the reception, or transmission of the ALERTING message by the UE.

##### 6.4.1.4.2 Procedure

a) For an MO call in the U4 state the USS/SS transmits CONNECT containing AoCC information.

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

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

d) For an MO call in the U10 state the USS/SS transmits FACILITY containing AoCC information.

#### 6.4.1.5 Acceptance criteria

In all cases, the UE shall ignore the AoCC information sent to it in the Facility information elements as part of the CONNECT/FACILITY messages and not send any AoCC information acknowledgement. It shall be checked for 15 s that the UE does not transmit any AoCC information acknowledgement after the receipt of AoCC information.

### 6.4.2 Maximum frequency of ACM updating

#### 6.4.2.1 Definition and applicability

During a call, the ACM shall be updated at the end of every interval. The interval length is the greater of either 5 s or the value given by parameter e2 (part of the Facility Information Element).

#### 6.4.2.2 Conformance requirement

The ACM shall be incremented when the CCM is incremented or once every 5 s, whichever is the longer period.

When used the value '1C' shall be used as SFI for EFACM, for compatibility reasons the terminal shall accept other values.

Reference:

- TS 22.024 [8], clause 4.3, part h;

- TS 31.102 [4], clauses 4.2.9, 5.3.4 and Annex H.1.

#### 6.4.2.3 Test purpose

1) To verify that the Terminal, during a call, increments the ACM every 5 s when e2 is less or equal to 5 s.

2) To verify that the Terminal is able to handle other values than '1C' as SFI of EFACM.

#### 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:

**EFUST (USIM Service Table)**

Logically: Local Phone Book available;

User controlled PLMN selector available;

Fixed dialling numbers available;

The GSM Access available;

The Group Identifier level 1 and level 2 not available;

AoC available.

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 |
| binary | xxxx xx11 | xxx1 xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 |

The coding of EFUST shall conform with the capabilities of the USIM used.

**EFACM (Accumulated call meter)**

Logically: 50 units

The SFI of EFACM shall be set to '18'.

**EFACMmax (Accumulated call meter maximum)**

Logically: 150 units

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

- Attach/detach: disabled.

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

- Access control: unrestricted.

User Equipment:

The UE is in MM-state "idle, updated".

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

##### 6.4.2.4.2 Procedure

a) The UE is made to initiate a call. The call establishment shall be performed according to the procedures defined in TS 34.108 [21], clause 7.2.3.2.3 extended by the messages of the AoCC. The call is established with AoCC e-parameters sent in a Facility IE in the CONNECT message, as given below. The UE returns the AoCC acknowledgement after the reception of the CONNECT message. It is an implementation option whether the AoCC acknowledge is sent by the UE before or after the CONNECT ACKNOWLEDGE.

b) The call is maintained for 90 s, then terminated by the USS. During the call, the USIM-simulator monitors the time intervals between successive INCREMENT commands. As the final INCREMENT command will have occurred as a result of call termination, the time interval calculated since the prior INCREMENT command shall be ignored.

Maximum Duration of Test:

2 minutes.

Expected Sequence A:

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Direction | Message | Comments |
| 1 | UE |  | The UE is made to initiate a call |
| 2 | UE -> USS | RRC CONNECTION REQUEST |  |
| 3 | USS -> UE | RRC CONNECTION SETUP |  |
| 4 | UE -> USS | RRC CONNECTION SETUP COMPLETE |  |
| 5 | UE -> USS | CM SERVICE REQUEST |  |
| 6 | USS -> UE | AUTHENTICATION REQUEST | MM procedure, to ensure the successful start of integrity in step 8 |
| 7 | UE -> USS | AUTHENTICATION RESPONSE |  |
| 8 | USS -> UE | SECURITY MODE COMMAND | RRC procedure, start of integrity is mandatory during call setup |
| 9 | UE -> USS | SECURITY MODE COMPLETE |  |
| 10 | UE -> USS | SETUP |  |
| 11 | USS -> UE | CALL PROCEEDING |  |
| 12 | USS -> UE | RADIO BEARER SETUP | To a supported channel type |
| 13 | UE -> USS | RADIO BEARER SETUPCOMPLETE |  |
| 14 | USS -> UE | ALERTING |  |
| 15 | USS -> UE | CONNECT | As default message except contains Facility IE with contents as indicated in i) below |
|  |  |  | Either A or B branch is taken |
| A16 | UE -> USS | CONNECT ACKNOWLEDGE |  |
| A17 | UE -> USS | FACILITY | As default message except contains Facility IE with contents as indicated in ii) below |
| B16 | UE -> USS | FACILITY | As default message except contains Facility IE with contents as indicated in ii) below |
| B17 | UE -> USS | CONNECT ACKNOWLEDGE |  |
| 18 |  |  | call duration 90 s after CAI information sent by USS, |
| 19 | USS -> UE | DISCONNECT |  |
| 20 | UE -> USS | RELEASE |  |
| 21 | USS -> UE | RELEASE COMPLETE |  |
| 22 | USS -> UE | RRC CONNECTION RELEASE | All connections of RRC are released. |
| 23 | UE -> USS | RRC CONNECTION RELEASE COMPLETE |  |

Expected Sequence B:

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Direction | Message | Comments |
| 1 | UE |  | The UE is made to initiate a call |
| 2 | UE -> SS | CHANNEL REQUEST |  |
| 3 | SS -> UE | IMMEDIATE ASSIGNMENT |  |
| 4 | UE -> SS | CM SERVICE REQUEST |  |
| 5 | SS -> UE | CM SERVICE ACCEPT |  |
| 6 | UE -> SS | SETUP |  |
| 7 | SS -> UE | CALL PROCEEDING |  |
| 8 | SS -> UE | ASSIGNMENT COMMAND | To a supported channel type |
| 9 | UE -> SS | ASSIGNMENT COMPLETE |  |
| 10 | SS -> UE | ALERTING |  |
| 11 | SS -> UE | CONNECT | As default message except contains Facility IE with contents as indicated in i) below |
|  |  |  | Either A or B branch is taken |
| A12 | UE -> SS | CONNECT ACKNOWLEDGE |  |
| A13 | UE -> SS | FACILITY | As default message except contains Facility IE with contents as indicated in ii) below |
| B12 | UE -> SS | FACILITY | As default message except contains Facility IE with contents as indicated in ii) below |
| B13 | UE -> SS | CONNECT ACKNOWLEDGE |  |
| 14 |  |  | call duration 90 s after CAI information sent by SS, |
| 15 | SS -> UE | DISCONNECT |  |
| 16 | UE -> SS | RELEASE |  |
| 17 | SS -> UE | RELEASE COMPLETE |  |
| 18 | SS -> UE | CHANNEL RELEASE | The main signalling link is released. |

Specific Message Contents:

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

For ASN.1 description see default message contents in TS 51.010‑1 [22], clause 31.6.4.

The values of the e-parameters within the parameter part of the Facility Information Element shall be set as below:

e-parameters:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| parameter: | e1 | e2 | e3 | e4 | e5 | e6 | E7 |
| value | 1 | 1 | 1 | 0 | 0 | 0 | 0 |

Values shown in table are in the format and have units as in TS 22.024 [8], clause 3.

**ii) FACILITY Information Element** with **Return Result** component type as defined in TS 24.080 [17], clause 3.6.1 table 3.4.

For ASN.1 description see default message contents in TS 51.010‑1 [22], clause 31.6.4.

#### 6.4.2.5 Acceptance criteria

The UE shall, during a call, send INCREMENT commands to the USIM every 5 s.

### 6.4.3 Call terminated when ACM greater than ACMmax

#### 6.4.3.1 Definition and applicability

ACMmax gives the maximum value of ACM, at which the current chargeable calls shall be terminated and no further calls may be made (except emergency calls).

#### 6.4.3.2 Conformance requirement

ACM shall be incremented by the value of CCM.

If the ACMmax is valid, and the ACM becomes equal to or exceeds the value of the ACMmax, then all calls in progress, chargeable to the user, shall be terminated by the UE, once the chargeable interval determined by the CAI has elapsed, (except emergency calls).

When used the value '1C' shall be used as SFI for EFACM, for compatibility reasons the terminal shall accept other values.

Reference:

- TS 22.024 [8], clauses 4.2.2 and 4.3 (part h);

- ETSI TS 102 221 [5], clause 14.1.3;

- TS 31.102 [4], clause 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 EFACM command is performed correctly by the terminal.

4) To verify that the Terminal is able to handle other values than '1C' as SFI of EFACM.

#### 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:

**EFUST (USIM Service Table)**

Logically: Local Phone Book available;

User controlled PLMN selector available;

Fixed dialling numbers available;

The GSM Access available;

The Group Identifier level 1 and level 2 not available;

AoC available.

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 |
| binary | xxxx xx11 | xxx1 xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 |

The coding of EFUST shall conform with the capabilities of the USIM used.

**EFACM (Accumulated call meter)**

Logically: 80 units

|  |  |  |  |
| --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 |
| binary | 0000 0000 | 0000 0000 | 0101 0000 |

The SFI of EFACM shall be set to '18'.

**EFACMmax (Accumulated call meter maximum)**

Logically: 94 units

|  |  |  |  |
| --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 |
| binary | 0000 0000 | 0000 0000 | 0101 1110 |

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

- Attach/detach: disabled.

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

- Access control: unrestricted.

User Equipment:

The UE is in MM-state "idle, updated".

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

##### 6.4.3.4.2 Procedure

a) The UE is made to initiate a call. The call establishment shall be performed according to the procedures defined in TS 34.108 [21], clause 7.2.3.2.3 extended by the messages of the AoCC. The call is established with AoCC e-parameters sent in a Facility IE in the CONNECT message, as given below. The UE returns the AoCC acknowledgement after the reception of the CONNECT message. It is an implementation option whether the AoCC acknowledge is sent by the UE before or after the CONNECT ACKNOWLEDGE.

b) The call is maintained until cleared by the UE (after 30 s).

c) The contents of ACM are checked.

Maximum Duration of Test:

2 minutes.

Expected Sequence A:

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Direction | Message | Comments |
| 1 | UE |  | The UE is made to initiate a call |
| 2 | UE -> USS | RRC CONNECTION REQUEST |  |
| 3 | USS -> UE | RRC CONNECTION SETUP |  |
| 4 | UE -> USS | RRC CONNECTION SETUP COMPLETE |  |
| 4A | UE -> USS | CM SERVICE REQUEST |  |
| 5 | USS -> UE | AUTHENTICATION REQUEST | MM procedure, to ensure the successful start of integrity in step 8 |
| 6 | UE -> USS | AUTHENTICATION RESPONSE |  |
| 7 | USS -> UE | SECURITY MODE COMMAND | RRC procedure, start of integrity is mandatory during call setup |
| 8 | UE -> USS | SECURITY MODE COMPLETE |  |
| 9 | UE -> USS | SETUP |  |
| 10 | USS -> UE | CALL PROCEEDING |  |
| 11 | USS -> UE | RADIO BEARER SETUP | To a supported channel type |
| 12 | UE -> USS | RADIO BEARER SETUP COMPLETE |  |
| 13 | USS -> UE | ALERTING |  |
| 14 | USS -> UE | CONNECT | As default message except contains Facility IE with contents as indicated in i) below |
|  |  |  | Either A or B branch is taken |
| A15 | UE -> USS | CONNECT ACKNOWLEDGE |  |
| A16 | UE -> USS | FACILITY | As default message except contains Facility IE with contents as indicated in ii) below |
| B15 | UE -> USS | FACILITY | As default message except contains Facility IE with contents as indicated in ii) below |
| B16 | UE -> USS | CONNECT ACKNOWLEDGE |  |
| 17 |  |  | call duration 30 s after CAI information sent by USS |
| 18 | UE -> USS | DISCONNECT |  |
| 19 | USS -> UE | RELEASE |  |
| 20 | UE -> USS | RELEASE COMPLETE |  |
| 21 | USS -> UE | RRC CONNECTION RELEASE | All connections of RRC are released. |
| 22 | UE -> USS | RRC CONNECTION RELEASE COMPLETE |  |

Expected Sequence B:

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Direction | Message | Comments |
| 1 | UE |  | The UE is made to initiate a call |
| 2 | UE -> SS | CHANNEL REQUEST |  |
| 3 | SS -> UE | IMMEDIATE ASSIGNMENT |  |
| 4 | UE -> SS | CM SERVICE REQUEST |  |
| 5 | SS -> UE | CM SERVICE ACCEPT |  |
| 6 | UE -> SS | SETUP |  |
| 7 | SS -> UE | CALL PROCEEDING |  |
| 8 | SS -> UE | ASSIGNMENT COMMAND | To a supported channel type |
| 9 | UE -> SS | ASSIGNMENT COMPLETE |  |
| 10 | SS -> UE | ALERTING |  |
| 11 | SS -> UE | CONNECT | As default message except contains Facility IE with contents as indicated in i) below |
|  |  |  | Either A or B branch is taken |
| A12 | UE -> SS | CONNECT ACKNOWLEDGE |  |
| A13 | UE -> SS | FACILITY | As default message except contains Facility IE with contents as indicated in ii) below |
| B12 | UE -> SS | FACILITY | As default message except contains Facility IE with contents as indicated in ii) below |
| B13 | UE -> SS | CONNECT ACKNOWLEDGE |  |
| 14 |  |  | call duration 30 s after CAI information sent by SS |
| 15 | UE -> SS | DISCONNECT |  |
| 16 | SS -> UE | RELEASE |  |
| 17 | UE -> SS | RELEASE COMPLETE |  |
| 18 | SS -> UE | CHANNEL RELEASE | The main signalling link is released. |

Specific Message Contents:

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

For ASN.1 description see default message contents in TS 51.010‑1 [22], clause 31.6.4.

The values of the e-parameters within the parameter part of the Facility Information Element shall be set as below:

e-parameters:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| parameter: | e1 | e2 | e3 | e4 | e5 | e6 | e7 |
| value | 10 | 10 | 1 | 0 | 0 | 0 | 0 |

Values shown in table are in the format and have units as in TS 22.024 [8], clause 3.

**ii) FACILITY Information Element** with **Return Result** component type as defined in TS 24.080 [17], clause 3.6.1 table 3.4.

For ASN.1 description see default message contents in TS 51.010‑1 [22], clause 31.6.4.

#### 6.4.3.5 Acceptance criteria

1) The UE shall terminate the call correctly 30 s after CAI was sent.

2) The value of ACM shall be 100 units.

### 6.4.4 Response codes of increase command of ACM

#### 6.4.4.1 Definition and applicability

ACM has a maximum value in terms of coding, and an attempt by the Terminal to exceed that value by sending an INCREASE command shall result in an error message from the USIM. As the maximum of the ACM is equal to the maximum value of ACMmax, all current chargeable calls shall be terminated and no further calls may be made (except emergency calls).

#### 6.4.4.2 Conformance requirement

The Terminal shall perform the increasing procedure, sending the amount to be increased.

The running accumulated charge shall be stored in the ACM of the USIM.

Where this charge cannot be stored in the UE, use of the telecommunications service shall be prevented.

At the time ACM exceeds it's maximum value, then all calls in progress, chargeable to the user, shall be terminated by the UE, once the chargeable interval determined by the CAI has elapsed, (except emergency calls).

When used the value '1C' shall be used as SFI for EFACM, for compatibility reasons the terminal shall accept other values.

References:

- TS 31.102 [4], clauses 4.2.9, 5.3.4 and Annex H.1;

- TS 22.086 [18], clauses 2.1 and 2.2.1.

#### 6.4.4.3 Test purpose

1) To verify that the Terminal clears a charged call if the USIM indicates that the ACM cannot be increased.

2) To verify that the Terminal is able to handle other values than "1C" as SFI of EFACM.

#### 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:

**EFUST (USIM Service Table)**

Logically: Local Phone Book available;

User controlled PLMN selector available;

Fixed dialling numbers available;

The GSM Access available;

The Group Identifier level 1 and level 2 not available;

AoC available.

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 |
| binary | xxxx xx11 | xxx1 xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 |

The coding of EFUST shall conform with the capabilities of the USIM used.

**EFACM (Accumulated call meter)**

Logically: (Maximum value – 10) units

|  |  |  |  |
| --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 |
| binary | 1111 1111 | 1111 1111 | 1111 0101 |

The SFI of EFACM shall be set to "18".

**EFACMmax (Accumulated call meter maximum)**

Logically: (Maximum value – 2) units

|  |  |  |  |
| --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 |
| binary | 1111 1111 | 1111 1111 | 1111 1101 |

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

- Attach/detach: disabled.

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

- Access control: unrestricted.

User Equipment:

The UE is in MM-state "idle, updated".

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

##### 6.4.4.4.2 Procedure

a) The UE is made to initiate a call. The call establishment shall be performed according to the procedures defined in TS 34.108 [21], clause 7.2.3.2.3 extended by the messages of the AoCC. The call is established with AoCC e-parameters sent in a Facility IE in the CONNECT message, as given below. The UE returns the AoCC acknowledgement after reception of the CONNECT message. It is an implementation option whether the AoCC acknowledge is sent by the UE before or after the CONNECT ACKNOWLEDGE.

b) After an interval has elapsed, the Terminal increments the ACM. When an INCREASE command is received, the USIM-simulator sends back the error "98 50".

c) Conditions are reset to those described in the initial conditions. Steps a) and b) of the test are repeated, except that the error code sent by the USIM simulator at step b) is now "6F xx".

d) Conditions are reset to those described in the initial conditions. Steps a) and b) of the test are repeated, except that the error code sent by the USIM simulator at step b) is now "65 81".

References:

- ETSI TS 102 221 [5], clause 10.2.1.

Maximum Duration of Test:

3 minutes.

Expected Sequence A:

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Direction | Message | Comments |
| 1 | UE |  | The UE is made to initiate a call |
| 2 | UE -> USS | RRC CONNECTION REQUEST |  |
| 3 | USS -> UE | RRC CONNECTION SETUP |  |
| 4 | UE -> USS | RRC CONNECTION SETUP COMPLETE |  |
| 4A | UE -> USS | CM SERVICE REQUEST |  |
| 5 | USS -> UE | AUTHENTICATION REQUEST | MM procedure, to ensure the successful start of integrity in step 8 |
| 6 | UE -> USS | AUTHENTICATION RESPONSE |  |
| 7 | USS -> UE | SECURITY MODE COMMAND | RRC procedure, start of integrity is mandatory during call setup |
| 8 | UE -> USS | SECURITY MODE COMPLETE |  |
| 9 |  |  |  |
| 10 | UE -> USS | SETUP |  |
| 11 | USS -> UE | CALL PROCEEDING |  |
| 12 | USS -> UE | RADIO BEARER SETUP | To a supported channel type |
| 13 | UE -> USS | RADIO BEARER SETUP COMPLETE |  |
| 14 | USS -> UE | ALERTING |  |
| 15 | USS -> UE | CONNECT | As default message except contains Facility IE with contents as indicated in i) below |
|  |  |  | Either A or B branch is taken |
| A16 | UE -> USS | CONNECT ACKNOWLEDGE |  |
| A17 | UE -> USS | FACILITY | As default message except contains Facility IE with contents as indicated in ii) below |
| B16 | UE -> USS | FACILITY | As default message except contains Facility IE with contents as indicated in ii) below |
| B17 | UE -> USS | CONNECT ACKNOWLEDGE |  |
| 18 |  |  | call duration 10s after CAI information sent by USS |
| 19 | UE -> USS | DISCONNECT |  |
| 20 | USS -> UE | RELEASE |  |
| 21 | UE -> USS | RELEASE COMPLETE |  |
| 22 | USS -> UE | RRC CONNECTION RELEASE | All connections of RRC are released. |
| 23 | UE -> USS | RRC CONNECTION RELEASE COMPLETE |  |

Expected Sequence B:

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Direction | Message | Comments |
| 1 | UE |  | The UE is made to initiate a call |
| 2 | UE -> SS | CHANNEL REQUEST |  |
| 3 | SS -> UE | IMMEDIATE ASSIGNMENT |  |
| 4 | UE -> SS | CM SERVICE REQUEST |  |
| 5 | SS -> UE | CM SERVICE ACCEPT |  |
| 6 | UE -> SS | SETUP |  |
| 7 | SS -> UE | CALL PROCEEDING |  |
| 8 | SS -> UE | ASSIGNMENT COMMAND | To a supported channel type |
| 9 | UE -> SS | ASSIGNMENT COMPLETE |  |
| 10 | SS -> UE | ALERTING |  |
| 11 | SS -> UE | CONNECT | As default message except contains Facility IE with contents as indicated in i) below |
|  |  |  | Either A or B branch is taken |
| A12 | UE -> SS | CONNECT ACKNOWLEDGE |  |
| A13 | UE -> SS | FACILITY | As default message except contains Facility IE with contents as indicated in ii) below |
| B12 | UE -> SS | FACILITY | As default message except contains Facility IE with contents as indicated in ii) below |
| B13 | UE -> SS | CONNECT ACKNOWLEDGE |  |
| 14 |  |  | call duration 10s after CAI information sent by SS |
| 15 | UE -> SS | DISCONNECT |  |
| 16 | SS -> UE | RELEASE |  |
| 17 | UE -> SS | RELEASE COMPLETE |  |
| 18 | SS -> UE | CHANNEL RELEASE | The main signalling link is released. |

Specific Message Contents:

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

For ASN.1 description see default message contents in TS 51.010‑1 [22], clause 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], clause 3.6.1 table 3.4.

For ASN.1 description see default message contents in TS 51.010‑1 [22], clause 31.6.4.

#### 6.4.4.5 Acceptance criteria

1) The UE shall terminate the call correctly 10 s after CAI was sent.

2) In each of the three cases, as described in steps b), c) and d) of the procedure, the UE shall terminate the call correctly when it receives an indication from the USIM that the ACM cannot be incremented.

# 7 PLMN related tests

## 7.1 FPLMN handling

### 7.1.1 Adding FPLMN to the Forbidden PLMN list

#### 7.1.1.1 Definition and applicability

A list of forbidden PLMNs stored in the USIM and providing storage for at least 4 entries is managed by the UE. In automatic PLMN selection mode the UE controls registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a registration reject with the cause "PLMN not allowed" the UE stores the PLMN which rejected the update request in the USIM.

The registration attempts initiated by the 3G UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

#### 7.1.1.2 Conformance requirement

In case of a 2G terminal:

1) In automatic PLMN selection mode the UE shall only attempt a LOCATION UPDATE if it receives a BCCH containing a LAI that is not indicated in the EFFPLMN in the USIM.

Reference:

- TS 22.011 [6], clause 2.3;

- TS 31.102 [4], clauses 5.1.1 and 5.2.7.

2) After receipt of a LOCATION UPDATING REJECT message with the cause "PLMN not allowed" the Terminal shall update the EFFPLMN in the USIM.

Reference:

- TS 22.011 [6], clause 2.3;

- TS 31.102 [4], clauses 5.1.1 and 5.2.7.

3) After call termination the USIM shall contain the correct Ciphering Key Sequence Number.

Reference:

- TS 31.102 [4], clauses 5.1.2, 5.2.5 and 5.2.6;

- TS 21.111 [19], clause 10.1.

4) After call termination the USIM shall contain the correct TMSI and location information received by the UE.

Reference:

- TS 31.102 [4], clauses 5.1.2, 5.2.5 and 5.2.6;

- TS 21.111 [19], clause 10.1.

In case of a 3G terminal:

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

I. In automatic PLMN selection mode the UE shall only attempt a LOCATION UPDATING REQUEST during registration on CS if it receives a BCCH containing a PLMN(MCC,MNC) that is not indicated in the EF FPLMN in the USIM or

II. in automatic PLMN selection mode the UE shall only attempt a ATTACH REQUEST during registration on PS if it receives a BCCH containing a PLMN(MCC,MNC) that is not indicated in the EFFPLMN 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 EFFPLMN in the USIM.

Reference:

- TS 22.011 [6], clause 2.3;

- TS 31.102 [4], clauses 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 receipt of a LOCATION UPDATING REJECT message during registration on CS with the cause "PLMN not allowed" the Terminal shall update the EF FPLMN in the USIM or.

II. after receipt of a ATTACH REJECT message during registration on PS with the cause "PLMN not allowed" the Terminal shall update the EFFPLMN 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 EFFPLMN in the USIM.

Reference:

- TS 22.011 [6], clause 3.2.2 2.3;

- TS 31.102 [4], clauses 5.1.1 and 5.2.7.

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

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

I. after registration on CS the USIM shall contain the correct TMSI and location information received by the UE or

II. after registration on PS the USIM shall contain the correct P-TMSI and routing information received by the UE or

III. after registration on CS/PS the USIM shall contain the correct TMSI, P-TMSI, location information and routing information received by the UE.

Reference:

- TS 31.102 [4], clauses 5.1.2, 5.2.5 and 5.2.6;

- TS 21.111 [6], clause 10.1.

5) After call termination the USIM shall contain the correct TMSI and location information received by the UE.

Reference:

- TS 31.102 [4], clauses 5.1.2, 5.2.5 and 5.2.6;

- TS 21.111 [6], clause 10.1.

#### 7.1.1.3 Test purpose

In case of a 2G terminal:

1) To verify that in automatic PLMN selection mode the UE does not attempt to access PLMNs stored in EFFPLMN on the USIM.

2) To verify that the EFFPLMN is correctly updated by the Terminal after receipt of a LOCATION UPDATING REJECT message with cause "PLMN not allowed".

3) To verify that the EFLOCI has been correctly updated by the Terminal.

In case of a 3G terminal:

1) To verify that in automatic PLMN selection mode the UE does not attempt to access PLMNs stored in EFFPLMN on the USIM.

2) To verify that after receipt of a

I. LOCATION UPDATING REJECT message with cause "PLMN not allowed" during registration on CS  
the Terminal correctly updates EFFPLMN and EFKeys, or

II. ATTACH REJECT message with cause "PLMN not allowed" during registration on PS  
the Terminal correctly updates EFFPLMN and EFKeysPS, or

III. LOCATION UPDATING REJECT and/or ATTACH REJECT message with cause "PLMN not allowed" during registration on CS/PS the Terminal correctly updates EFFPLMN, EFKeys and EFKeysPS.

3) To verify that

I. the EFLOCI has been correctly updated by the Terminal during registration on CS or.

II. the EFPSLOCI has been correctly updated by the Terminal during registration on PS or.

III. the EFLOCI and EFPSLOCI have been correctly updated by the Terminal during registration on CS/PS.

4) (void)

#### 7.1.1.4 Method of test

##### 7.1.1.4.1 Initial conditions

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 234/002/0001.

- RAI (MCC/MNC/LAC/RAC): 234/002/0001/05. (only for UTRAN cell)

- Access control: unrestricted.

NOTE: In case of a GERAN no packet system information is transmitted

The default UICC is used with the following exception:

**EFIMSI (IMSI)**

Logically: 246081111111111

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

**EFLOCI (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 |

**EFPSLOCI (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.

**EFKeys (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 |

**EFKeysPS (Ciphering and Integrity Keys for Packet Switched domain)**

Logically: Key Set Identifier KSI: 02

Ciphering Keys CK: undefined

Integrity Keys IK: undefined

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

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

##### 7.1.1.4.2 Procedure

Expected Sequence A:

a) The UE is powered on.

b) The USS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/003

The USS then resumes RF output on the BCCH.

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:

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:

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 receipt of a LOCATION UPDATING REQUEST from the UE, the USS performs authentication and starts integrity protection, sends LOCATION UPDATING REJECT to the UE with cause "PLMN Not Allowed", followed by RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS performs authentication and starts integrity protection, 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 performs authentication and starts integrity protection, 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 after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC/LAC): 234/008/0001

TMSI: "43658709"

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ATTACH ACCEPT to the UE with:

RAI (MCC/MNC/LAC/RAC): 234/008/0001/05

P-TMSI: "43658709"

P-TMSI signature value "443322"

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT and/or ATTACH ACCEPT with some of the following values to the UE with:

LAI (MCC/MNC/LAC): 234/008/0001

TMSI: "43658709"

RAI (MCC/MNC/LAC/RAC): 234/008/0001/05

P-TMSI: "43658709"

P-TMSI signature value "443322"

j) After passing through the authentication procedure and after receipt of

I. TMSI REALLOCATION COMPLETE during registration on CS from the UE the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

II. ATTACH COMPLETE during registration on PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE during registration on CS/PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

k) The UE is soft powered down.

Expected Sequence B:

a) The UE is powered on.

b) The SS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/003

The SS then resumes RF output on the BCCH.

c) The SS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/004

The SS then resumes RF output on the BCCH.

d) The SS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/005

The SS then resumes RF output on the BCCH.

e) The SS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

LAI (MCC/MNC/LAC): 234/007/0001

The SS then resumes RF output on the BCCH.

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

g) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING REJECT to the UE with cause "PLMN Not Allowed", followed by CHANNEL RELEASE.

The SS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

LAI (MCC/MNC/LAC): 234/008/0001

The SS then resumes RF output on the BCCH.

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

i) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC/LAC): 234/008/0001

TMSI: "43658709"

to the UE.

j) After receipt of a TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

k) The UE is soft powered down.

#### 7.1.1.5 Acceptance criteria

1) After each of the steps a) to d) the UE shall not attempt a LOCATION UPDATING and not a ATTACH procedure.

2) After step f) the 2G UE shall send LOCATION UPDATING REQUEST to the SS and a 3G terminal shall send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

2a) After step g) a terminal accessing UTRAN shall update

I. during the rejected registration attempt on CS or

**EFKeys (Ciphering and Integrity Keys)**

Logically: Key Set Identifier KSI: 07 (no key 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 |

II. during the rejected registration attempt on PS or

**EFKeysPS (Ciphering and Integrity Keys for Packet Switched domain)**

Logically: Key Set Identifier KSIPS: 07 (no key available)

Ciphering Keys CKPS: xx

Integrity Keys IKPS: xx

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | … | B16 | B17 | B18 | … | B31 | B32 | B33 |
| Hex | 07 | xx | xx | … | xx | xx | xx | … | xx | xx | Xx |

III. during the rejected registration attempt on CS/PS.

**EFKeys (Ciphering and Integrity Keys)**

Logically: Key Set Identifier KSI: 07 (no key 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 |

**EFKeysPS (Ciphering and Integrity Keys for Packet Switched domain)**

Logically: Key Set Identifier KSIPS: 07 (no key available)

Ciphering Keys CKPS: xx

Integrity Keys IKPS: xx

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | … | B16 | B17 | B18 | … | B31 | B32 | B33 |
| Hex | 07 | xx | xx | … | xx | xx | xx | … | xx | xx | Xx |

3) After step h) the 2G UE shall send LOCATION UPDATING REQUEST to the SS and a 3G terminal shall send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

4) After step i) the 2G UE shall respond with TMSI REALLOCATION COMPLETE to the SS and a 3G terminal shall respond with

I. TMSI REALLOCATION COMPLETE to the USS during registration on CS or

II. ATTACH COMPLETE during registration on PS or

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE to the USS during registration on CS/PS.

5) After step k) the USIM shall contain the following values:

**EFFPLMN (Forbidden PLMNs)**

Logically: PLMN1: 234 002 (MCC MNC)

PLMN2: 234 003

PLMN3: 234 004

PLMN4: 234 005

PLMN5: 234 006

PLMN6: 234 007

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

For 2G terminals and 3G terminals supporting (CS and PS) or (CS only):

**EFLOCI (Location Information)**

Logically: LAI-MCC: 234

LAI-MNC: 008

TMSI: "43658709"

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

For 3G terminals supporting (CS and PS) or (PS only):

**EFPSLOCI (Location Information)**

Logically: RAI-MCC: 234

RAI-MNC: 008

P-TMSI: "43658709"

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 43 | 65 | 87 | 09 | xx | xx | xx | 32 | 84 | 00 | xx |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Coding: | B12 | B13 | B14 |  |  |  |  |  |  |  |  |
| Hex | xx | xx | 00 |  |  |  |  |  |  |  |  |

**In case of a Terminal accessing GERAN:**

**EFKeys (Ciphering and Integrity Keys)**

Logically: Key Set Identifier KSI: 07 (not available)

Ciphering Keys CK: xx

Integrity Keys IK: xx

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | … | B16 | B17 | B18 | … | B31 | B32 | B33 |
| Hex | 07 | xx | xx | … | xx | xx | xx | … | xx | xx | Xx |

### 7.1.2 UE updating forbidden PLMNs

#### 7.1.2.1 Definition and applicability

A list of forbidden PLMNs stored in the USIM provides storage for at least 4 entries, and is managed by the UE. In automatic PLMN selection mode the UE controls registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a registration reject with the cause "PLMN not allowed" the UE stores the PLMN which rejected the update request in the USIM.

The registration attempts initiated by the 3G UE depends on UEs capabilities and can be one of the following:

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

#### 7.1.2.2 Conformance requirement

In case of a 2G terminal:

After the receipt of a LOCATION UPDATING REJECT message with the cause "PLMN not allowed" the UE shall update the EFFPLMN in the USIM.

Reference:

- TS 22.011 [6], clause 3.2.2.4.

- TS 31.102 [4], clauses 5.1.1 and 5.2.7.

In case of a 3G terminal:

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

I. After the receipt of a LOCATION UPDATING REJECT message during registration on CS with the cause "PLMN not allowed" the UE shall update the EF FPLMN in the USIM or

II. after receipt of a ATTACH REJECT message during registration on PS with the cause "PLMN not allowed" the Terminal shall update the EF FPLMN in the USIM or

III. after receipt of a LOCATION UPDATING REJECT and/or ATTACH REJECT message during registration on CS/PS with the cause "PLMN not allowed" the Terminal shall update the EF FPLMN in the USIM.

Reference:

- TS 22.011 [6], clause 3.2.2.4.

- TS 31.102 [4], clauses 5.1.1 and 5.2.7.

#### 7.1.2.3 Test purpose

To verify that the UE correctly updates the EFFPLMN, i.e. fill up existing gaps in the elementary file before overwriting any existing entries.

#### 7.1.2.4 Method of test

##### 7.1.2.4.1 Initial conditions

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 234/002/0001.

- RAI (MCC/MNC/LAC/RAC): 234/002/0001/05 (only for UTRAN cell)

- Access control: unrestricted.

NOTE: In case of a GERAN no packet system information is transmitted

The default UICC is used with the following exception:

**EFFPLMN (Forbidden PLMNs)**

Logically: PLMN1: 234 001 (MCC MNC)

PLMN2: empty

PLMN3: 234 003

PLMN4: 234 004

PLMN5: 234 005

PLMN6: 234 006

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 |
| Hex | 32 | 14 | 00 | FF | FF | FF | 32 | 34 | 00 | 32 | 44 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |  |  |
|  | 32 | 54 | 00 | 32 | 64 | 00 |  |  |  |  |  |  |

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

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

##### 7.1.2.4.2 Procedure

Expected Sequence A:

a) The UE is powered on.

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

c) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS performs authentication and starts integrity protection, sends LOCATION UPDATING REJECT to the UE with the cause "PLMN not allowed", followed by RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS performs authentication and starts integrity protection, 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 performs authentication and starts integrity protection, sends LOCATION UPDATING REJECT and/or ATTACH REJECT to the UE with cause "PLMN Not Allowed", followed by RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

d) The UE is soft powered down.

Expected Sequence B:

a) The UE is powered on.

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

c) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING REJECT to the UE with cause "PLMN Not Allowed", followed by CHANNEL RELEASE.

d) The UE is soft powered down.

#### 7.1.2.5 Acceptance criteria

1) After step b) the 2G UE shall send LOCATION UPDATING REQUEST to the SS and the 3G terminal shall send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

2) After step d) the USIM shall contain:

**EFFPLMN (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

**EFFPLMN (Forbidden PLMNs)**

Logically: PLMN1: 234 001 (MCC MNC)

PLMN2: 234 003

PLMN3: 234 004

PLMN4: 234 005

PLMN5: 234 006

PLMN6: 234 002

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 |
| Hex | 32 | 14 | 00 | 32 | 34 | 00 | 32 | 44 | 00 | 32 | 54 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |  |  |
|  | 32 | 64 | 00 | 32 | 24 | 00 |  |  |  |  |  |  |

### 7.1.3 UE deleting forbidden PLMNs

#### 7.1.3.1 Definition and applicability

In manual PLMN selection mode the UE allows registration attempts to all available PLMNs, including forbidden PLMNs (as indicated by the forbidden PLMN list on the USIM). As a result of a successful registration procedure onto a PLMN which is in the forbidden PLMN list, the forbidden PLMN list is automatically updated by the UE.

The registration attempts initiated by the 3G UE depends on Ues capabilities and can be one of the following:

I. registration procedures for Ues supporting CS or

II. registration procedures for Ues supporting PS or

III. registration procedures for Ues supporting CS/PS

#### 7.1.3.2 Conformance requirement

In case of a 2G terminal:

1) In manual PLMN selection mode the UE shall be able to perform a LOCATION UPDATING attempt to a PLMN which is in the forbidden PLMN list.

- TS 22.011 [6], clause 3.2.2.2.

2) After receipt of LOCATION UPDATING ACCEPT the UE shall delete the forbidden PLMN from the forbidden PLMN list.

- TS 22.011 [6], clause 3.2.2.4.

In case of a 3G terminal:

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

I. In manual PLMN selection mode the UE shall be able to perform a LOCATION UPDATING attempt during registration on CS to a PLMN which is in the forbidden PLMN list or

II. In manual PLMN selection mode the UE shall be able to perform a ATTACH attempt during registration on PS to a PLMN which is in the forbidden PLMN list or

III. In manual PLMN selection mode the UE shall be able to perform a LOCATION UPDATING and/or ATTACH attempt during registration on CS/PS to a PLMN which is in the forbidden PLMN list.

- TS 22.011 [6], clause 3.2.2.2.

- TS 31.102 [4], clauses 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 receipt of LOCATION UPDATING ACCEPT message during registration on CS the UE shall delete the forbidden PLMN from the forbidden PLMN list OR

II. After receipt of ATTACH ACCEPT message during registration on PS the UE shall delete the forbidden PLMN from the forbidden PLMN list or

III. After receipt of LOCATION UPDATING ACCEPT and/or ATTCH ACCEPT message during registration on CS/PS the UE shall delete the forbidden PLMN from the forbidden PLMN list.

- TS 22.011 [6], clause 3.2.2.4.

#### 7.1.3.3 Test purpose

1) To verify that the 2G UE is able to perform a LOCATION UPDATING on a forbidden PLMN in manual PLMN selection mode or to verify that the 3G UE is able to perform

I. a LOCATION UPDATING REQUEST during registration on CS on a forbidden PLMN in manual PLMN selection mode or

II. a ATTACH REQUEST during registration on PS on a forbidden PLMN in manual PLMN selection mode or

III. a LOCATION UPDATING REQUEST and/or ATTACH REQUEST during registration on CS/PS on a forbidden PLMN in manual PLMN selection mode.

2) To verify that the UE after a successful registration attempt deletes the PLMN in the EFFPLMN on the USIM.

#### 7.1.3.4 Method of test

##### 7.1.3.4.1 Initial conditions

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 234/005/0001.

- RAI (MCC/MNC/LAC/RAC): 234/005/0001/05 (only for UTRAN cell).

- Access control: unrestricted.

NOTE: In case of a GERAN no packet system information is transmitted

The default UICC is used with the following exception:

**EFFPLMN (Forbidden PLMNs)**

Logically: PLMN1: empty

PLMN2: empty

PLMN3: empty

PLMN4: empty

PLMN5: 234 005 (MCC MNC)

PLMN6: empty

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 |
| Hex | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |  |  |
|  | 32 | 54 | 00 | FF | FF | FF |  |  |  |  |  |  |

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

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

##### 7.1.3.4.2 Procedure

Expected Sequence A:

a) The UE is powered on.

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

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

d) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT with to the UE:

LAI (MCC/MNC/LAC): 234/005/0001

TMSI: "12345678"

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ATTACH ACCEPT with to the UE:

RAI (MCC/MNC/LAC/RAC): 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/RAC): 234/005/0001/05

P-TMSI: "12345678"

P-TMSI signature value "AB1234"

e) After passing through the authentication procedure and after receipt of

I. TMSI REALLOCATION COMPLETE during registration on CS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or

II. ATTACH COMPLETE during registration on PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE during registration on CS/PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

f) The UE is soft powered down.

Expected Sequence B:

a) The UE is powered on.

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

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

d) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC/LAC): 234/005/0001

TMSI: "12345678"

to the UE.

e) After receipt of TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE.

f) The UE is soft powered down.

#### 7.1.3.5 Acceptance criteria

1) After step c) the 2G UE shall send LOCATION UPDATING REQUEST to the SS and the 3G terminal shall send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

2) After step d) the 2G UE shall respond with TMSI REALLOCATION COMPLETE and the 3G terminal shall respond with

I. TMSI REALLOCATION COMPLETE to the USS during registration on CS or

II. ATTACH COMPLETE during registration on PS or

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE to the USS during registration on CS/PS.

3) After step f) the USIM shall contain the following values:

**EFFPLMN (Forbidden PLMNs)**

Logically: PLMN1: empty

PLMN2: empty

PLMN3: empty

PLMN4: empty

PLMN5: empty

PLMN6: empty

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 |
| Hex | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |  |  |
|  | FF | FF | FF | FF | FF | FF |  |  |  |  |  |  |

For 2G terminals and 3G terminals supporting CS only or CS/PS:

**EFLOCI (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 :**

**EFPSLOCI (Location Information)**

Logically: RAI-MCC: 234

RAI-MNC: 005

P-TMSI: "12345678"

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 12 | 34 | 56 | 78 | xx | xx | xx | 32 | 54 | 00 | xx |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Coding: | B12 | B13 | B14 |  |  |  |  |  |  |  |  |
| Hex | xx | xx | 00 |  |  |  |  |  |  |  |  |

### 7.1.4 Adding FPLMN to the forbidden PLMN list when accessing E-UTRAN

#### 7.1.4.1 Definition and applicability

A list of forbidden PLMNs stored in the USIM and providing storage for at least 4 entries is managed by the UE. In automatic PLMN selection mode the UE controls registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a registration reject with the cause "PLMN not allowed" the UE stores the PLMN which rejected the update request in the USIM.

#### 7.1.4.2 Conformance requirement

1) In automatic PLMN selection mode the UE shall only attempt a *AttachRequest* during registration on E-UTRAN/EPS if it receives a BCCH containing a PLMN (MCC,MNC) that is not indicated in the EFFPLMN in the USIM

Reference:

- TS 22.011 [6], clause 2.3;

- TS 31.102 [4], clauses 5.1.1 and 5.2.7.

2) After receipt of an *AttachReject* message during registration on E-UTRAN/EPS with the EMM cause "PLMN not allowed" the Terminal shall update the EFFPLMN in the USIM.

Reference:

- TS 22.011 [6], clause 3.2.2 2;

- TS 31.102 [4], clauses 5.1.1 and 5.2.7

3) After receipt of an *AttachReject* message during registration on E-UTRAN/EPS with the EMM cause "PLMN not allowed" the Terminal shall update the EFEPSLOCI in the USIM.

Reference:

- TS 24.301 [26], clause 5.5.1.2.5;

- TS 31.102 [4], clauses 5.1.1 and 4.2.9.1.

3) After registration on E-UTRAN/EPS the USIM shall contain the correct GUTI and TAI received by the UE.

Reference:

- TS 31.102 [4], clauses 5.1.2 and 4.2.9.1;

- TS 21.111 [6], clause 10.1.

#### 7.1.4.3 Test purpose

1) To verify that in automatic PLMN selection mode the UE does not attempt to access PLMNs stored in EFFPLMN on the USIM.

2) To verify that the EFFPLMN is correctly updated by the Terminal after receipt of a *AttachReject* message with cause "PLMN not allowed" during registration.

3) To verify that the EFEPSLOCI has been correctly updated by the Terminal during registration.

#### 7.1.4.4 Method of test

##### 7.1.4.4.1 Initial conditions

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

- TAI (MCC/MNC/TAC): 234/002/0001.

- Access control: unrestricted.

The NB-SS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 234/002/0001.

- Access control: unrestricted.

The default E-UTRAN UICC is used.

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

##### 7.1.4.4.2 Procedure

a) The UE is powered on.

b) The E-USS/NB-SS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/003

The E-USS/NB-SS then resumes RF output on the BCCH.

c) The E-USS/NB-SS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/004

The E-USS/NB-SS then resumes RF output on the BCCH.

d) The E-USS/NB-SS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/005

The E-USS/NB-SS then resumes RF output on the BCCH.

e) The E-USS/NB-SS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

TAI (MCC/MNC/TAC): 234/007/0001

The E-USS/NB-SS then resumes RF output on the BCCH.

f) After receipt of an *RRCConnectionRequest/RRCConnectionRequest-NB* from the UE, the E-USS/NB-SS sends *RRCConnectionSetup/RRCConnectionSetup-NB* to the UE, followed by *RRCConnectionSetupComplete/RRCConnectionSetupComplete-NB* sent by the UE to the E-USS/NB-SS.

g) During registration and after receipt of an *AttachRequest* from the UE, the E-USS/NB-SS performs authentication and starts NAS integrity protection, sends *AttachReject* to the UE with cause "PLMN Not Allowed", followed by *RRCConnectionRelease/RRCConnectionRelease-NB*.

h) The E-USS/NB-SS stops all RF output on the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

TAI (MCC/MNC/TAC): 234/008/0001

The E-USS/NB-SS then resumes RF output on the BCCH.

i) After receipt of an RRCConnectionRequest/RRCConnectionRequest-NB from the UE, the E-USS/NB-SS sends RRCConnectionSetup/RRCConnectionSetup-NB to the UE, followed by RRCConnectionSetupComplete/RRCConnectionSetupComplete-NB sent by the UE to the E-USS/NB-SS.

j) During registration and after receipt of an AttachRequest from the UE, the E-USS/NB-SS initiates authentication, starts integrity by using the security procedure and sends AttachAccept to the UE with:

TAI (MCC/MNC/TAC): 234/008/ 0001

GUTI: "23400800010266436587"

k) After receipt of *AttachComplete* during registration from the UE, the E-USS/NB-SS sends *RRCConnectionRelease/RRCConnectionRelease-NB*.

l) The UE is soft powered down.

#### 7.1.4.5 Acceptance criteria

1) After each of the steps a) to d) the terminal shall not attempt an Attach procedure.

2) After step f) the terminal shall send *AttachRequest* during registration.

3) After step h) the terminal shall send *AttachRequest* during registration.

4) After step i) the terminal shall respond with *AttachComplete* during registration.

5) After step k) the USIM shall contain the following values:

**EFFPLMN (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 |  |  |  |  |  |  |

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 23400800010266436587

Last visited registered TAI: 234/008/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 32 | 84 | 00 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 32 | 84 | 00 | 00 | 01 | 00 |  |  |  |  |

### 7.1.5 UE updating forbidden PLMNs when accessing E-UTRAN

#### 7.1.5.1 Definition and applicability

A list of forbidden PLMNs stored in the USIM provides storage for at least 4 entries, and is managed by the UE. In automatic PLMN selection mode the UE controls registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a registration reject with the cause "PLMN not allowed" the UE stores the PLMN which rejected the update request in the USIM.

#### 7.1.5.2 Conformance requirement

After receipt of a *AttachReject* message during registration with the cause "PLMN not allowed" the Terminal shall update the EF FPLMN in the USIM.

Reference:

- TS 22.011 [6], clause 3.2.2.4.

- TS 31.102 [4], clauses 5.1.1 and 5.2.7.

#### 7.1.5.3 Test purpose

To verify that the UE correctly updates the EFFPLMN, i.e. fill up existing gaps in the elementary file before overwriting any existing entries.

#### 7.1.5.4 Method of test

##### 7.1.5.4.1 Initial conditions

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

- TAI (MCC/MNC/TAC): 234/002/0001.

- Access control: unrestricted.

The NB-SS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 234/002/0001.

- Access control: unrestricted.

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

**EFFPLMN (Forbidden PLMNs)**

Logically: PLMN1: 234 001 (MCC MNC)

PLMN2: empty

PLMN3: 234 003

PLMN4: 234 004

PLMN5: 234 005

PLMN6: 234 006

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 |
| Hex | 32 | 14 | 00 | FF | FF | FF | 32 | 34 | 00 | 32 | 44 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |  |  |
|  | 32 | 54 | 00 | 32 | 64 | 00 |  |  |  |  |  |  |

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

##### 7.1.5.4.2 Procedure

a) The UE is powered on.

b) After receipt of a *RRCConnectionRequest/RRCConnectionRequest-NB* from the UE, the E-USS/NB-SS sends *RRCConnectionSetup/RRCConnectionSetup-NB* to the UE, followed by *RRCConnectionSetupComplete/RRCConnectionSetupComplete-NB* sent by the UE to the E-USS/NB-SS.

c) During registration and after receipt of a *AttachRequest* from the UE, the E-USS/NB-SS performs authentication and starts NAS integrity protection, sends *AttachReject* to the UE with cause "PLMN Not Allowed", followed by *RRCConnectionRelease/RRCConnectionRelease-NB*.

d) The UE is soft powered down.

#### 7.1.5.5 Acceptance criteria

1) After step b) the terminal shall send *AttachRequest* during registration.

2) After step d) the USIM shall contain:

**EFFPLMN (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

**EFFPLMN (Forbidden PLMNs)**

Logically: PLMN1: 234 001 (MCC MNC)

PLMN2: 234 003

PLMN3: 234 004

PLMN4: 234 005

PLMN5: 234 006

PLMN6: 234 002

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 |
| Hex | 32 | 14 | 00 | 32 | 34 | 00 | 32 | 44 | 00 | 32 | 54 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |  |  |
|  | 32 | 64 | 00 | 32 | 24 | 00 |  |  |  |  |  |  |

### 7.1.6 UE deleting forbidden PLMNs when accessing E-UTRAN

#### 7.1.6.1 Definition and applicability

In manual PLMN selection mode the UE allows registration attempts to all available PLMNs, including forbidden PLMNs (as indicated by the forbidden PLMN list on the USIM). As a result of a successful registration procedure onto a PLMN which is in the forbidden PLMN list, the forbidden PLMN list is automatically updated by the UE.

#### 7.1.6.2 Conformance requirement

a) In manual PLMN selection mode the UE shall be able to perform a ATTACH attempt during registration to a PLMN which is in the forbidden PLMN list or

- TS 22.011 [6], clause 3.2.2.2.

- TS 31.102 [4], clauses 5.1.1 and 5.2.7.

b) After receipt of *AttachAccept* message during registration the UE shall delete the forbidden PLMN from the forbidden PLMN list or

- TS 22.011 [6], clause 3.2.2.4.

#### 7.1.6.3 Test purpose

1) To verify that the terminal is able to perform an *AttachRequest* during registration on a forbidden PLMN in manual PLMN selection mode.

2) To verify that the UE after a successful registration attempt deletes the PLMN in the EFFPLMN on the USIM.

#### 7.1.6.4 Method of test

##### 7.1.6.4.1 Initial conditions

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

- TAI (MCC/MNC/TAC): 234/005/0001.

- Access control: unrestricted.

The NB-SS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 234/005/0001.

- Access control: unrestricted.

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

**EFFPLMN (Forbidden PLMNs)**

Logically: PLMN1: empty

PLMN2: empty

PLMN3: empty

PLMN4: empty

PLMN5: 234 005 (MCC MNC)

PLMN6: empty

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 |
| Hex | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |  |  |
|  | 32 | 54 | 00 | FF | FF | FF |  |  |  |  |  |  |

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

##### 7.1.6.4.2 Procedure

a) The UE is powered on.

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

c) After receipt of a *RRCConnectRequest/RRCConnectionRequest-NB* from the UE, the E-USS/NB-SS sends *RRCConnectionSetup/RRCConnectionSetup-NB* to the UE, followed by *RRCConnectionSetupComplete/RRCConnectionSetupComplete-NB* sent by the UE to the E-USS/NB-SS.

d) During registration and after receipt of a *AttachRequest* from the UE, the E-USS/NB-SS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC): 234/005/ 0001

GUTI: "23400500010266436587"

e) After receipt of the *AttachComplete* during registration from the UE, the E-USS/NB-SS sends *RRCConnectionRelease/RRCConnectionRelease-NB*.

f) The UE is soft powered down.

#### 7.1.6.5 Acceptance criteria

1) After step c) the terminal shall send *AttachRequest* during registration

2) After step d) the terminal shall respond with *AttachComplete* during registration

3) After step f) the USIM shall contain the following values:

**EFFPLMN (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 |  |  |  |  |  |  |

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 23400500010266436587

Last visited registered TAI: 234/005/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 32 | 54 | 00 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 32 | 54 | 00 | 00 | 01 | 00 |  |  |  |  |

### 7.1.7 Updating the Forbidden PLMN list after receiving non-integrity protected reject message – UTRAN

#### 7.1.7.1 Definition and applicability

A list of forbidden PLMNs stored in the USIM and providing storage for at least 4 entries is managed by the UE. In automatic PLMN selection mode the UE controls registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a registration reject with the cause "PLMN not allowed" the UE stores the PLMN which rejected the update request in the USIM.

#### 7.1.7.2 Conformance requirement

After receipt of a not integrity-protected LOCATION UPDATING REJECT and/or ATTACH REJECT message during registration on CS/PS with the cause "PLMN not allowed" the Terminal shall update the EFFPLMN in the USIM thereafter that VPLMN will not be accessed by the MS in automatic mode:

- if the MS is not configured to use timer T3245, and the MS maintains a list of PLMN-specific attempt counters and the value of the PLMN-specific attempt counter for that VPLMN is equal to the MS implementation specific maximum value or;

- if the MS is not configured to use timer T3245, and the MS is not maintain a list of PLMN-specific attempt counters

Reference:

- TS 23.122 [31], clause 3.1.

- TS 22.011 [6], clause 3.2.2 2.3;

- TS 31.102 [4], clauses 5.1.1 and 5.2.7.

#### 7.1.7.3 Test purpose

To verify in automatic PLMN selection mode and after receipt of a LOCATION UPDATING REJECT and/or ATTACH REJECT message with cause "PLMN not allowed" during registration that the UE correctly updates EFFPLMN, in the following cases:

- if the UE maintains a list of PLMN-specific attempt counters, and the value of the PLMN-specific attempt counter for that VPLMN is equal to the MS implementation specific maximum value.

- if the UE does not maintain a list of PLMN-specific attempt counters.

To verify that the UE correctly updates the EFFPLMN, i.e. fill up existing gaps in the elementary file before overwriting any existing entries.

#### 7.1.7.4 Method of test

##### 7.1.7.4.1 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:

**EFFPLMN (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 |  |  |  |  |  |  |

##### 7.1.7.4.2 Procedure

a) The UE is powered on.

b) Depending on which domain the UE is going to be registered on, the UE attempts to perform CS, PS or CS/PS registration to the USS.

c) During registration and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS sends a not integrity-protected 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) ) if the UE supports A.1/38, perform step e) after the expiry of timer T3247, otherwise perform step f).

e) Using the settings declared in table B.1/AER006, repeat step c) – d) until the PLMN-specific attempt counters has reached the maximum value for that VPLMN.

f) The UE is powered down

#### 7.1.7.5 Acceptance criteria

1) After step b) the terminal shall send a LOCATION UPDATING REQUEST and/or *AttachRequest* during registration.

2) After steps c) the UE shall start the timer T3247 before the next registration attempt.

3) Depending on the support of A.1/38, either after step d) or step e), the EFFPLMN in the USIM shall be updated as specified below.

**EFFPLMN (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

**EFFPLMN (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 |  |  |  |  |  |  |

### 7.1.8 Updating the Forbidden PLMN list after receiving non-integrity protected reject message – E-UTRAN

#### 7.1.8.1 Definition and applicability

A list of forbidden PLMNs stored in the USIM and providing storage for at least 4 entries is managed by the UE. In automatic PLMN selection mode the UE controls registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a registration reject with the cause "PLMN not allowed" the UE stores the PLMN which rejected the update request in the USIM.

#### 7.1.8.2 Conformance requirement

After receipt of a not integrity-protected ATTACH REJECT message during registration with the cause "PLMN not allowed" the Terminal shall update the EFFPLMN in the USIM thereafter that VPLMN will not be accessed by the MS in automatic mode:

- if the MS is not configured to use timer T3245, and the MS maintains a list of PLMN-specific attempt counters and the value of the PLMN-specific attempt counter for that VPLMN is equal to the MS implementation specific maximum value or;

- if the MS is not configured to use timer T3245, and the MS is not maintain a list of PLMN-specific attempt counters

Reference:

- TS 23.122 [31], clause 3.1.

- TS 22.011 [6], clause 3.2.2 2.3;

- TS 31.102 [4], clauses 5.1.1 and 5.2.7.

#### 7.1.8.3 Test purpose

To verify in automatic PLMN selection mode and after receipt of *ATTACH REJECT* message with cause "PLMN not allowed" during registration that the UE correctly updates EFFPLMN, for the following cases:

- if the UE maintains a list of PLMN-specific attempt counters, and the value of the PLMN-specific attempt counter for that VPLMN is equal to the MS implementation specific maximum value.

- if the UE does not maintain a list of PLMN-specific attempt counters.

To verify that the UE correctly updates the EFFPLMN, i.e. fill up existing gaps in the elementary file before overwriting any existing entries.

#### 7.1.8.4 Method of test

##### 7.1.8.4.1 Initial conditions

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

- TAI (MCC/MNC/TAC): 234/002/0001.

- Access control: unrestricted.

The NB-SS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 234/002/0001.

- Access control: unrestricted.

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

**EFFPLMN (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.

##### 7.1.8.4.2 Procedure

a) The UE is powered on.

b) After receipt of a *RRCConnectionRequest/RRCConnectionRequest-NB* from the UE, the E-USS/NB-SS sends *RRCConnectionSetup/RRCConnectionSetup-NB* to the UE, followed by *RRCConnectionSetupComplete/RRCConnectionSetupComplete-NB* sent by the UE to the E-USS/NB-SS.

c) During registration and after receipt of a *AttachRequest* from the UE, the E-USS/NB-SS sends non-integrity protected *AttachReject* message to the UE with cause "PLMN Not Allowed", followed by *RRCConnectionRelease/RRCConnectionRelease-NB*.

d) ) if the UE supports A.1/38, perform step e) after the expiry of timer T3247, otherwise perform step f).

e) Using the settings declared in table B.1/AER006, repeat step c) – d) until the PLMN-specific attempt counters has reached the maximum value for that VPLMN.

f) The UE is powered down.

#### 7.1.8.5 Acceptance criteria

1) After step b) the terminal shall send *AttachRequest* during registration.

2) After steps c) the UE shall start the timer T3247 before the next registration attempt.

3) Depending on the support of A.1/38, either after step d) or step e), the EFFPLMN in the USIM shall be updated as specified below.

**EFFPLMN (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

**EFFPLMN (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 |  |  |  |  |  |  |

### 7.1.9 Adding FPLMN to the forbidden PLMN list when accessing satellite NG-RAN

#### 7.1.9.1 Definition and applicability

A list of forbidden PLMNs stored in the USIM and providing storage for at least 4 entries is managed by the UE. In automatic PLMN selection mode the UE controls registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a registration reject with the cause "PLMN not allowed" the UE stores the PLMN which rejected the update request in the USIM.

#### 7.1.9.2 Conformance requirement

1) In automatic PLMN selection mode the UE shall only attempt a REGISTRATION REQUEST during registration on satellite NG-RAN if it receives a BCCH containing a PLMN (MCC,MNC) that is not indicated in the EFFPLMN in the USIM

Reference:

- TS 22.011 [6], clause 2.3;

- TS 31.102 [4], clauses 5.1.1 and 5.2.7.

2) After receipt of a REGISTRATION REJECT message during registration on satellite NG-RAN with the 5GMM cause "PLMN not allowed" the Terminal shall update the EFFPLMN in the USIM.

Reference:

- TS 22.011 [6], clause 3.2.2 2;

- TS 31.102 [4], clauses 5.1.1, 5.2.7 and 4.2.16.

3) After receipt of a REGISTRATION REJECT message during registration on satellite NG-RAN with the 5GMM cause "PLMN not allowed" the Terminal shall update the EF5GS3GPPLOCI in the USIM.

Reference:

- TS 24.501 [26], clause 5.5.1.2.5;

- TS 31.102 [4], clauses 5.1.1, 5.2.31 and 4.4.11.2.

4) After registration on satellite NG-RAN the USIM shall contain the correct 5G-GUTI and TAI received by the UE.

Reference:

- TS 31.102 [4], clause 5.1;

- TS 21.111 [6], clause 10.1.

#### 7.1.9.3 Test purpose

1) To verify that in automatic PLMN selection mode the UE does not attempt to access PLMNs stored in EFFPLMN on the USIM.

2) To verify that the EFFPLMN is correctly updated by the Terminal after receipt of a REGISTRATION REJECT message with cause "PLMN not allowed" during registration.

3) To verify that the EF5GS3GPPLOCI has been correctly updated by the Terminal during registration.

#### 7.1.9.4 Method of test

##### 7.1.9.4.1 Initial conditions

The SAT-NG-SS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 234/002/000001.

- Access control: unrestricted.

The default 5G-NR UICC is used.

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

##### 7.1.9.4.2 Procedure

a) The UE is powered on.

b) The SAT-NG-SS stops all transmission of the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/003

The SAT-NG-SS then resumes transmission of the BCCH.

c) The SAT-NG-SS stops all transmission of the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/004

The SAT-NG-SS then resumes transmission of the BCCH.

d) The SAT-NG-SS stops all transmission of the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

PLMN (MCC/MNC): 234/005

The SAT-NG-SS then resumes transmission of the BCCH.

e) The SAT-NG-SS stops all transmission of the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

TAI (MCC/MNC/TAC): 234/007/000001

The SAT-NG-SS then resumes transmission of the BCCH.

f) After receipt of an*RRCRequest* from the UE, the SAT-NG-SS sends *RRCSetup* to the UE, followed by *RRCSetupComplete* sent by the UE to the SAT-NG-SS.

g) During registration and after receipt of a REGISTRATION REQUESTfrom the UE, the SAT-NG-SS performs authentication and starts NAS integrity protection, sends REGISTRATION REJECT to the UE with cause "PLMN Not Allowed", followed by *RRCRelease*.

h) The SAT-NG-SS stops all transmission of the BCCH for a long enough period of time to cause a cell reselection procedure in the UE. The BCCH is changed to contain:

TAI (MCC/MNC/TAC): 234/008/000001

The SAT-NG-SS then resumes transmission of the BCCH.

i) After receipt of an *RRCRequest* from the UE, the SAT-NG-SS sends *RRCSetup* to the UE, followed by *RRCSetupComplete* sent by the UE to the SAT-NG-SS.

j) During registration and after receipt of a REGISTRATION REQUEST from the UE, the SAT-NG-SS initiates authentication, starts integrity by using the security procedure and sends REGISTRATION ACCEPT to the UE with:

TAI (MCC/MNC/TAC): 234/008/ 000001

5G-GUTI: "23400800010266436587"

k) After receipt of REGISTRATION COMPLETE during registration from the UE, the SAT-NG-SS sends *RRCRelease*.

l) The UE is soft powered down.

#### 7.1.9.5 Acceptance criteria

1) After each of the steps a) to d) the terminal shall not attempt an Attach procedure.

2) After step f) the terminal shall send REGISTRATION REQUEST during registration.

3) After step h) the terminal shall send REGISTRATION REQUEST during registration.

4) After step j) the terminal shall respond with REGISTRATION COMPLETE during registration.

5) After step k) the USIM shall contain the following values:

**EFFPLMN (Forbidden PLMNs)**

Logically: PLMN1: 234 002 (MCC MNC)

PLMN2: 234 003

PLMN3: 234 004

PLMN4: 234 005

PLMN5: 234 006

PLMN6: 234 007

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

**EF**5GS3GPPLOCI **(5GS 3GPP location information)**

Logically: 5G-GUTI: 23400800010266436587

Last visited registered TAI in 5GS for 3GPP access: 234/008/000001

5GS update status for 3GPP access: 5U1 UPDATED

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| Hex | 00 | 0B | F2 | 32 | 84 | 00 | 00 | 01 |
|  | **B9** | **B10** | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** |
|  | 02 | 66 | 43 | 65 | 87 | 32 | 84 | 00 |
|  | **B17** | **B18** | **B19** | **B20** |  |  |  |  |
|  | 00 | 00 | 01 | 00 |  |  |  |  |

### 7.1.10 UE updating forbidden PLMNs when accessing satellite NG-RAN

#### 7.1.10.1 Definition and applicability

A list of forbidden PLMNs stored in the USIM provides storage for at least 4 entries, and is managed by the UE. In automatic PLMN selection mode the UE controls registration attempts to appropriate networks with respect to this list of forbidden PLMNs. As a result of a registration reject with the cause "PLMN not allowed" the UE stores the PLMN which rejected the update request in the USIM.

#### 7.1.10.2 Conformance requirement

After receipt of a REGISTRATION REJECT message during registration on satellite NG-RAN with the 5GMM cause "PLMN not allowed" the Terminal shall update the EFFPLMN in the USIM.

Reference:

- TS 22.011 [6], clause 3.2.2.4.

- TS 31.102 [4], clauses 5.1.1, 4.2.16 and 5.2.7.

#### 7.1.10.3 Test purpose

To verify that the UE correctly updates the EFFPLMN, i.e. fill up existing gaps in the elementary file before overwriting any existing entries.

#### 7.1.10.4 Method of test

##### 7.1.10.4.1 Initial conditions

The SAT-NG-SS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 234/002/000001.

- Access control: unrestricted.

The default 5G-NR UICC is used with the following exception:

**EFFPLMN (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.

##### 7.1.10.4.2 Procedure

a) The UE is powered on.

b) After receipt of a *RRCRequest* from the UE, the SAT-NG-SS sends *RRCSetup* to the UE, followed by *RRCSetupComplete* sent by the UE to the SAT-NG-SS.

c) During registration and after receipt of a REGISTRATION REQUEST from the UE, the SAT-NG-SS performs authentication and starts NAS integrity protection, sends REGISTRATION REJECT to the UE with cause "PLMN Not Allowed", followed by *RRCRelease*.

d) The UE is soft powered down.

#### 7.1.10.5 Acceptance criteria

1) After step b) the terminal shall send REGISTRATION REQUEST during registration.

2) After step c) the USIM shall contain:

**EFFPLMN (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

**EFFPLMN (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 |  |  |  |  |  |  |

### 7.1.11 UE deleting forbidden PLMNs when accessing satellite NG-RAN in manual mode

#### 7.1.11.1 Definition and applicability

In manual PLMN selection mode the UE allows registration attempts to all available PLMNs, including forbidden PLMNs (as indicated by the forbidden PLMN list on the USIM). As a result of a successful registration procedure onto a PLMN which is in the forbidden PLMN list, the forbidden PLMN list is automatically updated by the UE.

#### 7.1.11.2 Conformance requirement

a) In manual PLMN selection mode the UE shall be able to perform a REGISTRATION REQUEST attempt during registration to a PLMN which is in the forbidden PLMN list

- TS 22.011 [6], clause 3.2.2.2.

- TS 31.102 [4], clauses 5.1.1 and 5.2.7.

b) After receipt of a REGISTRATION ACCEPT message during registration the UE shall delete the forbidden PLMN from the forbidden PLMN list

- TS 22.011 [6], clause 3.2.2.4.

#### 7.1.11.3 Test purpose

1) To verify that the terminal is able to perform a REGISTRATION REQUEST during registration on a forbidden PLMN in manual PLMN selection mode.

2) To verify that the UE after a successful registration attempt deletes the PLMN in the EFFPLMN on the USIM.

#### 7.1.11.4 Method of test

##### 7.1.11.4.1 Initial conditions

The SAT-NG-SS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 234/005/000001.

- Access control: unrestricted.

The default 5G-NR UICC is used with the following exception:

**EFFPLMN (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.

##### 7.1.11.4.2 Procedure

a) The UE is powered on.

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

c) After receipt of a *RRCRequest* from the UE, the SAT-NG-SS sends *RRCSetup* to the UE, followed by *RRCSetupComplete* sent by the UE to the SAT-NG-SS.

d) During registration and after receipt of a REGISTRATION REQUEST from the UE, the SAT-NG-SS initiates authentication, starts integrity by using the security procedure and sends REGISTRATION ACCEPT with to the UE:

TAI (MCC/MNC/TAC): 234/005/000001

5G-GUTI: "23400500010266436587"

e) After receipt of the REGISTRATION COMPLETE during registration from the UE, the SAT-NG-SS sends *RRCRelease*.

f) The UE is soft powered down.

#### 7.1.11.5 Acceptance criteria

1) After step c) the terminal shall send REGISTRATION REQUEST during registration

2) After step d) the terminal shall respond with REGISTRATION COMPLETE during registration

3) After step e) the USIM shall contain the following values:

**EFFPLMN (Forbidden PLMNs)**

Logically: PLMN1: empty

PLMN2: empty

PLMN3: empty

PLMN4: empty

PLMN5: empty

PLMN6: empty

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 |
| Hex | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |  |  |
|  | FF | FF | FF | FF | FF | FF |  |  |  |  |  |  |

**EF**5GS3GPPLOCI **(5GS 3GPP location information)**

Logically: 5G-GUTI: 23400500010266436587

Last visited registered TAI in 5GS for 3GPP access: 234/005/000001

5GS update status for 3GPP access: 5U1 UPDATED

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| Hex | 00 | 0B | F2 | 32 | 54 | 00 | 00 | 01 |
|  | **B9** | **B10** | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** |
|  | 02 | 66 | 43 | 65 | 87 | 32 | 54 | 00 |
|  | **B17** | **B18** | **B19** | **B20** |  |  |  |  |
|  | 00 | 00 | 01 | 00 |  |  |  |  |

## 7.2 User controlled PLMN selector handling

### 7.2.1 UE updating the User controlled PLMN selector list

#### 7.2.1.1 Definition and applicability

The User controlled PLMN selector list gives in priority order the preferred UPLMNs on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the EFPLMNwACT. Update and deletion of PLMNs may be performed by the subscriber.

#### 7.2.1.2 Conformance requirement

The UE shall correctly replace the selected UPLMN in the User controlled PLMN selector list.

- TS 31.102 [4], clause 5.3.6.

#### 7.2.1.3 Test purpose

To verify that the UE correctly updates the EFPLMNwACT.

#### 7.2.1.4 Method of test

##### 7.2.1.4.1 Initial conditions

No USS/SS is required for this test.

The default UICC is used.

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

##### 7.2.1.4.2 Procedure

a) The user shall initiate an MMI dependent procedure to change the second UPLMN in the User controlled PLMN selector list to MCC/MNC of 567/02, the ACT identifier shall set to UTRAN only.

b) The UE is soft powered down.

#### 7.2.1.5 Acceptance criteria

After step b) the USIM shall contain the following values:

**EFPLMNwACT (UPLMN Selector)**

Logically: 1st PLMN: 244 081 (MCC MNC)

1st ACT: UTRAN

2nd PLMN: 567 02

2nd ACT UTRAN

3rd PLMN: 244 082

3rd ACT UTRAN

4th PLMN: 244 082

4th ACT GSM

5th PLMN: 244 003

5th ACT UTRAN

6th PLMN: 244 004

6th ACT UTRAN

7th PLMN: 244 005

7th ACT UTRAN

8th PLMN: 244 006

8th ACT UTRAN

9th PLMN: 244 007

9th ACT UTRAN

10th PLMN: 244 008

10th ACT UTRAN

11th PLMN: 244 009

11th ACT UTRAN

12th PLMN: 244 010

12th ACT UTRAN

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | B13 | B14 | B15 |
| Hex | 42 | 14 | 80 | 80 | 00 | 65 | F7 | 20 | 80 | 00 | 42 | 24 | 80 | 80 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B16 | B17 | B18 | B19 | B20 | B21 | B22 | B23 | B24 | B25 | B26 | B27 | B28 | B29 | B30 |
|  | 42 | 24 | 80 | 00 | 80 | 42 | 34 | 00 | 80 | 00 | 42 | 44 | 00 | 80 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B31 | B32 | B33 | B34 | B35 | B36 | B37 | B38 | B39 | B40 | B41 | B42 | B43 | B44 | B45 |
|  | 42 | 54 | 00 | 80 | 00 | 42 | 64 | 00 | 80 | 00 | 42 | 74 | 00 | 80 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B46 | B47 | B48 | B49 | B50 | B51 | B52 | B53 | B54 | B55 | B56 | B57 | B58 | B59 | B60 |
|  | 42 | 84 | 00 | 80 | 00 | 42 | 94 | 00 | 80 | 00 | 42 | 04 | 10 | 80 | 00 |

### 7.2.2 UE recognising the priority order of the User controlled PLMN selector list with the same access technology.

#### 7.2.2.1 Definition and applicability

The User controlled PLMN selector list gives in priority order the preferred UPLMNs on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the EFPLMNwACT. Update and deletion of UPLMNs may be performed by the subscriber by the use of the PIN.

The registration attempts initiated by the terminal accessing UTRAN depends on terminal's capabilities and can be one of the following:

I. registration procedures for Ues supporting CS or

II. registration procedures for Ues supporting PS or

III. registration procedures for Ues supporting CS/PS

#### 7.2.2.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority order of the UPLMNs in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2.

#### 7.2.2.3 Test purpose

To verify that the UPLMN with the higher priority (defined by its position in EFPLMNwACT) takes precedence over the UPLMN with the lower priority when the UE performs a network selection.

#### 7.2.2.4 Method of test

##### 7.2.2.4.1 Initial conditions

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 244/033/0001.

- RAI (MCC/MNC/LAC/RAC): 244/033/0001/05 (only for UTRAN cell).

- Access control: unrestricted.

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 244/034/0001.

- RAI (MCC/MNC/LAC/RAC): 244/034/0001/05 (only for UTRAN cell).

- Access control: unrestricted.

NOTE: In case of a GERAN no packet system information is transmitted

The default UICC is used with the following exception:

**EFPLMNwACT (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 AIGSI….....

….....

8th PLMN: 244 034

8th ACT GSM

9th PLMN: 244 033

9th ACT GSM

10th PLMN: 244 008

10th ACT UTRAN

11th PLMN: 244 034

11th ACT UTRAN

12th PLMN: 244 033

12th ACT UTRAN

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | B13 | B14 | B15 |
| Hex | 42 | 14 | 80 | 80 | 00 | 42 | 14 | 80 | 00 | 80 | 42 | 24 | 80 | 80 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B16 | B17 | B18 | B19 | B20 | ….. | ….. | ….. | ….. |  |  |  |  |  |  |
|  | 42 | 24 | 80 | 00 | 80 | ….. | ….. | ….. | ….. |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | ….. | ….. | B36 | B37 | B38 | B39 | B40 | B41 | B42 | B43 | B44 | B45 |
|  |  |  |  | ….. | ….. | 42 | 44 | 30 | 00 | 80 | 42 | 34 | 30 | 00 | 80 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B46 | B47 | B48 | B49 | B50 | B51 | B52 | B53 | B54 | B55 | B56 | B57 | B58 | B59 | B60 |
|  | 42 | 84 | 00 | 80 | 00 | 42 | 44 | 30 | 80 | 00 | 42 | 34 | 30 | 80 | 00 |

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

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

##### 7.2.2.4.2 Procedure

Expected Sequence A:

a) The UE is powered on.

b) After receipt on the cell related to the BCCH transmitting MCC/MNC 244/034 of a RRC CONNECTION REQUEST from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

c) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT to the UE with the following values:

LAI (MCC/MNC/LAC): 244/034/0001

TMSI: "34567890"

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ATTACH ACCEPT to the UE with the following values:

RAI (MCC/MNC/LAC/RAC) 244/034/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT and/or ATTACH ACCEPT to the UE with some of the following values:

LAI (MCC/MNC/LAC): 244/034/0001

TMSI: "34567890"

RAI (MCC/MNC/LAC/RAC) 244/034/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

d) After passing through the authentication procedure and after receipt of

I. TMSI REALLOCATION COMPLETE during registration on CS from the UE, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or

II. ATTACH COMPLETE during registration on PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE during registration on CS/PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

e) The UE is soft powered down.

Expected Sequence B:

a) The UE is powered on.

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

c) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC/LAC): 244/034/0001

TMSI: "34567890"

to the UE

d) After receipt of a TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

e) The UE is soft powered down.

#### 7.2.2.5 Acceptance criteria

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

2) After step b) the UE accessing a GERAN shall send LOCATION UPDATING REQUEST to the SS and the UE accessing UTRAN shall send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST to the USS during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

3) After step c) the UE accessing a GERAN shall respond with TMSI REALLOCATION COMPLETE and the UE accessing UTRAN shall respond with

I. TMSI REALLOCATION COMPLETE to the USS during registration on CS or

II. ATTACH COMPLETE during registration on PS or

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE to the USS during registration on CS/PS.

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

For UEs accessing GERAN and UEs accessing UTRAN and supporting (CS and PS) or (CS only):

**EFLOCI (Location Information)**

Logically: LAI-MCC: 244

LAI-MNC: 034

TMSI: "34567890"

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 34 | 56 | 78 | 90 | 42 | 44 | 30 | xx | xx | xx | 00 |

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

**EFPSLOCI (Location Information)**

Logically: RAI-MCC: 244

RAI-MNC: 034

P-TMSI: "34567890"

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 34 | 56 | 78 | 90 | xx | xx | xx | 42 | 44 | 30 | xx |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Coding: | B12 | B13 | B14 |  |  |  |  |  |  |  |  |
| Hex | xx | xx | 00 |  |  |  |  |  |  |  |  |

### 7.2.3 UE recognising the priority order of the User controlled PLMN selector list using an ACT preference.

#### 7.2.3.1 Definition and applicability

The User controlled PLMN selector list gives in priority order the preferred PLMNs of the User on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the EFPLMNwACT. Update and deletion of User controlled PLMNs may be performed by the subscriber by the use of the PIN.

#### 7.2.3.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of the ACT identifier in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2;

- TS 31.102 [4], clauses 4.2.5 and 5.1.2.

#### 7.2.3.3 Test purpose

To verify that the ACT with the higher priority (defined by its position in EFPLMNwACT) takes precedence over the UPLMN with the lower priority when the UE performs a network selection.

#### 7.2.3.4 Method of test

##### 7.2.3.4.1 Initial conditions

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

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

- Attach/detach: disabled.

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

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

- Access control: unrestricted.

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

- Attach/detach: disabled.

- RAI (MCC/MNC/LAC/RAC): 244/082/0001/05.

- 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.

7.2.3.4.2 Procedure

a) The UE is powered on.

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

c) After receipt of a LOCATION UPDATING REQUEST and/or an ATTACH REQUEST from the UE, the SS sends a LOCATION UPDATING ACCEPT with:

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

TMSI: "34567890"

and/or an ATTACH ACCEPT with:

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

P-TMSI "34567890"

P-TMSI signature value "AB1234"

to the UE.

d) After receipt of a TMSI REALLOCATION COMPLETE and/or an ATTACH COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

e) The UE is soft powered down.

#### 7.2.3.5 Acceptance criteria

1.) After step a) the UE shall send a CHANNEL REQUEST on the GSM-cell related to the BCCH transmitting MCC/MNC 244/081 to the SS.

2) After step b) the UE shall send a LOCATION UPDATING REQUEST and/or an ATTACH REQUEST to the SS.

3) After step c) the UE shall respond with a TMSI REALLOCATION COMPLETE and/or an ATTACH COMPLETE.

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

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

**EFLOCI (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 |

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

**EFPSLOCI (Location Information)**

Logically: RAI-MCC: 244

RAI-MNC: 081

P-TMSI: "34567890"

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 34 | 56 | 78 | 90 | xx | xx | xx | 42 | 14 | 80 | xx |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Coding: | B12 | B13 | B14 |  |  |  |  |  |  |  |  |
| Hex | xx | xx | 00 |  |  |  |  |  |  |  |  |

### 7.2.4 Void

### 7.2.5 UE updating the User controlled PLMN selector list for E-UTRAN

#### 7.2.5.1 Definition and applicability

The User controlled PLMN selector list gives in priority order the preferred UPLMNs on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the EFPLMNwACT. Update and deletion of PLMNs may be performed by the subscriber.

#### 7.2.5.2 Conformance requirement

The UE shall correctly replace the selected UPLMN in the User controlled PLMN selector list.

- TS 31.102 [4], clause 5.3.6 and 4.2.5.

#### 7.2.5.3 Test purpose

To verify that the UE correctly updates the EFPLMNwACT.

#### 7.2.5.4 Method of test

##### 7.2.5.4.1 Initial conditions

No USS/SS is required for this test.

The default E-UTRAN UICC is used.

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

##### 7.2.5.4.2 Procedure

a) The user shall initiate an MMI dependent procedure to change the second UPLMN in the User controlled PLMN selector list to MCC/MNC of 567/04, the ACT identifier shall set to E-UTRAN only.

b) The UE is soft powered down.

#### 7.2.5.5 Acceptance criteria

After step b) the USIM shall contain the following values:

**EFPLMNwACT (UPLMN Selector)**

Logically: 1st PLMN: 244 081 (MCC MNC)

1st ACT: E-UTRAN

2nd PLMN: 567 04

2nd ACT E-UTRAN

3rd PLMN: 244 083

3rd ACT: E-UTRAN

4th PLMN: 244 082

4th ACT: GSM

5th PLMN: 244 003

5th ACT: E-UTRAN

6th PLMN: 244 004

6th ACT: UTRAN

7th PLMN: 244 005

7th ACT: UTRAN

8th PLMN: 244 081

8th ACT: UTRAN

9th PLMN: 244 007

9th ACT: UTRAN

10th PLMN: 244 008

10th ACT: E-UTRAN

11th PLMN: 244 009

11th ACT: UTRAN

12th PLMN: 244 010

12th ACT: E-UTRAN

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | B13 | B14 | B15 |
| Hex | 42 | 14 | 80 | 40 | 00 | 65 | F7 | 40 | 40 | 00 | 42 | 34 | 80 | 40 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B16 | B17 | B18 | B19 | B20 | B21 | B22 | B23 | B24 | B25 | B26 | B27 | B28 | B29 | B30 |
|  | 42 | 24 | 80 | 00 | 80 | 42 | 34 | 00 | 40 | 00 | 42 | 44 | 00 | 80 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B31 | B32 | B33 | B34 | B35 | B36 | B37 | B38 | B39 | B40 | B41 | B42 | B43 | B44 | B45 |
|  | 42 | 54 | 00 | 80 | 00 | 42 | 14 | 80 | 80 | 00 | 42 | 74 | 00 | 80 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B46 | B47 | B48 | B49 | B50 | B51 | B52 | B53 | B54 | B55 | B56 | B57 | B58 | B59 | B60 |
|  | 42 | 84 | 00 | 40 | 00 | 42 | 94 | 00 | 80 | 00 | 42 | 04 | 10 | 40 | 00 |

### 7.2.6 UE recognising the priority order of the User controlled PLMN selector list using an ACT preference- UTRAN/E-UTRAN

#### 7.2.6.1 Definition and applicability

The User controlled PLMN selector list gives in priority order the preferred PLMNs of the User on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the EFPLMNwACT. Update and deletion of User controlled PLMNs may be performed by the subscriber by the use of the PIN.

#### 7.2.6.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of the ACT identifier in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2;

- TS 31.102 [4], clauses 4.2.5 and 5.1.1.2.

#### 7.2.6.3 Test purpose

To verify that the ACT with the higher priority (defined by its position in EFPLMNwACT) takes precedence over the UPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for RAT  
E-UTRAN has to be handled correctly by the UE.

#### 7.2.6.4 Method of test

##### 7.2.6.4.1 Initial conditions

For this test both a UTRAN USS and an E-UTRAN E-USS is needed.

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 244/004/0001.

- Access control: unrestricted.

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

- TAI (MCC/MNC/TAC): 244/003/0001.

- Access control: unrestricted.

The default E-UTRAN UICC is used.

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

##### 7.2.6.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/003, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of a *AttachRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC): 244/003/ 0001

GUTI: "24400300010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*.

e) The UE is soft powered down.

#### 7.2.6.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/003 to the E-USS.

2) After step b) the terminal shall send *AttachRequest* to the E-USS.

3) After step c) the terminal shall respond with *AttachComplete* during registration.

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

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 24400300010266436587

Last visited registered TAI: 244/003/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 42 | 34 | 00 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 42 | 34 | 00 | 00 | 01 | 00 |  |  |  |  |

### 7.2.7 UE recognising the priority order of the User controlled PLMN selector list using an ACT preference- GSM/E-UTRAN

#### 7.2.7.1 Definition and applicability

The User controlled PLMN selector list gives in priority order the preferred PLMNs of the User on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the EFPLMNwACT. Update and deletion of User controlled PLMNs may be performed by the subscriber by the use of the PIN.

#### 7.2.7.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of the ACT identifier in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2;

- TS 31.102 [4], clauses 4.2.5 and 5.1.1.2.

#### 7.2.7.3 Test purpose

To verify that the ACT with the higher priority (defined by its position in EFPLMNwACT) takes precedence over the UPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for RAT  
E-UTRAN has to be handled correctly by the UE.

#### 7.2.7.4 Method of test

##### 7.2.7.4.1 Initial conditions

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

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 244/082/0001.

- Access control: unrestricted.

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

- TAI (MCC/MNC/TAC): 244/083/0001.

- Access control: unrestricted.

The default E-UTRAN UICC is used.

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

##### 7.2.7.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/083, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of a *AttachRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC): 244/083/ 0001

GUTI: "24408300010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*.

e) The UE is soft powered down.

#### 7.2.7.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/083 to the e-USS.

2) After step b) the terminal shall send *AttachRequest* to the E-USS.

3) After step c) the terminal shall respond with *AttachComplete* during registration.

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

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 24408300010266436587

Last visited registered TAI: 244/083/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 42 | 34 | 80 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 42 | 34 | 80 | 00 | 01 | 00 |  |  |  |  |

### 7.2.8 UE recognising the priority order of the User controlled PLMN selector list with the same access technology – E-UTRAN in NB-S1 mode

#### 7.2.8.1 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 EFPLMNwACT. Update and deletion of User controlled PLMNs may be performed by the subscriber by the use of the PIN.

#### 7.2.8.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of the ACT identifier in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2;

- TS 31.102 [4], clauses 4.2.5 and 5.1.1.2.

#### 7.2.8.3 Test purpose

To verify that the ACT with the higher priority (defined by its position in EFPLMNwACT) takes precedence over the UPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for  
E-UTRAN in NB-S1 mode has to be handled correctly by the UE.

#### 7.2.8.4 Method of test

##### 7.2.8.4.1 Initial conditions

For this test 2 NB-IoT-cells are needed.

The NB-SS transmits on BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 244/081/0001.

- Access control: unrestricted.

The NB-SS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 244/083/0001.

- Access control: unrestricted.

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

**EFPLMNwACT (User Controlled PLMN Selector with Access Technology)**

Logically: 1st PLMN: 244 083 (MCC MNC)

1st ACT: E-UTRAN in NB-S1mode

2nd PLMN: 244 081

2nd ACT: E-UTRAN in NB-S1 mode

3rd PLMN: 244 083

3rd ACT: E-UTRAN

4th PLMN: 244 082

4th ACT: GSM

5th PLMN: 244 003

5th ACT: E-UTRAN

6th PLMN: 244 004

6th ACT: UTRAN

7th PLMN: 244 005

7th ACT: UTRAN

8th PLMN: 244 081

8th ACT: UTRAN

9th PLMN: 244 007

9th ACT: UTRAN

10th PLMN: 244 008

10th ACT: E-UTRAN

11th PLMN: 244 009

11th ACT: UTRAN

12th PLMN: 244 010

12th ACT: E-UTRAN

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | B13 | B14 | B15 |
| Hex | 42 | 34 | 80 | 50 | 00 | 42 | 14 | 80 | 50 | 00 | 42 | 34 | 80 | 40 | 00 |
|  | B16 | B17 | B18 | B19 | B20 | B21 | B22 | B23 | B24 | B25 | B26 | B27 | B28 | B29 | B30 |
|  | 42 | 24 | 80 | 00 | 80 | 42 | 34 | 00 | 40 | 00 | 42 | 44 | 00 | 80 | 00 |
|  | B31 | B32 | B33 | B34 | B35 | B36 | B37 | B38 | B39 | B40 | B41 | B42 | B43 | B44 | B45 |
|  | 42 | 54 | 00 | 80 | 00 | 42 | 14 | 80 | 80 | 00 | 42 | 74 | 00 | 80 | 00 |
|  | B46 | B47 | B48 | B49 | B50 | B51 | B52 | B53 | B54 | B55 | B56 | B57 | B58 | B59 | B60 |
|  | 42 | 84 | 00 | 40 | 00 | 42 | 94 | 00 | 80 | 00 | 42 | 04 | 10 | 40 | 00 |

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

#### 7.2.8.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest-NB* from the UE on the NB-IoT-cell related to the BCCH transmitting MCC/MNC 244/083, the NB-SS sends *RRCConnectionSetup-NB* to the UE, followed by *RRCConnectionSetupComplete-NB* sent by the UE to the NB-SS.

c) During registration and after receipt of a *AttachRequest* from the UE, the NB-SS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC): 244/083/ 0001

GUTI: "24408300010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the NB-SS sends *RRCConnectionRelease-NB*.

e) The UE is powered down.

#### 7.2.8.5 Acceptance criteria

1) After step a) the UE shall send a *RRCConnectionRequest-NB* on the NB-IoT -cell related to the BCCH transmitting MCC/MNC 244/083 to the NB-SS.

2) After step b) the terminal shall send *AttachRequest* to the NB-SS.

3) After step c) the terminal shall respond with *AttachComplete* during registration.

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

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 24408300010266436587

Last visited registered TAI: 244/083/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 42 | 34 | 80 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 42 | 34 | 80 | 00 | 01 | 00 |  |  |  |  |

### 7.2.9 UE recognising the priority order of the User controlled PLMN selector list using the ACT preference – E-UTRAN in WB-S1/E-UTRAN in NB-S1

#### 7.2.9.1 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 EFPLMNwACT. Update and deletion of User controlled PLMNs may be performed by the subscriber by the use of the PIN.

#### 7.2.9.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of the ACT identifier in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2;

- TS 31.102 [4], clauses 4.2.5 and 5.1.1.2.

#### 7.2.9.3 Test purpose

To verify that the ACT with the higher priority (defined by its position in EFPLMNwACT) takes precedence over the UPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for RAT  
E-UTRAN in WB-S1 mode and E-UTRAN in NB-S1 mode has to be handled correctly by the UE.

#### 7.2.9.4 Method of test

##### 7.2.9.4.1 Initial conditions

For this test both an E-USS and NB-SS are needed.

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

- Attach/detach: disabled.

- TAI (MCC/MNC/LAC): 244/083/0001.

- Access control: unrestricted.

The NB-SS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 244/083/0001.

- Access control: unrestricted.

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

**EFPLMNwACT (User Controlled PLMN Selector with Access Technology)**

Logically: 1st PLMN: 244 081 (MCC MNC)

1st ACT: E-UTRAN

2nd PLMN: 244 081

2nd ACT: GSM

3rd PLMN: 244 083

3rd ACT: E-UTRAN in NB-S1 mode

4th PLMN: 244 083

4th ACT: E-UTRAN in WB-S1 mode

5th PLMN: 244 003

5th ACT: E-UTRAN

6th PLMN: 244 004

6th ACT: UTRAN

7th PLMN: 244 005

7th ACT: UTRAN

8th PLMN: 244 081

8th ACT: UTRAN

9th PLMN: 244 007

9th ACT: UTRAN

10th PLMN: 244 008

10th ACT: E-UTRAN

11th PLMN: 244 009

11th ACT: UTRAN

12th PLMN: 244 010

12th ACT: E-UTRAN

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | B13 | B14 | B15 |
| Hex | 42 | 14 | 80 | 40 | 00 | 42 | 14 | 80 | 00 | 80 | 42 | 34 | 80 | 50 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B16 | B17 | B18 | B19 | B20 | B21 | B22 | B23 | B24 | B25 | B26 | B27 | B28 | B29 | B30 |
|  | 42 | 34 | 80 | 60 | 00 | 42 | 34 | 00 | 40 | 00 | 42 | 44 | 00 | 80 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B31 | B32 | B33 | B34 | B35 | B36 | B37 | B38 | B39 | B40 | B41 | B42 | B43 | B44 | B45 |
|  | 42 | 54 | 00 | 80 | 00 | 42 | 14 | 80 | 80 | 00 | 42 | 74 | 00 | 80 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B46 | B47 | B48 | B49 | B50 | B51 | B52 | B53 | B54 | B55 | B56 | B57 | B58 | B59 | B60 |
|  | 42 | 84 | 00 | 40 | 00 | 42 | 94 | 00 | 80 | 00 | 42 | 04 | 10 | 40 | 00 |

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

##### 7.2.9.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest-NB* from the UE on the NB-IoT-cell related to the BCCH transmitting MCC/MNC 244/083, the NB-SS sends *RRCConnectionSetup-NB* to the UE, followed by *RRCConnectionSetupComplete-NB* sent by the UE to the NB-SS.

c) During registration and after receipt of a *AttachRequest* from the UE, the NB-SS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC): 244/083/ 0001

GUTI: "24408300010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the NB-SS sends *RRCConnectionRelease-NB*.

e) The UE is soft powered down.

#### 7.2.9.5 Acceptance criteria

1) After step a) the UE shall send a *RRCConnectionRequest-NB* on the NB-IoT-cell related to the BCCH transmitting MCC/MNC 244/083 to the NB-SS.

2) After step b) the terminal shall send *AttachRequest* to the NB-SS.

3) After step c) the terminal shall respond with *AttachComplete* during registration.

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

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 24408300010266436587

Last visited registered TAI: 244/083/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 42 | 34 | 80 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 42 | 34 | 80 | 00 | 01 | 00 |  |  |  |  |

### 7.2.10 UE updating the User controlled PLMN selector list for satellite-NG-RAN

#### 7.2.10.1 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 EFPLMNwACT. Update and deletion of PLMNs may be performed by the subscriber.

#### 7.2.10.2 Conformance requirement

The UE shall correctly replace the selected UPLMN in the User controlled PLMN selector list.

- TS 31.102 [4], clause 5.3.6 and 4.2.5.

#### 7.2.10.3 Test purpose

To verify that the UE correctly updates the EFPLMNwACT.

#### 7.2.10.4 Method of test

##### 7.2.10.4.1 Initial conditions

No SAT-NG-SS is required for this test.

The default 5G-NR UICC is used.

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

##### 7.2.10.4.2 Procedure

a) The user shall initiate an MMI dependent procedure to change the second UPLMN in the User controlled PLMN selector list to MCC/MNC of 567/004, the ACT identifier shall set to satellite satellite NG-RAN only.

b) The UE is soft powered down.

#### 7.2.10.5 Acceptance criteria

After step b) the USIM shall contain the following values:

**EFPLMNwACT (UPLMN Selector)**

Logically: 1st PLMN: 244 081 (MCC MNC)

1st ACT: E-UTRAN

2nd PLMN: 567 004

2nd ACT: satellite NG-RAN

3rd PLMN: 244 083

3rd ACT: satellite NG-RAN

4th PLMN: 244 082

4th ACT: GSM

5th PLMN: 244 003

5th ACT: satellite NG-RAN

6th PLMN: 244 004

6th ACT: UTRAN

7th PLMN: 244 005

7th ACT: NG-RAN

8th PLMN: 244 081

8th ACT: UTRAN

9th PLMN: 244 007

9th ACT: UTRAN

10th PLMN: 244 008

10th ACT: E-UTRAN

11th PLMN: 244 009

11th ACT: UTRAN

12th PLMN: 244 010

12th ACT: E-UTRAN

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | B13 | B14 | B15 |
| Hex | 42 | 14 | 80 | 40 | 00 | 65 | 47 | 00 | 04 | 00 | 42 | 34 | 80 | 04 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B16 | B17 | B18 | B19 | B20 | B21 | B22 | B23 | B24 | B25 | B26 | B27 | B28 | B29 | B30 |
|  | 42 | 24 | 80 | 00 | 80 | 42 | 34 | 00 | 04 | 00 | 42 | 44 | 00 | 80 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B31 | B32 | B33 | B34 | B35 | B36 | B37 | B38 | B39 | B40 | B41 | B42 | B43 | B44 | B45 |
|  | 42 | 54 | 00 | 08 | 00 | 42 | 14 | 80 | 80 | 00 | 42 | 74 | 00 | 80 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B46 | B47 | B48 | B49 | B50 | B51 | B52 | B53 | B54 | B55 | B56 | B57 | B58 | B59 | B60 |
|  | 42 | 84 | 00 | 40 | 00 | 42 | 94 | 00 | 80 | 00 | 42 | 04 | 10 | 40 | 00 |

7.2.11 UE recognising the priority order of the User controlled PLMN selector list using an ACT preference GSM/satellite NG-RAN

#### 7.2.11.1 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 EFPLMNwACT. Update and deletion of User controlled PLMNs may be performed by the subscriber by the use of the PIN.

#### 7.2.11.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of the ACT identifier in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2;

- TS 31.102 [4], clauses 4.2.5 and 5.1.1.2.

#### 7.2.11.3 Test purpose

To verify that the ACT with the higher priority (defined by its position in EFPLMNwACT) takes precedence over the UPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for RAT  
satellite NG-RAN has to be handled correctly by the UE.

#### 7.2.11.4 Method of test

##### 7.2.11.4.1 Initial conditions

For this test both a GSM SS and a SAT-NG-SS is needed.

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 244/082/0001.

- Access control: unrestricted.

The SAT-NG-SS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 244/083/000001.

- Access control: unrestricted.

The default 5G-NR UICC is used.

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

##### 7.2.11.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCRequest* from the UE on the satellite NG-RAN-cell related to the BCCH transmitting MCC/MNC 244/083, the SAT-NG-SS sends *RRCSetup* to the UE, followed by *RRCSetupComplete* sent by the UE to the SAT-NG-SS.

c) During registration and after receipt of a REGISTRATION REQUEST from the UE, the SAT-NG-SS initiates authentication, starts integrity by using the security procedure and sends REGISTRATION ACCEPT with to the UE:

TAI (MCC/MNC/TAC): 244/083/000001

5G-GUTI: "24408300010266436587"

d) After receipt of the REGISTRATION COMPLETE during registration from the UE, the SAT-NG-SS sends *RRCRelease*.

e) The UE is soft powered down.

#### 7.2.11.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCRequest* on the satellite NG-RAN-cell related to the BCCH transmitting MCC/MNC 244/083 to the SAT-NG-SS.

2) After step b) the terminal shall send REGISTRATION REQUEST to the SAT-NG-SS.

3) After step c) the terminal shall respond with REGISTRATION COMPLETE during registration.

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

**EF**5GS3GPPLOCI **(5GS 3GPP location information)**

Logically: 5G-GUTI: 24408300010266436587

Last visited registered TAI in 5GS for 3GPP access: 244/083/000001

5GS update status for 3GPP access: 5U1 UPDATED

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| Hex | 00 | 0B | F2 | 42 | 34 | 80 | 00 | 01 |
|  | **B9** | **B10** | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** |
|  | 02 | 66 | 43 | 65 | 87 | 34 | 80 | 00 |
|  | **B17** | **B18** | **B19** | **B20** |  |  |  |  |
|  | 00 | 00 | 01 | 00 |  |  |  |  |

### 7.2.12 UE recognising the priority order of the User controlled PLMN selector list using an ACT preference UTRAN/satellite NG-RAN

#### 7.2.12.1 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 EFPLMNwACT. Update and deletion of User controlled PLMNs may be performed by the subscriber by the use of the PIN.

#### 7.2.12.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of the ACT identifier in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2.

- TS 31.102 [4], clauses 4.2.5 and 5.1.1.2.

#### 7.2.12.3 Test purpose

To verify that the ACT with the higher priority (defined by its position in EFPLMNwACT) takes precedence over the UPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for RAT  
satellite NG-RAN has to be handled correctly by the UE.

#### 7.2.12.4 Method of test

##### 7.2.12.4.1 Initial conditions

For this test both an UTRAN USS and a SAT- NG-SS is needed.

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 244/004/0001.

- Access control: unrestricted.

The SAT-NG-SS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 244/083/000001.

- Access control: unrestricted.

The default 5G-NR UICC is used.

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

##### 7.2.12.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCRequest* from the UE on the satellite NG-RAN cell related to the BCCH transmitting MCC/MNC 244/083, the SAT-NG-SS sends *RRCSetup* to the UE, followed by *RRCSetupComplete* sent by the UE to the SAT-NG-SS.

c) During registration and after receipt of a REGISTRATION REQUEST from the UE, the SAT-NG-SS initiates authentication, starts integrity by using the security procedure and sends REGISTRATION ACCEPT with to the UE:

TAI (MCC/MNC/TAC): 244/083/000001

5G-GUTI: "24408300010266436587"

d) After receipt of the REGISTRATION COMPLETE during registration from the UE, the SAT-NG-SS sends *RRCRelease*.

e) The UE is soft powered down.

#### 7.2.12.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCRequest* on the satellite NG-RAN-cell related to the BCCH transmitting MCC/MNC 244/083 to the SAT-NG-SS.

2) After step b) the terminal shall send REGISTRATION REQUEST to the SAT-NG-SS.

3) After step c) the terminal shall respond with REGISTRATION COMPLETE during registration.

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

**EF**5GS3GPPLOCI **(5GS 3GPP location information)**

Logically: 5G-GUTI: 24408300010266436587

Last visited registered TAI in 5GS for 3GPP access: 244/083/000001

5GS update status for 3GPP access: 5U1 UPDATED

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| Hex | 00 | 0B | F2 | 42 | 34 | 80 | 00 | 01 |
|  | **B9** | **B10** | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** |
|  | 02 | 66 | 43 | 65 | 87 | 42 | 34 | 80 |
|  | **B17** | **B18** | **B19** | **B20** |  |  |  |  |
|  | 00 | 00 | 01 | 00 |  |  |  |  |

### 7.2.13 UE recognising the priority order of the User controlled PLMN selector list using an ACT preference E-UTRAN/satellite NG-RAN

#### 7.2.13.1 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 EFPLMNwACT. Update and deletion of User controlled PLMNs may be performed by the subscriber by the use of the PIN.

#### 7.2.13.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of the ACT identifier in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2.

- TS 31.102 [4], clauses 4.2.5 and 5.1.1.2.

#### 7.2.13.3 Test purpose

To verify that the ACT with the higher priority (defined by its position in EFPLMNwACT) takes precedence over the UPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for RAT  
satellite NG-RAN has to be handled correctly by the UE.

#### 7.2.13.4 Method of test

##### 7.2.13.4.1 Initial conditions

For this test both an E-USS and a SAT-NG-SS is needed.

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 244/008/0001.

- Access control: unrestricted.

The SAT-NG-SS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 244/083/000001.

- Access control: unrestricted.

The default 5G-NR UICC is used.

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

##### 7.2.13.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCRequest* from the UE on the satellite NG-RAN-cell related to the BCCH transmitting MCC/MNC 244/083, the SAT-NG-SS sends *RRCSetup* to the UE, followed by *RRCSetupComplete* sent by the UE to the SAT-NG-SS.

c) During registration and after receipt of a REGISTRATION REQUEST from the UE, the SAT-NG-SS initiates authentication, starts integrity by using the security procedure and sends REGISTRATION ACCEPT with to the UE:

TAI (MCC/MNC/TAC): 244/083/000001

5G-GUTI: "24408300010266436587"

d) After receipt of the REGISTRATION COMPLETE during registration from the UE, the SAT-NG-SS sends *RRCRelease*.

e) The UE is soft powered down.

#### 7.2.13.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCRequest* on the satellite NG-RAN-cell related to the BCCH transmitting MCC/MNC 244/083 to the SAT-NG-SS.

2) After step b) the terminal shall send REGISTRATION REQUEST to the SAT-NG-SS.

3) After step c) the terminal shall respond with REGISTRATION COMPLETE during registration.

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

**EF**5GS3GPPLOCI **(5GS 3GPP location information)**

Logically: 5G-GUTI: 24408300010266436587

Last visited registered TAI in 5GS for 3GPP access: 244/083/000001

5GS update status for 3GPP access: 5U1 UPDATED

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| Hex | 00 | 0B | F2 | 42 | 34 | 80 | 00 | 01 |
|  | **B9** | **B10** | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** |
|  | 02 | 66 | 43 | 65 | 87 | 42 | 34 | 80 |
|  | **B17** | **B18** | **B19** | **B20** |  |  |  |  |
|  | 00 | 00 | 01 | 00 |  |  |  |  |

### 7.2.14 UE recognising the priority order of the User controlled PLMN selector list using an ACT preference NG-RAN/satellite NG-RAN

#### 7.2.14.1 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 EFPLMNwACT. Update and deletion of User controlled PLMNs may be performed by the subscriber by the use of the PIN.

#### 7.2.14.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of the ACT identifier in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2.

- TS 31.102 [4], clauses 4.2.5 and 5.1.1.2.

#### 7.2.14.3 Test purpose

To verify that the ACT with the higher priority (defined by its position in EFPLMNwACT) takes precedence over the UPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for RAT  
satellite NG-RAN has to be handled correctly by the UE.

#### 7.2.14.4 Method of test

##### 7.2.14.4.1 Initial conditions

For this test both a NG-SS and a SAT-NG-SS is needed.

The NG-SS transmits on BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 244/083/000001.

- Access control: unrestricted.

The SAT-NG-SS transmits on BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 244/005/000001.

- Access control: unrestricted.

The default 5G-NR UICC is used.

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

##### 7.2.14.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCRequest* from the UE on the satellite NG-RAN-cell related to the BCCH transmitting MCC/MNC 244/083, the SAT-NG-SS sends *RRCSetup* to the UE, followed by *RRCSetupComplete* sent by the UE to the SAT-NG-SS.

c) During registration and after receipt of a REGISTRATION REQUEST from the UE, the SAT-NG-SS initiates authentication, starts integrity by using the security procedure and sends REGISTRATION ACCEPT with to the UE:

TAI (MCC/MNC/TAC): 244/083/000001

5G-GUTI: "24408300010266436587"

d) After receipt of the REGISTRATION COMPLETE during registration from the UE, the SAT-NG-SS sends *RRCRelease*.

e) The UE is soft powered down.

#### 7.2.14.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCRequest* on the satellite NG-RAN-cell related to the BCCH transmitting MCC/MNC 244/083 to the SAT-NG-SS.

2) After step b) the terminal shall send REGISTRATION REQUEST to the SAT-NG-SS.

3) After step c) the terminal shall respond with REGISTRATION COMPLETE during registration.

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

**EF**5GS3GPPLOCI **(5GS 3GPP location information)**

Logically: 5G-GUTI: 24408300010266436587

Last visited registered TAI in 5GS for 3GPP access: 244/083/000001

5GS update status for 3GPP access: 5U1 UPDATED

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| Hex | 00 | 0B | F2 | 42 | 34 | 80 | 00 | 01 |
|  | **B9** | **B10** | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** |
|  | 02 | 66 | 43 | 65 | 87 | 42 | 34 | 80 |
|  | **B17** | **B18** | **B19** | **B20** |  |  |  |  |
|  | 00 | 00 | 01 | 00 |  |  |  |  |

## 7.3 Operator controlled PLMN selector handling

### 7.3.1 UE recognising the priority order of the Operator controlled PLMN selector list.

#### 7.3.1.1 Definition and applicability

The Operator controlled PLMN selector list gives in priority order the preferred OPLMNs on which the UE shall register if no network of the User controlled PLMN selector list is available. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the EFOPLMNwACT. Update and deletion of OPLMNs shall not be possible by the subscriber by the use of the PIN.

The registration attempts initiated by the UE accessing UTRAN depends on UE's capabilities and can be one of the following:

I. registration procedures for Ues supporting CS or

II. registration procedures for Ues supporting PS or

III. registration procedures for Ues supporting CS/PS

#### 7.3.1.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of OPLMNs in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2;

- TS 31.102 [4], clause 4.2.53.

#### 7.3.1.3 Test purpose

To verify that the OPLMN with the higher priority (defined by its position in EFOPLMNwACT) takes precedence over the OPLMN with the lower priority when the UE performs a network selection.

#### 7.3.1.4 Method of test

##### 7.3.1.4.1 Initial conditions

For this test a USS (in case of a Terminal accessing UTRAN) or a SS (in case of a Terminal accessing a GERAN) is needed.

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 254/011/0001.

- RAI (MCC/MNC/LAC/RAC): 254/011/0001/05 (for UTRAN cell only).

- Access control: unrestricted.

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 254/012/0001.

- RAI (MCC/MNC/LAC/RAC): 254/012/0001/05 (for UTRAN cell only).

- Access control: unrestricted.

NOTE: In case of a GERAN no packet system information is transmitted.

The default UICC is used with the following exceptions:

**EFUST (USIM Service Table)**

Logically: Local Phone Book available

User controlled PLMN selector available

Fixed dialling numbers available

Barred dialling numbers available

The GSM Access available

The Group Identifier level 1 and level 2 not available

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

Operator controlled PLMN selector available

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 |
| binary | xx1x xx11 | xxxx xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 | xxxx xx1x |

The coding of EFUST shall conform with the capabilities of the USIM used.

**EFOPLMNwACT (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: 254 012

4th ACT: GSM

5th PLMN: 254 011

5th ACT: GSM

6th PLMN: 254 005

6th ACT: UTRAN

7th PLMN: 254 006

7th ACT: UTRAN

8th PLMN: 254 007

8th ACT: UTRAN

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B01 | B02 | B03 | B04 | B05 | B06 | B07 | B08 | B09 | B10 |
| Hex | 52 | 24 | 10 | 80 | 00 | 52 | 14 | 10 | 80 | 00 |
|  | B11 | B12 | B13 | B14 | B15 | B16 | B17 | B18 | B19 | B20 |
|  | 52 | 24 | 00 | 80 | 00 | 52 | 24 | 10 | 00 | 80 |
|  | B21 | B22 | B23 | B24 | B25 | B26 | B27 | B28 | B29 | B30 |
|  | 52 | 14 | 10 | 00 | 80 | 52 | 54 | 00 | 80 | 00 |
|  | B31 | B32 | B33 | B34 | B35 | B36 | B37 | B38 | B39 | B40 |
|  | 52 | 64 | 00 | 80 | 00 | 52 | 74 | 00 | 80 | 00 |

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

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

##### 7.3.1.4.2 Procedure

Expected Sequence A:

a) The UE is powered on.

b) After receipt on the cell related to the BCCH transmitting MCC/MNC 254/012 of a RRC CONNECTION REQUEST from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

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

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT to the UE with the following values:

LAI (MCC/MNC/LAC): 254/012/0001

TMSI: "34567890"

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ATTACH ACCEPT to the UE with following values:

RAI (MCC/MNC/LAC/RAC) 254/012/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT and/or ATTACH ACCEPT to the UE with some of the following values:

LAI (MCC/MNC/LAC): 254/012/0001

TMSI: "34567890"

RAI (MCC/MNC/LAC/RAC) 254/012/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

d) After receipt of a

I. TMSI REALLOCATION COMPLETE during registration on CS from the UE, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

II. ATTACH COMPLETE during registration on PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE during registration on CS/PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

e) The UE is soft powered down.

Expected Sequence B:

a) The UE is powered on.

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

c) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC/LAC): 254/012/0001

TMSI: "34567890"

to the UE.

d) After receipt of a TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

e) The UE is soft powered down.

#### 7.3.1.5 Acceptance criteria

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

2) After step b) the UE accessing a GERAN shall send LOCATION UPDATING REQUEST to the SS and the UE accessing UTRAN shall send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST. To the USS during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

3) After step c) the UE accessing GERAN shall respond with TMSI REALLOCATION COMPLETE and the UE accessing UTRAN shall respond with

I. TMSI REALLOCATION COMPLETE during registration on CS or

II. ATTACH COMPLETE during registration on PS or

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE to the USS during registration on CS/PS.

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

For UEs accessing GERAN and UEs accessing UTRAN and supporting (CS and PS) or (CS only):

**EFLOCI (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):

**EFPSLOCI (Location Information)**

Logically: RAI-MCC: 254

RAI-MNC: 012

P-TMSI: "34567890"

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 34 | 56 | 78 | 90 | xx | xx | xx | 52 | 24 | 10 | xx |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Coding: | B12 | B13 | B14 |  |  |  |  |  |  |  |  |
| Hex | xx | xx | 00 |  |  |  |  |  |  |  |  |

### 7.3.2 UE recognising the priority order of the User controlled PLMN selector over the Operator controlled PLMN selector list.

#### 7.3.2.1 Definition and applicability

The User controlled PLMN selector list has a higher priority as the OPLMN selector list on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the EFPLMNwACT.

The registration attempts initiated by the terminal accessing UTRAN depends on terminal's 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

#### 7.3.2.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of UPLMNs first before the OPLMNs in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2.2;

- TS 31.102 [4], clauses 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 EFPLMNwACT) takes precedence over the OPLMN with a higher priority when the UE performs a network selection.

#### 7.3.2.4 Method of test

##### 7.3.2.4.1 Initial conditions

For this test a USS (in case of a Terminal accessing UTRAN) or a SS (in case of a Terminal accessing a GERAN) is needed.

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 254/001/0001.

- RAI (MCC/MNC/LAC/RAC): 254/001/0001/05 (only for UTRAN cell).

- Access control: unrestricted.

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 244/010/0001.

- RAI (MCC/MNC/LAC/RAC): 244/010/0001/05 (only for UTRAN cell).

- Access control: unrestricted.

NOTE: In case of a GERAN no packet system information is transmitted

The default UICC is used with the following exception:

**EFUST (USIM Service Table)**

Logically: Local Phone Book available

User controlled PLMN selector available

Fixed dialling numbers available

Barred dialling numbers available

The GSM Access available

The Group Identifier level 1 and level 2 not available

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

Operator controlled PLMN selector available

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 |
| binary | xx1x xx11 | xxxx xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 | xxxx xx1x |

The coding of EFUST shall conform with the capabilities of the USIM used.

**EFPLMNwACT (UPLMN Selector with Access Technology)**

Logically: 1st PLMN: 244 081 (MCC MNC)

1st ACT: UTRAN

2nd PLMN: 244 081

2nd ACT: GSM

3rd PLMN: 244 082

3rd ACT: UTRAN

4th PLMN: 244 082

4th ACT: GSM

5th PLMN: 244 003

5th ACT: UTRAN

6th PLMN: 244 004

6th ACT: UTRAN

7th PLMN: 244 005

7th ACT: UTRAN

8th PLMN: 244 006

8th ACT: UTRAN

9th PLMN: 244 007

9th ACT: UTRAN

10th PLMN: 244 008

10th ACT: UTRAN

11th PLMN: 244 010

11th ACT: UTRAN

12th PLMN: 244 010

12th ACT: GSM

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

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

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

##### 7.3.2.4.2 Procedure

Expected Sequence A:

a) The UE is powered on.

b) After receipt of a RRC CONNECTION REQUEST from the UE on the cell related to the BCCH transmitting MCC/MNC 244/010, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS.

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

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT to the UE with the following values:

LAI (MCC/MNC/LAC): 244/010/0001

TMSI: "34567890"

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ATTACH ACCEPT with the following values:

RAI (MCC/MNC/LAC/RAC) 244/010/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT and/or ATTACH ACCEPT with some of the following values :

LAI (MCC/MNC/LAC): 244/010/0001

TMSI: "34567890"

RAI (MCC/MNC/LAC/RAC) 244/010/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

d) After receipt of a

I. TMSI REALLOCATION COMPLETE during registration on CS from the UE, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

II. ATTACH COMPLETE during registration on PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE during registration on CS/PS from the UE, the USS sends RRC CONNECTION RELEASE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

e) The UE is soft powered down.

Expected Sequence B:

a) The UE is powered on.

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

c) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC/LAC): 244/010/0001

TMSI: "34567890"

to the UE.

d) After receipt of a TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

e) The UE is soft powered down.

#### 7.3.2.5 Acceptance criteria

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

2) After step b) the UE accessing a GERAN shall send LOCATION UPDATING REQUEST to the SS and the UE accessing UTRAN shell send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

3) After step c) the UE accessing GERAN shall respond with TMSI REALLOCATION COMPLETE and the UE accessing UTRAN shall respond with

I. TMSI REALLOCATION COMPLETE during registration on CS or

II. ATTACH COMPLETE during registration on PS or

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE to the USS during registration on CS/PS..

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

For UEs accessing GERAN and UEs accessing UTRAN and supporting (CS and PS) or (CS only):

**EFLOCI (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):

**EFPSLOCI (Location Information)**

Logically: RAI-MCC: 244

RAI-MNC: 010

P-TMSI: "34567890"

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 34 | 56 | 78 | 90 | xx | xx | xx | 42 | 04 | 10 | xx |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Coding: | B12 | B13 | B14 |  |  |  |  |  |  |  |  |
| Hex | xx | xx | 00 |  |  |  |  |  |  |  |  |

### 7.3.3 UE recognising the priority order of the Operator controlled PLMN selector list when accessing E-UTRAN

#### 7.3.3.1 Definition and applicability

The Operator controlled PLMN selector list gives in priority order the preferred OPLMNs on which the UE shall register if no network of the User controlled PLMN selector list is available. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the EFOPLMNwACT. Update and deletion of OPLMNs shall not be possible by the subscriber by the use of the PIN.

#### 7.3.3.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of OPLMNs in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2;

- TS 31.102 [4], clause 4.2.53, 4.2.5 and 5.1.1.2.

#### 7.3.3.3 Test purpose

To verify that the OPLMN with the higher priority (defined by its position in EFOPLMNwACT) takes precedence over the OPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for RAT  
E-UTRAN/NB-IoT has to be handled correctly by the UE.

#### 7.3.3.4 Method of test

##### 7.3.3.4.1 Initial conditions

For this test an E-USS/NB-SS is required.

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

- TAI (MCC/MNC/TAC): 254/011/0001.

- Access control: unrestricted.

- TAI (MCC/MNC/TAC): 254/012/0001.

- Access control: unrestricted.

The NB-SS transmits on two BCCHs, with the following network parameters:

- TAI (MCC/MNC/TAC): 254/011/0001.

- Access control: unrestricted.

- TAI (MCC/MNC/TAC): 254/012/0001.

- Access control: unrestricted.

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

**EFUST (USIM Service Table)**

Logically: Local Phone Book available

User controlled PLMN selector available

Fixed dialling numbers available

Barred dialling numbers available

The GSM Access available

The Group Identifier level 1 and level 2 not available

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

Operator controlled PLMN selector available

EPS Mobility Management Information available

Allowed CSG Lists and corresponding indications not available

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 |
| Binary | xx1x xx11 | xxxx xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 | xxxx xx1x | xxxx xxxx | xxxx xxxx |
|  |  |  |  |  |  |  |  |  |
|  | B9 | B10 | B11 |  |  |  |  |  |
|  | xxxx xxxx | xxxx xxxx | xx01 xxxx |  |  |  |  |  |

The coding of EFUST shall conform with the capabilities of the USIM used.

**EFOPLMNwACT (OPLMN Selector)**

Logically: 1st PLMN: 254 012 (MCC MNC)

1st ACT E-UTRAN

2nd PLMN: 254 011

2nd ACT E-UTRAN

3rd PLMN: 254 002

3rd ACT: E-UTRAN

4th PLMN: 254 012

4th ACT: GSM

5th PLMN: 254 011

5th ACT: GSM

6th PLMN: 254 005

6th ACT: UTRAN

7th PLMN: 254 006

7th ACT: UTRAN

8th PLMN: 254 007

8th ACT: UTRAN

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B01 | B02 | B03 | B04 | B05 | B06 | B07 | B08 | B09 | B10 |
| Hex | 52 | 24 | 10 | 40 | 00 | 52 | 14 | 10 | 40 | 00 |
|  | B11 | B12 | B13 | B14 | B15 | B16 | B17 | B18 | B19 | B20 |
|  | 52 | 24 | 00 | 40 | 00 | 52 | 24 | 10 | 00 | 80 |
|  | B21 | B22 | B23 | B24 | B25 | B26 | B27 | B28 | B29 | B30 |
|  | 52 | 14 | 10 | 00 | 80 | 52 | 54 | 00 | 80 | 00 |
|  | B31 | B32 | B33 | B34 | B35 | B36 | B37 | B38 | B39 | B40 |
|  | 52 | 64 | 00 | 80 | 00 | 52 | 74 | 00 | 80 | 00 |

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

##### 7.3.3.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest/RRCConnectionRequest-NB* from the UE on the E-UTRAN-cell/NB-IoT-cell related to the BCCH transmitting MCC/MNC 254/012, the E-USS/NB-SS sends *RRCConnectionSetup/RRCConnectionSetup-NB* to the UE, followed by *RRCConnectionSetupComplete/RRCConnectionSetupComplete-NB* sent by the UE to the E-USS/NB-SS.

c) During registration and after receipt of a *AttachRequest* from the UE, the E-USS/NB-SS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC): 254/012/ 0001

GUTI: "25401200010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the E-USS/NB-SS sends *RRCConnectionRelease/RRCConnectionRelease-NB*.

e) The UE is soft powered down.

#### 7.3.3.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCConnectionRequest/RRCConnectionRequest-NB* on the E-UTRAN-cell/NB-IoT-cell related to the BCCH transmitting MCC/MNC 254/012 to the E-USS/NB-SS.

2) After step b) the terminal shall send *AttachRequest* to the E-USS/NB-SS.

3) After step c) the terminal shall respond with *AttachComplete* during registration.

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

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 25401200010266436587

Last visited registered TAI: 254/012/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 52 | 24 | 10 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 52 | 24 | 10 | 00 | 01 | 00 |  |  |  |  |

### 7.3.4 UE recognising the priority order of the User controlled PLMN selector over the Operator controlled PLMN selector list – E-UTRAN

#### 7.3.4.1 Definition and applicability

The User controlled PLMN selector list has a higher priority as the OPLMN selector list on which the UE shall register. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the EFPLMNwACT.

#### 7.3.4.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of UPLMNs first before the OPLMNs in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2.2;

- TS 31.102 [4], clauses 4.2.5, 4.2.53 and 5.1.1.2.

#### 7.3.4.3 Test purpose

To verify that the User controlled PLMN with a lower priority (defined by its position in EFPLMNwACT) takes precedence over the OPLMN with a higher priority when the UE performs a network selection. Hereby the new coding for RAT  
E-UTRAN/NB-IoT has to be handled correctly by the UE.

#### 7.3.4.4 Method of test

##### 7.3.4.4.1 Initial conditions

For this test an E-USS/NB-SS is required.

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

- TAI (MCC/MNC/TAC): 254/001/0001.

-- Access control: unrestricted.

- TAI (MCC/MNC/TAC): 244/010/0001.

- Access control: unrestricted.

The NB-SS transmits on two BCCHs, with the following network parameters:

- TAI (MCC/MNC/TAC): 254/001/0001.

-- Access control: unrestricted.

- TAI (MCC/MNC/TAC): 244/010/0001.

- Access control: unrestricted.

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

**EFUST (USIM Service Table)**

Logically: Local Phone Book available

User controlled PLMN selector available

Fixed dialling numbers available

Barred dialling numbers available

The GSM Access available

The Group Identifier level 1 and level 2 not available

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

Operator controlled PLMN selector available

EPS Mobility Management Information available

Allowed CSG Lists and corresponding indications not available

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 |
| Binary | xx1x xx11 | xxxx xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 | xxxx xx1x | xxxx xxxx | xxxx xxxx |
|  |  |  |  |  |  |  |  |  |
|  | B9 | B10 | B11 |  |  |  |  |  |
|  | xxxx xxxx | xxxx xxxx | xx01 xxxx |  |  |  |  |  |

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

##### 7.3.4.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest/RRCConnectionRequest-NB* from the UE on the E-UTRAN-cell/NB-IoT-cell related to the BCCH transmitting MCC/MNC 244/010, the E-USS/NB-SS sends *RRCConnectionSetup/RRCConnectionSetup-NB* to the UE, followed by *RRCConnectionSetupComplete/RRCConnectionSetupComplete-NB* sent by the UE to the E-USS/NB-SS.

c) During registration and after receipt of a *AttachRequest* from the UE, the E-USS/NB-SS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC): 244/010/ 0001

GUTI: "24401000010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the E-USS/NB-SS sends *RRCConnectionRelease/RRCConnectionRelease-NB*.

e) The UE is soft powered down.

#### 7.3.4.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCConnectionRequest/RRCConnectionRequest-NB* on the E-UTRAN-cell/NB-IoT-cell related to the BCCH transmitting MCC/MNC 244/010 to the E-USS/NB-SS.

2) After step b) the terminal shall send *AttachRequest* to the E-USS/NB-SS.

3) After step c) the terminal shall respond with *AttachComplete* during registration.

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

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 24401000010266436587

Last visited registered TAI: 244/010/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 42 | 04 | 10 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 42 | 04 | 10 | 00 | 01 | 00 |  |  |  |  |

7.3.5 UE recognising the priority order of the Operator controlled PLMN selector list when accessing E-UTRAN in NB-S1 mode

7.3.5.1 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 EFOPLMNwACT. Update and deletion of OPLMNs shall not be possible by the subscriber by the use of the PIN.

7.3.5.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of OPLMNs in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2;

- TS 31.102 [4], clause 4.2.53, 4.2.5 and 5.1.1.2.

7.3.5.3 Test purpose

To verify that the OPLMN with the higher priority (defined by its position in EFOPLMNwACT) takes precedence over the OPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for RAT  
E-UTRAN in NB-IoT mode has to be handled correctly by the UE.

7.3.5.4 Method of test

7.3.5.4.1 Initial conditions

For this test a NB-SS is required.

The NB-SS transmits on two BCCHs, with the following network parameters:

- TAI (MCC/MNC/TAC): 254/011/0001.

- Access control: unrestricted.

- TAI (MCC/MNC/TAC): 254/012/0001.

- Access control: unrestricted.

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

**EFUST (USIM Service Table)**

Logically: Local Phone Book available

User controlled PLMN selector available

Fixed dialling numbers available

Barred dialling numbers available

The GSM Access available

The Group Identifier level 1 and level 2 not available

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

Operator controlled PLMN selector available

EPS Mobility Management Information available

Allowed CSG Lists and corresponding indications not available

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 |
| Binary | xx1x xx11 | xxxx xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 | xxxx xx1x | xxxx xxxx | xxxx xxxx |
|  |  |  |  |  |  |  |  |  |
|  | B9 | B10 | B11 |  |  |  |  |  |
|  | xxxx xxxx | xxxx xxxx | xx01 xxxx |  |  |  |  |  |

The coding of EFUST shall conform with the capabilities of the USIM used.

**EFOPLMNwACT (OPLMN Selector)**

Logically: 1st PLMN: 254 012 (MCC MNC)

1st ACT E-UTRAN in NB-S1 mode

2nd PLMN: 254 011

2nd ACT E-UTRAN in NB-S1 mode

3rd PLMN: 254 002

3rd ACT: E-UTRAN

4th PLMN: 254 012

4th ACT: GSM

5th PLMN: 254 011

5th ACT: GSM

6th PLMN: 254 005

6th ACT: UTRAN

7th PLMN: 254 006

7th ACT: UTRAN

8th PLMN: 254 007

8th ACT: UTRAN

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B01 | B02 | B03 | B04 | B05 | B06 | B07 | B08 | B09 | B10 |
| Hex | 52 | 24 | 10 | 50 | 00 | 52 | 14 | 10 | 50 | 00 |
|  | B11 | B12 | B13 | B14 | B15 | B16 | B17 | B18 | B19 | B20 |
|  | 52 | 24 | 00 | 40 | 00 | 52 | 24 | 10 | 00 | 80 |
|  | B21 | B22 | B23 | B24 | B25 | B26 | B27 | B28 | B29 | B30 |
|  | 52 | 14 | 10 | 00 | 80 | 52 | 54 | 00 | 80 | 00 |
|  | B31 | B32 | B33 | B34 | B35 | B36 | B37 | B38 | B39 | B40 |
|  | 52 | 64 | 00 | 80 | 00 | 52 | 74 | 00 | 80 | 00 |

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

7.3.5.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest-NB* from the UE on the NB-IoT-cell related to the BCCH transmitting MCC/MNC 254/012, the NB-SS sends *RRCConnectionSetup-NB* to the UE, followed by *RRCConnectionSetupComplete-NB* sent by the UE to the NB-SS.

c) During registration and after receipt of a *AttachRequest* from the UE, the NB-SS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC): 254/012/ 0001

GUTI: "25401200010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the NB-SS sends *RRCConnectionRelease-NB*.

e) The UE is soft powered down.

7.3.5.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCConnectionRequest-NB* on the NB-IoT-cell related to the BCCH transmitting MCC/MNC 254/012 to the NB-SS.

2) After step b) the terminal shall send *AttachRequest* to the NB-SS.

3) After step c) the terminal shall respond with *AttachComplete* during registration.

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

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 25401200010266436587

Last visited registered TAI: 254/012/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 52 | 24 | 10 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 52 | 24 | 10 | 00 | 01 | 00 |  |  |  |  |

7.3.6 UE recognising the priority order of the User controlled PLMN selector over the Operator controlled PLMN selector list – E-UTRAN in NB-S1 mode

7.3.6.1 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 EFPLMNwACT.

7.3.6.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of UPLMNs first before the OPLMNs in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2.2;

- TS 31.102 [4], clauses 4.2.5, 4.2.53 and 5.1.1.2.

7.3.6.3 Test purpose

To verify that the User controlled PLMN with a lower priority (defined by its position in EFPLMNwACT) takes precedence over the OPLMN with a higher priority when the UE performs a network selection. Hereby the new coding for RAT  
E-UTRAN in NB-IoT mode has to be handled correctly by the UE.

7.3.6.4 Method of test

7.3.6.4.1 Initial conditions

For this test a NB-SS is required.

The NB-SS transmits on two BCCHs, with the following network parameters:

- TAI (MCC/MNC/TAC): 254/001/0001.

-- Access control: unrestricted.

- TAI (MCC/MNC/TAC): 244/010/0001.

- Access control: unrestricted.

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

**EFUST (USIM Service Table)**

Logically: Local Phone Book available

User controlled PLMN selector available

Fixed dialling numbers available

Barred dialling numbers available

The GSM Access available

The Group Identifier level 1 and level 2 not available

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

Operator controlled PLMN selector available

EPS Mobility Management Information available

Allowed CSG Lists and corresponding indications not available

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 |
| Binary | xx1x xx11 | xxxx xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 | xxxx xx1x | xxxx xxxx | xxxx xxxx |
|  |  |  |  |  |  |  |  |  |
|  | B9 | B10 | B11 |  |  |  |  |  |
|  | xxxx xxxx | xxxx xxxx | xx01 xxxx |  |  |  |  |  |

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

**EFPLMNwACT (User Controlled PLMN Selector with Access Technology)**

Logically: 1st PLMN: 244 081 (MCC MNC)

1st ACT: E-UTRAN

2nd PLMN: 244 081

2nd ACT: GSM

3rd PLMN: 244 083

3rd ACT: E-UTRAN

4th PLMN: 244 082

4th ACT: GSM

5th PLMN: 244 003

5th ACT: E-UTRAN

6th PLMN: 244 004

6th ACT: UTRAN

7th PLMN: 244 005

7th ACT: UTRAN

8th PLMN: 244 081

8th ACT: UTRAN

9th PLMN: 244 007

9th ACT: UTRAN

10th PLMN: 244 008

10th ACT: E-UTRAN

11th PLMN: 244 009

11th ACT: UTRAN

12th PLMN: 244 010

12th ACT: E-UTRAN in NB-S1 mode

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | B13 | B14 | B15 |
| Hex | 42 | 14 | 80 | 40 | 00 | 42 | 14 | 80 | 00 | 80 | 42 | 34 | 80 | 40 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B16 | B17 | B18 | B19 | B20 | B21 | B22 | B23 | B24 | B25 | B26 | B27 | B28 | B29 | B30 |
|  | 42 | 24 | 80 | 00 | 80 | 42 | 34 | 00 | 40 | 00 | 42 | 44 | 00 | 80 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B31 | B32 | B33 | B34 | B35 | B36 | B37 | B38 | B39 | B40 | B41 | B42 | B43 | B44 | B45 |
|  | 42 | 54 | 00 | 80 | 00 | 42 | 14 | 80 | 80 | 00 | 42 | 74 | 00 | 80 | 00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B46 | B47 | B48 | B49 | B50 | B51 | B52 | B53 | B54 | B55 | B56 | B57 | B58 | B59 | B60 |
|  | 42 | 84 | 00 | 40 | 00 | 42 | 94 | 00 | 80 | 00 | 42 | 04 | 10 | 50 | 00 |

**EFOPLMNwACT (Operator Controlled PLMN Selector with Access Technology)**

Logically: 1st PLMN: 254 001 (MCC MNC)

1st ACT: E-UTRAN in NB-S1 mode

2nd PLMN: 254 001

2nd ACT: GSM

3rd PLMN: 254 002

3rd ACT: E-UTRAN

4th PLMN: 254 003

4th ACT: E-UTRAN

5th PLMN: 254 004

5th ACT: UTRAN

6th PLMN: 254 005

6th ACT: UTRAN

7th PLMN: 254 006

7th ACT: UTRAN

8th PLMN: 254 007

8th ACT: UTRAN

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B01 | B02 | B03 | B04 | B05 | B06 | B07 | B08 | B09 | B10 |
| Hex | 52 | 14 | 00 | 50 | 00 | 52 | 14 | 00 | 00 | 80 |
|  | B11 | B12 | B13 | B14 | B15 | B16 | B17 | B18 | B19 | B20 |
|  | 52 | 24 | 00 | 40 | 00 | 52 | 34 | 00 | 40 | 00 |
|  | B21 | B22 | B23 | B24 | B25 | B26 | B27 | B28 | B29 | B30 |
|  | 52 | 44 | 00 | 80 | 00 | 52 | 54 | 00 | 80 | 00 |
|  | B31 | B32 | B33 | B34 | B35 | B36 | B37 | B38 | B39 | B40 |
|  | 52 | 64 | 00 | 80 | 00 | 52 | 74 | 00 | 80 | 00 |

7.3.6.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest-NB* from the UE on the NB-IoT-cell related to the BCCH transmitting MCC/MNC 244/010, the NB-SS sends *RRCConnectionSetup-NB* to the UE, followed by *RRCConnectionSetupComplete-NB* sent by the UE to the NB-SS.

c) During registration and after receipt of a *AttachRequest* from the UE, the NB-SS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC): 244/010/ 0001

GUTI: "24401000010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the NB-SS sends *RRCConnectionRelease-NB*.

e) The UE is soft powered down.

7.3.6.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCConnectionRequest-NB* on the NB-IoT-cell related to the BCCH transmitting MCC/MNC 244/010 to the NB-SS.

2) After step b) the terminal shall send *AttachRequest* to the NB-SS.

3) After step c) the terminal shall respond with *AttachComplete* during registration.

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

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 24401000010266436587

Last visited registered TAI: 244/010/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 42 | 04 | 10 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 42 | 04 | 10 | 00 | 01 | 00 |  |  |  |  |

7.3.7 UE recognising the priority order of the Operator controlled PLMN selector list using the ACT preference - E-UTRAN in NB-S1/ E-UTRAN in WB-S1 mode

7.3.7.1 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 EFOPLMNwACT. Update and deletion of OPLMNs shall not be possible by the subscriber by the use of the PIN.

7.3.7.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of OPLMNs in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2;

- TS 31.102 [4], clause 4.2.53, 4.2.5 and 5.1.1.2.

7.3.7.3 Test purpose

To verify that the OPLMN with the higher priority (defined by its position in EFOPLMNwACT) takes precedence over the OPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for RAT  
E-UTRAN in NB-IoT mode and E-UTRAN in WB-S1 mode has to be handled correctly by the UE.

7.3.7.4 Method of test

7.3.7.4.1 Initial conditions

For this test an E-USS and NB-SS is required.

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

- TAI (MCC/MNC/TAC): 254/012/0001.

- Access control: unrestricted.

The NB-SS transmits on BCCHs, with the following network parameters:

- TAI (MCC/MNC/TAC): 254/012/0001.

- Access control: unrestricted.

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

**EFUST (USIM Service Table)**

Logically: Local Phone Book available

User controlled PLMN selector available

Fixed dialling numbers available

Barred dialling numbers available

The GSM Access available

The Group Identifier level 1 and level 2 not available

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

Operator controlled PLMN selector available

EPS Mobility Management Information available

Allowed CSG Lists and corresponding indications not available

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 |
| Binary | xx1x xx11 | xxxx xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 | xxxx xx1x | xxxx xxxx | xxxx xxxx |
|  |  |  |  |  |  |  |  |  |
|  | B9 | B10 | B11 |  |  |  |  |  |
|  | xxxx xxxx | xxxx xxxx | xx01 xxxx |  |  |  |  |  |

The coding of EFUST shall conform with the capabilities of the USIM used.

**EFOPLMNwACT (OPLMN Selector)**

Logically: 1st PLMN: 254 012 (MCC MNC)

1st ACT E-UTRAN in NB-S1 mode

2nd PLMN: 254 012

2nd ACT E-UTRAN in WB-S1 mode

3rd PLMN: 254 002

3rd ACT: E-UTRAN

4th PLMN: 254 012

4th ACT: GSM

5th PLMN: 254 011

5th ACT: GSM

6th PLMN: 254 005

6th ACT: UTRAN

7th PLMN: 254 006

7th ACT: UTRAN

8th PLMN: 254 007

8th ACT: UTRAN

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B01 | B02 | B03 | B04 | B05 | B06 | B07 | B08 | B09 | B10 |
| Hex | 52 | 24 | 10 | 50 | 00 | 52 | 24 | 10 | 60 | 00 |
|  | B11 | B12 | B13 | B14 | B15 | B16 | B17 | B18 | B19 | B20 |
|  | 52 | 24 | 00 | 40 | 00 | 52 | 24 | 10 | 00 | 80 |
|  | B21 | B22 | B23 | B24 | B25 | B26 | B27 | B28 | B29 | B30 |
|  | 52 | 14 | 10 | 00 | 80 | 52 | 54 | 00 | 80 | 00 |
|  | B31 | B32 | B33 | B34 | B35 | B36 | B37 | B38 | B39 | B40 |
|  | 52 | 64 | 00 | 80 | 00 | 52 | 74 | 00 | 80 | 00 |

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

7.3.7.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest-NB* from the UE on the NB-IoT-cell related to the BCCH transmitting MCC/MNC 254/012, the NB-SS sends *RRCConnectionSetup-NB* to the UE, followed by *RRCConnectionSetupComplete-NB* sent by the UE to the NB-SS.

c) During registration and after receipt of a *AttachRequest* from the UE, the NB-SS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC): 254/012/ 0001

GUTI: "25401200010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the NB-SS sends *RRCConnectionRelease-NB*.

e) The UE is soft powered down.

7.3.7.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCConnectionRequest-NB* on the NB-IoT-cell related to the BCCH transmitting MCC/MNC 254/012 to the NB-SS.

2) After step b) the terminal shall send *AttachRequest* to the NB-SS.

3) After step c) the terminal shall respond with *AttachComplete* during registration.

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

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 25401200010266436587

Last visited registered TAI: 254/012/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 52 | 24 | 10 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 52 | 24 | 10 | 00 | 01 | 00 |  |  |  |  |

7.3.8 UE recognising the priority order of the Operator controlled PLMN selector list using the ACT preference - E-UTRAN in NB-S1 mode/ GSM

7.3.8.1 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 EFOPLMNwACT. Update and deletion of OPLMNs shall not be possible by the subscriber by the use of the PIN.

7.3.8.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of OPLMNs in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2;

- TS 31.102 [4], clause 4.2.53, 4.2.5 and 5.1.1.2.

7.3.8.3 Test purpose

To verify that the OPLMN with the higher priority (defined by its position in EFOPLMNwACT) takes precedence over the OPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for RAT  
E-UTRAN in NB-S1 mode has to be handled correctly by the UE.

7.3.8.4 Method of test

7.3.8.4.1 Initial conditions

For this test both a GSM SS and an NB-IoT NB-SS are needed.

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 244/083/0001.

- Access control: unrestricted.

The NB-SS transmits on the BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 244/083/0001.

- Access control: unrestricted.

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

**EFOPLMNwACT (Operator Controlled PLMN Selector with Access Technology)**

Logically: 1st PLMN: 254 001 (MCC MNC)

1st ACT: E-UTRAN

2nd PLMN: 254 001

2nd ACT: GSM

3rd PLMN: 244 083

3rd ACT: E-UTRAN in NB-S1 mode

4th PLMN: 244 083

4th ACT: GSM

5th PLMN: 254 004

5th ACT: UTRAN

6th PLMN: 254 005

6th ACT: UTRAN

7th PLMN: 254 006

7th ACT: UTRAN

8th PLMN: 254 007

8th ACT: UTRAN

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B01 | B02 | B03 | B04 | B05 | B06 | B07 | B08 | B09 | B10 |
| Hex | 52 | 14 | 00 | 40 | 00 | 52 | 14 | 00 | 00 | 80 |
|  | B11 | B12 | B13 | B14 | B15 | B16 | B17 | B18 | B19 | B20 |
|  | 42 | 34 | 80 | 50 | 00 | 42 | 34 | 80 | 00 | 80 |
|  | 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.

7.3.8.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest-NB* from the UE on the NB-IoT-cell related to the BCCH transmitting MCC/MNC 244/083, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete-NB* sent by the UE to the NB-SS.

c) During registration and after receipt of a *AttachRequest* from the UE, the NB-SS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC): 244/083/ 0001

GUTI: "24408300010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the NB-SS sends *RRCConnectionRelease-NB*.

e) The UE is soft powered down.

7.3.8.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCConnectionRequest-NB* on the NB-IoT-cell related to the BCCH transmitting MCC/MNC 244/083 to the NB-SS.

2) After step b) the terminal shall send *AttachRequest* to the NB-SS.

3) After step c) the terminal shall respond with *AttachComplete* during registration.

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

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 24408300010266436587

Last visited registered TAI: 244/083/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 42 | 34 | 80 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 42 | 34 | 80 | 00 | 01 | 00 |  |  |  |  |

7.3.9 UE recognising the priority order of the Operator controlled PLMN selector list using the ACT preference - E-UTRAN in WB-S1 mode/GSM

7.3.9.1 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 EFOPLMNwACT. Update and deletion of OPLMNs shall not be possible by the subscriber by the use of the PIN.

7.3.9.2 Conformance requirement

When registering onto a VPLMN the UE shall take into account the priority of OPLMNs in the preferred list on the USIM.

- TS 22.011 [6], clause 3.2.2;

- TS 31.102 [4], clause 4.2.53, 4.2.5 and 5.1.1.2.

7.3.9.3 Test purpose

To verify that the OPLMN with the higher priority (defined by its position in EFOPLMNwACT) takes precedence over the OPLMN with the lower priority when the UE performs a network selection. Hereby the new coding for RAT  
E-UTRAN in WB-S1 mode has to be handled correctly by the UE.

7.3.9.4 Method of test

7.3.9.4.1 Initial conditions

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

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 244/083/0001.

- Access control: unrestricted.

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

- TAI (MCC/MNC/TAC): 244/083/0001.

- Access control: unrestricted.

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

**EFOPLMNwACT (Operator Controlled PLMN Selector with Access Technology)**

Logically: 1st PLMN: 254 001 (MCC MNC)

1st ACT: E-UTRAN

2nd PLMN: 254 001

2nd ACT: GSM

3rd PLMN: 244 083

3rd ACT: E-UTRAN in WB-S1 mode

4th PLMN: 244 083

4th ACT: GSM

5th PLMN: 254 004

5th ACT: UTRAN

6th PLMN: 254 005

6th ACT: UTRAN

7th PLMN: 254 006

7th ACT: UTRAN

8th PLMN: 254 007

8th ACT: UTRAN

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B01 | B02 | B03 | B04 | B05 | B06 | B07 | B08 | B09 | B10 |
| Hex | 52 | 14 | 00 | 40 | 00 | 52 | 14 | 00 | 00 | 80 |
|  | B11 | B12 | B13 | B14 | B15 | B16 | B17 | B18 | B19 | B20 |
|  | 42 | 34 | 80 | 60 | 00 | 42 | 34 | 80 | 00 | 80 |
|  | 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.

7.3.9.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/083, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

c) During registration and after receipt of a *AttachRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC): 244/083/ 0001

GUTI: "24408300010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*.

e) The UE is soft powered down.

7.3.9.5 Acceptance criteria

1.) After step a) the UE shall send a *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/083 to the E-USS.

2) After step b) the terminal shall send *AttachRequest* to the E-USS.

3) After step c) the terminal shall respond with *AttachComplete* during registration.

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

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 24408300010266436587

Last visited registered TAI: 244/083/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 42 | 34 | 80 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 42 | 34 | 80 | 00 | 01 | 00 |  |  |  |  |

## 7.4 Higher priority PLMN search handling

### 7.4.1 UE recognising the search period of the Higher priority PLMN

#### 7.4.1.1 Definition and applicability

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

The registration attempts initiated by the terminal accessing UTRAN depends on terminal's capabilities and can be one of the following:

I. registration procedures for Ues supporting CS or

II. registration procedures for Ues supporting PS or

III. registration procedures for Ues supporting CS/PS

#### 7.4.1.2 Conformance requirement

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

- TS 22.011 [6], clauses 3.2.2 and 3.2.2.5.

- TS 24.008 [16], clause 4.7.5

#### 7.4.1.3 Test purpose

To verify that the Higher priority PLMN timer is read and the Higher priority PLMN takes precedence over the VPLMN in which the UE is currently registered in.

#### 7.4.1.4 Method of test

##### 7.4.1.4.1 Initial conditions

For this test an UTRAN USS (in case of a Terminal accessing UTRAN) or a SS (in case of Terminal accessing a GERAN) is needed.

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 244/082/0001.

- RAI (MCC/MNC/LAC/RAC): 244/082/0001/05 (only for UTRAN cell).

- Access control: unrestricted.

After the registration of UE the USS (in case of a Terminal accessing UTRAN) or a SS (in case of Terminal accessing a GERAN) transmits on a second BCCH, with the following network parameters:

- Attach/detach: disabled.

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

- RAI (MCC/MNC/LAC/RAC): 244/081/0001/05. (only for UTRAN cell)

- Access control: unrestricted.

NOTE: In case of a GERAN no packet system information is transmitted

The default UICC shall be used with the following exception:

**EFHPPLMN (Higher Priority PLMN Search period)**

Logically: set to 6 minutes

|  |  |
| --- | --- |
| Coding: | B1 |
| Hex | 01 |

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

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

##### 7.4.1.4.2 Procedure

Expected sequence A:

a) The UE shall be powered on.

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

c) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT to the UE with the following values:

LAI (MCC/MNC/LAC): 244/082/0001

TMSI: "34567890"

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ATTACH ACCEPT with the following values to the UE:

RAI (MCC/MNC/LAC/RAC): 244/082/0001/05

P-TMSI: "34567890"

P-TMSI signature value: "AB1234"

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT and/or ATTACH ACCEPT with some of the following values to the UE:

LAI (MCC/MNC/LAC): 244/082/0001

TMSI: "34567890"

RAI (MCC/MNC/LAC/RAC) 244/082/0001/05

P-TMSI "34567890"

P-TMSI signature value "AB1234"

d) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. After receipt of a TMSI REALLOCATION COMPLETE from the UE during registration on CS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

II. After receipt of a ATTACH COMPLETE from the UE during registration on PS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. After receipt of a TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE from the UE during registration on CS/PS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

e) The USS starts to send on the second BCCH with the MCC/MNC 244/081. An internal timer shall start to run.

f) After receipt on the cell related to the BCCH transmitting MCC/MNC 244/081 of a RRC CONNECTION REQUEST from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS. The internal timer is stopped.

g) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT to the UE with following values:

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

TMSI: "12345678"

II. During registration on PS and after receipt of a ROUTING AREA UPDATE REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ROUTING AREA UPDATE ACCEPT with the following values to the UE:

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

P-TMSI "12345678"

P-TMSI signature value "AB1234"

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ROUTING AREA UPDATE REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT and/or ROUTING AREA UPDATE ACCEPT with some of the following values to the UE:

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

TMSI: "12345678"

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

P-TMSI "12345678"

P-TMSI signature value "AB1234"

h) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. After receipt of a TMSI REALLOCATION COMPLETE from the UE during registration on CS, the USS sends RRC CONNECTION RELEASE to the UE followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or

II. After receipt of a ROUTING AREA UPDATE COMPLETE from the UE during registration on PS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. After receipt of a TMSI REALLOCATION COMPLETE and/or ROUTING AREA UPDATE COMPLETE from the UE during registration on CS/PS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

i) The UE is soft powered down.

Expected sequence B:

a) The UE shall be powered on.

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

c) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC/LAC): 244/082/0001

TMSI: "34567890"

to the UE.

d) After receipt of a TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

e) The SS starts to send on the second BCCH with the MCC/MNC 244/081. An internal timer shall start to run.

f) After receipt of a CHANNEL REQUEST from the UE, the SS sends IMMEDIATE ASSIGNMENT to the UE. The internal timer is stopped.

g) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

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

TMSI: "12345678"

to the UE.

h) After receipt of a TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

i) The UE is soft powered down.

#### 7.4.1.5 Acceptance criteria

1) After step e) the UE accessing a GERAN shall send CHANNEL REQUEST on the cell related to the BCCH transmittingMCC/MNC 244/081 to the SS and the UE accessing UTRAN shall send an RRC CONNECTION REQUEST on the cell related to the BCCH transmitting MCC/MNC 244/081 to the USS

2) After.step e) the UE accessing a GERAN shall send LOCATION UPDATING REQUEST to the SS and the UE accessing UTRAN shall send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ROUTING AREA UPDATE REQUEST during registration on PS or

III. LOCATION UPDATING REQUEST and/or ROUTING AREA UPDATE REQUEST to the USS during registration on CS/PS.

3) After step g) the UE accessing a GERAN shall respond with TMSI REALLOCATION COMPLETE and the UE accessing UTRAN shall respond with

I. TMSI REALLOCATION COMPLETE to the USS during registration on CS or

II. ROUTING AREA UPDATE COMPLETE during registration on PS or

III. TMSI REALLOCATION COMPLETE and/or ROUTING AREA UPDATE COMPLETE to the USS during registration on CS/PS.

4) The value of the internal timer shall not exceed 6 minutes.

NOTE: To take the systems processing time into account, the value of the internal timer may allowed to be a guard time of 10 % greater than the required 6 minutes.

5) After step i) the USIM shall contain the following values:

For UEs accessing GERAN and UEs accessing UTRAN and supporting (CS and PS) or (CS only):

**EFLOCI (Location Information)**

Logically: LAI-MCC: 244

LAI-MNC: 081

TMSI: "12345678"

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 12 | 34 | 56 | 78 | 42 | 14 | 80 | xx | xx | xx | 00 |

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

**EFPSLOCI (Location Information)**

Logically: RAI-MCC: 244

RAI-MNC: 081

P-TMSI: "12345678"

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 12 | 34 | 56 | 78 | xx | xx | xx | 42 | 14 | 80 | xx |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Coding: | B12 | B13 | B14 |  |  |  |  |  |  |  |  |
| Hex | xx | xx | 00 |  |  |  |  |  |  |  |  |

### 7.4.2 GSM/UmTS dual mode UEs recognising the search period of the Higher priority PLMN

#### 7.4.2.1 Definition and applicability

The Higher priority PLMN handling is defined in TS 22.011 [6] . The Higher priority PLMN search period gives the time interval between searches for a higher priority PLMN.

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

I. registration procedures for UEs supporting CS or

II. registration procedures for UEs supporting PS or

III. registration procedures for UEs supporting CS/PS

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

#### 7.4.2.2 Conformance requirement

After registered onto a VPLMN the UE shall take into account the Higher priority PLMN search period timer and the priority order of the Higher priority PLMNs in the preferred lists on the USIM including the Access Technology Identifier.

- TS 22.011 [6], clauses 3.2.2 and 3.2.2.5.

#### 7.4.2.3 Test purpose

To verify that the Higher priority PLMN timer is read and the Higher priority PLMN with the higher priority (defined according to the selection order in TS 22.011 [6]) takes precedence over the VPLMN in which the UE is currently registered in.

#### 7.4.2.4 Method of test

##### 7.4.2.4.1 Initial conditions

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

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 244/082/0001.

- Access control: unrestricted.

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

- Attach/detach: disabled.

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

- Access control: unrestricted.

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

- Attach/detach: disabled.

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

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

- Access control: unrestricted.

The default UICC is used with the following exception:

**EFHPLMNwACT (HPLMN selector with Access Technology)**

Logically: Set to MCC 244 and MNC 081

Set to UTRAN

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 |
| Hex | 42 | 14 | 80 | 80 | 00 |

**EFHPPLMN (Higher Priority HPLMN Search period)**

Logically: set to 6 minutes

|  |  |
| --- | --- |
| Coding: | B1 |
| Hex | 01 |

**EFUST (USIM Service Table)**

Logically: Local Phone Book available

User controlled PLMN selector available

Fixed dialling numbers available

Barred dialling numbers available

The GSM Access available

The Group Identifier level 1 and level 2 not available

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

HPLMN selector with access technology available

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 |
| binary | xx1x xx11 | xxxx xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 | xxxx x1xx |

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

##### 7.4.2.4.2 Procedure

a) The UE is powered on.

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

c) After receipt of a LOCATION UPDATING REQUEST from the UE, the SS sends LOCATION UPDATING ACCEPT with:

LAI (MCC/MNC/LAC): 244/082/0001

TMSI: "34567890"

to the UE.

d) After receipt of a TMSI REALLOCATION COMPLETE from the UE, the SS sends CHANNEL RELEASE to the UE.

e) The SS starts to send on the second BCCH with the MCC/MNC 244/081 and the USS starts to send with the Same MCC/MNC. An internal timer shall start to run.

f) After receipt of a RRC CONNECTION REQUEST on the UTRAN-cell related to the BCCH transmitting MCC/MNC 244/081 from the UE, the USS sends RRC CONNECTION SETUP to the UE, followed by RRC CONNECTION SETUP COMPLETE sent by the UE to the USS. The internal timer is stopped.

g) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. During registration on CS and after receipt of a LOCATION UPDATING REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT with the following values to the UE:

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

TMSI: "12345678"

II. During registration on PS and after receipt of a ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends ATTACH ACCEPT with the following values to the UE:

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

P-TMSI "12345678"

P-TMSI signature value "AB1234"

III. During registration on CS/PS and after receipt of a LOCATION UPDATING REQUEST and/or ATTACH REQUEST from the UE, the USS initiates authentication, starts integrity by using the security procedure and sends LOCATION UPDATING ACCEPT and/or ATTACH ACCEPT with some of the following values to the UE:

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

TMSI: "12345678"

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

P-TMSI "12345678"

P-TMSI signature value "AB1234"

h) Depending on which domain the UE is going to be registered on, one of the following sequences will be passed through:

I. After receipt of a TMSI REALLOCATION COMPLETE from the UE during registration on CS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or

II. After receipt of a ATTACH COMPLETE from the UE during registration on PS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS or.

III. After receipt of a TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE from the UE during registration on CS/PS, the USS sends RRC CONNECTION RELEASE to the UE, followed by RRC CONNECTION RELEASE COMPLETE sent by the UE to the USS.

i) The UE is soft powered down.

#### 7.4.2.5 Acceptance criteria

1) After step e) the UE shall send an RRC CONNECTION REQUEST on the UTRAN-cell related to the BCCH transmitting MCC/MNC 244/081 to the USS.

2) After step e) the UE shall send

I. LOCATION UPDATING REQUEST to the USS during registration on CS or

II. ATTACH REQUEST during registration on PS or

III. LOCATION UPDATING REQUEST and/or ATTACH REQUEST to the USS during registration on CS/PS.

3) After step g) the UE shall respond with

I. TMSI REALLOCATION COMPLETE during registration on CS or

II. ATTACH COMPLETE during registration on PS or

III. TMSI REALLOCATION COMPLETE and/or ATTACH COMPLETE to the USS during registration on CS/PS.

4) The value of the internal timer shall not exceed 6 minutes.

NOTE: To take the systems processing time into account, the value of the internal timer may allowed to be a guard time of 10 % greater than the required 6 minutes.

5) After step i) the USIM shall contain the following values:

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

**EFLOCI (Location Information)**

Logically: LAI-MCC: 244

LAI-MNC: 081

TMSI: "12345678"

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 12 | 34 | 56 | 78 | 42 | 14 | 80 | xx | xx | xx | 00 |

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

**EFPSLOCI (Location Information)**

Logically: RAI-MCC: 244

RAI-MNC: 081

P-TMSI: "12345678"

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 12 | 34 | 56 | 78 | xx | xx | xx | 42 | 14 | 80 | xx |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Coding: | B12 | B13 | B14 |  |  |  |  |  |  |  |  |
| Hex | xx | xx | 00 |  |  |  |  |  |  |  |  |

### 7.4.3 UE recognising the search period of the Higher priority PLMN – E-UTRAN

#### 7.4.3.1 Definition and applicability

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

#### 7.4.3.2 Conformance requirement

After registered onto a VPLMN the UE shall take into account the Higher priority PLMN search period timer and the priority order of the Higher priority PLMNs in the preferred lists on the USIM.

- TS 22.011 [6], clauses 3.2.2 and 3.2.2.5.

- TS 24.301 [26], clause 5.5.3.2

- TS 31.102 [4], clause 4.2.6.

#### 7.4.3.3 Test purpose

To verify that the Higher priority PLMN timer is read and the Higher priority PLMN takes precedence over the VPLMN in which the UE is currently registered in. Hereby the new coding for RAT E-UTRAN/NB-IoT has to be handled correctly by the UE.

#### 7.4.3.4 Method of test

##### 7.4.3.4.1 Initial conditions

For this test an E-USS/NB-IoT is required.

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

-- TAI (MCC/MNC/TAC): 244/008/0001.

- Access control: unrestricted.

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

- TAI (MCC/MNC/TAC): 244/083/0001.

-- Access control: unrestricted.

The NB-SS transmits on BCCH with the following network parameters:

-- TAI (MCC/MNC/TAC): 244/008/0001.

- Access control: unrestricted.

After the registration of UE the NB-SS transmits on a second BCCH with the following network parameters:

- TAI (MCC/MNC/TAC): 244/083/0001.

-- Access control: unrestricted.

The default E-UTRAN UICC shall be used with the following exception:

**EFHPPLMN (Higher Priority PLMN Search period)**

Logically: For an MS that does not only support any of the following or a combination of NB-S1 mode or GERAN EC-GSM-IoT or Category M1 of E-UTRAN enhanced-MTC mode, T is 6 minutes. Otherwise T is 2 hours.

|  |  |
| --- | --- |
| Coding: | B1 |
| Hex | 01 |

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

##### 7.4.3.4.2 Procedure

a) The UE is powered on.

b) After receipt of an *RRCConnectionRequest/RRCConnectionRequest-NB* from the UE on the E-UTRAN-cell/NB-IoT-cell related to the BCCH transmitting MCC/MNC 244/008, the E-USS/NB-SS sends *RRCConnectionSetup/RRCConnectionSetup-NB* to the UE, followed by *RRCConnectionSetupComplete/ RRCConnectionSetupComplete-NB* sent by the UE to the E-USS/NB-SS.

c) During registration and after receipt of a *AttachRequest* from the UE, the E-USS/NB-SS initiates authentication, starts integrity by using the security procedure and sends *AttachAccept* with to the UE:

TAI (MCC/MNC/TAC): 244/008/ 0001

GUTI: "24400800010266436587"

d) After receipt of the *AttachComplete* during registration from the UE, the E-USS/NB-SS sends *RRCConnectionRelease/RRCConnectionRelease-NB*.

e) The E-USS/NB-SS starts to send on the second BCCH with the MCC/MNC 244/083. An internal timer shall start to run.

f) After receipt of an *RRCConnectionRequest/RRCConnectionRequest-NB* from the UE on the E-UTRAN-cell/NB-IoT-cell related to the BCCH transmitting MCC/MNC 244/083, the E-USS/NB-SS sends *RRCConnectionSetup/RRCConnectionSetup-NB* to the UE, followed by *RRCConnectionSetupComplete/RRCConnectionSetupComplete-NB* sent by the UE to the E-USS/NB-SS.

g) During registration and after receipt of a *TrackingAreaUpdateRequest* from the UE, the E-USS/NB-SS initiates authentication, starts integrity by using the security procedure and sends *TrackingAreaUpdateAccept* with to the UE:

TAI (MCC/MNC/TAC): 244/083/ 0001

GUTI: "24408300010266436587"

h) After receipt of the *TrackingAreaUpdatComplete* during registration from the UE, the E-USS/NB-SS sends *RRCConnectionRelease/RRCConnectionRelease-NB*.

i) The UE is soft powered down.

#### 7.4.3.5 Acceptance criteria

1.) After step e) the UE shall send a *RRCConnectionRequest/RRCConnectionRequest-NB* on the E-UTRAN-cell/NB-IoT-cell related to the BCCH transmitting MCC/MNC 244/083 to the E-USS/NB-SS.

2) After step f) the terminal shall send *TrackingAreaUpdateReques* to the E-USS/NB-SS.

3) After step g) the terminal shall respond with *TrackingAreaUpdatComplete* during registration.

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

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 24408300010266436587

Last visited registered TAI: 244/083/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 42 | 34 | 80 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 42 | 34 | 80 | 00 | 01 | 00 |  |  |  |  |

### 7.4.4 E-UTRAn/EPC capable UEs recognising the search period of the Higher priority PLMN – GSM/E-UTRAN

#### 7.4.4.1 Definition and applicability

The Higher priority PLMN handling is defined in TS 22.011 [6]. The Higher priority PLMN search period gives the time interval between searches for a higher priority PLMN.

To avoid a duplication of tests, this test supersedes the previous test case (7.4.3).

#### 7.4.4.2 Conformance requirement

After registered onto a VPLMN the UE shall take into account the Higher priority PLMN search period timer and the priority order of the Higher priority PLMNs in the preferred lists on the USIM including the Access Technology Identifier.

- TS 22.011 [6], clauses 3.2.2 and 3.2.2.5.

#### 7.4.4.3 Test purpose

To verify that the Higher priority PLMN timer is read and the Higher priority PLMN with the higher priority (defined according to the selection order in TS 22.011 [6]) takes precedence over the VPLMN in which the UE is currently registered in. Hereby the new coding for RAT E-UTRAN has to be handled correctly by the UE.

#### 7.4.4.4 Method of test

##### 7.4.4.4.1 Initial conditions

For this test both a GSM SS and an E-UTRAN E-USS are needed.

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 244/082/0001.

- RAI (MCC/MNC/LAC/RAC): 244/082/0001/05.

- Access control: unrestricted.

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

- Attach/detach: disabled.

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

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

- Access control: unrestricted.

At the same time as the SS sends on a second BCCH, the E- USS transmits on BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 244/081/0001.

-- Access control: unrestricted.

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

**EFHPLMNwACT (HPLMN selector with Access Technology)**

Logically: Set to MCC 244 and MNC 081

Set to

E-UTRAN

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 |
| Hex | 42 | 14 | 80 | 40 | 00 |

**EFHPPLMN (Higher Priority HPLMN Search period)**

Logically: set to 6minutes

|  |  |
| --- | --- |
| Coding: | B1 |
| Hex | 01 |

**EFUST (USIM Service Table)**

Logically: Local Phone Book available

User controlled PLMN selector available

Fixed dialling numbers available

Barred dialling numbers available

The GSM Access available

The Group Identifier level 1 and level 2 not available

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

HPLMN selector with access technology available

EPS Mobility Management Information available

Allowed CSG Lists and corresponding indications not available

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 |
| Binary | xx1x xx11 | xxxx xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 | xxxx x1xx | xxxx xxxx | xxxx xxxx |
|  |  |  |  |  |  |  |  |  |
|  | B9 | B10 | B11 |  |  |  |  |  |
|  | xxxx xxxx | xxxx xxxx | xx01 xxxx |  |  |  |  |  |

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

##### 7.4.4.4.2 Procedure

a) The UE is powered on.

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

c) After receipt of an ATTACH REQUEST from the UE, the SS sends ATTACH ACCEPT with:

RAI (MCC/MNC/LAC/RAC): 244/082/0001/05

TMSI: "34567890"

to the UE.

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

e) The SS starts to send on the second BCCH with the MCC/MNC 244/081 and the E-USS starts to send with the Same MCC/MNC. An internal timer shall start to run.

f) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/081, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

g) During registration and after receipt of a *TrackingAreaUpdateRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *TrackingAreaUpdateAccept* with to the UE:

TAI (MCC/MNC/TAC): 244/081/ 0001

GUTI: "24408100010266436587"

h) After receipt of the *TrackingAreaUpdatComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*.

i) The UE is soft powered down.

#### 7.4.4.5 Acceptance criteria

1.) After step e) the UE shall send a *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/081 to the e-USS.

2) After step f) the terminal shall send *TrackingAreaUpdateReques* to the E-USS.

3) After step g) the terminal shall respond with *TrackingAreaUpdatComplete* during registration.

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

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 24408100010266436587

Last visited registered TAI: 244/081/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 42 | 14 | 80 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 42 | 14 | 80 | 00 | 01 | 00 |  |  |  |  |

### 7.4.5 E-UTRAn/EPC capable UEs recognising the search period of the Higher priority PLMN – UTRAN/E-UTRAN

#### 7.4.5.1 Definition and applicability

The Higher priority PLMN list gives in priority order the Higher priority PLMN on which the UE shall register first. The Radio Access Technology identifier defines the Radio network in which the UE shall register. The list is stored on the USIM in the EFHPLMNwACT. The Higher priority PLMN search period gives the time interval in which the UE shall search for a possible Higher priority PLMN registration.

To avoid a duplication of tests, this test supersedes test 7.4.x.

#### 7.4.5.2 Conformance requirement

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

- TS 22.011 [6], clauses 3.2.2 and 3.2.2.5.

#### 7.4.5.3 Test purpose

To verify that the Higher priority PLMN timer is read and the Higher priority PLMN with the higher priority (defined by its position in EFHPLMNwACT) takes precedence over the VPLMN in which the UE is currently registered in. Hereby the new coding for RAT E-UTRAN has to be handled correctly by the UE.

#### 7.4.5.4 Method of test

##### 7.4.5.4.1 Initial conditions

For this test both a UTRAN USS and an E-UTRAN E-USS are needed.

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

- Attach/detach: disabled.

- LAI (MCC/MNC/LAC): 244/009/0001.

- RAI (MCC/MNC/LAC/RAC): 244/009/0001/05.

- Access control: unrestricted.

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

- Attach/detach: disabled.

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

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

- Access control: unrestricted.

At the same time as the SS sends on a second BCCH, the E- USS transmits on BCCH, with the following network parameters:

- TAI (MCC/MNC/TAC): 244/081/0001.

-- Access control: unrestricted.

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

**EFHPLMNwACT (HPLMN selector with Access Technology)**

Logically: Set to MCC 244 and MNC 081

Set to

E-UTRAN

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 |
| Hex | 42 | 14 | 80 | 40 | 00 |

**EFHPPLMN (Higher Priority HPLMN Search period)**

Logically: set to 6minutes

|  |  |
| --- | --- |
| Coding: | B1 |
| Hex | 01 |

**EFUST (USIM Service Table)**

Logically: Local Phone Book available

User controlled PLMN selector available

Fixed dialling numbers available

Barred dialling numbers available

The GSM Access available

The Group Identifier level 1 and level 2 not available

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

HPLMN selector with access technology available

EPS Mobility Management Information available

Allowed CSG Lists and corresponding indications not available

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 |
| Binary | xx1x xx11 | xxxx xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 | xxxx x1xx | xxxx xxxx | xxxx xxxx |
|  |  |  |  |  |  |  |  |  |
|  | B9 | B10 | B11 |  |  |  |  |  |
|  | xxxx xxxx | xxxx xxxx | xx01 xxxx |  |  |  |  |  |

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

##### 7.4.5.4.2 Procedure

a) The UE is powered on.

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

c) After receipt of an ATTACH REQUEST from the UE, the SS sends ATTACH ACCEPT with:

RAI (MCC/MNC/LAC/RAC): 244/009/0001/05

TMSI: "34567890"

to the UE.

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

e) TheUSS starts to send on the second BCCH with the MCC/MNC 244/081 and the E-USS starts to send with the Same MCC/MNC. An internal timer shall start to run.

f) After receipt of an *RRCConnectionRequest* from the UE on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/081, the E-USS sends *RRCConnectionSetup* to the UE, followed by *RRCConnectionSetupComplete* sent by the UE to the E-USS.

g) During registration and after receipt of a *TrackingAreaUpdateRequest* from the UE, the E-USS initiates authentication, starts integrity by using the security procedure and sends *TrackingAreaUpdateAccept* with to the UE:

TAI (MCC/MNC/TAC): 244/081/ 0001

GUTI: "24408100010266436587"

h) After receipt of the *TrackingAreaUpdatComplete* during registration from the UE, the E-USS sends *RRCConnectionRelease*.

i) The UE is soft powered down.

#### 7.4.5.5 Acceptance criteria

1.) After step e) the UE shall send a *RRCConnectionRequest* on the E-UTRAN-cell related to the BCCH transmitting MCC/MNC 244/081 to the e-USS.

2) After step f) the terminal shall send *TrackingAreaUpdateReques* to the E-USS.

3) After step g) the terminal shall respond with *TrackingAreaUpdatComplete* during registration.

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

**EFEPSLOCI (EPS Information)**

Logically: GUTI: 24408100010266436587

Last visited registered TAI: 244/081/0001

EPS update status: updated

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 |
| Hex | 0B | F6 | 42 | 14 | 80 | 00 | 01 | 02 | 66 | 43 | 65 |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B12 | B13 | B14 | B15 | B16 | B17 | B18 |  |  |  |  |
|  | 87 | 42 | 14 | 80 | 00 | 01 | 00 |  |  |  |  |

### 7.4.6 UE recognising Multiplier Coefficient for Higher Priority PLMN search - satellite-NG-RAN

#### 7.4.6.1 Definition and applicability

The Multiplier Coefficient for Higher Priority PLMN search is the multiplier coefficient take with the time interval configured in EFHPPLMN to adjust the time interval for higher priority PLMN search. Higher priority PLMN list gives in priority order the Higher priority PLMN on which the UE shall register first.

#### 7.4.6.2 Conformance requirement

After registered onto a VPLMN the UE shall take into account the Higher priority PLMN search period timer multiplied by the Multiplier Coefficient for Higher Priority PLMN search and the priority order of the Higher priority PLMNs in the preferred lists on the USIM.

- TS 22.011 [6], clauses 3.2.2 and 3.2.2.5.

- TS 24.501 [42], clause 5.5.1.2.4.

- TS 23.122 [31], clause 4.4.3.3.1.

- TS 31.102 [4], clause 4.2.6, 4.2.8, and 4.4.11.20.

#### 7.4.6.3 Test purpose

To verify that the Higher priority PLMN timer is read.

To verify that the Multiplier Coefficient for Higher Priority PLMN search is read,

Upon time interval between two searches adjusted with the mulpiplier coefficient, to verify that the Higher priority PLMN takes precedence over the VPLMN in which the UE is currently registered in.

Hereby the new coding for NG-RAN satellite access has to be handled correctly by the UE.

#### 7.4.6.4 Method of test

##### 7.4.6.4.1 Initial conditions

For this test a SAT-NG-SS is required.

The SAT-NG-SS transmits on BCCH with the following network parameters:

-- TAI (MCC/MNC/TAC): 244/008/000001.

- Access control: unrestricted.

After the registration of UE the SAT-NG-SS transmits on a second BCCH with the following network parameters:

- TAI (MCC/MNC/TAC): 244/083/000001.

-- Access control: unrestricted.

The default 5G-NR UICC supporting Rel-17 features is used with the following exception:

**EFHPLMNwACT (HPLMN selector with Access Technology)**

Logically: Set to MCC 244 and MNC 083

Set to satellite NG-RAN

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 |
| Hex | 42 | 34 | 80 | 04 | 00 |

**EFHPPLMN (Higher Priority HPLMN Search period)**

Logically: set to 6 minutes

|  |  |
| --- | --- |
| Coding: | B1 |
| Hex | 01 |

**EFMCHPPLMN (Multiplier Coefficient for Higher Priority PLMN search)**

Logically: set to 2

|  |  |
| --- | --- |
| Coding: | B1 |
| Hex | 02 |

**EFUST (USIM Service Table)**

Logically:

|  |  |  |  |
| --- | --- | --- | --- |
| Service n°43: |  | HPLMN selector with access technology | available |
| Service n°144: |  | Multiplier Coefficient for Higher Priority PLMN search via NG-RAN satellite access | available |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coding:** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| Binary: | xxxx xxxx | xxxx xxxx | xxxx xxxx | xxxx xxxx | xxxx xxxx | xxxx x1xx | xxxx xxxx | xxxx xxxx |
|  | **B9** | **B10** | **B11** | **…** | **B16** | **B17** | **B18** | **B19** |
|  | xxxx xxxx | xxxx xxxx | xxxx xxxx | ... | xxxx xxxx | xxxx xxxx | 1xxx xxxx | xxxx xxxx |

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

##### 7.4.6.4.2 Procedure

a) The UE is powered on.

b) After receipt of a *RRCRequest* from the UE on the NG-RAN-cell related to the BCCH transmitting MCC/MNC 244/008, the NG-SS sends *RRCSetup* to the UE, followed by *RRCSetupComplete* sent by the UE to the NG-SS.

c) During registration and after receipt of a REGISTRATION REQUEST from the UE, the NG-SS initiates authentication, starts integrity by using the security procedure and sends REGISTRATION ACCEPT to the UE with:

TAI (MCC/MNC/TAC): 244/008/ 000001

5G-GUTI: "24400800010266436587"

d) After receipt of the REGISTRATION COMPLETE during registration from the UE, the NG-SS sends *RRCRelease*.

e) The NG-SS starts to send on the second BCCH with the MCC/MNC 244/083. An internal timer shall start to run.

f) After receipt of an *RRCRequest* from the UE on the NG-RAN-cell related to the BCCH transmitting MCC/MNC 244/083, the NG-SS sends *RRCSetup*  to the UE, followed by *RRCSetupComplete* sent by the UE to the NG-SS. The internal timer is stopped.

g) During registration and after receipt of a REGISTRATION REQUEST from the UE, the NG-SS initiates authentication, starts integrity by using the security procedure and sends REGISTRATION ACCEPT to the UE with:

TAI (MCC/MNC/TAC): 244/083/ 000001

5G-GUTI: "24408300010266436587"

h) The UE is soft powered down.

#### 7.4.6.5 Acceptance criteria

1) After step e) the UE shall send a *RRCRequest* on the satellite NG-RAN-cell related to the BCCH transmitting MCC/MNC 244/083 to the SAT-NG-SS.

2) The value of the internal timer shall exceed 6 minutes and not exceed 12 minutes.

NOTE: To take the systems processing time into account, the value of the internal timer may allow to be a guard time of 10 % greater than the required 12 minutes.

3) After step h) the USIM shall contain the following values:

**EF**5GS3GPPLOCI **(5GS 3GPP location information)**

Logically: 5G-GUTI: 24408300010266436587

Last visited registered TAI in 5GS for 3GPP access: 244/083/000001

5GS update status for 3GPP access: 5U1 UPDATED

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| Hex | 00 | 0B | F2 | 42 | 34 | 80 | 00 | 01 |
|  | **B9** | **B10** | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** |
|  | 02 | 66 | 43 | 65 | 87 | 42 | 34 | 80 |
|  | **B17** | **B18** | **B19** | **B20** |  |  |  |  |
|  | 00 | 00 | 01 | 00 |  |  |  |  |

### 7.4.7 UE recognising the search period of the Higher priority PLMN – NG-RAN

#### 7.4.7.1 Definition and applicability

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

#### 7.4.7.2 Conformance requirement

After registered onto a VPLMN the UE shall take into account the Higher priority PLMN search period timer and the priority order of the Higher priority PLMNs in the preferred lists on the USIM.

- TS 22.011 [6], clauses 3.2.2 and 3.2.2.5.

- TS 24.501 [42], clause 5.5.1.2.4.

- TS 31.102 [4], clause 4.2.6.

#### 7.4.7.3 Test purpose

To verify that the Higher priority PLMN timer is read and the Higher priority PLMN takes precedence over the VPLMN in which the UE is currently registered in. Hereby the new coding for NG-RAN has to be handled correctly by the UE.

#### 7.4.7.4 Method of test

##### 7.4.7.4.1 Initial conditions

For this test a NG-SS is required.

The NG-SS transmits on BCCH with the following network parameters:

-- TAI (MCC/MNC/TAC): 244/008/000001.

- Access control: unrestricted.

After the registration of UE the NG-SS transmits on a second BCCH with the following network parameters:

- TAI (MCC/MNC/TAC): 244/083/000001.

-- Access control: unrestricted.

The default 5G-NR UICC is used with the following exception:

**EFHPLMNwACT (HPLMN selector with Access Technology)**

Logically: Set to MCC 244 and MNC 083

Set to NG-RAN

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 |
| Hex | 42 | 34 | 80 | 08 | 00 |

**EFHPPLMN (Higher Priority HPLMN Search period)**

Logically: set to 6 minutes

|  |  |
| --- | --- |
| Coding: | B1 |
| Hex | 01 |

**EFUST (USIM Service Table)**

Logically:

|  |  |  |  |
| --- | --- | --- | --- |
| Service n°43: |  | HPLMN selector with access technology | available |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coding:** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| Binary: | xxxx xxxx | xxxx xxxx | xxxx xxxx | xxxx xxxx | xxxx xxxx | xxxx x1xx | xxxx xxxx | xxxx xxxx |
|  | **B9** | **B10** | **B11** | **…** | **B16** |  |  |  |
|  | xxxx xxxx | xxxx xxxx | xxxx xxxx | ... | xxxx xxxx |  |  |  |

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

##### 7.4.7.4.2 Procedure

a) The UE is powered on.

b) After receipt of a *RRCRequest* from the UE on the NG-RAN-cell related to the BCCH transmitting MCC/MNC 244/008, the NG-SS sends *RRCSetup* to the UE, followed by *RRCSetupComplete* sent by the UE to the NG-SS.

c) During registration and after receipt of a REGISTRATION REQUEST from the UE, the NG-SS initiates authentication, starts integrity by using the security procedure and sends REGISTRATION ACCEPT to the UE with:

TAI (MCC/MNC/TAC): 244/008/000001

5G-GUTI: "24400800010266436587"

d) After receipt of the REGISTRATION COMPLETE during registration from the UE, the NG-SS sends *RRCRelease*.

e) The NG-SS starts to send on the second BCCH with the MCC/MNC 244/083. An internal timer shall start to run.

f) After receipt of an *RRCRequest* from the UE on the NG-RAN-cell related to the BCCH transmitting MCC/MNC 244/083, the NG-SS sends *RRCSetup*  to the UE, followed by *RRCSetupComplete* sent by the UE to the NG-SS. The internal timer is stopped.

g) During registration and after receipt of a REGISTRATION REQUEST from the UE, the NG-SS initiates authentication, starts integrity by using the security procedure and sends REGISTRATION ACCEPT to the UE with:

TAI (MCC/MNC/TAC): 244/083/000001

5G-GUTI: "24408300010266436587"

h) The UE is soft powered down.

#### 7.4.7.5 Acceptance criteria

1) After step e) the UE shall send a *RRCRequest* on the NG-RAN-cell related to the BCCH transmitting MCC/MNC 244/083 to the NG-SS.

2) 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 allow to be a guard time of 10 % greater than the required 6 minutes.

3) After step h) the USIM shall contain the following values:

**EF**5GS3GPPLOCI **(5GS 3GPP location information)**

Logically: 5G-GUTI: 24408300010266436587

Last visited registered TAI in 5GS for 3GPP access: 244/083/000001

5GS update status for 3GPP access: 5U1 UPDATED

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| Hex | 00 | 0B | F2 | 42 | 34 | 80 | 00 | 01 |
|  | **B9** | **B10** | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** |
|  | 02 | 66 | 43 | 65 | 87 | 42 | 34 | 80 |
|  | **B17** | **B18** | **B19** | **B20** |  |  |  |  |
|  | 00 | 00 | 01 | 00 |  |  |  |  |

## 7.5 Void

# 8 Subscription independent tests

## 8.1 Phone book procedures

### 8.1.1 Recognition of a previously changed phonebook

#### 8.1.1.1 Definition and applicability

If the UICC is inserted into a GERAN Rel-4 or earlier terminal, the phonebook may have been altered in this GSM session. If the ADN entry has been changed or deleted, the GSM terminal will not be able to change the appropriate additional phonebook entries (e.g. EFANR Additional Number). In that case the UICC shall set a flag in the appropriate EFPBC (phonebook Control). If the UICC is inserted in a 3G or GERAN Terminal, the 3G or GERAN Terminal shall recognise the flag and the phonebook shall be synchronised by the Terminal. Once the Terminal recognise the set flag in the EFPBC, the Terminal shall update the Change Counter in the EFCC.

#### 8.1.1.2 Conformance requirement

The 3G or GERAN Terminal shall recognise the set flag in the EFPBC and then synchronise the phonebook. The Terminal shall also update EFCC (Change Counter).

- TS 31.102 [4], clause 4.4.2.

#### 8.1.1.3 Test purpose

1) To verify that the Terminal has recognised that the phonebook has been altered by a GSM Terminal.

2) To verify that the Terminal does the synchronising of the changed phonebook entries.

3) To verify that the Terminal updates the EFPBC and EFCC.

#### 8.1.1.4 Method of test

##### 8.1.1.4.1 Initial conditions

No USS is needed for this test.

The default UICC is used with the following exception:

**EFADN (Abbreviated Dialling Number)**

Logically:

Record 1: Length of alpha identifier: 32 characters;

Alpha identifier: "ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEF";

Length of BCD number: "03";

TON and NPI: Telephony and Unknown;

Dialled number: 123;

CCI: None;

Ext1: None.

Record 1:

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

**EFPBC (Phonebook Control)**

Logically:

Record 1: The ADN Record No. 1 has been hanged by a GSM terminal.

Related ADN record is not hidden.

|  |  |  |
| --- | --- | --- |
| Coding: | B1 | B2 |
| Hex | 01 | 00 |

**EFCC (Change Counter)**

Logically: "000F"

|  |  |  |
| --- | --- | --- |
| Coding: | B1 | B2 |
| Hex | 00 | 0F |

The UICC is installed into the Terminal

##### 8.1.1.4.2 Procedure

a) The Terminal is powered on.

b) The Terminal shall stay powered on until the phonebook synchronisation procedures are finished. If the synchronisation is indicated by the Terminal, the Terminal shall only powered down after this indication is vanished.

#### 8.1.1.5 Acceptance criteria

After step b) the USIM shall contain the following values:

**EFPBC (Phonebook Control)**

Logically:

Record 1: The entry control information is reset.

Related ADN record is not hidden.

|  |  |  |
| --- | --- | --- |
| Coding: | B1 | B2 |
| Hex | 00 | 00 |

**EFCC (Change Counter)**

Logically: The counter is incremented to "0010"

|  |  |  |
| --- | --- | --- |
| Coding: | B1 | B2 |
| Hex | 00 | 10 |

### 8.1.2 Update of the Phonebook Synchronisation Counter (PSC)

#### 8.1.2.1 Definition and applicability

The phonebook synchronisation Counter is used to unambiguously identify the status of the phonebook. Every time the phonebook is reset/deleted or the UID and/or the CC has run out of range, the PSC shall be regenerated.

The PSC is a part of the phonebook identifier.

#### 8.1.2.2 Conformance requirement

Every time either the UID or the CC is incremented by the Terminal, the value of the contend of the appropriate EF shall be tested. If either UID or CC has reached "FF FF", the related EF shall be set to "00 01" and the PSC is incremented.

- TS 31.102 [4], clause 4.4.2.12.2.

#### 8.1.2.3 Test purpose

1) To verify that the Terminal has recognised that the values of UID and CC has changed.

2) To verify that the Terminal resets the value of EFUID and EFCC.

3) To verify that the Terminal updates EFPSC.

#### 8.1.2.4 Method of test

##### 8.1.2.4.1 Initial conditions

No USS is needed for this test.

The default UICC is used with the following exception:

**EFUID (Unique Identifier)**

Logically: one record is set to "FF FF"

|  |  |  |
| --- | --- | --- |
| Coding: | B1 | B2 |
| Hex | FF | FF |

**EFPUID (Previous Unique Identifier)**

Logically: is set to "FF FF"

|  |  |  |
| --- | --- | --- |
| Coding: | B1 | B2 |
| Hex | FF | FF |

**EFCC (Change Counter)**

Logically: set to "FF FF"

|  |  |  |
| --- | --- | --- |
| Coding: | B1 | B2 |
| Hex | FF | FF |

**EFPSC (Phonebook Synchronisation Counter)**

Logically: set to "00 00 FF FF"

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 |
| Hex | 00 | 00 | FF | FF |

At least one phonebook entry shall be empty and available for creating a new entry (e.g. an appropriate ADN record).

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

##### 8.1.2.4.2 Procedure

a) A new phonebook entry shall be created.

NOTE 1: This may be done by storing a new telephone number in an empty ADN record.

b) The UE shall have given the time to perform the regeneration of the UID records.

NOTE 2: It is assumed that the UE will indicate the time it needs to perform the regeneration by displaying a busy signal to the user.

#### 8.1.2.5 Acceptance criteria

After step b) the USIM shall contain the following values:

The EFUID (Unique Identifier) shall have been regenerated with UID values starting with "00 01". The UID values may be stored in any order, but shall be unique. The entry in EFUID with value FF FF (the maximum value) shall have been replaced by an appropriate value which shall be distinguishable to the maximum value. EFPUID shall contain a UID value (other than FFFF) that is present in EFUID.

**EFCC (Change Counter)**

Logically: set to "00 01"

|  |  |  |
| --- | --- | --- |
| Coding: | B1 | B2 |
| Hex | 00 | 01 |

**EFPSC (Phonebook Synchronisation Counter)**

Logically: set to "00 01 00 00"

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 |
| Hex | 00 | 01 | 00 | 00 |

### 8.1.3 Phonebook content handling

#### 8.1.3.1 Handling of BCD number/ SSC content extension

##### 8.1.3.1.1 Definition and applicability

The length of BCD number/SSC contents in EFADN byte gives the number of bytes of the following two data items containing actual BCD number/SSC information. This means that the maximum value is 11, even when the actual ADN/SSC information length is greater than 11. When an ADN/SSC has extension, it is indicated by the extension1 identifier being unequal to 'FF'. The remainder is stored in the EFEXT1 with the remaining length of the additional data being coded in the appropriate additional record itself.

##### 8.1.3.1.2 Conformance requirement

The terminal shall support the BCD number/ SSC extension for EFADN as defined in TS 31.102 [4], clauses 4.4.2.3 and 4.4.2.4.

Reference:

- TS 31.102 [4], clauses 4.4.2.3 and 4.4.2.4.

##### 8.1.3.1.3 Test purpose

1) To verify that the terminal is able to read and update BCD numbers/ SSC content with and without extension correctly in EFADN and EFEXT1.

##### 8.1.3.1.4 Method of test

8.1.3.1.4.1 Initial conditions

The terminal is connected to the USIM Simulator.

Prior to the test execution the terminal manufacturer shall state the maximum number of BCD digits (excluding TON/NPI), which are supported by the terminal for global phonebook updating.

The default USIM is used with the following exceptions:

Only the global phonebook is present.

The global phonebook shall contain:

**EFPBR (Phonebook reference file)**

Logically: Only EFADN and EFEXT1 are present in the global phonebook.

**EFADN (Abbreviated dialling numbers)**

Logically:

10 records, each record non-empty and unique. Unless otherwise stated, the ADN records shall not use extended BCD numbers/SSC strings.

Record 1: Length of alpha identifier: 32 characters;

Alpha identifier: "Contact001";

Length of BCD number: 11;

TON and NPI: Telephony and International;

Dialled number: "00112233445566778899";

CCI: 'FF';

Ext1: 01.

Record 1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | … | B32 | B33 |
| Hex | 43 | 6F | 6E | 74 | 61 | 63 | 74 | 30 | 30 | 31 | FF | … | FF | 0B |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B34 | B35 | B36 | B37 | B38 | B39 | B40 | B41 | B42 | B43 | B44 | B45 | B46 |  |
|  | 91 | 00 | 11 | 22 | 33 | 44 | 55 | 66 | 77 | 88 | 99 | FF | 01 |  |

Record 2: Length of alpha identifier: 32 characters;

Alpha identifier: "Contact002";

Length of BCD number: 11;

TON and NPI: Telephony and International;

Dialled number: "01234567890123456789";

CCI: 'FF';

Ext1: 'FF'.

Record 2:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | … | B32 | B33 |
| Hex | 43 | 6F | 6E | 74 | 61 | 63 | 74 | 30 | 30 | 32 | FF | … | FF | 0B |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B34 | B35 | B36 | B37 | B38 | B39 | B40 | B41 | B42 | B43 | B44 | B45 | B46 |  |
|  | 91 | 10 | 32 | 54 | 76 | 98 | 10 | 32 | 54 | 76 | 98 | FF | FF |  |

Record 3: Length of alpha identifier: 32 characters;

Alpha identifier: "Contact003";

Length of BCD number: 11;

TON and NPI: Telephony and International;

Dialled number: "99887766554433221100";

CCI: 'FF';

Ext1: '02'.

Record 3:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | … | B32 | B33 |
| Hex | 43 | 6F | 6E | 74 | 61 | 63 | 74 | 30 | 30 | 33 | FF | … | FF | 0B |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B34 | B35 | B36 | B37 | B38 | B39 | B40 | B41 | B42 | B43 | B44 | B45 | B46 |  |
|  | 91 | 99 | 88 | 77 | 66 | 55 | 44 | 33 | 22 | 11 | 00 | FF | 02 |  |

Record 4: Length of alpha identifier: 32 characters;

Alpha identifier: "Contact004";

Length of BCD number: 9;

TON and NPI: Telephony and International;

Dialled number: "1212121212121212";

CCI: 'FF';

Ext1: 'FF'.

Record 4:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | … | B32 | B33 |
| Hex | 43 | 6F | 6E | 74 | 61 | 63 | 74 | 30 | 30 | 34 | FF | … | FF | 09 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B34 | B35 | B36 | B37 | B38 | B39 | B40 | B41 | B42 | B43 | B44 | B45 | B46 |  |
|  | 91 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | FF | FF | FF | FF |  |

Record 7: Length of alpha identifier: 32 characters;

Alpha identifier: "Contact007";

Length of BCD number: 3;

TON and NPI: Telephony and International;

Dialled number: "678";

CCI: 'FF';

Ext1: 'FF'.

Record 7:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | … | B32 | B33 |
| Hex | 43 | 6F | 6E | 74 | 61 | 63 | 74 | 30 | 30 | 37 | FF | … | FF | 03 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B34 | B35 | B36 | B37 | B38 | B39 | B40 | B41 | B42 | B43 | B44 | B45 | B46 |  |
|  | 91 | 76 | F8 | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |  |

**EFEXT1 (Extension 1)**

Logically: 4 records

Record 1: Record type: '02'

Extension data: "01234567890123456789";

Identifier: 'FF'.

Record 1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | B13 |  |
| Hex | 02 | 0A | 10 | 32 | 54 | 76 | 98 | 10 | 32 | 54 | 76 | 98 | FF |  |

Record 2: Record type: '02'

Extension data: "99887766554433221100";

Identifier: '03'.

Record 2:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | B13 |  |
| Hex | 02 | 0A | 99 | 88 | 77 | 66 | 55 | 44 | 33 | 22 | 11 | 00 | 03 |  |

Record 3: Record type: '02'

Extension data: "11p12345";

Identifier: 'FF'.

Record 3:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | B13 |  |
| Hex | 02 | 04 | 11 | 1C | 32 | 54 | FF | FF | FF | FF | FF | FF | FF |  |

Record 4: Record type: '00'

Extension data: empty;

Identifier: 'FF'.

Record 4:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | B13 |  |
| Hex | 00 | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF |  |

8.1.3.1.4.2 Procedure

a) The terminal is switched on and the USIM application shall be activated.

b) The user shall use an MMI dependent procedure to select the global phonebook.

c) The user shall change the BCD number of the entry "Contact002" to "22446622446622446600777888999". If the maximum number of BCD digits supported for the global phonebook update is less than in the requested input BCD number string, then the user shall enter the BCD number string as requested, but only up to the maximum number of BCD digits which are supported for updating.

d) The user shall extend the BCD number of the entry "Contact007" to "01234567890123456789777888999".. If the maximum number of BCD digits supported for the global phonebook update is less than in the requested input BCD number string, then the user shall enter the BCD number string as requested, but only up to the maximum number of BCD digits which are supported for updating.

e) The user shall delete the phonebook entry "Contact001".

f) The user shall set the BCD number of the entry "Contact002" to "22446622446600"

g) The user shall create the new phonebook entry "NewContact" with the BCD number "1234567890123456789012345678901234567890123456789012".. If the maximum number of BCD digits supported for the global phonebook update is less than in the requested input BCD number string, then the user shall enter the BCD number string as requested, but only up to the maximum number of BCD digits which are supported for updating.

h) The user shall delete the phonebook entry "Contact003".

i) The terminal is switched off.

##### 8.1.3.1.5 Acceptance criteria

1) After step a) the terminal shall have activated the USIM application.

2) After step b) the terminal shall have selected the global phonebook and shall have read EFPBR in the global phonebook.

3) After step c) the global phonebook shall contain a record with "22446622446622446600" as BCD number and "04" as extension record identifier. EFEXT1 shall contain a record with "Additional data" as record type, the BCD number extension "777888999" and "FF" as identifier to indicate the end of the chain. If the maximum number of BCD digits supported for global phonebook updating is less than in the requested input BCD number, then EFADN and EFEXT1 shall contain the BCD number as entered on the MMI.

4) After step d) the terminal shall have taken action to prevent storage of the extended BCD number, e.g. by giving an indication to the user or not allowing to enter the extended number. EFEXT1 shall have not been updated and the extension record identifier of the entry "Contact007"shall remain as "FF".

5) After step e) records of EFADN and EFEXT1 which were used to store the data for the phonebook entry "Contact001" shall be empty, i.e. the EFADN record shall be "FF… FF" and the EFEXT1 record shall be "00FF… FF."

6) After step f) the record of EFEXT1 which was used to store the BCD number extension "777888999" shall be empty and the record used for storing the entry with the alpha identifier "Contact002" of EFADN shall contain the BCD number "22446622446600" and the extension record identifier "FF".

7) After step g) a record of EFADN shall contain "NewContact" as alpha identifier, "12345678901234567890" as BCD number and shall use an extension record identifier unequal to "FF".

The EFEXT1 record which was indicated in the EFADN record used in this case shall contain "Additional data" as record type, "12345678901234567890" as BCD number and an extension record identifier unequal to "FF", while the EFEXT1 record used to continue the chain inside EFEXT1 shall contain "Additional data" as record type, "123456789012" as BCD number and "FF" as extension record identifier.

If the maximum number of BCD digits supported for global phonebook updating is less than the requested input BCD number, then EFADN and EFEXT1 shall contain the BCD number as entered on the MMI.

8) After step h) the record of EFADN which was used to store the data for "Contact003" and the related records of EFEXT1 shall be empty.

### 8.1.4 Phonebook selection

#### 8.1.4.1 Definition and applicability

The UICC may contain a global phonebook, or application specific phonebooks, or both in parallel. When both phonebook types co-exist, they are independent and no data is shared. In this case, it shall be possible for the user to select which phonebook the user would like to access.

#### 8.1.4.2 Conformance requirement

The terminal shall support the global and the application specific phonebooks as defined in TS 31.102 [4], clause 4.4.2.

Reference:

- TS 31.102 [4], clause 4.4.2.

#### 8.1.4.3 Test purpose

1) To verify that the terminal offers a possibility to select which phonebook the user would like to select if both, the global and the local phonebook, co-exist.

2) To verify that the data contained in the local phonebook can be read and updated correctly.

3) To verify that the data contained in the global phonebook can be read and updated correctly.

#### 8.1.4.4 Method of test

##### 8.1.4.4.1 Initial conditions

The terminal is connected to the USIM Simulator.

The default USIM is used with the following exceptions:

The local and the global phonebook are both present.

The local phonebook shall contain:

**EFPBR (Phonebook reference file)**

Logically: Only EFADN and EFEXT1 are present in the local phonebook.

**EFADN (Abbreviated dialling numbers)**

Logically: 10 records, each record non-empty and unique.

Record 4: Length of alpha identifier: 32 characters;

Alpha identifier: "Contact004";

Length of BCD number: "03";

TON and NPI: Telephony and International;

Dialled number: 004;

CCI: 'FF';

Ext1: 'FF'.

Record 4:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | … | B32 | B33 |
| Hex | 43 | 6F | 6E | 74 | 61 | 63 | 74 | 30 | 30 | 34 | FF | … | FF | 03 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B34 | B35 | B36 | B37 | B38 | B39 | … | B46 |  |  |  |  |  |  |
|  | 91 | 00 | F4 | FF | FF | FF | … | FF |  |  |  |  |  |  |

Record 5: Length of alpha identifier: 32 characters;

Alpha identifier: "Contact005";

Length of BCD number: "03";

TON and NPI: Telephony and International;

Dialled number: 1234;

CCI: 'FF';

Ext1: None.

Record 5:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | … | B32 | B33 |
| Hex | 43 | 6F | 6E | 74 | 61 | 63 | 74 | 30 | 30 | 35 | FF | … | FF | 03 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B34 | B35 | B36 | B37 | B38 | B39 | … | B46 |  |  |  |  |  |  |
|  | 91 | 21 | 43 | FF | FF | FF | … | FF |  |  |  |  |  |  |

The global phonebook shall contain:

**EFPBR (Phonebook reference file)**

Logically: Only EFADN is present in the global phonebook.

**EFADN (Abbreviated dialling numbers)**

Logically: 8 records, records 3 and 6 empty, each non-empty record unique.

Record 1: Length of alpha identifier: 32 characters;

Alpha identifier: "Contact001";

Length of BCD number: "03";

TON and NPI: Telephony and International;

Dialled number: 001;

CCI: 'FF';

Ext1: 'FF'.

Record 1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | … | B32 | B33 |
| Hex | 43 | 6F | 6E | 74 | 61 | 63 | 74 | 30 | 30 | 31 | FF | … | FF | 03 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B34 | B35 | B36 | B37 | B38 | B39 | … | B46 |  |  |  |  |  |  |
|  | 91 | 00 | F1 | FF | FF | FF | … | FF |  |  |  |  |  |  |

Record 2: Length of alpha identifier: 32 characters;

Alpha identifier: "Contact002";

Length of BCD number: "03";

TON and NPI: Telephony and International;

Dialled number: 002;

CCI: 'FF';

Ext1: 'FF'.

Record 2:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | … | B32 | B33 |
| Hex | 43 | 6F | 6E | 74 | 61 | 63 | 74 | 30 | 30 | 32 | FF | … | FF | 03 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B34 | B35 | B36 | B37 | B38 | B39 | … | B46 |  |  |  |  |  |  |
|  | 91 | 00 | F2 | FF | FF | FF | … | FF |  |  |  |  |  |  |

Record 4: Length of alpha identifier: 32 characters;

Alpha identifier: "Contact004";

Length of BCD number: "03";

TON and NPI: Telephony and International;

Dialled number: 0041;

CCI: 'FF';

Ext1: 'FF'.

Record 4:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | … | B32 | B33 |
| Hex | 43 | 6F | 6E | 74 | 61 | 63 | 74 | 30 | 30 | 34 | FF | … | FF | 03 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B34 | B35 | B36 | B37 | B38 | B39 | … | B46 |  |  |  |  |  |  |
|  | 91 | 00 | 14 | FF | FF | FF | … | FF |  |  |  |  |  |  |

Record 5: Length of alpha identifier: 32 characters;

Alpha identifier: "Contact005";

Length of BCD number: "03";

TON and NPI: Telephony and International;

Dialled number: 1234;

CCI: 'FF';

Ext1: 'FF'.

Record 5:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | … | B32 | B33 |
| Hex | 43 | 6F | 6E | 74 | 61 | 63 | 74 | 30 | 30 | 35 | FF | … | FF | 03 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B34 | B35 | B36 | B37 | B38 | B39 | … | B46 |  |  |  |  |  |  |
|  | 91 | 21 | 43 | FF | FF | FF | … | FF |  |  |  |  |  |  |

Record 7: Length of alpha identifier: 32 characters;

Alpha identifier: "Contact007";

Length of BCD number: "03";

TON and NPI: Telephony and International;

Dialled number: 007;

CCI: 'FF';

Ext1: 'FF'.

Record 7:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | … | B32 | B33 |
| Hex | 43 | 6F | 6E | 74 | 61 | 63 | 74 | 30 | 30 | 37 | FF | … | FF | 03 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B34 | B35 | B36 | B37 | B38 | B39 | … | B46 |  |  |  |  |  |  |
|  | 91 | 00 | F7 | FF | FF | FF | … | FF |  |  |  |  |  |  |

Record 8: Length of alpha identifier: 32 characters;

Alpha identifier: "Contact008";

Length of BCD number: "03";

TON and NPI: Telephony and International;

Dialled number: 008;

CCI: 'FF';

Ext1: 'FF'.

Record 8:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | … | B32 | B33 |
| Hex | 43 | 6F | 6E | 74 | 61 | 63 | 74 | 30 | 30 | 38 | FF | … | FF | 03 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B34 | B35 | B36 | B37 | B38 | B39 | … | B46 |  |  |  |  |  |  |
|  | 91 | 00 | F8 | FF | FF | FF | … | FF |  |  |  |  |  |  |

##### 8.1.4.4.2 Procedure

a) The terminal is switched on and the USIM application shall be activated.

b) The user shall use an MMI dependent procedure to select the global phonebook.

c) The global phonebook record with the alpha identifier "Contact005" and the associated dialling number shall be read by the user.

d) The dialling number of the global phonebook record with the alpha identifier "Contact005" shall be set to "+1122330".

e) A new entry with the values "Contact006" as alpha identifier and "+9876543210" as associated dialling number shall be added to the global phonebook.

f) The user shall use an MMI dependent procedure to select the local phonebook.

g) The local phonebook record with the alpha identifier "Contact005" and the associated dialling number shall be read by the user.

h) The dialling number of the local phonebook record with the alpha identifier "Contact005" shall be set to "+11223345".

i) The user shall try to add a new entry with the values "Contact007" as alpha identifier and "+007" as associated dialling number to the local phonebook.

j) The user shall delete the entry "Contact004" from the local phonebook.

k) The user shall add a new entry with the values "Contact007" as alpha identifier and "+007" as associated dialling number to the local phonebook.

l) The user shall use an MMI dependent procedure to select the global phonebook.

m) The user shall delete the entry "Contact007" from the global phonebook.

n) The terminal is switched off.

#### 8.1.4.5 Acceptance criteria

1) After step a) the terminal shall have activated the USIM application, shall have read the status of the local Phonebook in EFUST.

2) After step b) the terminal shall have selected the global phonebook and shall have read EFPBR in the global phonebook.

3) After step c) the terminal shall have read the global phonebook record which is used to store the enrty "Contact005" and shall have presented the alpha identifier "Contact005" and the dialling number "+1234" to the user.

4) After step d) EFADN in the global phonebook shall contain a record with the alpha identifier "Contact005" with the new dialling number "+1122330" and the terminal shall have given an indication to the user that the phonebook update has been performed successfully.

5) After step e) a new record shall have been added to EFADN in the global phonebook with the alpha identifier "Contact006" and the dialling number string "+9876543210".

6) After step f) the terminal shall have selected the local phonebook and shall have read EFPBR in the local phonebook.

7) After step g) the terminal shall have read the local phonebook record which is used to store the entry "Contact005" and shall have presented the alpha identifier "Contact005" and the dialling number "+1234" to the user.

8) After step h) EFADN in the local phonebook shall contain a record with the alpha identifier "Conatct005" and with new dialling number "+11223345" and the terminal shall have given an indication to the user that the phonebook update has been performed successfully.

9) After step i) the terminal shall have given an indication that update of the local phonebook can't be performed. EFADN shall have not been updated.

10) After step j) the local phonebook record which was used to store the entry "Contact004" shall be empty and the terminal shall have indicated that the deletion of the phonebook entry was performed successfully.

11) After step k) a new record shall have been added to EFADN in the local phonebook with the alpha identifier "Contact007" and the dialling number string "+007"

12) After step l) the terminal shall have selected the global phonebook and shall have read EFPBR in the global phonebook.

13) After step m) the global phonebook record which was used to store the entry "Contact007" shall be empty and the terminal shall have indicated that the deletion of the phonebook entry was performed successfully.

### 8.1.5 Local Phonebook handling

#### 8.1.5.1 Definition and applicability

The UICC may contain a global phonebook, or application specific phonebooks, or both in parallel.

#### 8.1.5.2 Conformance requirement

The terminal shall support the local phonebook as defined in TS 31.102 [4], clause 4.4.2.

Reference:

- TS 31.102 [4], clause 4.4.2.

#### 8.1.5.3 Test purpose

1) To verify that the terminal supports the local phonebook without existence of the global phonebook.

2) To verify that the data contained in the local phonebook can be read and updated correctly.

#### 8.1.5.4 Method of test

##### 8.1.5.4.1 Initial conditions

The terminal is connected to the USIM Simulator.

The default USIM is used with the following exceptions:

The local phonebook is present, the global phonebook is not present.

The local phonebook shall contain:

**EFPBR (Phonebook reference file)**

Logically: Only EFADN and EFEXT1 are present in the local phonebook.

**EFADN (Abbreviated dialling numbers)**

Logically: 10 records, each record non-empty and unique.

Record 4: Length of alpha identifier: 32 characters;

Alpha identifier: "Contact004";

Length of BCD number: "03";

TON and NPI: Telephony and International;

Dialled number: 004;

CCI: 'FF';

Ext1: 'FF'.

Record 4:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | … | B32 | B33 |
| Hex | 43 | 6F | 6E | 74 | 61 | 63 | 74 | 30 | 30 | 34 | FF | … | FF | 03 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B34 | B35 | B36 | B37 | B38 | B39 | … | B46 |  |  |  |  |  |  |
|  | 91 | 00 | F4 | FF | FF | FF | … | FF |  |  |  |  |  |  |

Record 5: Length of alpha identifier: 32 characters;

Alpha identifier: "Contact005";

Length of BCD number: "03";

TON and NPI: Telephony and International;

Dialled number: 1234;

CCI: 'FF';

Ext1: 'FF'.

Record 5:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | … | B32 | B33 |
| Hex | 43 | 6F | 6E | 74 | 61 | 63 | 74 | 30 | 30 | 35 | FF | … | FF | 03 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | B34 | B35 | B36 | B37 | B38 | B39 | … | B46 |  |  |  |  |  |  |
|  | 91 | 21 | 43 | FF | FF | FF | … | FF |  |  |  |  |  |  |

##### 8.1.5.4.2 Procedure

a) The terminal is switched on and the USIM application shall be activated.

b) The user shall use an MMI dependent procedure to select the phonebook on the USIM (local phonebook).

c) The local phonebook record with the alpha identifier "Contact005" and the associated dialling number shall be read by the user.

d) The dialling number of the local phonebook record with the alpha identifier "Contact005" shall be set to "+11223345" and the alpha identifier shall be changed to "Contact8901234567890123456789012".

e) The user shall try to add a new entry with the values "Contact007" as alpha identifier and "+007" as associated dialling number to the local phonebook.

f) The user shall delete the entry "Contact004" from the local phonebook.

g) The user shall add a new entry with the values "Contact007" as alpha identifier and "+007" as associated dialling number to the local phonebook.

h) The terminal is switched off.

#### 8.1.5.5 Acceptance criteria

1) After step a) the terminal shall have activated the USIM application, shall have read the status of the local Phonebook in EFUST.

2) After step b) the terminal shall have selected the local phonebook and shall have read EFPBR in the local phonebook.

3) After step c) the terminal shall have read the local phonebook record which is used to store the entry "Contact005" and shall have presented the alpha identifier "Contact005" and the dialling number "+1234" to the user.

4) After step d) EFADN in the local phonebook shall contain a record with the new alpha identifier "Contact8901234567890123456789012" and the dialling number "+11223345" and the terminal shall have given an indication to the user that the phonebook update has been performed successfully.

5) After step e) the terminal shall have given an indication that update of the local phonebook can't be performed. EFADN shall have not been updated.

6) After step f) the local phonebook record which was used to store the entry "Contact004" in the local phonebook shall be empty and the terminal shall have indicated that the deletion of the phonebook entry was performed successfully.

7) After step g) a new record shall have been added to EFADN in the local phonebook with the alpha identifier "Contact007" and the dialling number string "+007"

## 8.2 Short message handling report

### 8.2.1 Correct storage of a SM on the USIM

#### 8.2.1.1 Definition and applicability

Once a SMS is received by the UE, the Terminal shall store the SM on the USIM, if this is indicated by the class 2 of the SMS (USIM specific SM). For this it is assumed, that at least one relevant SMS field are available on the USIM and they are indicated as empty.

#### 8.2.1.2 Conformance requirement

The received class 2 SMS shall be stored on the USIM in EFSMS. The status of a received SMS, which has not been read yet, shall be set to "3" (SMS to be read).

- TS 23.038 [3], clause 4.

- TS 23.040 [13], clause 10.1, operation 6;

- TS 24.011, clauses 8.2.2, 8.2.3 and 8.2.5.4, Table 8.4 (part 2)

- TS 31.102 [4], clauses 4.2.25.

#### 8.2.1.3 Test purpose

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

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

#### 8.2.1.4 Method of test

##### 8.2.1.4.1 Initial conditions

The default UICC is used with the following exceptions:

1) EFUST (USIM Service Table)

Logically: Local Phone Book available

User controlled PLMN selector available

Fixed dialling numbers available

Barred dialling numbers available

The GSM Access available

The Group Identifier level 1 and level 2 not available

SMS available

SMS Status available

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Byte: | B1 | B2 | B3 | B4 | B5 |
| Binary | xx1x xx11 | xxxx X11x | xxxx 1x00 | xxxx x1xx | xxxx xx11 |

The coding of EFUST shall conform with the capabilities of the USIM used.

1) EFSMS (Short Message Service) and EFSMSS (SMS Status) as defined in 8.2.4.4.1.

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

- Attach/detach: disabled.

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

- Access control: unrestricted.

The USS/SS transmits the class 2 short message with the parameters as defined in 8.2.4.4.1.

User Equipment:

The UE is connected to the USIM-Simulator and the USS/SS.

##### 8.2.1.4.2 Procedure

CS related sequence for UTRAN/GERAN

Perform the "CS related procedure" and continue with "Generic Procedure 1" as defined clause 8.2.4.4.2 as test "8.2.1" with the following parameters:

- Applicable Network Simulator (NWS): USS (UMTS System Simulator or System Simulator)

- CS is used to send and receive short messages

- ME supports UTRAN or GERAN

CS related procedure:

a) The ME is switched on and will perform the Profile Download, USIM initialization and network registration.

b) Continue with step c) of the Generic Procedure 1 as defined in 8.2.4.4.2.

#### 8.2.1.5 Acceptance criteria

1) After step c) the record of the USIM EFSMS which was empty, shall contain the values as defined in 8.2.4.5

### 8.2.2 Correct reading of a SM on the USIM

#### 8.2.2.1 Definition and applicability

A SM which is stored but not yet read, is indicated as Status "3" (SMS to be read ) on EFSMS. The Terminal may indicate the user this status. After the SMS is read by the user, the status of the SMS shall be changed to "1" (SMS read).

#### 8.2.2.2 Conformance requirement

A received SM was stored on the USIM in EFSMS. At the time the SMS is read by the user, the status of a received SMS, shall be changed to "1" (SMS read).

- TS 23.038 [3], clause 4.

- TS 23.040 [13];

- TS 31.102 [4], clauses 4.2.25 and 4.2.28.

#### 8.2.2.3 Test purpose

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

2) To verify that the Terminal changes the status of a read SMS to "1" (SMS read).

#### 8.2.2.4 Method of test

##### 8.2.2.4.1 Initial conditions

The default UICC is used with the following exception:

**EFUST (USIM Service Table)**

Logically: Local Phone Book available

User controlled PLMN selector available

Fixed dialling numbers available

Barred dialling numbers available

The GSM Access available

The Group Identifier level 1 and level 2 not available

SMS available

SMS Status available

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 |
| binary | xx1x xx11 | xxxx X11x | xxxx 1x00 | xxxx x1xx | xxxx xx11 |

The coding of EFUST shall conform with the capabilities of the USIM used.

**EFSMSS (SMS Status)**

Logically: Last used TP-MR not set.

Memory capacity available (flag unset b1="1").

|  |  |  |
| --- | --- | --- |
| Coding: | B1 | B2 |
| Hex | FF | FF |

**EFSMS (Short Message Service)**

Logically: Status byte set to SMS to be read.

A chosen test is written in the text body of the EFSMS.

Record 1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | … | B176 |
| Hex | 03 | xx | xx | xx | xx | xx | xx | xx | xx | xx | xx | xx | … | xx |

NOTE: "xx" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.

At least 9 records.

Logically: Status byte set to empty

no text is written (Remainder Bytes set to "FF").

Record:

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

A USS (in case of a Terminal accessing UTRAN) or a SS (in case of a Terminal accessing GERAN) is only needed to bring the UE into a defined idle mode. The USS/SS transmits on the BCCH:

- Attach/detach: disabled.

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

- Access control: unrestricted.

User Equipment:

The UE is in MM-state "idle, updated".

##### 8.2.2.4.2 Procedure

a) After the UE has brought in idle state, the SMS shall be read.

b) The UE is powered off.

#### 8.2.2.5 Acceptance criteria

1) After a) the correct text of the SMS shall be read from the UE display.

2) After step b) the EFSMS record 1 shall contains the following values:

Logically: Status byte set to SMS read.

The entire content of the SMS shall be unchanged.

Record 1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | … | B176 |
| Hex | 01 | xx | xx | Xx | xx | xx | xx | xx | xx | xx | xx | xx | … | xx |

NOTE: "xx" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.

### 8.2.3 SM memory capacity exceeded handling

#### 8.2.3.1 Definition and applicability

Once a SMS is received by the UE, the Terminal shall store the SM on the USIM, if this is indicated by the class 2 of the SMS (USIM specific SM). For this it is assumed, that at least one relevant SMS field are available on the USIM and they are indicated as empty. If all SMS data field are full and furthermore all memory capacity reserved for SMS inside the ME is filled up to maximum and a SM was rejected, then this shall be indicated in the SMS Status file.

#### 8.2.3.2 Conformance requirement

The received class 2 SMS shall be stored on the USIM in EFSMS. The status of a received SMS, which has not been read yet, shall be set to "3" (SMS to be read). If the terminal notifies the network that the terminal has been unable to accept a short message because its memory capacity has been exceeded, then the ME shall set the Memory Capacity Exceeded Notification Flag in the EFSMSS.

- TS 23.038 [3], clause 4.

- TS 23.040 [13], clause 10.1, operation 6;

- TS 24.011, clauses 8.2.2, 8.2.3 and 8.2.5.4, Table 8.4 (part 2)

- TS 31.102 [4], clauses 4.2.25 and 4.2.28.

#### 8.2.3.3 Test purpose

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

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

3) To verify that the Terminal sets the memory full flag in EFSMSS if the terminal notifies the network that the terminal has been unable to accept a short message because its memory capacity has been exceeded.

#### 8.2.3.4 Method of test

##### 8.2.3.4.1 Initial conditions

The default UICC is used with the following exception:

**EFUST (USIM Service Table)**

Logically: Local Phone Book available

User controlled PLMN selector available

Fixed dialling numbers available

Barred dialling numbers available

The GSM Access available

The Group Identifier level 1 and level 2 not available

SMS available

SMS Status available

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 |
| binary | xx1x xx11 | xxxx X11x | xxxx 1x00 | xxxx x1xx | xxxx xx11 |

The coding of EFUST shall conform with the capabilities of the USIM used.

**EFSMS (Short Message Service)**

At least 10 records.

Record 1 shall be empty.

Logically: Status byte set to empty.

Record 1:

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

All other Record shall be full.

Logically: Status byte set to SMS read.

The text body of the record shall be filled with any appropriate text.

Records:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | … | B176 |
| Hex | 01 | xx | xx | xx | xx | xx | xx | xx | xx | xx | xx | xx | … | xx |

NOTE: "xx" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the received SMS.

**EFSMSS (SMS Status)**

Logically: Last used TP-MR not defined.

Memory capacity available (flag unset b1="1").

|  |  |  |
| --- | --- | --- |
| Coding: | B1 | B2 |
| Hex | FF | FF |

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

- Attach/detach: disabled.

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

- Access control: unrestricted.

The USS/ SS transmits the short messages with the following parameters:

Logically:

Class 2 SM:TS-Service Centre Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 112233445566

SMS TPDU:

TP-Message-Type-Indicator: SMS-DELIVER (in the direction SC to MS)

TP-More-Messages-to-Send: No more messages are waiting for the MS in this SC

TP-Reply-Path: TP-Reply-Path parameter is not set in this SMS-DELIVER

TP-User-Data-Header-Indicator: The TP-UD field contains only the short message

TP-Status-Report-Indication: A status report shall be returned to the SME

Bits 4-3: 00

TP-Originating-Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 012344556677

TP-Protocol-Identifier: No interworking, but SME-to-SME protocol

TP-Data-Coding-Scheme:

Bits 8-7: General Data Coding

Bit 6: Text is uncompressed

Bit 5: Bits 2-1 have a message class meaning

Bits 4-3: GSM 7 bit default alphabet

Bits 2-1: Class 2: (U)SIM specific message

TP-Service-Centre-Time-Stamp: 02-03-04 09:13:06 GMT + 1

TP-User-Data-Length: 160

TP-User-Data:

"Once a SMS is received by the UE, the Terminal shall store the SMS on the USIM, if this is indicated by the class 2 of the SMS (USIM specific SMS). For this…"

Class 1 SM:

The same content as for the Class 2 SMS except :

SMS TPDU:

TP-More-Messages-to-Send: More messages are waiting for the MS in this SC

TP-Data-Coding-Scheme:

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

TP-Service-Centre-Time-Stamp: Always set to current time of the system simulator

User Equipment:

The UE is in MM-state "idle, updated". If there is ME storage capacity available the storage for SMS inside the ME shall be able to allow for at least one more mobile terminated (e.g. Class 1) SM.

##### 8.2.3.4.2 Procedure

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

b) After the UE has indicated that a SM was received, the SM shall not be read.

c) The USS starts sending Class 1 SMs as defined in 8.2.1.4.1 until the UE sends an RP-ERROR message with cause "Memory capacity exceeded".

d) The UE is powered off.

#### 8.2.3.5 Acceptance criteria

1) After step b) the record of the EFSMS which was empty, shall contain the following values:

Logically: Status byte set to SMS to be read

The text of the received SMS shall be present in the record.

Record 1:

Logically:

Status:

RFU bits 8-6: 000

Status: Used space, message received by UE from network, message to be read

TS-Service Centre Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 112233445566

SMS TPDU:

TP-Message-Type-Indicator: SMS-DELIVER (in the direction SC to UE)

TP-More-Messages-to-Send: No more messages are waiting for the UE in this SC

TP-Reply-Path: TP-Reply-Path parameter is not set in this SMS-DELIVER

TP-User-Data-Header-Indicator: The TP-UD field contains only the short message

TP-Status-Report-Indication: A status report shall be returned to the SME

Bits 4-3: 00

TP-Originating-Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 012344556677

TP-Protocol-Identifier: No interworking, but SME-to-SME protocol

TP-Data-Coding-Scheme:

Bits 8-7: General Data Coding

Bit 6: Text is uncompressed

Bit 5: Bits 2-1 have a message class meaning

Bits 4-3: GSM 7 bit default alphabet

Bits 2-1: Class 2: (U)SIM specific message

TP-Service-Centre-Time-Stamp: 02-03-04 09:13:06 GMT + 1

TP-User-Data-Length: 160

TP-User-Data:

"Once a SMS is received by the UE, the Terminal shall store the SMS on the USIM, if this is indicated by the class 2 of the SMS (USIM specific SMS). For this …"

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hex | 03 | 07 | 91 | 11 | 22 | 33 | 44 | 55 | 66 | 24 | 0C | 91 | 10 | 32 | 44 | 55 |
|  | 66 | 77 | 00 | 12 | 20 | 30 | 40 | 90 | 31 | 60 | 40 | A0 | 4F | F7 | B8 | 0C |
|  | 0A | 83 | A6 | CD | 29 | 28 | 3D | 07 | C9 | CB | E3 | 72 | DA | 5E | 26 | 83 |
|  | C4 | 79 | 10 | 1D | 5D | 06 | 55 | 8B | 2C | 10 | 1D | 5D | 06 | 51 | CB | F2 |
|  | 76 | DA | 1D | 66 | 83 | E6 | E8 | 30 | 9B | 0D | 9A | D3 | DF | F2 | 32 | 88 |
|  | 8E | 2E | 83 | A6 | CD | 29 | E8 | ED | 06 | D1 | D1 | 65 | 50 | 75 | 9A | 6C |
|  | B2 | 40 | 69 | 33 | 88 | 8E | 4E | CF | 41 | E9 | 39 | 28 | ED | 26 | A7 | C7 |
|  | 61 | 7A | 99 | 0C | 12 | E7 | 41 | 74 | 74 | 19 | 34 | 66 | 87 | E7 | 73 | 90 |
|  | 0C | F4 | 36 | 83 | E8 | E8 | 32 | 68 | DA | 9C | 82 | 50 | D5 | 69 | B2 | 09 |
|  | 9A | C3 | CB | E3 | B4 | 39 | 3D | 06 | 4D | 9B | D3 | 94 | 0B | 64 | 7C | CB |
|  | 41 | 74 | 74 | 7A | 0E | 72 | B9 | 5C |  |  |  |  |  |  |  |  |

After step d) the Memory Capacity Exceeded Notification Flag in the EFSMSS shall be set to exceeded.

**EFSMSS (SMS Status)**

Logically: Last used TP-MR shall be set to any appropriate value.

Memory capacity exceeded (flag set b1="0").

|  |  |  |
| --- | --- | --- |
| Coding: | B1 | B2 |
| Hex | xx | FE |

### 8.2.4 Correct storage of an SM on the UICC

#### 8.2.4.1 Definition and applicability

For IMS: When a SIP MESSAGE request including a short message in the "vnd.3gpp.sms" payload is delivered and the extracted RP-DATA payload contains a Class 2 SM (USIM specific SM) the terminal shall store the SM on the USIM or ISIM. For this it is assumed, that at least one relevant SMS field are available on the USIM or ISIM and they are indicated as empty.

That the UE correctly implemented the role of an SMS-over-IP receiver is tested in clause 18.2 of TS 34.229-1 [33].

#### 8.2.4.2 Conformance requirement

As TS 31.103[32] and TS 31.102[4] do not indicate in which of both applications a SM received via IMS shall be stored, the received Class 2 SM received via IMS shall be stored in EFSMS either on the USIM or on the ISIM. The status of a received SMS, which has not been read yet, shall be set to "3" (SMS to be read).

- TS 23.038 [3], clause 4.

- TS 23.040 [13], clause 10.1, operation 6;

- TS 24.011, clauses 7.3.1.1, 8.2.2, 8.2.3 and 8.2.5.4, Table 8.4 (part 2)

- TS 31.102 [4], clauses 4.2.25,

- TS 31.103 [32], clauses 4.2.12,

- TS 34.229 [33], Annexes C.2, C.18 and 18.2.

#### 8.2.4.3 Test purpose

1) To verify that the Terminal stored correctly the class 2 SMS on the USIM or the ISIM.

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

#### 8.2.4.4 Method of test

##### 8.2.4.4.1 Initial conditions

The E-UTRAN/EPC ISIM-UICC is used with the following exception:

Logically: Local Phone Book available

User controlled PLMN selector available

Fixed dialling numbers available

Barred dialling numbers available

The GSM Access available

The Group Identifier level 1 and level 2 not available

SMS available

SMS Status available

Service n 33 (Packed Switched Domain) shall be set to '1'

Enabled Services Table available

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Byte: | B1 | B2 | B3 | B4 | B5 |
| Binary | xx1x xx11 | xxxx X11x | xxxx 1x00 | xxxx x1xx | xxxx xx11 |

The coding of EFUST shall conform with the capabilities of the USIM used.

**EFSMS (Short Message Service) – For USIM and ISIM**

At least 10 records.

Record 1 shall be empty.

Logically: Status byte set to empty.

Record 1:

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

All other Record shall be full.

Logically: Status byte set to SMS read.

The text body of the record shall be filled with any appropriate text.

Records:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | … | B176 |
| Hex | 01 | xx | xx | xx | xx | xx | xx | xx | xx | xx | xx | xx | … | xx |

NOTE: "xx" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the received SMS.

**EFSMSS (SMS Status) – For USIM and ISIM**

Logically: Last used TP-MR not defined.

Memory capacity available (flag unset b1="1").

|  |  |  |
| --- | --- | --- |
| Coding: | B1 | B2 |
| Hex | FF | FF |

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

- Attach/detach: disabled.

- USS LAI (MCC/MNC/LAC): 246/081/0001 (For UTRAN testing only)

- E-USS TAI (MCC/MNC/TAC): 246/081/0001 (For E-UTRAN testing only)

- Access control: unrestricted.

The NWS transmits the short messages with the following parameters:

Logically:

Class 2 SM: TS-Service Centre Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 112233445566

SMS TPDU:

TP-Message-Type-Indicator: SMS-DELIVER (in the direction SC to MS)

TP-More-Messages-to-Send: No more messages are waiting for the MS in this SC

TP-Reply-Path: TP-Reply-Path parameter is not set in this SMS-DELIVER

TP-User-Data-Header-Indicator: The TP-UD field contains only the short message

TP-Status-Report-Indication: A status report shall be returned to the SME

Bits 4-3: 00

TP-Originating-Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 012344556677

TP-Protocol-Identifier: No interworking, but SME-to-SME protocol

TP-Data-Coding-Scheme:

Bits 8-7: General Data Coding

Bit 6: Text is uncompressed

Bit 5: Bits 2-1 have a message class meaning

Bits 4-3: GSM 7 bit default alphabet

Bits 2-1: Class 2: (U)SIM specific message

TP-Service-Centre-Time-Stamp: 02-03-04 09:13:06 GMT + 1

TP-User-Data-Length: 160

TP-User-Data:

"Once a SMS is received by the UE, the Terminal shall store the SMS on the USIM, if this is indicated by the class 2 of the SMS (USIM specific SMS). For this…"

##### 8.2.4.4.2 Procedure

**Sequence A for IMS on UTRAN**

a) The ME activates the required bearer, discovers the P-CSCF, and registers with the values from the ISIM with the IMS services (see Note 2).

b) Continue with step c) in the Generic Procedure 1.

**Sequence B for IMS on E-UTRAN**

a) The ME activates the required bearer, discovers the P-CSCF, and registers with the values from the ISIM with the IMS services (see Note 3).

b) Continue with step c) in the Generic Procedure 1.

**Generic Procedure 1**

c) After the UE is set to idle mode, the defined class 2 SM defined in 8.2.1.4.1 with 160 characters shall be sent to the UE (see Note 1) as specified in clause 18.2 of TS 34.229-1 [33] and use the SM payload defined in 8.2.1.4.1 in the Message-body of MESSAGE defined in clause A.7.1 in TS 34.229-1 [33].

d) After the UE has indicated that a SM was received, the SM shall not be read.

e) The UE is powered off.

Note 1: In case of IMS the Short Message is contained in the message body of the SIP MESSAGE.

Note 2: For E-UTRAN: The EPS bearer context activation according to the procedures defined in TS 34.229-1 [33], Annex C.2 and C.18 is performed.

Note 3: For UTRAN: For SMS-over-IP a PDP context activation according to the procedures defined in TS 34.229-1 [33], Annex C.2 and C.17 is performed.

#### 8.2.4.5 Acceptance criteria

1) After step d) the record of the EFSMS (on either the ISIM or USIM) which was empty, shall contain the following values:

Logically: Status byte set to SMS to be read

The text of the received SMS shall be present in the record.

Record 1:

Logically:

Status:

RFU bits 8-6: 000

Status: Used space, message received by UE from network, message to be read

TS-Service Centre Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 112233445566

SMS TPDU:

TP-Message-Type-Indicator: SMS-DELIVER (in the direction SC to UE)

TP-More-Messages-to-Send: No more messages are waiting for the UE in this SC

TP-Reply-Path: TP-Reply-Path parameter is not set in this SMS-DELIVER

TP-User-Data-Header-Indicator: The TP-UD field contains only the short message

TP-Status-Report-Indication: A status report shall be returned to the SME

Bits 4-3: 00

TP-Originating-Address:

Bit 8: 1

Type-Of-Number: International number

Numbering-Plan-Identification: ISDN/telephony numbering plan

Address value: 012344556677

TP-Protocol-Identifier: No interworking, but SME-to-SME protocol

TP-Data-Coding-Scheme:

Bits 8-7: General Data Coding

Bit 6: Text is uncompressed

Bit 5: Bits 2-1 have a message class meaning

Bits 4-3: GSM 7 bit default alphabet

Bits 2-1: Class 2: (U)SIM specific message

TP-Service-Centre-Time-Stamp: 02-03-04 09:13:06 GMT + 1

TP-User-Data-Length: 160

TP-User-Data:

"Once a SMS is received by the UE, the Terminal shall store the SMS on the USIM, if this is indicated by the class 2 of the SMS (USIM specific SMS). For this …"

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hex | 03 | 07 | 91 | 11 | 22 | 33 | 44 | 55 | 66 | 24 | 0C | 91 | 10 | 32 | 44 | 55 |
|  | 66 | 77 | 00 | 12 | 20 | 30 | 40 | 90 | 31 | 60 | 40 | A0 | 4F | F7 | B8 | 0C |
|  | 0A | 83 | A6 | CD | 29 | 28 | 3D | 07 | C9 | CB | E3 | 72 | DA | 5E | 26 | 83 |
|  | C4 | 79 | 10 | 1D | 5D | 06 | 55 | 8B | 2C | 10 | 1D | 5D | 06 | 51 | CB | F2 |
|  | 76 | DA | 1D | 66 | 83 | E6 | E8 | 30 | 9B | 0D | 9A | D3 | DF | F2 | 32 | 88 |
|  | 8E | 2E | 83 | A6 | CD | 29 | E8 | ED | 06 | D1 | D1 | 65 | 50 | 75 | 9A | 6C |
|  | B2 | 40 | 69 | 33 | 88 | 8E | 4E | CF | 41 | E9 | 39 | 28 | ED | 26 | A7 | C7 |
|  | 61 | 7A | 99 | 0C | 12 | E7 | 41 | 74 | 74 | 19 | 34 | 66 | 87 | E7 | 73 | 90 |
|  | 0C | F4 | 36 | 83 | E8 | E8 | 32 | 68 | DA | 9C | 82 | 50 | D5 | 69 | B2 | 09 |
|  | 9A | C3 | CB | E3 | B4 | 39 | 3D | 06 | 4D | 9B | D3 | 94 | 0B | 64 | 7C | CB |
|  | 41 | 74 | 74 | 7A | 0E | 72 | B9 | 5C |  |  |  |  |  |  |  |  |

2) The UE shall pass the requirements which are verified in the MT SMS test case specified in clause 18.2 of TS 34.229-1 [33].

### 8.2.5 Correct reading of a SM on the USIM if USIM and ISIM are present

#### 8.2.5.1 Definition and applicability

A SM which is stored but not yet read, is indicated as Status "3" (SMS to be read) on EFSMS. The Terminal may indicate the user this status. After the SMS is read by the user, the status of the SMS shall be changed to "1" (SMS read). This applies to short messages stored on the USIM and to short messages stored on the ISIM.

#### 8.2.5.2 Conformance requirement

A received SM was stored in EFSMS on the ISIM and another SM was stored in EFSMS on the USIM. The user shall be able to read short messages stored on the USIM. At the time the SMS is read by the user, the status of a received SMS, shall be changed to "1" (SMS read).

- TS 23.038 [3], clause 4.

- TS 23.040 [13];

- TS 31.102 [4], clauses 4.2.25 and 4.2.28,

- TS 31.103 [32], clauses 4.2.12 and 4.2.13.

#### 8.2.5.3 Test purpose

1) To verify that the Terminal correctly reads the SMS on the USIM if the USIM and ISIM are both present.

2) To verify that the Terminal changes the status of a read SMS to "1" (SMS read) of the message read from the USIM.

#### 8.2.5.4 Method of test

##### 8.2.5.4.1 Initial conditions

The E-UTRAN/EPC ISIM-UICC is used with the following exception:

**EFUST (USIM Service Table)**

As defined in in clause 4.5.2 with the expection that services n°10 (Short Message Storage) and n°11 (SMS Status Report) are available.

**EFSMSS (SMS Status) on the USIM and on the ISIM**

Logically: Last used TP-MR not set.

Memory capacity available (flag unset b1="1").

|  |  |  |
| --- | --- | --- |
| Byte: | B1 | B2 |
| Hex: | FF | FF |

**EFSMS (Short Message Service) on the USIM**

Logically: Status byte set to SMS to be read.

A chosen test is written in the text body of the EFSMS. This content shall be different from the content stored in EFSMS in the ISIM.

Record 1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | … | B176 |
| Hex | 03 | xx | xx | xx | Xx | xx | xx | xx | xx | xx | xx | xx | … | xx |

NOTE: "xx" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.

At least 9 records.

Logically: Status byte set to empty

no text is written (Remainder Bytes set to "FF").

Record:

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

**EFSMS (Short Message Service) on the ISIM**

Logically: Status byte set to SMS to be read.

A chosen test is written in the text body of the EFSMS. This content shall be different from the content stored in EFSMS in the USIM.

Record 1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Byte: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | … | B176 |
| Hex: | 03 | yy | yy | yy | Yy | yy | yy | yy | yy | yy | yy | yy | … | yy |

NOTE: "yy" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.

At least 9 records.

Logically: Status byte set to empty

no text is written (Remainder Bytes set to "FF").

Record:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Byte: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | … | B176 |
| Hex: | 00 | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | … | FF |

EFSMS on the USIM and EFSMS on the ISIM shall not share the same memory.

EFSMSS on the USIM and EFSMSS on the ISIM shall not share the same memory.

User Equipment:

The User Equipment is connected to the E-UTRAN/EPC ISIM-UICC.

##### 8.2.5.4.2 Procedure

a) The UE is switched on.

b) The user shall read the SMS stored on the USIM.

c) The UE is switched off

#### 8.2.5.5 Acceptance criteria

1) After b) the correct text of the SMS on the USIM shall be read and be displayed to the user.

2) After step b) the EFSMS record 1 of the USIM shall contains the following values:

Logically: Status byte set to SMS read.

The entire content of the SMS shall be unchanged.

Record 1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Byte: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | … | B176 |
| Hex: | 01 | xx | xx | xx | Xx | xx | xx | xx | xx | xx | xx | xx | … | xx |

3) After step b) the EFSMS and EFSMSS on the ISIM shall remain unchanged.

NOTE: "yy" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.

### 8.2.6 Correct reading of a SM on the ISIM if USIM and ISIM are present

#### 8.2.6.1 Definition and applicability

A SM which is stored but not yet read, is indicated as Status "3" (SMS to be read) on EFSMS. The Terminal may indicate the user this status. After the SMS is read by the user, the status of the SMS shall be changed to "1" (SMS read). This applies to short messages stored on the USIM and to short messages stored on the ISIM.

#### 8.2.6.2 Conformance requirement

A received SM was stored in EFSMS on the ISIM and another SM was stored in EFSMS on the USIM. The user shall be able to read short messages stored on the ISIM. At the time the SMS is read by the user, the status of a received SMS, shall be changed to "1" (SMS read).

- TS 23.038 [3], clause 4.

- TS 23.040 [13];

- TS 31.102 [4], clauses 4.2.25 and 4.2.28,

- TS 31.103 [32], clauses 4.2.12 and 4.2.13.

#### 8.2.6.3 Test purpose

1) To verify that the Terminal correctly reads the SMS on the ISIM if the USIM and ISIM are both present.

2) To verify that the Terminal changes the status of a read SMS to "1" (SMS read) of the message read from the ISIM.

#### 8.2.6.4 Method of test

##### 8.2.6.4.1 Initial conditions

The E-UTRAN/EPC ISIM-UICC is used with the following exception:

**EFUST (USIM Service Table)**

As defined in in clause 4.5.2 with the expection that services n°10 (Short Message Storage) and n°11 (SMS Status Report) are available.

**EFSMSS (SMS Status) on the USIM and on the ISIM**

Logically: Last used TP-MR not set.

Memory capacity available (flag unset b1="1").

|  |  |  |
| --- | --- | --- |
| Byte: | B1 | B2 |
| Hex: | FF | FF |

**EFSMS (Short Message Service) on the USIM**

Logically: Status byte set to SMS to be read.

A chosen test is written in the text body of the EFSMS. This content shall be different from the content stored in EFSMS in the ISIM.

Record 1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | … | B176 |
| Hex | 03 | xx | xx | xx | Xx | xx | xx | xx | xx | xx | xx | xx | … | xx |

NOTE: "xx" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.

At least 9 records.

Logically: Status byte set to empty

no text is written (Remainder Bytes set to "FF").

Record:

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

**EFSMS (Short Message Service) on the ISIM**

Logically: Status byte set to SMS to be read.

A chosen test is written in the text body of the EFSMS. This content shall be different from the content stored in EFSMS in the USIM.

Record 1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Byte: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | … | B176 |
| Hex: | 03 | yy | yy | yy | Yy | yy | yy | yy | yy | yy | yy | yy | … | yy |

NOTE: "yy" shall be the appropriate text using the SMS default 7-bit coded alphabet as defined in TS 23.038 [3] which represents the stored SMS.

At least 9 records.

Logically: Status byte set to empty

no text is written (Remainder Bytes set to "FF").

Record:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Byte: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | … | B176 |
| Hex: | 00 | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | FF | … | FF |

EFSMS on the USIM and EFSMS on the ISIM shall not share the same memory.

EFSMSS on the USIM and EFSMSS on the ISIM shall not share the same memory.

User Equipment:

The User Equipment is connected to the E-UTRAN/EPC ISIM-UICC.

##### 8.2.6.4.2 Procedure

a) The UE is switched on.

b) The user shall read the SMS stored on the USIM.

c) The UE is switched off

#### 8.2.6.5 Acceptance criteria

1) After b) the correct text of the SMS on the ISIM shall be read and be displayed to the user.

2) After step b) the EFSMS record 1 of the ISIM shall contains the following values:

Logically: Status byte set to SMS read.

The entire content of the SMS shall be unchanged.

Record 1:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Byte: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | … | B176 |
| Hex: | 01 | yy | yy | yy | yy | yy | yy | yy | yy | yy | yy | yy | … | Yy |

3) After step b) the EFSMS and EFSMSS on the USIM shall remain unchanged.

### 8.2.7 Correct storage of an SM on the UICC

#### 8.2.7.1 Definition and applicability

Once a SMS is received by the UE, the Terminal shall store the SM on the USIM, if this is indicated by the class 2 of the SMS (USIM specific SM). For this it is assumed, that at least one relevant SMS field is available on the USIM and indicated as empty

#### 8.2.7.2 Conformance requirement

The received class 2 SMS shall be stored on the USIM in EFSMS. The status of a received SMS, which has not been read yet, shall be set to "3" (SMS to be read).

- TS 23.038 [3], clause 4.

- TS 23.040 [13], clause 10.1, operation 6;

- TS 24.011, clauses 7.3.1.1, 8.2.2, 8.2.3 and 8.2.5.4, Table 8.4 (part 2)

- TS 31.102 [4], clauses 4.2.25.

- TS 24.301 [26], clauses 5.6.3, 5.6.3.3.

#### 8.2.7.3 Test purpose

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

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

#### 8.2.7.4 Method of test

##### 8.2.7.4.1 Initial conditions

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

1) EFSMS (Short Message Service) and EFSMSS (SMS Status) as defined in 8.2.4.4.1.

The NB-SS transmits on the BCCH, with the following network parameters:

- Attach/detach: disabled.

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

- Access control: unrestricted.

The NB-SS transmits the class 2 short message with the parameters as defined in 8.2.4.4.1.

##### 8.2.7.4.2 Procedure

a) The ME is switched on and will perform USIM initialization and network registration.

b) SMS over SGs (DOWNLINK NAS TRANSPORT and UPLINK NAS TRANSPORT messages) is used to send and receive short messages.

c) Continue with step c) of the Generic Procedure 1 as defined in 8.2.4.4.2.

#### 8.2.7.5 Acceptance criteria

1) After step c) the record of the USIM EFSMS which was empty, shall contain the values as defined in 8.2.4.5

## 8.3 MMS related tests

### 8.3.1 UE recognising the priority order of MMS Issuer Connectivity Parameters

#### 8.3.1.1 Definition and applicability

An MMS User Agent shall use the MMS related information stored in the USIM, if present, unless otherwise specified by the user. Some of these sets of MMS connectivity parameters are preset by the issuer of the USIM with the first supported set being the default. This information is used to connect to the network for purpose of accessing the MMS Relay/Server.

The MMS connectivity information on the USIM includes preferences for the selection of Interface to Core Network and Bearer parameters. If these are stored on the USIM the MMS-capable UE shall automatically select the Interface to Core Network and Bearer parameters based on their order of precedence defined on the USIM unless otherwise specified by the user.

MMS user preferences information, which is stored on the USIM, shall be used by an MMS User Agent for user assistance in preparation of terminal-originated MMs (e.g. default values for parameters that are often used).

#### 8.3.1.2 Conformance requirement

The Terminal's MMS User Agent shall use the MMS connectivity parameters stored first in the supported parameter sets of EFMMSICP as default parameters to connect to the network for MMS purposes (i.e. sending an User generated MM).

- TS 31.102 [4], clauses 4.2.69 and 5.3.30;

- TS 23.140 [23], clause 7.1.14 and Annex F.

MMS user preferences information, which is stored on the USIM, shall be used by an MMS User Agent for user assistance in preparation of terminal-originated MMs.

- TS 31.102 [4], clauses 4.2.70 and 5.3.31;

- TS 23.140 [23], clause 7.1.14 and Annex F.

#### 8.3.1.3 Test purpose

1) To verify that the Terminal's MMS User Agent uses the MMS connectivity parameter stored on the USIM to connect to the network for MMS purposes.

2) To verify that the Terminal's MMS User Agent uses the first stored set of supported parameters in EFMMSICP 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](mailto:mms@operator.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](mailto:mms@operator.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](mailto:mms@operator.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](mailto:mms@operator.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:

**EFUST (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](mailto:mms@operator.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 EFMMSICP 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 EFMMSICP.

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 EFMMSICP.

3) After step b) the Terminal shall have sent the MM to "+0123456789" using the MMS user preference information stored in EFMMSUP.

### 8.3.2 UE recognising the priority order of MMS User Connectivity Parameters

#### 8.3.2.1 Definition and applicability

An MMS User Agent shall use the MMS related information stored in the USIM, if present, unless otherwise specified by the user. The MMS connectivity parameters determined by the user, with the first supported set being the default, shall be used to connect to the network for purpose of accessing the MMS Relay/Server.

The MMS connectivity information on the USIM includes preferences for the selection of Interface to Core Network and Bearer parameters. If these are stored on the USIM the MMS-capable UE shall automatically select the Interface to Core Network and Bearer parameters based on their order of precedence defined on the USIM unless otherwise specified by the user.

MMS user preferences information, which is stored on the USIM, shall be used by an MMS User Agent for user assistance in preparation of terminal-originated MMs (e.g. default values for parameters that are often used).

#### 8.3.2.2 Conformance requirement

When using the MMS User Connectivity Parameters to connect to the network for MMS purposes (i.e. sending an User generated MM), the Terminal's MMS User Agent shall use the MMS User Connectivity Parameters with the highest priority (as defined by its position in EFMMSUCP) unless otherwise specified by the user.

- TS 31.102 [4], clauses 4.2.71 and 5.3.32;

- TS 23.140 [23], clause 7.1.14 and Annex F.

MMS user preferences information, which is stored on the USIM, shall be used by an MMS User Agent for user assistance in preparation of terminal-originated MMs.

- TS 31.102 [4], clauses 4.2.70 and 5.3.31;

- TS 23.140 [23], clause 7.1.14 and Annex F.

#### 8.3.2.3 Test purpose

1) To verify that the Terminal's MMS User Agent uses the MMS connectivity parameter stored on the USIM to connect to the network for MMS purposes.

2) To verify that when using the MMS User Connectivity Parameters to connect to the network for MMS purposes the Terminal's MMS User Agent uses the set of supported parameters in EF MMSUCP with the highest priority (as defined by its position in EFMMSUCP).

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](mailto:mms@operator.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](mailto:mms@operator.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](mailto:mms@operator.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](mailto:mms@operator.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:

**EFUST (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](mailto:mms@operator.com)"

1st Interface to Core Network and Bearer

Bearer: "GSM-CSD"

Address: "+495251699"

Type of address: "E164"

Speed: "Autobauding"

Call type: "ANALOG\_MODEM"

Authentication type: "PAP"

Authentication id: "UDO\_OTS1"

Authentication pw: "Udo\_password1"

2nd Interface to Core Network and Bearer

Bearer: "GSM-CSD"

Address: "+495251700"

Type of address: "E164"

Speed: "Autobauding"

Call type: "ANALOG\_MODEM"

Authentication type: "PAP"

Authentication id: "UDO\_OTS2"

Authentication pw: "Udo\_password2"

3rd Interface to Core Network and Bearer

Bearer: "GSM-GPRS"

Address: "wap.B2B-operator2.com"

Type of address: "APN"

Call type: "ANALOG\_MODEM"

Delivery of erroneous SDU: "No"

Residual Bit Error Rate: "1\*10-5"

SDU-Error-Ratio: "1\*10-6"

Traffic-class: "Interactive class"

Maximum bit rate for downlink: "8 kbps"

Authentication type: "PAP"

Authentication id: "UDO\_OTS1"

Authentication pw: "Udo\_password1"

4th Interface to Core Network and Bearer

Bearer: "GSM-GPRS"

Address: "wap.B2C-operator2.com"

Type of address: "APN"

Call type: "ANALOG\_MODEM"

Delivery of erroneous SDU: "No"

Residual Bit Error Rate: "1\*10-5"

SDU-Error-Ratio: "1\*10-6"

Traffic-class: "Interactive class"

Maximum bit rate for downlink: "8 kbps"

Authentication type: "PAP"

Authentication id: "UDO\_OTS2"

Authentication pw: "Udo\_password2"

Gateway:

Address: "170.187.51.4"

Type of address: "Ipv4"

Port : "9203"

Service: "CO-WSP"

Authentication type: "HTTP BASIC"

Authentication id: "gateway\_user7"

Authentication pw: "gateway\_password7"

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | AB | 82 | 01 | 47 | 80 | 01 | 01 | 81 | 18 | 68 | 74 | 74 |
|  | 70 | 3A | 2F | 2F | 6D | 6D | 73 | 2E | 6F | 70 | 65 | 72 |
|  | 61 | 74 | 6F | 72 | 32 | 2E | 63 | 6F | 6D | 82 | 2F | 10 |
|  | AA | 08 | 2B | 34 | 39 | 35 | 32 | 35 | 31 | 36 | 39 | 39 |
|  | 00 | 09 | 87 | 25 | C5 | 0A | 90 | 0C | 9A | 0D | 55 | 44 |
|  | 4F | 11 | 4F | 54 | 53 | 31 | 00 | 0E | 55 | 64 | 6F | 11 |
|  | 70 | 61 | 73 | 73 | 77 | 6F | 72 | 64 | 31 | 00 | 82 | 2F |
|  | 10 | AA | 08 | 2B | 34 | 39 | 35 | 32 | 35 | 31 | 37 | 30 |
|  | 30 | 00 | 09 | 87 | 25 | C5 | 0A | 90 | 0C | 9A | 0D | 55 |
|  | 44 | 4F | 11 | 4F | 54 | 53 | 32 | 00 | 0E | 55 | 64 | 6F |
|  | 11 | 70 | 61 | 73 | 73 | 77 | 6F | 72 | 64 | 32 | 00 | 82 |
|  | 43 | 10 | AB | 08 | 03 | 77 | 61 | 70 | 0D | 42 | 32 | 42 |
|  | 2D | 6F | 70 | 65 | 72 | 61 | 74 | 6F | 72 | 32 | 03 | 63 |
|  | 6F | 6D | 00 | 09 | 89 | 0A | 90 | 31 | 03 | 37 | 70 | 38 |
|  | 06 | 33 | 60 | 36 | 08 | 0C | 9A | 0D | 55 | 44 | 4F | 11 |
|  | 4F | 54 | 53 | 31 | 00 | 0E | 55 | 64 | 6F | 11 | 70 | 61 |
|  | 73 | 73 | 77 | 6F | 72 | 64 | 31 | 00 | 82 | 43 | 10 | AB |
|  | 08 | 03 | 77 | 61 | 70 | 0D | 42 | 32 | 43 | 2D | 6F | 70 |
|  | 65 | 72 | 61 | 74 | 6F | 72 | 32 | 03 | 63 | 6F | 6D | 00 |
|  | 09 | 89 | 0A | 90 | 31 | 03 | 37 | 70 | 38 | 06 | 33 | 60 |
|  | 36 | 08 | 0C | 9A | 0D | 55 | 44 | 4F | 11 | 4F | 54 | 53 |
|  | 32 | 00 | 0E | 55 | 64 | 6F | 11 | 70 | 61 | 73 | 73 | 77 |
|  | 6F | 72 | 64 | 32 | 00 | 83 | 3B | 20 | 31 | 37 | 30 | 2E |
|  | 31 | 38 | 37 | 2E | 35 | 31 | 2E | 34 | 00 | 21 | 85 | 23 |
|  | 39 | 32 | 30 | 31 | 00 | 24 | CB | 19 | 9C | 1A | 67 | 61 |
|  | 74 | 65 | 77 | 61 | 79 | 11 | 75 | 73 | 65 | 72 | 37 | 00 |
|  | 1B | 67 | 61 | 74 | 65 | 77 | 61 | 79 | 11 | 70 | 61 | 73 |
|  | 73 | 77 | 6F | 72 | 64 | 37 | 00 |  |  |  |  |  |

The UICC is installed into the Terminal and the user has indicated the data stored in EF**MMSUCP**as default.

##### 8.3.2.4.2 Procedure

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

b) When the Terminal is in idle mode the user shall generate an MM using the MMS User Agent on the Terminal with the default MMS User Connectivity Parameters and the MMS user preference information stored in the card and send it to "+0123456789".

#### 8.3.2.5 Acceptance criteria

1) After step b) the Terminal shall have read the first supported set of MMS connectivity parameters stored in EF**MMSUCP**.

2) After step b) the Terminal shall have sent the MM to "+0123456789" using the MMS User Connectivity Parameter set with the highest priority (as defined by its position in EF**MMSUCP**), which can be used to access an available MMS Relay/Server.

3) After step b) the Terminal shall have sent the MM to "+0123456789" using the MMS user preference information stored in EF**MMSUCP**.

### 8.3.3 UE recognising the priority order of MMS Issuer Connectivity Parameters over the MMS User Connectivity Parameters

#### 8.3.3.1 Definition and applicability

An MMS User Agent shall use the MMS related information stored in the USIM, if present, unless otherwise specified by the user. This information comprises MMS connectivity information, MMS user preferences and MMS notifications.

MMS user preferences information, which is stored on the USIM, shall be used by an MMS User Agent for user assistance in preparation of terminal-originated MMs (e.g. default values for parameters that are often used).

#### 8.3.3.2 Conformance requirement

MMS connectivity information, on the USIM includes a number of sets of MMS connectivity parameters. Some of these sets of MMS connectivity parameters are preset by the issuer of the USIM with the first set being the default. Such default preset MMS connectivity parameter set shall be selected unless otherwise specified by the user.

- TS 31.102 [4], clauses 4.2.69, 4.7.71, 5.3.30 and 5.3.32;

- TS 23.140 [23], clause 7.1.14 and Annex F

#### 8.3.3.3 Test purpose

1) To verify that the Terminal's MMS User Agent uses the MMS connectivity parameter stored on the USIM to connect to the network for MMS purposes.

2) To verify that a MMS Issuer Connectivity Parameter set with lower priority (as defined by its position in EF**MMSICP**) takes precedence over a MMS User Connectivity Parameter set with a higher priority.

#### 8.3.3.4 Method of test

##### 8.3.3.4.1 Initial conditions

Four MMS Relays/Servers are available:

MMS Relay/Server 1:

MMS Connectivity Parameters

MMS implementation information: "WAP"

MMS Relay/Server

MMS Relay/Server information: "http://[mms-operator3.com](mailto:mms@operator.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](mailto:mms@operator.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](mailto:mms@operator.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](mailto:mms@operator.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:

**EFUST (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](mailto:mms@operator.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](mailto:mms@operator.com)"

1st Interface to Core Network and Bearer

Bearer: "GSM-CSD"

Address: "+495251699"

Type of address: "E164"

Speed: "Autobauding"

Call type: "ANALOG\_MODEM"

Authentication type: "PAP"

Authentication id: "UDO\_OTS1"

Authentication pw: "Udo\_password1"

2nd Interface to Core Network and Bearer

Bearer: "GSM-CSD"

Address: "+495251700"

Type of address: "E164"

Speed: "Autobauding"

Call type: "ANALOG\_MODEM"

Authentication type: "PAP"

Authentication id: "UDO\_OTS2"

Authentication pw: "Udo\_password2"

3rd Interface to Core Network and Bearer

Bearer: "GSM-GPRS"

Address: "wap.B2P-operator3.com"

Type of address: "APN"

Call type: "ANALOG\_MODEM"

Delivery of erroneous SDU: "No"

Residual Bit Error Rate: "1\*10-5"

SDU-Error-Ratio: "1\*10-6"

Traffic-class: "Interactive class"

Maximum bit rate for downlink: "8 kbps"

Authentication type: "PAP"

Authentication id: "UDO\_OTS1"

Authentication pw: "Udo\_password1"

4th Interface to Core Network and Bearer

Bearer: "GSM-GPRS"

Address: "wap.B2C-operator3.com"

Type of address: "APN"

Call type: "ANALOG\_MODEM"

Delivery of erroneous SDU: "No"

Residual Bit Error Rate: "1\*10-5"

SDU-Error-Ratio: "1\*10-6"

Traffic-class: "Interactive class"

Maximum bit rate for downlink: "8 kbps"

Authentication type: "PAP"

Authentication id: "UDO\_OTS2"

Authentication pw: "Udo\_password2"

Gateway:

Address: "170.187.51.5"

Type of address: "Ipv4"

Port : "9201"

Service: "CO-WSP"

Authentication type: "HTTP BASIC"

Authentication id: "gateway\_user9"

Authentication pw: "gateway\_password9"

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coding: | AB | 82 | 01 | | 47 | 80 | 01 | 01 | 81 | 18 | 68 | 74 | 74 |
|  | 70 | 3A | 2F | | 2F | 6D | 6D | 73 | 2D | 6F | 70 | 65 | 72 |
|  | 61 | 74 | 6F | | 72 | 33 | 2E | 63 | 6F | 6D | 82 | 2F | 10 |
|  | AA | 08 | 2B | | 34 | 39 | 35 | 32 | 35 | 31 | 36 | 39 | 39 |
|  | 00 | 09 | 87 | | 25 | C5 | 0A | 90 | 0C | 9A | 0D | 55 | 44 |
|  | 4F | 11 | 4F | | 54 | 53 | 31 | 00 | 0E | 55 | 64 | 6F | 11 |
|  | 70 | 61 | 73 | | 73 | 77 | 6F | 72 | 64 | 31 | 00 | 82 | 2F |
|  | 10 | AA | 08 | | 2B | 34 | 39 | 35 | 32 | 35 | 31 | 37 | 30 |
|  | 30 | 00 | 09 | | 87 | 25 | C5 | 0A | 90 | 0C | 9A | 0D | 55 |
|  | 44 | 4F | 11 | | 4F | 54 | 53 | 32 | 00 | 0E | 55 | 64 | 6F |
|  | 11 | 70 | 61 | | 73 | 73 | 77 | 6F | 72 | 64 | 32 | 00 | 82 |
|  | 43 | 10 | AB | | 08 | 03 | 77 | 61 | 70 | 0D | 42 | 32 | 50 |
|  | 2D | 6F | 70 | | 65 | 72 | 61 | 74 | 6F | 72 | 33 | 03 | 63 |
|  | 6F | 6D | 00 | | 09 | 89 | 0A | 90 | 31 | 03 | 37 | 70 | 38 |
|  | 06 | 33 | 60 | | 36 | 08 | 0C | 9A | 0D | 55 | 44 | 4F | 11 |
|  | 4F | 54 | 53 | | 31 | 00 | 0E | 55 | 64 | 6F | 11 | 70 | 61 |
|  | 73 | 73 | 77 | | 6F | 72 | 64 | 31 | 00 | 82 | 43 | 10 | AB |
|  | 08 | 03 | 77 | | 61 | 70 | 0D | 42 | 32 | 43 | 2D | 6F | 70 |
|  | 65 | 72 | 61 | | 74 | 6F | 72 | 33 | 03 | 63 | 6F | 6D | 00 |
|  | 09 | 89 | 0A | | 90 | 31 | 03 | 37 | 70 | 38 | 06 | 33 | 60 |
|  | 36 | 08 | 0C | | 9A | 0D | 55 | 44 | 4F | 11 | 4F | 54 | 53 |
|  | 32 | 00 | 0E | 55 | | 64 | 6F | 11 | 70 | 61 | 73 | 73 | 77 |
|  | 6F | 72 | 64 | 32 | | 00 | 83 | 3C | 20 | 31 | 37 | 30 | 2E |
|  | 31 | 38 | 37 | | 2E | 35 | 31 | 2E | 35 | 00 | 21 | 85 | 23 |
|  | 39 | 32 | 30 | | 31 | 00 | 24 | CB | 19 | 9C | 1A | 67 | 61 |
|  | 74 | 65 | 77 | | 61 | 79 | 11 | 75 | 73 | 65 | 72 | 39 | 00 |
|  | 1B | 67 | 61 | | 74 | 65 | 77 | 61 | 79 | 11 | 70 | 61 | 73 |
|  | 73 | 77 | 6F | | 72 | 64 | 39 | 00 |  |  |  |  |  |

The UICC is installed into the Terminal and the user hasn't specified a default MMS connectivity parameter set.

##### 8.3.3.4.2 Procedure

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

b) When the Terminal is in idle mode the user shall generate an MM using the MMS User Agent on the Terminal with the default MMS connectivity parameter set and send it to "+0123456789". If no MMS Relay/Server is available for this parameter set, the next MMS connectivity parameter set offered by the MMS User Agent shall be used to send the MM.

#### 8.3.3.5 Acceptance criteria

After step b) the Terminal shall have sent the MM to "+0123456789" using the first supported MMS connectivity parameter set, which can be used to access an available MMS Relay/Server and is stored in EF**MMSICP**.

### 8.3.4 Usage of MMS notification

#### 8.3.4.1 Definition and applicability

An MMS User Agent shall use the MMS related information stored in the USIM, if present, unless otherwise specified by the user. This information comprises MMS connectivity information, MMS user preferences and MMS notifications. MMS notifications should be stored on the USIM together with an associated status by a MMS User Agent according to TS 23.140 [23].

#### 8.3.4.2 Conformance requirement

A Terminal supporting MMS notification storage on the USIM shall store MMS notifications together with an associated status on the USIM.

- TS 31.102 [4], clauses 4.2.67 and 5.3.29;

- TS 23.140 [23], clauses 7.1.12, 7.1.14, 8.1.4 and Annex F.

#### 8.3.4.3 Test purpose

To verify that the Terminal stores and updates MMS notifications with the associated status on the USIM correctly.

#### 8.3.4.4 Method of test

##### 8.3.4.4.1 Initial conditions

Two MMS Relays/Servers are available:

MMS Relay/Server 1:

MMS Connectivity Parameters

MMS implementation information: "WAP"

MMS Relay/Server

MMS Relay/Server information: "http://[mms-operator1.com](mailto:mms@operator.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](mailto:mms@operator.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:

**EFUST (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](mailto:mms@operator.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 EFMMSICP and shall have forward the MM to "+0123456789" using the MMS Relay/Server 1. The MMS notification shall have either been set to "used space, notification read, MM forwarded" or the MMS notification shall have been deleted and the associated shall have been set to "Free space".

5) After step f) the MMS User Agent on the terminal shall have stored the MMS notification on the USIM with the values defined in step f) of 8.4.4.4.2, the associated status shall have been set to "Used space, notification not read, MM not retrieved" and the MMS User Agent shall indicate to the user that a MMS notification has been received.

6) After step g) the status of the MMS notification stored on the USIM shall have been set to "used space, notification read, MM not retrieved".

7) After step h) the MMS user agent shall have not retrieved the MM from the MMS Relay/Server 1 and the status of the MMS notification stored on the USIM shall have either been set to "used space, notification read, MM rejected" or the MMS notification shall have been deleted and the associated shall have been set to "Free space".

## 8.4 UICC presence detection

### 8.4.1 Definition and applicability

To ensure that the UICC has not been removed during a card session, the Terminal sends in case of inactivity on the UICC-Terminal interface, at frequent intervals, a STATUS command during each call.

This procedure shall be used in addition to a mechanical or other devices used to detect the removal of a UICC.

### 8.4.2 Conformance requirement

A STATUS command shall be issued within all 30 second periods of inactivity on the UICC-Terminal interface during a call. Inactivity in this case is defined as starting at the end of the last communication or the last issued STATUS command. If no response data is received to this STATUS command, then the call shall be terminated as soon as possible but at least within 5s after the STATUS command has been sent. If the DF indicated in response to a STATUS command is not the same as that which was indicated in the previous response, or accessed by the previous command, then the call shall be terminated as soon as possible but at least within 5 seconds after the response data has been received. Here a call covers a circuit switched call, and/or an active PDP context.

The ME may suspend the UICC presence detection based on STATUS commands in case it has an active PDP context, but has not exchanged any data with the network within a 30s period of inactivity on the UICC-ME interface, and resume it as soon as data is exchanged with the network, sending immediately a new STATUS command.

- TS 31.102 [4], clauses 5.1.9

- ETSI TS 102 221 [5], clause 14.5.2.

### 8.4.3 Test purpose

1) To verify that there are no periods of inactivity on the UICC‑Terminal interface greater than 30 seconds during a call.

2) To verify that the terminal terminates a call within 5 s at the latest after having received an invalid response to the STATUS command.

### 8.4.4 Method of test

#### 8.4.4.1 Initial conditions

The terminal shall be connected to the UICC simulator. All elementary files shall be coded as default.

#### 8.4.4.2 Procedure

a) A call shall be set up using the generic call setup for circuit switched call or to activate a PDP context.

NOTE: In case of PDP context for a terminal that supports Rel-12 or later, exchange of data with the network may be required to guarantee the correct result of the test.

b) The UICC simulator shall monitor the time of periods of inactivity on the UICC-Terminal interface.

c) After 3 minutes, the call or PDP context shall be cleared.

d) A call shall be set up using the generic call setup for circuit switched call or to activate a PDP context.

NOTE: In case of PDP context for a terminal that supports Rel-12 or later, exchange of data with the network may be required to guarantee the correct result of the test.

e) After one minute after the call was successfully set up, the UICC simulator shall respond to a STATUS command with the response data indicating a DF different from the current DF.

### 8.4.5 Acceptance criteria

1) During step b), the time of periods of inactivity on the UICC-Terminal interface shall not be longer than 30 seconds.

2) After step e), the Terminal shall terminate the call or PDP context within 5 s at the latest after having received the wrong response to the STATUS command.

## 8.5 UICC presence detection when connected to E-UTRAN/EPC

### 8.5.1 Definition and applicability

To ensure that the UICC has not been removed during a card session, the Terminal sends in case of inactivity on the UICC-Terminal interface, at frequent intervals, a STATUS command during each call or active PDP context.

### 8.5.2 Conformance requirement

A STATUS command shall be issued within all 30 second periods of inactivity on the UICC-Terminal interface during an active PDP context. Inactivity in this case is defined as starting at the end of the last communication or the last issued STATUS command. If no response data is received to this STATUS command, then the active PDP context shall be terminated as soon as possible but at least within 5s after the STATUS command has been sent. If the DF indicated in response to a STATUS command is not the same as that which was indicated in the previous response, or accessed by the previous command, then the active PDP context shall be terminated as soon as possible but at least within 5 seconds after the response data has been received.

The ME may suspend the UICC presence detection based on STATUS commands in case it has an active EPS bearer context, but has not exchanged any data with the network within a 30s period of inactivity on the UICC-ME interface, and resume it as soon as data is exchanged with the network, sending immediately a new STATUS command.

There is 1:1 mapping between one PDP context and one EPS Bearer.

- TS 31.102 [4], clauses 5.1.9

- ETSI TS 102 221 [5], clause 14.5.2.

- TS 23.060 [25], clause 9.2.1A.

### 8.5.3 Test purpose

1) To verify that there are no periods of inactivity on the UICC‑Terminal interface greater than 30 seconds during an active PDP context.

2) To verify that the terminal terminates the default EPS Bearer within 5 s at the latest after having received an invalid response to the STATUS command.

### 8.5.4 Method of test

#### 8.5.4.1 Initial conditions

The terminal is connected to the USIM Simulator and the E-USS/NB-SS.

The default E-UTRAN UICC is used.

#### 8.5.4.2 Procedure

a) The terminal is switched on, performs the Attach procedure to the E-USS/NB-SS and establishes the default EPS bearer.

NOTE: For a terminal that supports Rel-12 or later, exchange of data with the network may be required to guarantee the correct result of the test.

b) The UICC simulator shall monitor the time of periods of inactivity on the UICC-Terminal interface.

c) Step b) shall be performed for 3 minutes.

d) After one minute after the end of step c), the UICC simulator shall respond to a STATUS command with the response data indicating a DF different from the current DF.

### 8.5.5 Acceptance criteria

1) During step c), the time of periods of inactivity on the UICC-Terminal interface shall not be longer than 30 seconds.

2) After step d), the Terminal shall terminate the default EPS bearer within 5 s at the latest after having received the wrong response to the STATUS command.