**3GPP TSG-CT WG6 Meeting #110*****C6-220150***

**E-meeting; 22th – 25th Feb. 2022**

|  |
| --- |
| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **31.124** | **CR** | **0626** | **rev** | **-** | **Current version:** | **16.6.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps | **X** | ME | **X** | Radio Access Network | **X** | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  | Add a TC for 27.22.4.7- REFRESH (SUPI\_NAI changing procedure, NG-RAN) |
|  |  |
| ***Source to WG:*** | China Mobile |
| ***Source to TSG:*** | CT6 |
|  |  |
| ***Work item code:*** | 5GS\_Ph1\_UEConTest |  | ***Date:*** | 2022-02-18 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-16 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  | \_ |
| ***Reason for change:*** | The current specification doesn’t involve test case about REFRESH of EFSUPI\_NAI changing procedure for NG-RAN. |
|  |  |
| ***Summary of change:*** | Add a TC for REFRESH when EFSUPI\_NAI changes in NG-RAN. |
|  |  |
| ***Consequences if not approved:*** | The current test cases don’t cover REFRESH of EFSUPI\_NAI changing procedure for NG-RAN. |
|  |  |
| ***Clauses affected:*** | 3.4, 27.22.4.7 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **x** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **x** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **x** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |

|  |  |
| --- | --- |
| ***This CR's revision history:*** |  |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Start of change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

## 3.4 Applicability table

Table B.1: Applicability of tests

| **Item** | **Description** | **Tested feature defined in Release** | **Test sequence(s)** | **R99 ME** | **Rel-4 ME** | **Rel-5 ME** | **…** | **Rel-14-ME** | **Rel-15 ME** | **Rel-16 ME** | Terminal Profile | **Network Dependency** | **Support** | **Additional test case execution recommendation** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| … | … | … | … | … | … | … | … | … | … |  |  | … | … | … |
| 10 | **REFRESH 27.22.4.7** |  |  |  |  |  |  |  |  |  |  |  |  |  |
| … | … | … | … | … | … | … | … | … |  |  | … | … | … |
| REFRESH, UICC Reset for SUPI\_NAI Changing procedure, NG-RAN |  Rel-16 | x.1 |  |  |  |  |  |  | C232 | E.1/89 AND E.1/281 | NG-RAN |  |  |
| REFRESH, 3G Session Reset for SUPI\_NAI Changing procedure, NG-RAN |  Rel-16 | x.2 |  |  |  |  |  |  | C232 | E.1/89 AND E.1/281 | NG-RAN |  |  |

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Next of change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

##### 27.22.4.7.x REFRESH (SUPI\_NAI changing procedure, NG-RAN)

27.22.4.7.x.1 Definition and applicability

See clause 3.2.2.

27.22.4.7.x.2 Conformance requirement

The ME shall support the REFRESH command as defined in:

- TS 31.111 [15] clause 6.1, clause 6.4.7, clause 6.4.7.1, clause 6, clause 6.6.13, clause x.2, clause 8.6, clause 8.7 and clause 8.18.

Additionally the ME shall support the USIM Initialization and USIM application closure procedure as defined in:

- TS 31.102 [14] clause 5.1.1.2, clause 5.1.3 and Annex I.

27.22.4.7.x.3 Test purpose

To verify that the ME performs the Proactive Command – REFRESH in accordance with the Command Qualifier and the SUPI\_NAI changing procedure. This may require the ME to perform:

- the USIM initialization

- a re-read of the contents and structure of the SUPI\_NAI on the USIM

- a restart of the card session

- a successful return of the result of the execution of the command in the TERMINAL RESPONSE command sent to the UICC.

27.22.4.7.x.4 Method of test

27.22.4.7.x.4.1 Initial conditions

The ME is connected to the USIM Simulator and connected to the NG-SS.

The NG-RAN parameters of the system simulator are:

- Mobile Country Code (MCC) = 001;

- Mobile Network Code (MNC) = 01;

- Tracking Area Code (TAC) = 000001;

The elementary files are coded as the default NG-RAN UICC with the following exceptions:

**EFUST (USIM Service Table)**

Logically:

User controlled PLMN selector available

Fixed dialling numbers available

The GSM Access available

The Group Identifier level 1 and level 2 not available

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

Enabled Services Table available

EPS Mobility Management Information available

Allowed CSG Lists and corresponding indications

5GS Mobility Management Information available

5G Security Parameters available

Subscription identifier privacy support available

SUCI calculation by the USIM not available

Support for SUPI of type NSI or GLI or GCI available

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Byte: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 |
| Binary: | xxxx xx1x | xxxx xxxx | xxxx 1x00 | xxxx x1xx | xxxx xx11 | xxxx xxxx | xxxx xxxx | xxxx xxxx |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | B9 | B10 | B11 |  | B16 | B17 |  |  |
|  | xxxx xxxx | xxxx xxxx | xx11 xxxx | ..... | xxx0 111x | xxxxxx1x |  |  |

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

**EFSUPI\_NAI (SUPI as Network Access Identifier)**

Logically:

Network Access Identifier TLV data object: 80 14 75 73 65 72 69 64 31 38 40 65 78 61 6D 70 6C 65 2E 63 6F 6D

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coding:** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** |
| Hex | 80  | 14 | 75 | 73 | 65 | 72 | 69 | 64 |
|  | **B9** | **B10** | **B11** | **B12** | **B13** | **B14** | **B15** | **B16** |
|  | 31 | 38 | 40 | 65 | 78 | 61 | 6D | 70 |
|  | **B17** | **B18** | **B19** | **B20** | **B21** | **B22** |  |  |
|  | 6C | 65 | 2E | 63 | 6F | 6D |  |  |

Prior to this test the ME shall have been powered on and performed the PROFILE DOWNLOAD procedure.

27.22.4.7.x.4.2 Procedure

**Expected Sequence x.1 (REFRESH, UICC Reset for SUPI\_NAI Changing procedure, NG-RAN)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Step** | **Direction** | **MESSAGE / Action** | **Comments** |
| 1 | ME → NG-SS | ME successfully REGISTER with NG-RAN cell. |  |
| 2 | UICC → ME | PROACTIVE COMMAND PENDING: REFRESH x.1.1 | [To inform the ME that SUPI\_NAI has changed] |
| 3 | ME → UICC | FETCH |  |
| 4 | UICC → ME | PROACTIVE COMMAND: REFRESH x.1.1 or x.1.2 | IF terminal supports PD\_ Refresh\_Enforcement\_Policy use PROACTIVE COMMAND: REFRESH x.1.2, ELSE x.1.1. |
| 5 | ME→NG-SS | Deregistration Request |  |
| 6 | ME → UICC | STATUS[P1='02'] | ME indicates to USIM that the termination procedure is starting |
| 7 | ME → UICC | ME performs UICC reset. | Both cold and warm resets are allowed |
| 8 | UICC | Update EF SUPI\_NAI and EF 5GS3GPPLOCI. | The content of EF SUPI\_NAI has been changed to "userid19@example.com" and the 5G-GUTI in EF 5GS3GPPLOCI is updated to 'FF FF FF FF FF FF FF FF FF FF FF FF FF'. |
| 9 | ME→UICC | ME performs USIM Initialization, including send STATUS[P1='01'] and no TERMINAL RESPONSE shall be sent. | [ME resets and performs USIM initialization] |
| 10 | ME→NG-SS | Registration Request | The ME will register using SUPI\_NAI "userid19@example.com" in NG-RAN. |
| 11 | NG-SS→ME | Registration Accpet |  |
| 12 | ME→NG-SS | Registration Complete |  |

PROACTIVE COMMAND: REFRESH x.1.1

Logically:

Command details

 Command number: 1

 Command type: REFRESH

 Command qualifier: UICC RESET

Device identities

 Source device: UICC

 Destination device: ME

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BER-TLV: | D0 | 09 | 81 | 03 | 01 | 01 | 04 | 82 | 02 | 81 | 82 |

PROACTIVE COMMAND: REFRESH x.1.2

Logically:

Command details

 Command number: 1

 Command type: REFRESH

 Command qualifier: UICC RESET

Device identities

 Source device: UICC

 Destination device: ME

Refresh enforcement policy: Force immediate REFRESH even if the terminal is busy on data call

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BER-TLV: | D0 | 0C | 81 | 03 | 01 | 01 | 04 | 82 | 02 | 81 | 82 | 3A |
|  | 01 | 02 |

**Expected Sequence x.2 (REFRESH, 3G Session Reset for SUPI\_NAI Changing procedure, NG-RAN)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Step** | **Direction** | **MESSAGE / Action** | **Comments** |
| 2 | ME → NG-SS | ME successfully REGISTER with NG-RAN cell. |  |
| 4 | UICC→ ME | PROACTIVE COMMAND PENDING: REFRESH x.2.1 | [To inform the ME that SUPI\_NAI has changed] |
| 5 | ME → UICC | FETCH |  |
| 6 | UICC → ME | PROACTIVE COMMAND: REFRESH x.2.1 or x.2.2 | IF terminal supports PD\_ Refresh\_Enforcement\_Policy use PROACTIVE COMMAND: REFRESH x.2.2, ELSE x.2.1. |
| 7 | ME→NG-SS | Deregistration Request |  |
| 9 | ME → UICC | STATUS[P1='02'] | If A.1/172 is supported, then the ME indicates to USIM that the termination procedure is starting, completes the 3G session termination procedure and resets the application via SELECT by DF name command with the AID.The ME performs the USIM initialization. |
| 10 | UICC | Update EF SUPI\_NA and EF 5GS3GPPLOCI | The content of EF SUPI\_NAI has been updated to "userid19@example.com" and 5G-GUTI in EF 5GS3GPPLOCI is updated to 'FF FF FF FF FF FF FF FF FF FF FF FF FF' |
| 11 | ME → UICC | TERMINAL RESPONSE: REFRESH x.2.1A or TERMINAL RESPONSE: REFRESH x.2.1B | [normal ending] |
| 12 | UICC → ME | PROACTIVE UICC SESSION ENDED |  |
| 13 | ME→NG-SS | Registration Request | The ME will register using SUPI\_NAI "userid19@example.com" in NG-RAN. |
| 14 | NG-SS→ME | Registration Accpet |  |
| 15 | ME→NG-SS | Registration Complete |  |

PROACTIVE COMMAND: REFRESH x.2.1

Logically:

Command details

 Command number: 1

 Command type: REFRESH

 Command qualifier: 3G Session Reset

Device identities

 Source device: UICC

 Destination device: ME

File list

 Number of files: 2

 File: EF SUPI\_NAI

 File: EF 5GS3GPPLOCI

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BER-TLV: | D0 | 1C | 81 | 03 | 01 | 01 | 06 | 82 | 02 | 81 | 82 | 92 |
|  | 11 | 02 | 3F | 00 | 7F | FF | 5F | C0 | 4F | 09 | 3F | 00 |
|  | 7F | FF | 5F | C0 | 4F | 01 |  |  |  |  |  |  |

PROACTIVE COMMAND: REFRESH x.2.2

Logically:

Command details

 Command number: 1

 Command type: REFRESH

 Command qualifier: 3G Session Reset

Device identities

 Source device: UICC

 Destination device: ME

File list

 Number of files: 2

 File: EF SUPI\_NAI

 File: EF 5GS3GPPLOCI

Refresh enforcement policy: Force immediate REFRESH even if the terminal is busy on data call

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BER-TLV: | D0 | 1F | 81 | 03 | 01 | 01 | 06 | 82 | 02 | 81 | 82 | 92 |
|  | 11 | 02 | 3F | 00 | 7F | FF | 5F | C0 | 4F | 09 | 3F | 00 |
|  | 7F | FF | 5F | C0 | 4F | 01 | 3A | 01 | 02 |  |  |  |

TERMINAL RESPONSE: REFRESH x.2.1A

Logically:

Command details

 Command number: 1

 Command type: REFRESH

 Command qualifier: 3G Session Reset

Device identities

 Source device: ME

 Destination device: UICC

Result

 General Result: Command performed successfully

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BER-TLV: | 81 | 03 | 01 | 01 | 06 | 82 | 02 | 82 | 81 | 83 | 01 | 00 |

TERMINAL RESPONSE: REFRESH x.2.1B

Logically:

Command details

 Command number: 1

 Command type: REFRESH

 Command qualifier: 3G Session Reset

Device identities

 Source device: ME

 Destination device: UICC

Result

 General Result: REFRESH performed with additional EFs read

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BER-TLV: | 81 | 03 | 01 | 01 | 06 | 82 | 02 | 82 | 81 | 83 | 01 | 03 |

27.22.4.7.5.5 Test requirement

The ME shall operate in the manner defined in expected sequences x.1 to x.2.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* End of change \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*