**3GPP TSG-CT WG6 #112-e *C6-220448***

**E-meeting; 23rd – 26th Aug 2022**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **31.124** | **CR** | **0647** | **rev** | **-** | **Current version:** | **16.8.0** |  |
|  | | | | | | | | |
| *For* [***H******E******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** |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Correction to TC 27.22.14.3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | China telecom, Datang Linktester Technology Co., Ltd., Huawei, HiSilicon | | | | | | | | | |
| ***Source to TSG:*** | CT6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | UEConTest\_R16 | | | | |  | | ***Date:*** | | 2022-07-20 |
|  |  | | | |  | | |  | |  |
| ***Category:*** | **F** |  | | | | | | ***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 can be 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-12 (Release 12) Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | 1) TS 31.111 clause 7.1.1.1A states:  *when the ME receives a:*  *- REGISTRATION ACCEPT message or a DL NAS TRANSPORT message that includes an SOR transparent container information element with list type with value "0"= secure packet; or*  *(..)*  *- containing a secure packet constructed as an SMS-Deliver (as specified in 3GPP TS 23.040 [5] with:*  *(..)*  *- then the ME shall pass the message transparently to the UICC using the ENVELOPE (SMS-PP DOWNLOAD) command as defined below;*  *- the ME shall not display or alert the user*  *- the secure packet is coded as a Command Packet formatted as Short Message Point to Point (as specified in 3GPP TS 31.115  [41]))*  2) CR C1-192101(Corrections to the length of the SOR transparent container and UE parameters update transparent container) was agreed in CT1#116 in April 2019. C1-192101cleary states that, the maximum length of a secured packet included in an SOR transparent container is 163 octets according to TS 23.040. The original maximum length of a secured packet was changed from 2026 octets to “n” / “a+z” in TS 24.501 correspondingly.  3) In such case, the secured packet in the SOR transparent container information element should include only one SMS-deliver and is no more than 163 octets.  4) The test Sequence 3.2 (SMS-PP Data Download in several ENVELOPE commands after Steering of Roaming via REGISTRATION ACCEPT long message with REFRESH command [Steering of Roaming]), which includes 3 consecutive SMS-Delivers in the secured packet of SOR transparent container and excessive octets, is somehow contradicted with TS 31.111 clause 7.1.1.1A and is not necessary. | | | | | | | | |
| ***PL*** | |  | | | | | | | | |
| ***Summary of change:*** | | 1. Delete test Sequence 3.2 (SMS-PP Data Download in several ENVELOPE commands after Steering of Roaming via REGISTRATION ACCEPT long message with REFRESH command [Steering of Roaming]) in clause 27.22.14.3.4; 2. Fix some errors in Applicability table**;** 3. Fix some typos; | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | 1. Inconsistency between the test purpose and test sequences. 2. unaligned with TS 31.111 and TS 24.501. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 3.4, 27.22.14.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | Was C6-220448 |

---------------------------- Start of Change -----------------------------

## 3.4 Applicability table

NOTE: It is possible that the applicability of some tests indicated in table B.1 does not match with the value in the Release column, due to late definition of the test sequences. Tests should be performed without considering the Release column, but only based on the conditions indicated for each release.

Table B.1: Applicability of tests

| Item | Description | Re-lease | Test sequence (s) | Rel 99 ME | Rel-4 ME | Rel-5 ME | Rel-6 ME | Rel-7 ME | **Rel-8 ME** | **Rel-9 ME** | **Rel-10 ME** | **Rel-11 ME** | Rel-12 ME | Rel-13 ME | Rel-14 ME | Rel-15 ME | Rel-16 ME | Terminal Profile | Network Dependency | Sup-port | Additional test case execution parameter |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | **PROFILE DOWNLOAD 27.22.1** | R99 | 1 | M | M | M | M | M | M | M | M | M | M | M | M | M | M | E.1/1 | No |  |  |
| 2 | **Contents of the TERMINAL PROFILE command 27.22.2** | R99 |  | M | M | M | M | M | M | M | M | M | M | M | M | M | M | E.1/1 | No |  |  |
| 3 | **Servicing of Proactive UICC Commands 27.22.3** | R99 |  | M | M | M | M | M | M | M | M | M | M | M | M | M | M |  | No |  |  |
| … |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 54 | **27.22.14: SMS-PP Data Download on NAS messages** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 27.22.14.1: SMS-PP Data Dowload after UE parameters update data (Routing Indicator Data) via DL NAS TRANSPORT message "acknowledgement not requested" and "re-registration not requested" | Rel-15 | 1.1 |  |  |  |  |  |  |  |  |  |  |  |  | C231 | C231 | E.1/24 AND E.1/2 | NG-SS only |  |  |

| Item | Description | Re-lease | Test sequence (s) | Rel 99 ME | Rel-4 ME | Rel-5 ME | Rel-6 ME | Rel-7 ME | **Rel-8 ME** | **Rel-9 ME** | **Rel-10 ME** | **Rel-11 ME** | Rel-12 ME | Rel-13 ME | Rel-14 ME | Rel-15 ME | Rel-16 ME | Terminal Profile | Network Dependency | Sup-port | Additional test case execution parameter |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | SMS-PP Data Download after Steering of Roaming via DL NAS TRANSPORT long message with REFRESH command [Steering of Roaming] | Rel-15 | 2.2 |  |  |  |  |  |  |  |  |  |  |  |  | C231 | C231 | E.1/24 AND E.1/2 | NG-SS only |  |  |
|  | 27.22.14.1: SMS-PP Data Dowload after UE parameters update data (Routing Indicator Data) via DL NAS TRANSPORT message "acknowledgement not requested" and "re-registration requested" | Rel-15 | 1.2 |  |  |  |  |  |  |  |  |  |  |  |  | C231 | C231 | E.1/24 AND E.1/2 | NG-SS only |  |  |
|  | 27.22.14.1: SMS-PP Data Dowload after UE parameters update data (Routing Indicator Data) via DL NAS TRANSPORT message "acknowledgement requested" and "re-registration requested" | Rel-15 | 1.3 |  |  |  |  |  |  |  |  |  |  |  |  | C231 | C231 | E.1/24 AND E.1/2 | NG-SS only |  |  |
|  | 27.22.14.1: SMS-PP Data Dowload after UE parameters update data (Routing Indicator Data) via DL NAS TRANSPORT message "acknowledgement requested" and "re-registration not requested" | Rel-15 | 1.4 |  |  |  |  |  |  |  |  |  |  |  |  | C231 | C231 | E.1/24 AND E.1/2 | NG-SS only |  |  |

| Item | Description | Re-lease | Test sequence (s) | Rel 99 ME | Rel-4 ME | Rel-5 ME | Rel-6 ME | Rel-7 ME | **Rel-8 ME** | **Rel-9 ME** | **Rel-10 ME** | **Rel-11 ME** | Rel-12 ME | Rel-13 ME | Rel-14 ME | Rel-15 ME | Rel-16 ME | Terminal Profile | Network Dependency | Sup-port | Additional test case execution parameter |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 27.22.14.2: SMS-PP Data Download after Steering of Roaming via DL NAS TRANSPORT message with REFRESH command [Steering of Roaming] | Rel-15 | 2.1 |  |  |  |  |  |  |  |  |  |  |  |  | C231 | C231 | E.1/24 AND E.1/2 | NG-SS only |  |  |
|  | **27.22.14.2: SMS-PP Data Download in several ENVELOPE commands after Steering of**  **Roaming via DL NAS TRANSPORT long message with REFRESH command [Steering of Roaming]** | Rel-16 | 2.2 |  |  |  |  |  |  |  |  |  |  |  |  |  | C231 | E.1/24 AND E.1/2 | NG-SS only |  |  |
|  | 27.22.14.3: SMS-PP Data Download after Steering of Roaming via REGISTRATION ACCEPT message with REFRESH command [Steering of Roaming] | Rel-15 | 3.1 |  |  |  |  |  |  |  |  |  |  |  |  | C231 | C231 | E.1/24 AND E.1/2 | NG-SS only |  |  |
|  | void | Rel-15 | 3.2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NOTE: For Rel-13 if the UE supports NB-IoT, this test case shall be verified by accessing the NB System Simulator (NB-SS). | | | | | | | | | | | | | | | | | | | | | |

---------------------------- Next Change ------------------------------

#### 27.22.14.3 Steering of Roaming via REGISTRATION ACCEPT message

##### 27.22.14.3.1 Definition and applicability

See clause 3.2.2.

##### 27.22.14.3.2 Conformance requirement

The ME shall support the Proactive UICC: SMS-PP Data Download facility as defined in the following technical specifications:

- TS 31.111 [15] clause 5, clause 7.1, clause 8.1, clause 8.7, clause 8.13 and clause 11.

- TS 31.115 [28] clause 4.

- TS 23.038 [7] clause 4.

The ME shall support the Procedure for SMS-PP data download via REGISTRATION ACCEPT messages as defined in the following technical specifications:

- TS 31.111 [15] clause 7.1.1.1a.

The ME shall support the steering of roaming procedure as defined in:

- TS 23.122 [29] clause 4.4.6.

##### 27.22.14.3.3 Test purpose

To verify that when the service "data download via SMS Point-to-point" is available in the USIM Service Table and the ME receives a REGISTRATION ACCEPT message that includes:

- a SOR transparent container information element with list type with value "0"= secured packet containing a secured packet constructed as an SMS-Deliver (as specified in TS 23.040 [5]) with:

- protocol identifier = SIM data download;

- data coding scheme = class 2 message;

and the integrity check of the message was successful then the ME shall:

- pass the message transparently to the UICC using the ENVELOPE (SMS-PP DOWNLOAD) command as defined in TS 31.111 [15] clause 7.1.1.2;

- not display or alert the user;

Where the secured packet is coded as a Command Packet formatted as Short Message Point to Point (as specified in TS 31.115 [41]).

To verify that the ME interprets the UICC returns response correctly.

##### 27.22.14.3.4 Method of Test

27.22.14.3.4.1 Initial conditions

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

The ME is connected to NG-SS and it has performed the Registration procedure.

The default NG-RAN UICC and the following parameters are used:

**EFUST (USIM Service Table)**

EFUST shall be configured as defined in 27.22.2D.1 with the exception that Service n°42 "Operator controlled PLMN selector with Access Technology" and Service n°127 "Control plane-based steering of UE in VPLMN" are available.

The NG-RAN UICC parameters are:

* one OTA Key Set for Remote Management with:
  + Key Version: 01
    - 1st key
      * Key Index (Kic): 01
      * Key Algorithm: Triple DES
      * Key value: 000102030405060708090A0B0C0D0E0F
    - 2nd key
      * Key Index (Kid): 02
      * Key Algorithm: Triple DES
      * Key value: 000102030405060708090A0B0C0D0E0F
    - 3rd key
      * Key Index (Kik): 03
      * Key Algorithm: Triple DES
      * Key value: 000102030405060708090A0B0C0D0E0F

The NG-RAN parameters of the system simulator are:

- Mobile Country Code (MCC) = 001;

- Mobile Network Code (MNC) = 02;

- Tracking Area Code (TAC) = 000001;

- NG-RAN Cell Id = 0001 (36 bits).

The elementary files are coded as USIM Application Toolkit default with the following exceptions:

- The "data download via SMS Point-to-point" service is available in the USIM Service Table.

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

27.22.14.3.4.2 Procedure

**Expected Sequence 3.1 (SMS-PP Data Download after Steering of Roaming via REGISTRATION ACCEPT message with REFRESH command [Steering of Roaming])**

|  |  |  |  |
| --- | --- | --- | --- |
| **Step** | **Direction** | **MESSAGE / Action** | **Comments** |
| 1 | USER → ME | The ME is switched on | ME will perform Profile Download and USIM initialisation |
| 2 | ME → NG-SS | ME initiates registration to NG-RAN cell. |  |
| 3 | NG-SS → ME | ME is successfully registered to NG-RAN  NG-SS sends REGISTRATION ACCEPT message 3.1.1 with  SOR transparent container | SOR header with:  ACK set to "acknowledgement not requested"  List Type set to "secured packet" |
| 4 | ME→ UICC | ENVELOPE: SMS-PP DOWNLOAD 3.1.1 | the ME shall pass the message transparently to the UICC using the ENVELOPE (SMS-PP DOWNLOAD) command as specified in TS 31.111 [15] clause 7.1.1.1a |
| 5 | UICC → ME | SW1/SW2 91 XX |  |
| 6 | ME→ UICC | FETCH |  |
| 7 | UICC → ME | PROACTIVE COMMAND: REFRESH 3.1.1 [Steering of Roaming] |  |
| 8 | ME→ UICC | TERMINAL RESPONSE: REFRESH 3.1.1 |  |
| 9 | UICC → ME | PROACTIVE UICC SESSION ENDED |  |
| 10 | ME | Steering of Roaming procedure | As specified in TS 23.122 [29] clause 4.4.6  Note: the complete SOR procedure cannot be verified. |

REGISTRATION ACCEPT message 3.1.1

Logically:

Including SOR transparent container IEI 73 (referring to TS 24.501 Table 8.2.7.1.1) defined as below

Message details (referring to TS 24.501 Figure 9.11.3.51.1)

SOR header:

SOR data type: "0" (SOR transparent container carries steering of roaming information)

List indication: "1" (list of preferred PLMN/access technology combinations is provided)

List type: "0" (The list type is a secured packet.)

ACK: "0" (acknowledgment not requested)

Secured packet as specified in TS 31.111 [15] clause 7.1.1.1a – TPDU Command Packet

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 40 | 00 | 91 | 7F | F6 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 4E | 02 | 70 | 00 | 00 | 49 | 15 | 02 | 00 | 10 | 10 | B0 |
| 01 | 40 | 00 | 00 | 00 | 00 | 00 | 00 | 93 | 8A | B4 | 08 |
| 49 | 71 | 14 | 29 | AA | 31 | 22 | 07 | 00 | A4 | 00 | 04 |
| 02 | 6F | 61 | 22 | 0F | 00 | D6 | 00 | 00 | 0A | 52 | 34 |
| 00 | 80 | 00 | 52 | 44 | 00 | 00 | 80 | 81 | 15 | 81 | 03 |
| 01 | 01 | 07 | 82 | 02 | 81 | 82 | 72 | 0A | 52 | 34 | 00 |
| 80 | 00 | 52 | 44 | 00 | 00 | 80 |  |  |  |  |  |

ENVELOPE: SMS-PP DOWNLOAD 3.1.1

Logically:

SMS-PP Download

Device identities

Source device: Network

Destination device: UICC

SMS TPDU Contents of Secured Packet from REGISTRATION ACCEPT message 3.1.1

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BER-TLV: | D1 | 61 | 82 | 02 | 83 | 81 | 8B | 5B | 40 | 00 | 91 | 7F |
|  | F6 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 4E | 02 | 70 | 00 |
|  | 00 | 49 | 15 | 02 | 00 | 10 | 10 | B0 | 01 | 40 | 00 | 00 |
|  | 00 | 00 | 00 | 00 | 93 | 8A | B4 | 08 | 49 | 71 | 14 | 29 |
|  | AA | 31 | 22 | 07 | 00 | A4 | 00 | 04 | 02 | 6F | 61 | 22 |
|  | 0F | 00 | D6 | 00 | 00 | 0A | 52 | 34 | 00 | 80 | 00 | 52 |
|  | 44 | 00 | 00 | 80 | 81 | 15 | 81 | 03 | 01 | 01 | 07 | 82 |
|  | 02 | 81 | 82 | 72 | 0A | 52 | 34 | 00 | 80 | 00 | 52 | 44 |
|  | 00 | 00 | 80 |  |  |  |  |  |  |  |  |  |

PROACTIVE COMMAND: REFRESH 3.1.1

Logically:

Command details

Command number: 1

Command type: REFRESH

Command qualifier: Steering of Roaming

Device identities

Source device: UICC

Destination device: ME

PLMNwAcT List:

1stPLMN: 254/003

1stACT: UTRAN

2ndPLMN: 254/004

2ndACT: GERAN

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BER-TLV: | D0 | 15 | 81 | 03 | 01 | 01 | 07 | 82 | 02 | 81 | 82 | 72 |
|  | 0A | 52 | 34 | 00 | 80 | 00 | 52 | 44 | 00 | 00 | 80 |  |

TERMINAL RESPONSE: REFRESH 3.1.1

Logically:

Command details

Command number: 1

Command type: REFRESH

Command qualifier: Steering of Roaming

Device identities

Source device: ME

Destination device: UICC

Result

General Result: Command performed successfully

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BER-TLV: | 81 | 03 | 01 | 01 | 07 | 82 | 02 | 82 | 81 | 83 | 01 | 00 |

**Expected Sequence 3.2 (void)**



























##### 27.22.14.3.5 Test requirement

The ME shall operate in the manner defined in expected sequence 3.1.

---------------------------- End of Change ------------------------------