**3GPP TSG- Meeting # *Draft +C6-220242***

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| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
|  | | | | | | | | |
| *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** |

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| ***Title:*** | and TC 27.22.14.3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | , Qualcomm Technologies Inc. | | | | | | | | | |
| ***Source to TSG:*** | CT6 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** |  | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | With introduction of a new sequence unnecessary dependencies were created. This should be reversed to avoid unfair treatment of DUTs in other sequences.  Seqences 2.1 and 2.2 from TC 27.22.14.2 and seqences 3.1 and 3.2 from TC 27.22.14.3 do not have test steps to verify requirements from TS 23.122 clause 4.4.6. Test purposes and procedures for the TC 27.22.14.2 sequences and the procedures for the TC 27.22.14.3 sequences shall be modified to clearly identify verifiable requirements. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Correction of EF\_UST, clear assignment of EF\_UST settings to related sequences. Correction of incorrect coding in EF\_OPLMNwACT.  Grouping of initial conditions and test purposes by sequence.  For TC 27.22.14.2:  Adding a test purpose, asking for the verification of requirement from TS 23.122 clause 4.4.6 for the sequence 2.3.  Adding a note in the last test step of sequences 2.1 and 2.2 to clarify that the verification of requirement from TS 23.122 clause 4.4.6 is not possible/necessary in the present sequence.  Editorial corrections - Replace ‘x’ in the test steps of the test sequence 2.3 with ‘3’ (e.g.: 2.x.1 -> 2.3.1)  For TC 27.22.14.3:  Adding a note in the last test step of sequences 3.1 and 3.2 to clarify that the verification of requirement from TS 23.122 clause 4.4.6 is not possible/necessary in the present sequence. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | DUTs may unfairly fail tests or will be excluded from testing due to the missing support of a feature or an unavailable verification method for the tested sequence. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 27.22.14.2.4.1, 27.22.14.2.4.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

27.22.14 ENVELOPE SMS-PP Data Download on NAS messages

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27.22.14.2 Steering of Roaming via DL NAS TRANSPORT message

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\*\*\*\*\* start of changes \*\*\*\*\*

27.22.14.2.3 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 DL NAS TRANSPORT message that includes:

- an SOR transparent container information element with list type with value "0"= secure packet. Containing a secure packet constructed as an SMS-Deliver (as specified in 3GPP TS 23.040 [8] 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 3GPP TS 31.111 [15] clause 7.1.1.2;

- not display or alert the user.

Where the secure packet is coded as a Command Packet formatted as Short Message Point to Point (as specified in 3GPP TS 31.115 [28])

For sequence 2.1 and 2.2:

To verify that when ME receives a USAT REFRESH command qualifier of type "Steering of Roaming", it (as specified in 3GPP TS 23.122 [29] clause 4.4.6):

- deletes formerly forbidden PLMNs provided as allowed in the REFRESH command from the Forbidden PLMN list and from the Forbidden PLMNs for GPRS service list. This includes any information stored in the UICC.

For sequence 2.3:

when ME receives a USAT REFRESH command qualifier of type "Steering of Roaming", it (as specified in 3GPP TS 23.122 [29] clause 4.4.6):- replaces the highest priority entries in the "Operator Controlled PLMN Selector with Access Technology" list stored in the ME with the list provided in the REFRESH command,

Note: This requirement is implicitly verified when the ME attempts to obtain service on a higher priority PLMN.

- deletes formerly forbidden PLMNs provided as allowed in the REFRESH command from the Forbidden PLMN list and from the Forbidden PLMNs for GPRS service list. This includes any information stored in the UICC ,

- considers new information provided in subsequent attempts to access a higher priority PLMN,

and

- attempts to obtain service on a higher priority PLMN as specified in 3GPP TS 23.122 [29] clause 4.4.3.3 by acting as if timer T that controls periodic attempts has expired.

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\*\*\*\*\* next change \*\*\*\*\*

27.22.14.2.4 Method of Test

27.22.14.2.4.1 Initial conditions

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

The default NG-RAN UICC with the following exceptions is used:

The NG-RAN UICC parameters are:one OTA Key Set 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







**EFUST (USIM Service Table)**

Logically:

|  |  |  |
| --- | --- | --- |
| Service n°42 | Operator controlled PLMN selector with Access Technology | available |
| Service n°113 | URI support for SMS-PP DOWNLOAD as defined in TS 31.111 [15] | available |
| Service n°127 | Control plane-based steering of UE in VPLMN | available |

Coding:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Byte:** | **B1** |  | **B6** |  | **B15** | **B16** |
| Binary: | xxxx xxxx | … | xxxx xx1x | …. | xxxx xxx1 | x1xx xxxx |

**EFFPLMN**

Logically:

PLMN1: 254 002 (MCC MNC)

PLMN2: 254 003

PLMN3: 254 004

PLMN4: 234 004

PLMN5: 234 005

PLMN6: 234 006

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coding:** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** | **B9** | **B10** | **B11** | **B12** |
| Hex | 52 | 24 | 00 | 52 | 34 | 00 | 52 | 44 | 00 | 32 | 44 | 00 |
|  | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** |  |  |  |  |  |  |
|  | 32 | 54 | 00 | 32 | 64 | 00 |  |  |  |  |  |  |

EFOPLMNwACT:

Logically:

1st PLMN: 254 001 (MCC MNC)

1st ACT: NG-RAN

2nd PLMN: 254 001

2nd ACT: E-UTRAN

3rd PLMN: 274 002

3rd ACT: NG-RAN

4th PLMN: 274 003

4th ACT: E-UTRAN

5th PLMN: 274 004

5th ACT: E-UTRAN

6th PLMN: 274 005

6th ACT: E-UTRAN

7th PLMN: 274 006

7th ACT: E-UTRAN

8th PLMN: 274 007

8th ACT: UTRAN

Coding:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Coding:** | **B1** | **B2** | **B3** | **B4** | **B5** | **B6** | **B7** | **B8** | **B9** | **B10** | **B11** | **B12** |
| Hex | 52 | 14 | 00 | 08 | 00 | 52 | 14 | 00 | 40 | 00 | 72 | 24 |
|  | **B13** | **B14** | **B15** | **B16** | **B17** | **B18** | **B19** | **B20** | **B21** | **B22** | **B23** | **B24** |
|  | 00 | 08 | 00 | 72 | 34 | 00 | 40 | 00 | 72 | 44 | 00 | 40 |
|  | **B25** | **B26** | **B27** | **B28** | **B29** | **B30** | **B31** | **B32** | **B33** | **B34** | **B35** | **B36** |
|  | 00 | 72 | 54 | 00 | 40 | 00 | 72 | 64 | 00 | 40 | 00 | 72 |
|  | **B37** | **B38** | **B39** | **B40** |  |  |  |  |  |  |  |  |
|  | 74 | 00 | 80 | 00 |  |  |  |  |  |  |  |  |

**EFHPPLMN (Higher Priority PLMN Search period)**

Logically: set to 6 minutes

|  |  |
| --- | --- |
| **Coding:** | **B1** |
| Hex | 01 |

The NG-RAN parameters of the system simulator are,

for sequences 2.1 and 2.2:

* Mobile Country Code (MCC) = 001;
* Mobile Network Code (MNC) = 01;
* Tracking Area Code (TAC) = 000001;
* NG-RAN Cell Id = 0001 (36 bits).

for sequence 2.3:

NG-RAN Cell 1:

- Mobile Country Code (MCC) = 254;

- Mobile Network Code (MNC) = 001;

- Tracking Area Code (TAC) = 000001;

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

NG-RAN Cell 2:

- Mobile Country Code (MCC) = 254;

- Mobile Network Code (MNC) = 003;

- Tracking Area Code (TAC) = 000001;

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

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###### 27.22.14.2.4.2 Procedure

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\*\*\*\*\* next change \*\*\*\*\*

TERMINAL RESPONSE: REFRESH 2.1.1

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 |

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\*\*\*\*\* next change \*\*\*\*\*

TERMINAL RESPONSE: REFRESH 2.2.1

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 |

…

\*\*\*\*\* next change \*\*\*\*\*

27.22.14.2.4.2 Procedure

**Expected Sequence 2.1 (SMS-PP Data Download after Steering of Roaming via DL NAS TRANSPORT 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 successfully REGISTER with NG-RAN cell. |  |
| 3 | NG-SS → ME | NG-SS send to ME DL NAS TRANSPORT message 2.1.1 with  acknowledgement not requested  List Type is secured packet | SOR header with:  ACK set to "acknowledgement not requested"  List Type set to "secured packet" |
| 4 | ME→ UICC | ENVELOPE: SMS-PP DOWNLOAD 2.1.1 | the ME shall pass the message transparently to the UICC using the ENVELOPE (SMS-PP DOWNLOAD) command as specified in 3GPP 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 2.1.1 [Steering of Roaming] |  |
| 8 | ME→ UICC | TERMINAL RESPONSE: REFRESH 2.1.1 |  |
| 9 | UICC → ME | PROACTIVE UICC SESSION ENDED |  |
| 10 | ME | Steering of Roaming procedure | As specified in 3GPP TS 23.122 [29] clause 4.4.6  Note1:The complete SOR procedure cannot be verified.  Note2: A verification of the complete SoR procedure is done in sequence 2.3 |

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\*\*\*\*\* next change \*\*\*\*\*

**Expected Sequence 2.2 (SMS-PP Data Download in several ENVELOPE commands after Steering of Roaming via DL NAS TRANSPORT long message with REFRESH command [Steering of Roaming])**

|  |  |  |  |
| --- | --- | --- | --- |
| **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 successfully REGISTER with NG-RAN cell. |  |
| 3 | NG-SS → ME | NG-SS send to ME DL NAS TRANSPORT long message 2.2.1 with  acknowledgement not requested  List Type is secured packet | SOR header with:  ACK set to "acknowledgement not requested"  List Type set to "secured packet" |
| 4 | ME→ UICC | ENVELOPE: SMS-PP DOWNLOAD 2.2.1 | 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  Note: Message is too long for one ENVELOPE command then it is cut in several ENVELOPE commands.  1st part of message |
| 5 | UICC → ME | SW1/SW2 90 00 |  |
| 6 | ME → UICC | ENVELOPE: SMS-PP DOWNLOAD 2.2.2 | 2nd part of message |
| 7 | UICC → ME | SW1/SW2 90 00 |  |
| 8 | ME → UICC | ENVELOPE: SMS-PP DOWNLOAD 2.2.3 | 3rd and last part of message |
| 9 | UICC → ME | SW1/SW2 91 XX |  |
| 10 | ME → UICC | FETCH |  |
| 11 | UICC → ME | PROACTIVE COMMAND: REFRESH 2.2.1 [Steering of Roaming] |  |
| 12 | ME → UICC | Update of EFFPLMN | [Deletion of the entry with PLMN 254/003] |
| 13 | ME → UICC | TERMINAL RESPONSE: REFRESH 2.2.1 |  |
| 14 | UICC → ME | PROACTIVE UICC SESSION ENDED |  |
| 15 | ME | Steering of Roaming procedure | As specified in TS 23.122 [29] clause 4.4.6  Note1:The complete SOR procedure cannot be verified.  Note2: A verification of the complete SoR procedure is done in sequence 2.3 |

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\*\*\*\*\* next change \*\*\*\*\*

**Expected Sequence 2.3: (Steering of Roaming via DL NAS TRANSPORT message with "Acknowledgement requested" and REFRESH command [Steering of Roaming])**

|  |  |  |  |
| --- | --- | --- | --- |
| **Step** | **Direction** | **MESSAGE / Action** | **Comments** |
| 1 | NG-SS | NG-RAN Cell 1 and NG‑RAN Cell 2 transmit BCCH. |  |
| 2 | USER → ME | The ME is switched on | ME will perform Profile Download and USIM initialisation |
| 3 | UICC → ME | PROACTIVE COMMAND PENDING: SET UP EVENT LIST 2.3.1 | If programmable non-removable UICC with a Test Applet is used (as defined in clause 27.0), the TERMINAL RESPONSE cannot be verified by the Test Applet and that the LOCATION STATUS Event has been successfully registered in the device after step 5 is implicitly verified at steps 8 and 18. |
| 4 | ME → UICC | FETCH |
| 5 | UICC → ME | PROACTIVE COMMAND; SET UP EVENT LIST 2.3.1 |
| 6 | ME → UICC | TERMINAL RESPONSE; SET UP EVENT LIST 2.3.1 |
| 7 | ME → NG-SS | The ME successfully registers to NG-RAN cell 1 |  |
| 8 | ME UICC | ENVELOPE: EVENT DOWNLOAD - Location Status 2.3.1 |  |
| 9 | NG-SS → ME | DL NAS TRANSPORT message 2.3.1 | SOR header with:   * ACK set to "acknowledgement requested" * List Type set to "secured packet" |
| 10 | ME → UICC | ENVELOPE: SMS-PP DOWNLOAD 2.3.1 | 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 |
| 11 | UICC → ME | SW1/SW2 '91 XX' |  |
| 12 | ME → UICC | FETCH |  |
| 13 | UICC → ME | PROACTIVE COMMAND: REFRESH 2.3.1 [Steering of Roaming] | Note: Step 12 can occur at any time during execution of steps 9 to 11 |
| 14 | ME → UICC | Update of EFFPLMN | [Deletion of the entry with PLMN 254/003] |
| 15 | ME → UICC | TERMINAL RESPONSE: REFRESH 2.3.1 |  |
| 16 | UICC → ME | Proactive UICC session is terminated |  |
| 17 | ME → NG-SS | The ME successfully registers to NG-RAN cell 2 within 6 minutes | [SOR transparent container 2.3.1 with Acknowledgement.]  Note: The ME might have registered to the Cell 2 before this step |
| 18 | ME → UICC | ENVELOPE: EVENT DOWNLOAD - Location Status 2.3.2 | PLMN MCC/MNC 254/003, Normal service |

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27.22.14.3 Steering of Roaming via REGISTRATION ACCEPT message

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27.22.14.2.3 Test purpose

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To verify that when ME receives a USAT REFRESH command qualifier of type "Steering of Roaming", it (as specified in 3GPP TS 23.122 [29] clause 4.4.6):

- deletes formerly forbidden PLMNs provided as allowed in the REFRESH command from the Forbidden PLMN list and from the Forbidden PLMNs for GPRS service list. This includes any information stored in the UICC

27.22.14.3.4.2 Procedure

\*\*\*\*\* next change \*\*\*\*\*

**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. |

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\*\*\*\*\* next change \*\*\*\*\*

**Expected 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])**

|  |  |  |  |
| --- | --- | --- | --- |
| **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 |  |
| 3 | NG-SS → ME | ME is successfully registered to NG-RAN  NG-SS sends REGISTRATION ACCEPT long message 3.2.1 with  acknowledgement not requested  List Type is secured packet | SOR header with:  ACK set to "acknowledgement not requested"  List Type set to "secured packet" |
| 4 | ME→ UICC | ENVELOPE: SMS-PP DOWNLOAD 3.2.1 | 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  Note: Message is too long for one ENVELOPE command then it is cut in several ENVELOPE commands.  1st part of message |
| 5 | UICC → ME | SW1/SW2 90 00 |  |
| 6 | ME→ UICC | ENVELOPE: SMS-PP DOWNLOAD 3.2.2 | 2nd part of message |
| 7 | UICC → ME | SW1/SW2 90 00 |  |
| 8 | ME→ UICC | ENVELOPE: SMS-PP DOWNLOAD 3.2.3 | 3rd and last part of message |
| 9 | UICC → ME | SW1/SW2 91 XX |  |
| 10 | ME→ UICC | FETCH |  |
| 11 | UICC → ME | PROACTIVE COMMAND: REFRESH 3.2.1 [Steering of Roaming] |  |
| 12 | ME→ UICC | TERMINAL RESPONSE: REFRESH 3.2.1 |  |
| 13 | UICC → ME | PROACTIVE UICC SESSION ENDED |  |
| 14 | ME | Steering of Roaming procedure | As specified in TS 23.122 [29] clause 4.4.6  Note: the complete SOR procedure cannot be verified. |

\*\*\*\*\* end of changes \*\*\*\*\*