**3GPP TSG-CT WG1 Meeting #141e *Rev\_*C1-232286**

**Online 17 – 21 April 2023**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.501** | **CR** | **5046** | **rev** | **3** | **Current version:** | **18.2.1** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | UPSI Error handling when PCF provides PSI for which UE has no policy section | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Apple | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI18 | | | | |  | ***Date:*** | | | 2023-04-07 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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:*** | | As per incoming LS C1-230026 / S2-2211347 from SA2, during PCF re-selection, when PCF has no prior information about list of PSIs, ANDSP support or OS ID of UE the PCF may consider the list of PSIs stored in the UDR as the list of PSIs stored in the UE, even if the UE provided no list of PSI, no ANDSP support and no OS ID.  In such a case then it may happen that the PCF may request the UE to remove a Policy Section that is not stored in the UE. In such scenario, the UE should discard the instruction and return an error to the PCF, so that the PCF is aware of the error scenario. Also, the UE should consider including the UPSI(s) of the UE policy section(s) stored in the UE in the MANAGE UE POLICY COMMAND REJECT message, so that the UE and PCF can be in sync. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | If UE receives an instruction to delete a policy section with a PSI for which there is no corresponding stored policy section, the UE discards the instruction and returns an error to the PCF, so that the PCF is aware of the error scenario. Also, the UE may include the UPSI(s) of the UE policy section(s) stored in the UE in the MANAGE UE POLICY COMMAND REJECT message, so that the UE and PCF can be in sync. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Unclear how UE handles the above scenario and its not clear how the UE and PCF get in sync leading to unpredictable results. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | D.2.1.4, D.2.1.6, D.5.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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

### D.2.1.4 Network-requested UE policy management procedure not accepted by the UE

If the UE could not execute all instructions included in the UE policy section management list IE successfully, the UE:

a) shall set the PTI IE to the PTI value received within the MANAGE UE POLICY COMMAND message and encode the UPSI associated with the instructions which could not be executed successfully and the associated UE policy delivery service cause indicating the cause of the failure in a UE policy section management result IE as specified in subclause D.5.3 and include it in a MANAGE UE POLICY COMMAND REJECT message;

b) may include the UPSI list IE in the MANAGE UE POLICY COMMAND REJECT message (see case g in subclause D.2.1.6); and

c) shall transport the MANAGE UE POLICY COMMAND REJECT message using the NAS transport procedure as specified in subclause 5.4.5.

Upon receipt of the MANAGE UE POLICY COMMAND REJECT message, the PCF shall stop timer T3501. Any instruction that was included in the UE policy section management list IE and whose associated UPSI is not included in a UE policy section management result IE of the received MANAGE UE POLICY COMMAND REJECT message is considered as successfully executed.

The PCF should ensure that the PTI value assigned to this procedure is not released immediately.

NOTE: The way to achieve this is implementation dependent. For example, the PCF can ensure that the PTI value assigned to this procedure is not released during the time equal to or greater than the default value of timer T3501.

Upon receipt of the notification from the AMF that the UE is not reachable, the PCF shall stop the T3501.

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

### D.2.1.6 Abnormal cases in the UE

The following abnormal cases can be identified:

a) Receipt of an instruction associated with a UPSI which has a PLMN ID part that is not equal to the PLMN ID of the UE's HPLMN and the instruction contains a UE policy part with a UE policy part type set to "URSP" for a UE not operating in SNPN access operation mode, or receipt of an instruction associated with a UPSI which has a PLMN ID part that is not equal to the PLMN ID part of the selected SNPN and the instruction contains a UE policy part with a UE policy part type set to "URSP" for a UE operating in SNPN access operation mode.

The UE shall set the UE policy delivery service cause to #111 (Protocol error, unspecified) for the instruction in the UE policy section management result IE of the MANAGE UE POLICY COMMAND REJECT message.

b) Receipt of an instruction associated with a UPSI which has a PLMN ID part that is not equal to the PLMN ID of the UE's HPLMN or the UE's RPLMN and the instruction contains a UE policy part with a UE policy part type set to "ANDSP" for a UE not operating in SNPN access operation mode or receipt of an instruction associated with a UPSI which has a PLMN ID part that is not equal to the PLMN ID part of the subscribed SNPN and the instruction contains a UE policy part with a UE policy part type set to "ANDSP" for a UE operating in SNPN access operation mode.

The UE shall set the UE policy delivery service cause to #111 (Protocol error, unspecified) for the instruction in the UE policy section management result IE of the MANAGE UE POLICY COMMAND REJECT message.

c) Transmission failure of the MANAGE UE POLICY COMPLETE message indication from lower layers.

The UE shall not diagnose an error and consider the network-initiated UE policy delivery procedure complete.

NOTE 1: Considering the network-initiated UE policy delivery procedure complete as a result of this abnormal case does not cause the UE to revert the execution of the instructions included in the MANAGE UE POLICY COMMAND message.

d) Transmission failure of the MANAGE UE POLICY COMMAND REJECT message indication from lower layers.

The UE shall not diagnose an error and consider the network-initiated UE policy delivery procedure complete.

NOTE 2: Considering the network-initiated UE policy delivery procedure complete as a result of this abnormal case does not cause the UE to revert the execution of the instructions included in the MANAGE UE POLICY COMMAND message and successfully processed by the UE.

e) Receipt of a MANAGE UE POLICY COMMAND message with a PTI set to the same value as the PTI of a previously received MANAGE UE POLICY COMMAND message.

The UE shall discard the message and retransmit the MANAGE UE POLICY COMMAND COMPLETE or MANAGE UE POLICY COMMAND REJECT message transmitted in response to the previously received MANAGE UE POLICY COMMAND message.

NOTE 3: The way to achieve this is UE implementation dependent. For example, the UE can assume that on the fifth expiry of timer T3501, the PCF will abort the procedure and that the PTI value assigned to the procedure will be released.

f) Receipt of an instruction associated with a UPSI which has a PLMN ID part that is equal to the PLMN ID part of the selected SNPN, the instruction contains a UE policy part with a UE policy part type set to "URSP", UE's RSNPN is a non-subscribed SNPN and:

1) the UE has a stored non-subscribed SNPN signalled URSP handling indication for the selected entry of "list of subscriber data" or the selected PLMN subscription indicating that the UE is not allowed to accept URSP signalled by non-subscribed SNPNs; or

2) the UE does not have a stored non-subscribed SNPN signalled URSP handling indication for the selected entry of "list of subscriber data" or the selected PLMN subscription, and the non-subscribed SNPN signalled URSP handling indication preconfigured in the selected entry of "list of subscriber data" or the selected PLMN subscription indicates that the UE is not allowed to accept URSP signalled by non-subscribed SNPNs;

for a UE operating in SNPN access operation mode.

The UE shall set the UE policy delivery service cause to #111 (Protocol error, unspecified) for the instruction in the UE policy section management result IE of the MANAGE UE POLICY COMMAND REJECT message.

g) Receipt of an instruction with a UPSI and without UE policy section contents, for which the UE stores no UE policy section identified by that UPSI.

The UE shall discard the instruction associated with the UPSI and set the UE policy delivery service cause to #111 (Protocol error, unspecified) for the instruction in the UE policy section management result IE of the MANAGE UE POLICY COMMAND REJECT message. The UE shall also include in the MANAGE UE POLICY COMMAND REJECT message:

1) the UPSI(s) of the UE policy section(s) which are identified by a UPSI with the PLMN ID part indicating the HPLMN or the selected PLMN available in the UE in the UPSI list IE, if not operating in SNPN access operation mode; or

2) the UPSI(s) of the UE policy section(s) which are identified by a UPSI:

- with the PLMN ID part indicating the MCC and MNC of the selected SNPN; and

- associated with the NID of the selected SNPN;

available in the UE in the UPSI list IE, if operating in SNPN access operation mode.

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

## D.5.3 Manage UE policy command reject

### D.5.3.1 Message definition

The MANAGE UE POLICY COMMAND REJECT message is sent by the UE to the PCF to report that one or more instructions could not be successfully executed at the UE, see table D.5.3.1.1

Message type: MANAGE UE POLICY COMMAND REJECT

Significance: dual

Direction: UE to network

Table D.5.3.1.1: MANAGE UE POLICY COMMAND REJECT message content

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| IEI | | Information Element | Type/Reference | Presence | Format | Length |
|  | | PTI | Procedure transaction identity  9.6 | M | V | 1 |
|  | | MANAGE UE POLICY COMMAND REJECT message identity | UE policy delivery service message type  D.6.1. | M | V | 1 |
|  | | UE policy section management result | UE policy section management result  D.6.3 | M | LV-E | 11-65533 |
| XY | | UPSI list | UPSI list  D.6.4 | O | LV-E | 3-65531 |
| NOTE: The total length of the MANAGE UE POLICY COMMAND REJECT message content cannot exceed 65535 octets (see Payload container contents maximum length as specified in subclause 9.11.3.39.1). | | | | | | |

\*\*\* end of change \*\*\*