**3GPP TSG-CT WG1 Meeting #123-eC1-202328**

**Electronic meeting, 16-24 April 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.501** | **CR** | **2107** | **rev** | **1** | **Current version:** | **16.4.1** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network | **X** |

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| ***Title:*** | PDU session release due to CP only revocation | | | | | | | | | |
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| ***Source to WG:*** | OPPO | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5G\_CIoT | | | | |  | ***Date:*** | | | 2020-4-21 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | Based on the agree CR S2-2002348 in SA2#137e, the PDU session can be release because the netwok determines the CP only for a PDU session cannot be remained, e.g. based on operator policy.  In this case, the AMF will trigger SMF to release the CP only PDU session.  SMF sends PDU session release command to UE with the 5GSM cause value.  To allow UE to get the service again, the #39 is reused to make UE to initiate a new PDU session establishment procedure. | | | | | | | | |
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| ***Summary of change:*** | | A case that network releases PDU session due to CP only revocation is added under the cause #39. | | | | | | | | |
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| ***Consequences if not approved:*** | | How to handle the CP only revocation for PDU session is missing. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.3.3.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\* \* \* First Change \* \* \* \*

#### 6.3.3.2 Network-requested PDU session release procedure initiation

In order to initiate the network-requested PDU session release procedure, the SMF shall create a PDU SESSION RELEASE COMMAND message.

The SMF shall set the 5GSM cause IE of the PDU SESSION RELEASE COMMAND message to indicate the reason for releasing the PDU session.

The 5GSM cause IE typically indicates one of the following 5GSM cause values:

#8 operator determined barring;

#26 insufficient resources;

#29 user authentication or authorization failed;

#36 regular deactivation;

#38 network failure;

#39 reactivation requested;

#46 out of LADN service area;

#67 insufficient resources for specific slice and DNN;

#69 insufficient resources for specific slice.

If the selected SSC mode of the PDU session is "SSC mode 2" and the SMF requests the relocation of SSC mode 2 PDU session anchor with different PDU sessions as specified in 3GPP TS 23.502 [9], the SMF shall include 5GSM cause #39 "reactivation requested".

If the network-requested PDU session release procedure is triggered by a UE-requested PDU session release procedure, the SMF shall set the PTI IE of the PDU SESSION RELEASE COMMAND message to the PTI of the PDU SESSION RELEASE REQUEST message received as part of the UE-requested PDU session release procedure.

If the network-requested PDU session release procedure is not triggered by a UE-requested PDU session release procedure, the SMF shall set the PTI IE of the PDU SESSION RELEASE COMMAND message to "No procedure transaction identity assigned".

Based on the local policy and user's subscription data, if the SMF decides to release the PDU session after determining the UE has:

a) moved between a tracking area in NB-N1 mode and a tracking area in WB-N1 mode;

b) moved between a tracking area in NB-S1 mode and a tracking area in WB-N1 mode;

c) moved between a tracking area in WB-S1 mode and a tracking area in NB-N1 mode; or

d) a PDU session which is not only for control plane CIoT 5GS optimization any more,

the SMF shall:

a) include the 5GSM cause value #39 "reactivation requested" in the 5GSM cause IE of the PDU SESSION RELEASE COMMAND message; or

b) include a 5GSM cause value other than #39 "reactivation requested" in the 5GSM cause IE of the PDU SESSION RELEASE COMMAND message.

NOTE: The included 5GSM cause value is up to the network implementation.

If the SMF receives an event notification from the AMF that the UE is out of the LADN service area and the SMF decides to release the PDU session, the SMF shall include the 5GSM cause value #46 "out of LADN service area" in the 5GSM cause IE of the PDU SESSION RELEASE COMMAND message. Upon receipt of the 5GSM cause value #46 "out of LADN service area" in the 5GSM cause IE of the PDU SESSION RELEASE COMMAND message, the UE shall release the PDU session.

The SMF may include a Back-off timer value IE in the PDU SESSION RELEASE COMMAND message when the 5GSM cause value #26 "insufficient resources" is included in the PDU SESSION RELEASE COMMAND message. If the 5GSM cause value is #26 "insufficient resources" and the PDU SESSION RELEASE COMMAND message is sent to a UE configured for high priority access in selected PLMN or the request type was set to "initial emergency request" or "existing emergency PDU session" for the establishment of the PDU session, the network shall not include a Back-off timer value IE.

The SMF may include a Back-off timer value IE in the PDU SESSION RELEASE COMMAND message when the 5GSM cause value #67 "insufficient resources for specific slice and DNN" is included in the PDU SESSION RELEASE COMMAND message. If the 5GSM cause value is #67 "insufficient resources for specific slice and DNN" and the PDU SESSION RELEASE COMMAND message is sent to a UE configured for high priority access in selected PLMN or the request type was set to "initial emergency request" or "existing emergency PDU session" for the establishment of the PDU session, the network shall not include a Back-off timer value IE.

The SMF may include a Back-off timer value IE in the PDU SESSION RELEASE COMMAND message when the 5GSM cause #69 "insufficient resources for specific slice" is included in the PDU SESSION RELEASE COMMAND message. If the 5GSM cause value is #69 "insufficient resources for specific slice" and the PDU SESSION RELEASE COMMAND message is sent to a UE configured for high priority access in selected PLMN or the request type was set to "initial emergency request" or "existing emergency PDU session" for the establishment of the PDU session, the network shall not include a Back-off timer value IE.

The SMF shall send:

a) the PDU SESSION RELEASE COMMAND message; and

b) the N1 SM delivery skip allowed indication:

1) if the SMF allows the AMF to skip sending the N1 SM container to the UE and the 5GSM cause IE is not set to #39 "reactivation requested"; or

2) if the SMF allows the AMF to skip sending the N1 SM container to the UE and the Access type IE is not set to "3GPP access" or "non-3GPP access"

towards the AMF, and the SMF shall start timer T3592 (see example in figure 6.3.3.2.1).



Figure 6.3.3.2.1: Network-requested PDU session release procedure

\* \* \* End of Changes \* \* \* \*