**3GPP TSG-CT WG1 Meeting #130-eC1-21xxxx**

**Electronic meeting, 20-28 May 2021**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  | **24.501** | **CR** | **3291** | **rev** | **1** | **Current version:** | **17.2.1** |  |
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| *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 |  |

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| ***Title:***  | Handling of abnormal cases of PDU session establishment procedure |
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| ***Source to WG:*** | MediaTek Inc. |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5GProtoc17 |  | ***Date:*** | 2021-05-24 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-17 |
|  | *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)* |
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| ***Reason for change:*** | There are multiple purposes of the PDU session establishment procedure:* Establish a new PDU session (emergency/non-emergency)
* Handover an existing PDU session (emergency/non-emergency)
	+ between 5G 3GPP/5G non-3GPP access
	+ from S1 mode or ePDG to N1 mode

However, the current abnormal case handling for “collision of UE-requested PDU session establishment procedure and network-requested PDU session release procedure” is mainly for the case of “establishing a new PDU session. Also it is not clear whether the existing PDU session is still active when the PDU session handover between 3GPP and non-3GPP access does not succeed. |
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| ***Summary of change:*** | 1. Upon collision of UE-requested PDU session establishment procedure and network-requested PDU session release procedure:
	* for the case of PDU session handover between 5G 3GPP access and 5G non-3GPP access, the UE shall abort the PDU session establishment procedure and proceed with the PDU session release procedure; or
	* otherwise (e.g., establishing a new SA/MA PDU session, handover from S1 mode/ePDG… etc), the UE shall ignore the PDU session release command and proceed with the PDU session establishment procedure.
2. Clarify that if the PDU session handover between 3GPP and non-3GPP access does not succeed, the UE shall consider that the PDU session is still associated with the source access type.
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| ***Consequences if not approved:*** | The UE cannot handle the collision correctly when the UE requests to handover the PDU session between 5G 3GPP access and 5G non-3GPP access but the network requests to release it. The existing UE handling makes the UE inappropriately ignore the PDU session release procedure but proceed with the problematic PDU session establishment procedure for handover. |
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| ***Clauses affected:*** | 6.4.1.6 |
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|  | **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 ...  |
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| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

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

#### 6.4.1.6 Abnormal cases in the UE

The following abnormal cases can be identified:

a) Expiry of timer T3580

 The UE shall, on the first expiry of the timer T3580:

- if the PDU SESSION ESTABLISHMENT REQUEST message was sent with request type set to "initial emergency request" or "existing emergency PDU session", then the UE may:

a) inform the upper layers of the failure of the procedure; or

NOTE 1: This can result in the upper layers requesting another emergency call attempt using domain selection as specified in 3GPP TS 23.167 [6].

b) de-register locally, if not de-registered already, attempt initial registration for emergency services.

 If the UE sent the PDU SESSION ESTABLISHMENT REQUEST message in order for the handover of an existing emergency PDU session between 3GPP access and non-3GPP access, the UE shall consider that the emergency PDU session is associated with the source access type.

- otherwise, retransmit the PDU SESSION ESTABLISHMENT REQUEST message and the PDU session information which was transported together with the initial transmission of the PDU SESSION ESTABLISHMENT REQUEST message and shall reset and start timer T3580, if still needed. This retransmission can be repeated up to four times, i.e. on the fifth expiry of timer T3580, the UE shall abort the procedure, release the allocated PTI and enter the state PROCEDURE TRANSACTION INACTIVE. If the UE sent the PDU SESSION ESTABLISHMENT REQUEST message in order for the handover of an existing non-emergency PDU session between 3GPP access and non-3GPP access, the UE shall consider that the PDU session is associated with the source access type.

b) Upon receiving an indication that the 5GSM message was not forwarded due to routing failure along with a PDU SESSION ESTABLISHMENT REQUEST message with the PDU session ID IE set to the same value as the PDU session ID that was sent by the UE, the UE shall stop timer T3580 and shall abort the procedure. If the UE sent the PDU SESSION ESTABLISHMENT REQUEST message in order for the handover of an existing PDU session between 3GPP access and non-3GPP access, the UE shall consider that the PDU session is associated with the source access type.

b1) Upon receiving an indication that the 5GSM message was not forwarded due to service area restrictions along with a PDU SESSION ESTABLISHMENT REQUEST message with the PDU session ID IE set to the same value as the PDU session ID that was sent by the UE, the UE shall stop timer T3580 and shall abort the procedure. If the UE sent the PDU SESSION ESTABLISHMENT REQUEST message in order for the handover of an existing PDU session between 3GPP access and non-3GPP access, the UE shall consider that the PDU session is associated with the source access type.

c) Collision of UE-requested PDU session establishment procedure and network-requested PDU session release procedure.

 If the UE receives a PDU SESSION RELEASE COMMAND message after sending a PDU SESSION ESTABLISHMENT REQUEST message to the network, and the PDU session ID in the PDU SESSION RELEASE COMMAND message is the same as the PDU session ID in the PDU SESSION ESTABLISHMENT REQUEST message, the UE shall:

- if the PDU SESSION ESTABLISHMENT REQUEST message was sent with request type set to "existing PDU session" or "existing emergency PDU session" in order for the handover of an existing non-emergency PDU session between 3GPP access and non-3GPP access, abort the PDU session establishment procedure and proceed with the network-requested PDU session release procedure; or

- otherwise, ignore the PDU SESSION RELEASE COMMAND message and proceed with the UE-requested PDU session establishment procedure.

d) Inter-system change from N1 mode to S1 mode triggered during UE-requested PDU session establishment procedure.

 If the UE-requested PDU session establishment procedure is triggered for handover of an existing PDU session from non-3GPP access to 3GPP access, and the inter-system change from N1 mode to S1 mode is triggered by the NG-RAN and the UE did not receive response to PDU session establishment request, then the UE shall abort the procedure, stop timer T3580, and notify the upper layer of the handover failure.

NOTE 2: This can result in the upper layer requesting re-initiation of handover from non-3GPP access to 3GPP access after the inter-system change is completed, if still required.

e) For an MA PDU session established on a single access, upon receipt of a PDU SESSION ESTABLISHMENT ACCEPT message over the other access, if any value of the selected PDU session type, selected SSC mode, 5GSM cause, PDU address, S-NSSAI, DNN IEs in the PDU SESSION ESTABLISHMENT ACCEPT message is different from the corresponding stored value, the UE shall perform a local release of the MA PDU session, and perform the registration procedure for mobility and periodic registration update with a REGISTRATION REQUEST message including the PDU session status IE over both accesses.

f) Collision of UE-requested PDU session establishment procedure initiated to perform handover of an existing PDU session from non-3GPP access to 3GPP access and a notification from the network with access type indicating non-3GPP access.

 If the UE receives a notification from the network with access type indicating non-3GPP access after sending a PDU SESSION ESTABLISHMENT REQUEST message to perform handover of an existing PDU session from non-3GPP access to 3GPP access, the UE shall abort the PDU session establishment procedure, stop timer T3580, proceed with the service request procedure to perform handover of existing PDU session(s) from non-3GPP access to 3GPP access.