**3GPP TSG-CT WG1 Meeting #136-eC1-223858**

**E-Meeting, 12th – 20th May 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **24.501** | **CR** | **4420** | **rev** | **-** | **Current version:** | **17.6.1** |  |
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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 | **X** |

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| ***Title:***  | Abort 5GSM procedure in case of UE initiated release the NAS signalling connection |
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| ***Source to WG:*** | ZTE |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | MUSIM |  | ***Date:*** | 2022-05-01 |
|  |  |  |  |  |
| ***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:*** | During a 5GSM procedure, the MUSIM-capable UE may request the network to release the UE from RRC-CONNECTED state in 3GPP access for a USIM due to activity on another USIM in 3GPP access. However, according to the currrent specifiction of the coordination between the protocols for 5GS mobility management and 5GS session management in clause 4.2, the 5GSM procedure is suspended. That means that upon compeletion of 5GMM procedure(i.e. SR procedure or registration procedure), the UE and the AMF shall re-establish the NAS signalling connection to re-transmit 5GSM message. It may cause the UE to fall into a loop. Thus it is proposed to add a new exception to require the UE and the AMF to abort 5GSM prcodure to avoid re-establishing the NAS signalling connection if the 5GMM procedure is initated by the the MUSIM-capable UE to request the network to release the NAS signalling connection. |
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| ***Summary of change:*** | Add a new exception to require the UE and the AMF to abort 5GSM prcodure to avoid re-establishing the NAS signalling connection if the 5GMM procedure is initated by the the MUSIM-capable UE to request the network to release the NAS signalling connection. |
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| ***Consequences if not approved:*** | The 5GSM procedure may cause the NAS signalling connection re-establishment loop. |
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| ***Clauses affected:*** | 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:*** |  |

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

## 4.2 Coordination between the protocols for 5GS mobility management and 5GS session management

A 5GS session management (5GSM) message is piggybacked in specific 5GS mobility management (5GMM) transport messages. To this purpose, the 5GSM messages can be transmitted in an information element in the 5GMM transport messages. In this case, the UE, the AMF and the SMF execute the 5GMM procedure and the 5GSM procedure in parallel. The success of the 5GMM procedure is not dependent on the success of the piggybacked 5GSM procedure.

The UE can only initiate the 5GSM procedure when there is a 5GMM context established at the UE.

During 5GMM procedures, the UE and the AMF shall suspend the transmission of 5GSM messages, except when:

a) the 5GMM procedure is piggybacking 5GSM messages;

b) the UE is in 5GMM-CONNECTED mode and a service request procedure for re-establishing user-plane resources of PDU session(s) is initiated without including PDU session status IE or Allowed PDU session status IE. In this case, the UE and the AMF need not suspend the transmission of 5GSM messages related to other PDU session(s) than the one(s) for which the user- plane resources re-establishment is requested; or

c) the 5GMM procedure is used by the MUSIM UE to request the network to release the NAS signalling connection. In this case, the UE shall abort 5GSM prcodure to avoid re-establishing the NAS signalling connection due to pending 5GSM message. The AMF shall abort 5GSM prcodure to avoid paging due to pending 5GSM message if the paging restriction is not supported. Otherwise, the AMF decides to re-transmission 5GSM message based on the paging restriction preferences.

If the UE determines to locally release the N1 NAS signalling connection upon receiving an SOR transparent container during a registration procedure as specified in 3GPP TS 23.122 [5] Annex C.2, the UE shall suspend the transmission of 5GSM messages after sending the REGISTRATION COMPLETE message and until the N1 NAS signalling connection is released to obtain service on a higher priority PLMN, with the exception of the case when the UE has an emergency PDU session.

A 5GMM message piggybacking a 5GSM message for a PDU session shall be delivered via the access associated with the PDU session, if any, with the following exceptions:

a) the AMF shall send, via 3GPP access, a DL NAS TRANSPORT message piggybacking a downlink 5GSM message of a network-requested 5GSM procedure for a PDU session associated with non-3GPP access if the conditions specified in subclause 5.5.1.3.4 or subclause 5.6.1.4 are met;

b) the UE shall send an UL NAS TRANSPORT message piggybacking a response message to the 5GSM message described in a) via either:

1) 3GPP access; or

2) non-3GPP access if the UE is in 5GMM-CONNECTED mode over non-3GPP access; and

NOTE: The interaction between the 5GMM sublayer and the 5GSM sublayer to enable the UE to send the UL NAS TRANSPORT message containing the response message via 3GPP access is required. This is achieved via UE implementation.

c) the UE shall send, via the target access, an UL NAS TRANSPORT message piggybacking a 5GSM message associated with a request type set to "existing PDU session" or "existing emergency PDU session" for handover of an existing PDU session between 3GPP access and non-3GPP access.

A 5GMM message piggybacking a 5GSM message as a response message to a request message associated with an MA PDU session, shall be delivered via the same access that the initial message was received.

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