**3GPP TSG-CT WG1 Meeting #132-eC1-216046**

**E-meeting, 11-15 October 2021**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  | **24.501** | **CR** | **3616** | **rev** | **1** | **Current version:** | **17.4.1** |  |
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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:***  | NAS signalling recovery from fallback when the UE was only performing ProSe PC5 procedures |
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| ***Source to WG:*** | Samsung |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | 5G\_ProSe |  | ***Date:*** | 29-09-2021 |
|  |  |  |  |  |
| ***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:*** | Section 5.3.1.2 describes how the UE recovers from fallback for different cases. The following case is missing:* UE is in 5GMM-CONNECTED mode and was performing ProSe direct discovery over PC5 or ProSe direct communication over PC5
* UE receives fallback indication from lower layers

After fallback, the UE enters 5GMM-IDLE mode and it needs to recover its NAS signaling connection. How to recover in this case is missing. However, since in 5GMM-IDLE mode the UE uses the service request procedure if it needs to perform ProSe PC5 discovery/communication, then the recovery should also use service request procedure for consistency. |
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| ***Summary of change:*** | When the UE in 5GMM-CONNECTED mode over 3GPP access receives a fallback indication from lower layers and the UE has no pending NAS procedure but the UE was performing ProSe direct discovery over PC5 or ProSe direct communication over PC5, then the UE should enter 5GMM-IDLE mode and perform the service request procedure. |
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| ***Consequences if not approved:*** | How to recover from fallback when the UE was only performing ProSe direct discovery over PC5 or ProSe direct communication over PC5 remains unspecified and as such the UE behaviour is not known for this case. |
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| ***Clauses affected:*** | 5.3.1.2 |
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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 ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

\*\*\*\*\*\* NEXT CHANGE \*\*\*\*\*\*

#### 5.3.1.2 Re-establishment of the N1 NAS signalling connection

When the UE in 5GMM-CONNECTED mode over 3GPP access receives a fallback indication from lower layers, and the UE has no pending NAS procedure and no pending uplink user data for PDU session(s) with user-plane resources already established, the UE shall:

a) enter 5GMM-IDLE mode; and

b) initiate the registration procedure for mobility and periodic registration update and include the Uplink data status IE in the REGISTRATION REQUEST message indicating the PDU session(s) for which user-plane resources were active prior to receiving the fallback indication, if any (see subclause 5.5.1.3 for further details).

When the UE in 5GMM-CONNECTED mode over 3GPP access receives a fallback indication from lower layers, and the UE has pending uplink user data for PDU session(s) with user-plane resources already established but no pending NAS procedure, the UE shall:

a) enter 5GMM-IDLE mode; and

b) initiate the service request procedure and include the Uplink data status IE in the SERVICE REQUEST message indicating the PDU session(s) for which user-plane resources were active prior to receiving the fallback indication (see subclause 5.6.1 for further details).

When the UE in 5GMM-CONNECTED mode over 3GPP access receives a fallback indication from lower layers, and the UE has a pending registration procedure, a service request procedure, or a de-registration procedure, the UE shall:

a) enter 5GMM-IDLE mode;

b) proceed with the pending procedure; and

c) if the pending procedure is a service request or registration procedure, the UE shall include the Uplink data status IE in the SERVICE REQUEST message, or in the REGISTRATION REQUEST message, indicating the PDU session(s) for which user-plane resources were not active prior to receiving a fallback indication from the lower layers and the UE has pending user data to be sent over 3GPP access, if any, and the PDU session(s) for which user-plane resources were active prior to receiving the fallback indication, if any (see subclauses 5.5.1.3 and 5.6.1 for further details).

When the UE in 5GMM-CONNECTED mode over 3GPP access receives a fallback indication from lower layers, and the UE has a pending NAS procedure other than a registration procedure, a service request procedure, or a de-registration procedure, the UE shall:

a) enter 5GMM-IDLE mode;

b) initiate the service request procedure and include the Uplink data status IE in the SERVICE REQUEST message indicating the PDU session(s) for which user-plane resources were active prior to receiving the fallback indication, if any (see subclause 5.6.1 for further details); and

c) upon successful service request procedure completion, proceed with any pending procedure.

When the UE in 5GMM-CONNECTED mode over 3GPP access receives a fallback indication from lower layers, and the UE has no pending NAS procedure and no pending uplink user data for PDU session(s) with user-plane resources already established, and the UE was using network resources for ProSe direct discovery over PC5 or ProSe direct communication over PC5 (see 3GPP TS 23.304 [6E]), the UE shall:

a) enter 5GMM-IDLE mode; and

b) initiate the service request procedure and include the Uplink data status IE in the SERVICE REQUEST message indicating the PDU session(s) for which user-plane resources were active prior to receiving the fallback indication, if any (see subclause 5.6.1 for further details).

The cases above apply when the UE is in an allowed area or when the UE is not in a non-allowed area.

When the UE:

a) is in a non-allowed area or is not in an allowed area;

b) is in 5GMM-CONNECTED mode over 3GPP access;

c) receives a fallback indication from lower layers; and

d) does not have signalling pending,

the UE shall:

a) enter 5GMM-IDLE mode; and

b) initiate the registration procedure for mobility and periodic registration update. The UE shall not include the Uplink data status IE in the REGISTRATION REQUEST message except if the PDU session for which user-plane resources were active is an emergency PDU session, or if the UE is configured for high priority access in the selected PLMN.

In the above cases when the UE receives a fallback indication from lower layers, if the UE is in non-allowed area or not in allowed area, the UE shall behave as specified in subclause 5.3.5.

\*\*\*\*\*\* END CHANGE \*\*\*\*\*\*