**3GPP TSG-CT WG1 Meeting #125-eC1-20xxxx**

**Electronic meeting, 20-28 August 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **24.501** | **CR** | **2468** | **rev** | **1** | **Current version:** | **16.5.1** |  |
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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:*** | Clarification for SR attempt count reset | | | | | | | | | |
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| ***Source to WG:*** | MediaTek Inc. | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GProtoc16 | | | | |  | ***Date:*** | | | 2020-08-24 |
|  |  | | | |  | |  | | |  |
| ***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) Rel-17 (Release 17)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | As per TS24.501, subclause 5.6.1.1,  *The service request attempt counter shall be reset when:*  *- a registration procedure for mobility and periodic registration update is successfully completed;*  *- a service request procedure is successfully completed; or*  *- a service request procedure is rejected as specified in subclause 5.6.1.5 or subclause 5.3.20.*  But there are more conditions in which SR attempt counter should be reset   1. T3525 expiry so that when again SR has been failed as per subclause 5.6.1.7 then SR attempt counter can be increment. 2. A UE-initiated de-registration procedure or Network-initiated de-registration procedure is completed successful as per subclause 5.5.2. | | | | | | | | |
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| ***Summary of change:*** | | SR attempt counter should be reset   1. T3525 expiry 2. A UE-initiated de-registration procedure or Network-initiated de-registration procedure is completed successfully as per subclause 5.5.2 | | | | | | | | |
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| ***Consequences if not approved:*** | | Unclear information for resetting of SR attempt counter may lead to ambigous result. | | | | | | | | |
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| ***Clauses affected:*** | | 5.6.1.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

\*\*\* change \*\*\*

#### 5.6.1.1 General

The purpose of the service request procedure is to change the 5GMM mode from 5GMM-IDLE to 5GMM-CONNECTED mode. If the UE is not using 5GS services with control plane CIoT 5GS optimization, this procedure is used to request the establishment of user-plane resources for PDU sessions which are established without user-plane resources. In latter case, the 5GMM mode can be the 5GMM-IDLE mode or the 5GMM-CONNECTED mode if the UE requires to establish user-plane resources for PDU sessions. If the UE is using 5GS services with control plane CIoT 5GS optimization, this procedure can be used for UE initiated transfer of user data via the control plane from 5GMM-IDLE mode.

NOTE 1: The lower layer indicates when the user-plane resources for PDU sessions are successfully established or released.

This procedure is used when:

- the network has downlink signalling pending over 3GPP access and the UE is in 5GMM-IDLE mode over 3GPP access;

- the network has downlink signalling pending over non-3GPP access, the UE is in 5GMM-IDLE mode over non-3GPP access and in 5GMM-IDLE or 5GMM-CONNECTED mode over 3GPP access;

- the UE has uplink signalling pending over 3GPP access and the UE is in 5GMM-IDLE mode over 3GPP access;

- the network has downlink user data pending over 3GPP access and the UE is in 5GMM-IDLE mode over 3GPP access;

- the network has downlink user data pending over non-3GPP access, the UE is in 5GMM-IDLE mode over non-3GPP access and in 5GMM-IDLE or 5GMM-CONNECTED mode over 3GPP access;

- the UE has user data pending over 3GPP access and the UE is in 5GMM-IDLE or 5GMM-CONNECTED mode over 3GPP access;

- the UE has user data pending over non-3GPP access and the UE is in 5GMM-CONNECTED mode over non-3GPP access;

- the UE in 5GMM-IDLE mode over non-3GPP access, receives an indication from the lower layers of non-3GPP access, that the access stratum connection is established between UE and network, if T3346 is not running;

- the UE in 5GMM-IDLE or 5GMM-CONNECTED mode over 3GPP access receives a request from the upper layers to perform emergency service fallback and performs emergency services fallback as specified in subclause 4.13.4.2 of 3GPP TS 23.502 [9]; or

- the UE has to request resources for V2X communication over PC5.

This procedure shall not be used for initiating user data transfer or PDU session management related signalling other than for performing UE-requested PDU session release procedure related to a PDU session for LADN when the UE is located outside the LADN service area.

In NB-N1 mode, this procedure shall not be used to request the establishment of user-plane resources:

a) for a number of PDU sessions that exceeds the UE' s maximum number of supported user-plane resources if there is currently:

if there is currently:

1) no user-plane resources established for the UE;

2) user-plane resources established for:

i) one PDU session and the Multiple user-plane resources support bit was set to "Multiple user-plane resources not supported" in the 5GMM capability IE; or

ii) two PDU sessions and the Multiple user-plane resources support bit was set to "Multiple user-plane resources supported" in the 5GMM capability IE; or

b) for additional PDU sessions, if the number of PDU sessions for which user-plane resources are currently established is equal to the UE's maximum number of supported user-plane resources.

The service request procedure is initiated by the UE, however, it can be triggered by the network by means of:

- the paging procedure (see subclause 5.6.2) for the transfer of downlink signalling or user data pending over 3GPP access to a UE in 5GMM-IDLE mode over 3GPP access;

- the paging procedure (see subclause 5.6.2) for the transfer of downlink signalling or user data pending over non-3GPP access to a UE in 5GMM-IDLE mode over 3GPP access and in 5GMM-IDLE mode over non-3GPP access;

- the notification procedure (see subclause 5.6.3) for the transfer of downlink signalling or user data pending over non-3GPP access to a UE in 5GMM-CONNECTED mode over 3GPP access and in 5GMM-IDLE mode over non-3GPP access; or

- the notification procedure (see subclause 5.6.3) for the transfer of downlink signalling or user data pending over 3GPP access to a UE in 5GMM-IDLE mode over 3GPP access and in 5GMM-CONNECTED mode over non-3GPP access.

NOTE 2: In case the UE is in 5GMM-IDLE mode over 3GPP access and in 5GMM-CONNECTED mode over non-3GPP access and downlink signalling or user data pending over 3GPP access needs to be transferred, the AMF can trigger either the notification procedure or the paging procedure based on implementation.

The UE shall invoke the service request procedure when:

a) the UE, in 5GMM-IDLE mode over 3GPP access, receives a paging request from the network;

b) the UE, in 5GMM-CONNECTED mode over 3GPP access, receives a notification from the network with access type indicating non-3GPP access;

c) the UE, in 5GMM-IDLE mode over 3GPP access, has uplink signalling pending (except in case i);

d) the UE, in 5GMM-IDLE mode over 3GPP access, has uplink user data pending (except in case j);

e) the UE, in 5GMM-CONNECTED mode or in 5GMM-CONNECTED mode with RRC inactive indication, has user data pending due to no user-plane resources established for PDU session(s) used for user data transport;

f) the UE in 5GMM-IDLE mode over non-3GPP access, with T3346 not active or upon expiry of T3346, receives or has already received an indication from the lower layers of non-3GPP access, that the access stratum connection is established between UE and network;

g) the UE, in 5GMM-IDLE mode over 3GPP access, receives a notification from the network with access type indicating 3GPP access when the UE is in 5GMM-CONNECTED mode over non-3GPP access;

h) the UE, in 5GMM-IDLE, 5GMM-CONNECTED mode over 3GPP access, or 5GMM-CONNECTED mode with RRC inactive indication, receives a request from the upper layers to perform emergency service fallback and performs emergency services fallback as specified in subclause 4.13.4.2 of 3GPP TS 23.502 [9];

i) the UE, in 5GMM-CONNECTED mode over 3GPP access or in 5GMM-CONNECTED mode with RRC inactive indication, receives a fallback indication from the lower layers (see subclauses 5.3.1.2 and 5.3.1.4) and the UE has a pending NAS procedure other than a registration, service request, or de-registration procedure;

j) the UE, in 5GMM-CONNECTED mode over 3GPP access or in 5GMM-CONNECTED mode with RRC inactive indication, receives a fallback indication from the lower layers (see subclauses 5.3.1.2 and 5.3.1.4) and the UE has pending uplink user data for PDU session(s) with user-plane resources already established but no pending NAS procedure;

k) the UE, in 5GMM-CONNECTED mode and has a NAS signalling connection only, is using 5GS services with control plane CIoT 5GS optimization and has pending user data to be sent via user-plane resources; or

l) the UE in 5GMM-IDLE mode over 3GPP access has to request resources for V2X communication over PC5 (see 3GPP TS 23.287 [6C]).

If one of the above criteria to invoke the service request procedure is fulfilled, then the service request procedure shall only be initiated by the UE when the following conditions are fulfilled:

- its 5GS update status is 5U1 UPDATED, and the TAI of the current serving cell is included in the TAI list; and

- no 5GMM specific procedure is ongoing.

The UE shall not invoke the service request procedure when the UE is in the state 5GMM-SERVICE-REQUEST-INITIATED.



Figure 5.6.1.1.1: Service Request procedure (Part 1)



Figure 5.6.1.1.2: Service Request procedure (Part 2)

A service request attempt counter is used to limit the number of service request attempts and no response from the network. The service request attempt counter shall be incremented as specified in subclause 5.6.1.7.

The service request attempt counter shall be reset when:

- a registration procedure for mobility and periodic registration update is successfully completed;

- a service request procedure is successfully completed;

- a service request procedure is rejected as specified in subclause 5.6.1.5 or subclause 5.3.20;

- timer T3525 expires; or

- a UE-initiated de-registration procedure or network-initiated de-registration procedure is successfully completed as specified in subclause 5.5.2.

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