**3GPP TSG-CT WG1 Meeting #133-eC1-216718**

**E-meeting, 11-19 November 2021**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  | **24.501** | **CR** | **3732** | **rev** | **-** | **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:***  | PDU session modification after inter-system change into a non-allowed area |
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| ***Source to WG:*** | Samsung |
| ***Source to TSG:*** | C1 |
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| ***Work item code:*** | 5GProtoc17 |  | ***Date:*** | 02-11-2021 |
|  |  |  |  |  |
| ***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:*** | Per current spec, the UE must report its 5GSM capabilities when it comes to 5GS and the PDN connection was established in S1 mode (see section 6.4.2.1 of TS 24.501).However, when the UE performs the registration procedure after the inter-system change from S1 mode to N1 mode, the UE can find out that the current TAI is indicated to be a non-allowed area. So then we have the following conflicting requirements:i) per current requirements, the UE **SHALL** perform PDU session modification procedure to report its 5GSM capabilities, andii) the UE is in a non-allowed area where a 5GSM procedure is not allowed.In order to solve the problem identified above, the UE should report its 5GSM capability after it leaves the non-allowed area.Note: a “similar” issue is also described in the same section in which the UE could not perform the procedure due to a running BO timer. Currently, the spec requires the UE to attempt again after the BO timer expires as shown below from the same section:“If the UE needs to initiate the UE-requested PDU session modification procedure to indicate to the network the relevant 5GSM parameters and capabilities (e.g. the UE's 5GSM capabilities, whether the UE supports more than 16 packet filters, the maximum data rate per UE for user-plane integrity protection supported by the UE for uplink, the maximum data rate per UE for user-plane integrity protection supported by the UE for downlink and whether the UE requests the PDU session to be an always-on PDU session in the 5GS) for a PDN connection established when in S1 mode, **after the first inter-system change from S1 mode to N1 mode**, the UE is a UE operating in single-registration mode in the network supporting N26 interface and timer T3396, T3584, T3585 or the back-off timer is running, **the UE shall initiate the UE-requested PDU session modification procedure after expiry of timer T3396, T3584 or T3585 or after expiry of the back-off timer**.” |
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| ***Summary of change:*** | If the UE needs to perform PDU session modification to report 5GSM capabilities after an inter-system change from S1 mode to N1 mode but the UE is in a non-allowed area (i.e. UE is in substate substate 5GMM-REGISTERED.NON-ALLOWED-SERVICE), then the UE shall initiate the procedure after it leaves the non-allowed area (i.e. UE is in substate substate 5GMM-REGISTERED.NORMAL-SERVICE). |
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| ***Consequences if not approved:*** | The UE will not perform a PDU session modification procedure in the case described as there is no requirement to do so after leaving the non-allowed area. Consequently, the SMF will not have the UE’s 5GSM capabilities that are currently required. |
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| ***Clauses affected:*** | 6.4.2.1 |
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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:*** |  |

\*\*\*\*\*\* START CHANGE \*\*\*\*\*\*

#### 6.4.2.1 General

The purpose of the UE-requested PDU session modification procedure is:

a) to enable the UE to request modification of a PDU session;

b) to indicate a change of 3GPP PS data off UE status for a PDU session;

c) to revoke the previously indicated support for reflective QoS;

d) to request specific QoS handling and segregation of service data flows;

e) to indicate to the network the relevant 5GSM parameters and capabilities (e.g. the UE's 5GSM capabilities, whether the UE supports more than 16 packet filters, the maximum data rate per UE for user-plane integrity protection supported by the UE for uplink, the maximum data rate per UE for user-plane integrity protection supported by the UE for downlink and whether the UE requests the PDU session to be an always-on PDU session in the 5GS) for a PDN connection established when in S1 mode, after the first inter-system change from S1 mode to N1 mode, if the UE is a UE operating in single-registration mode in a network supporting N26 interface;

f) to delete one or more mapped EPS bearer contexts;

g) to convey a port management information container;

h) to re-negotiate header compression configuration associated to a PDU session using control plane CIoT 5GS optimization; or

i) to enable the UE to request to join or leave one or more MBS multicast sessions associated with a PDU session.

NOTE: The case c), d), e), f) and g) do not apply to PDU sessions associated with the control plane only indication.

When the UE-requested PDU session modification procedure is used to indicate a change of 3GPP PS data off UE status for a PDU session (see subclause 6.2.10), the UE shall initiate the UE-requested PDU session modification procedure even if the UE is outside the LADN service area or the timer T3396, T3584, T3585 or the back-off timer is running or is deactivated.

If the UE needs to revoke the previously indicated support for reflective QoS for a PDU session and timer T3396, T3584, T3585 or the back-off timer is running or is deactivated, the UE shall not initiate the UE-requested PDU session modification procedure and shall instead initiate the UE-requested PDU session release procedure.

If the UE needs to initiate the UE-requested PDU session modification procedure to indicate to the network the relevant 5GSM parameters and capabilities (e.g. the UE's 5GSM capabilities, whether the UE supports more than 16 packet filters, the maximum data rate per UE for user-plane integrity protection supported by the UE for uplink, the maximum data rate per UE for user-plane integrity protection supported by the UE for downlink and whether the UE requests the PDU session to be an always-on PDU session in the 5GS) for a PDN connection established when in S1 mode, after the first inter-system change from S1 mode to N1 mode, the UE is a UE operating in single-registration mode in the network supporting N26 interface and:

a) timer T3396, T3584, T3585 or the back-off timer is running, the UE shall initiate the UE-requested PDU session modification procedure after expiry of timer T3396, T3584 or T3585 or after expiry of the back-off timer; or

b) the UE is in substate 5GMM-REGISTERED.NON-ALLOWED-SERVICE and has not performed the the UE-requested PDU session modification procedure (see subclause 5.3.5), the UE shall initiate the UE-requested PDU session modification procedure after entering substate 5GMM-REGISTERED.NORMAL-SERVICE.

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