**3GPP TSG-SA5 Meeting #141-eS5-221125rev1**

**e-meeting, 17 - 26 January 2022**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **32.255** | **CR** | **0361** | **rev** | **1** | **Current version:** | **17.4.0** |  |
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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 |  | Radio Access Network |  | Core Network | **X** |

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| ***Title:***  | Add charging enhancements of 5GS CIoT in charging procedure |
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| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | 5G\_CIoT\_CH |  | ***Date:*** | 2022-01-07 |
|  |  |  |  |  |
| ***Category:*** | B |  | ***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:*** | This tdoc is to update charging procedures related to 5GS CIoT. |
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| ***Summary of change:*** | This tdoc is to update charging procedure related to 5GS CIoT in case of PDU session establishment. |
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| ***Consequences if not approved:*** | The 5GS CIoT related steps and description are not covered in TS 32.255. |
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| ***Clauses affected:*** | 5.2.2.2.2 |
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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:*** |  |

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| **Start of changes** |

##### 5.2.2.2.2 PDU session establishment

The following figure 5.2.2.2.2-1 describes a PDU session establishment charging, based on figure 4.3.2.2.1.1 TS 23.502 [202] description:

Figure 5.2.2.2.2-1: PDU session establishment

8. The SMF selects an SSC mode for the PDU Session and also selects one or more UPFs.

9. The SMF may perform a Session Management Policy Modification procedure to report some event to the PCF that has previously subscribed.

9ch-a.The SMF creates a Charging Id for the PDU session, and sends Charging Data Request[initial] to CHF for authorization for the subscriber to start the PDU session which is triggered by start of PDU session charging event.

As described in TS 23.502 [201], when receives during PDU session establishment, the SMF may include 5GS CIoT optimizations information in Charging Data Request [initial]. .

9ch-b. The CHF opens CDR for this PDU session.

9ch-c. The CHF acknowledges by sending Charging Data Response[Initial] to the SMF.

15. AMF to SMF: SM Request (N2 SM information).

[16a-b]. N4 session Modification.

16ch-a. This step may occur in case "start of service data flow" needs quota from CHF, for the SMF to request quota.

16ch-b. The CHF updates CDR for this PDU session.

16ch-c. The CHF acknowledges by sending Charging Data Response[Update] to the SMF.

NOTE 1: The steps from 16ch-a to 16ch-c for quota request from CHF are not applicable for offline only charging.

17. SM Request with PDU session Update Response to AMF.

18. SMF sends SM Context Status Notify to AMF.

19. In case of PDU Type IPv6, IPv6 Address Configuration.

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| **End of changes** |