**3GPP TSG-SA5 Meeting #129e *S5-201226***

**e-meeting, 24 February – 4 March 2020** Revision of S5-20xxxx

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| *CR-Form-v11.4* | | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | | |
|  | | | | | | | | | |
|  | **32.255** | **CR** | **0183** | **rev** | **-** | **Current version:** | **16.3.0** |  |
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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:*** | Correct PDU session modification procedure with I-SMF insertion. | | | | | | | | | |
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| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | ETSUN | | | | |  | ***Date:*** | | | 2019-02-15 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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)* | |
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| ***Reason for change:*** | | The PDU session modification procedure with I-SMF involved is specified in TS 32.255. The SMF can not obtain the correct usage report from UPF in the step 1a and 1e. In the step 1a.ch-a and 1b~1e.ch-a, the SMF shall report the incorrect volume counter to CHF in the PDU session modification procedure. The trigger of I-SMF insertion should be already addressed in step 16a-c. It is unnecessary to send duplicated charging information in multiple steps in modification procedure. In general, the SMF can obtain the usage report from PSA-UPF in the step 16a-b and report it to CHF in step 16.ch-a. | | | | | | | | |
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| ***Summary of change:*** | | The steps is change in clause 5.2.2.14.3, include:   * Remove steps from 1a.ch-a to 1a.ch-c. * Remove steps from 1b~1e.ch-a to 1b~1e.ch-c * Change steps 15.ch-a~c to 16.ch-a~c | | | | | | | | |
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| ***Consequences if not approved:*** | | The SMF shall report the incorrect volume counter to CHF in the PDU session modification procedure. | | | | | | | | |
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| ***Clauses affected:*** | | 5.2.2.14.3 | | | | | | | | |
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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:*** | |  | | | | | | | | |

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| **First change to TS 32.255** |

##### 5.2.2.14.3 PDU Session modification procedure with I-SMF involved

The following figure 5.2.2.14.3-1 describes a PDU Session modification charging message flow, for the case where the service area of the selected SMF does not include the location where the UE camps, with simplified I-SMF with UE and Serving Network message flows , based on TS 23.502 [201] figure 4.3.3.3-1, where the V-SMF and V-UPF are replaced by I-SMF and I-UPF, and H-SMF and H-UPF are replaced by SMF and UPF (PSA) respectively:



Figure 5.2.2.14.3-1: UE or network requested PDU Session Modification charging with I-SMF involved

PDU Session served by both I-SMF and SMF has been established, with the ongoing Charging session.

1a. UE or serving network AMF requested PDU Session Modification Request to I-SMF, I-SMF invokes a Nsmf\_PDUSession\_Update Request message to SMF, including User Location Information, QoS information and I-SMF information. SMF accept with Nsmf\_PDUSession\_Update\_Response message to I-SMF.

1b~1d. With PCF initiated SM Policy Association Modification or UDM updated the subscription data or SMF decided to modify PDU Session triggers, SMF starts SMF requested PDU Session Modification procedures.

1e. (R)AN initiated PDU Session Modification Request to I-SMF, I-SMF invokes a Nsmf\_PDUSession\_Update Request message to SMF, including User Location Information, QoS information with indication of QoS flow released and I-SMF information. SMF accept with Nsmf\_PDUSession\_Update\_Response message to I-SMF.

3. With SMF initiated QoS flows modification procedure, SMF invokes a Nsmf\_PDUSession\_Update Request message to I-SMF.

4~14. I-SMF interacting with UE and Serving Network message flows, including the QoS rule(s) and QoS Flow level QoS parameters operations.

15. I-SMF invokes a Nsmf\_PDUSession\_Update Response message to SMF, including User Location Information, QoS flow information and I-SMF information.

16a-b. The SMF update N4 session of the UPF.

16.ch-a. All counts are closed in SMF and a Charging Data Request [Update] message with PDU Session related triggers (e.g. QoS change)including I-SMF information is sent to CHF, if required by immediate report category trigger. New counts and time stamps for all active service data flows are started in the SMF.

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

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

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| **End of Change** |