**3GPP TSG-SA5 Meeting #140-e *S5-216072***

**e-meeting, 15 - 24 November 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **32.255** | **CR** | **0348** | **rev** | **-** | **Current version:** | **17.3.0** |  |
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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:*** | Correcting home provided charging id and trigger at inter-PLMN V-SMF change | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17 | | | | |  | ***Date:*** | | | 2021-11-04 |
|  |  | | | |  | |  | | |  |
| ***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 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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
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| ***Reason for change:*** | | The home charging id isn’t sent from the old V-SMF to the new V-SMF.  The charging data request update is dependent on an immediate trigger. | | | | | | | | |
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| ***Summary of change:*** | | Removing the home changing id between the V-SMFs.  Adding that the charging data request update requires an immediate trigger. | | | | | | | | |
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| ***Consequences if not approved:*** | | How the triggering and home charging id should be handled in the case of inter PLMN V-SMF change is undefined and may lead to interoperability issues. | | | | | | | | |
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| ***Clauses affected:*** | | 5.2.2.14.9, 5.2.2.14.10 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 32.255 CR 0334 | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | To be added after S5-215231. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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| **First change** |

##### 5.2.2.14.9 Roaming Home routed PDU session - inter-PLMN V-SMF change

The following figure 5.2.2.14.9.1 describes the Home Routed PDU Session case in which the UE moves out of V-SMF service area in the serving PLMN to a new PLMN V-SMF service area, based on figure 4.23.4.3-1 of TS 23.502 [201], with I-SMF replaced by V-SMF in I-SMF change scenario:



Figure 5.2.2.14.9.1: Roaming Home routed PDU session inter-PLMN V-SMF change

0cha: Ongoing charging session in old VPLMN for UE served by old V-SMF, using Charging Id1.

0chb: Ongoing charging session for HPLMN for UE served by old V-SMF, using Charging Id1.

1-2. UE moves into a different PLMN, and the new AMF determines the new V-SMF based on service area.

3- 4b. SM Context retrieval by new V-SMF from the old V-SMF. The Charging Id containing Charging Id1 value is conveyed to the new V-SMF.

4ch-a. The UE is identified as a roamer, the CHF is selected accordingly.

4ch-b. A Charging Data Request [Initial] is sent to V-CHF, indicating "in-bound roamer", with charging Id = Charging Id1 received on step 4b.

4ch-c. The V-CHF opens a CDR (indicating "in-bound roamer").

4ch-d. The V-CHF acknowledges by sending Charging Data Response [Initial] to the V-SMF and optionally supplies a "Roaming Charging Profile" to the V-SMF which overrides the default one.

5-7c. Refer steps 5 to 7c in Figure 4.23.4.3-1 of TS 23.502 [201].

8a. Nsmf\_PDUSession\_Update Request from new V-SMF towards the H-SMF with the "Roaming Charging Profile".

8ach-a. A Charging Data Request [Update] is sent to H-CHF in HPLMN, indicating the V-SMF change and "Roaming Charging Profile" received from the VPLMN.

8ach-b. The H-CHF in HPLMN updates the CDR.

8ach-c. The H-CHF in HPLMN acknowledges by sending Charging Data Response [Update] to the H-SMF and supplies the HPLMN selected "Roaming Charging Profile" for this VPLMN.

8c. Nsmf\_PDUSession\_Update Response from H-SMF to new V-SMF with the "Roaming Charging Profile".

8cch-a. A Charging Data Request [Update] is sent, when any immediate trigger condition is met, to V-CHF with charging information received from H-SMF, which includes the HPLMN selected "Roaming Charging Profile".

8cch-b. The V-CHF updates the CDR.

8cch-c. The V-CHF acknowledges by sending Charging Data Response [Update] to the V-SMF.

9, 17-21. Refer steps 9 and 17 to 21 in Figure 4.23.4.3-1 of TS 23.502 [201].

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| **End of changes** |