**3GPP TSG-SA5 Meeting #142-e *S5-222428rev2***

**e-meeting, 4th – 12th April 2022** Revision of S5-20xxxx

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **32.255** | **CR** | **0** | **rev** | **1** | **Current version:** | **17.5.0** |  |
|  |
| *For* [***HELP***](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:***  | Additional charging architecture for MVNO |
|  |  |
| ***Source to WG:*** | Huawei, Vodafone |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | CHROAM |  | ***Date:*** | 2022-04-06 |
|  |  |  |  |  |
| ***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:*** | For the support of MVNO (with CHF) charging, the general description and charging architecture is introduced. |
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| ***Summary of change:*** | Add the charging architecture for the support of MVNO (with CHF) charging.  |
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| ***Consequences if not approved:*** | The support of the MVNO (with CHF) scenario charging is incomplete. |
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| ***Clauses affected:*** | Annex X(New) |
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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:*** |  |

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| **First change** |

Annex X (normative):
Mobile Virtual Network Operators charging (MVNO) Charging

## X.1 General

This clause specifies the 5G Non-roaming MVNO (with CHF) Charging.

## X.2 5G data connectivity domain converged charging architecture

The SMF embedding the CTF, generates charging events towards the CHF in MNO and the CHF in MVNO for PDU connectivity converged charging.

As described in TS 32.240 [1], the CTF generates charging events towards to the CHF for converged online and offline charging processing. The CDRs generation is performed by the CHF acting as a CDF, which transfers them to the CGF.
Finally, the CGF creates CDR files and forwards them to the BD.

Figure X.2-1 depicts the 5G data connectivity converged charging architecture service-based representation for MVNO:



Figure X.2-1: 5G data connectivity converged charging architecture for MVNO service based representation (non-roaming)

A-CHF is used when an additional actor (i.e. MVNO) performs retail charging for its own subscribers.

Figure X.2-2 depicts the 5G data connectivity converged charging architecture for MVNO in reference point representation:



Figure X.2-2: 5G data connectivity converged charging architecture in MVNO reference point representation (non-roaming)

The N40 reference point is defined for the interactions between SMF and CHF in MNO, the N48 reference point is defined for the interactions between SMF in the MNO and CHF in the MVNO in the reference point representation.

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| **End of change** |