**3GPP TSG-SA5 Meeting #155 *S5-242703rev1***

**Jeju, South Korea, 27 - 31 May 2024**

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| *CR-Form-v12.0* |
| **CHANGE REQUEST** |
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|  | **32.240** | **CR** | **0491** | **rev** | **1** | **Current version:** | **18.6.0** |  |
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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:***  | Introduction of GMLC in charging architecture for 5GS |
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| ***Source to WG:*** | China Telecom |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | DUMMY |  | ***Date:*** | 2024-05-16 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** | Rel-19 |
|  | *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 o. | *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:*** | In order to support the charging aspects of Ranging and Sidelink Positioning, the introduction of GMLC should be added. |
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| ***Summary of change:*** | Add the introduction of GMLC for charging aspects of Ranging and Sidelink Positioning. |
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| ***Consequences if not approved:*** | The support of Ranging and Sidelink Positioning charging is incomplete. |
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| ***Clauses affected:*** | 4.2.3, 4.4.3 |
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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:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

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| **First change** |

### 4.2.3 Common architecture – service based interface

The following figures provide an overview of the logical ubiquitous charging architecture and the information flows for converged offline and online charging in service based interface variant for 5G systems and Edge Computing enabling sub-systems.

Figure 4.2.3.1 provides the overview in service based representation:



Figure 4.2.3.1: Logical ubiquitous charging architecture and information flows for 5G systems – service based representation

Figure 4.2.3.2 provides the overview in reference point representation:



Figure 4.2.3.2: Logical ubiquitous charging architecture and information flows for 5G systems – reference point representation

The reference points are defined in clause 4.4.3.

For the sake of simplicity, the SMF+PGW-C is not explicitly added in Figure 4.2.3.1 and Figure 4.2.3.2, and is represented by the SMF. The SMF+PGW-C uses Nchf for 5GS and EPC interworking as well as when enhanced to support GERAN/UTRAN.

The Nchf\_SpendingLimitControl service exposed by CHF and consumed by the PCF is specified in TS 23.502 [214].

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| **Second change** |

### 4.4.3 Charging services Reference point

The common charging architectures are mapped into the specific domain/subsystem/service charging architectures in the respective middle tier TSs, which contain in their reference point representation, the following reference points:

**N28:** Reference point between PCF and CHF defined in TS 23.501[215]**.**

**N40:** Reference point between SMF and the CHF in the same PLMN defined in clause 4.2 of TS 32.255 [15].

**N41:** Reference point between AMF and CHF in HPLMN defined in clause 4.2.2 of TS 32.256 [16].

**N42:** Reference point between AMF and CHF in VPLMN defined in clause 4.2.2 of TS 32.256 [16].

**N44:** Reference point between NEF and CHF defined in clause 4.4 of TS 32.254 [14].

**N45:** Reference point between IMS Node and CHF defined in clause 4.4 of TS 32.260 [20].

**N46:** Reference point between SMSF and CHF defined in clause 4.4 of TS 32.274 [34].

**N47**: Reference point between SMF and the CHF in different PLMNs defined in clause 4.2 of TS 32.255 [15].

**N48**: Reference point between 5G DDNMF and the CHF in different PLMNs defined in clause 4.4 of TS 32.277 [37].

**N49**: Reference point between EES and CHF defined in clause 4.2.3 of TS 32.257 [17].

**N100**: Reference point between MMS node and CHF defined in clause 4.4 of TS 32.270 [30].

**N101**: Reference point between MB-SMF and the CHF in the same PLMN defined in clause 4.2 of TS 32.255 [15].

**N102**: Reference point between NSACF and the CHF defined in clause 4.2.1 of TS 28.203 [72].

**N103**: Reference point between NSSAAF and the CHF defined in clause 4.2.1 of TS 28.204 [73].

**N104**: Reference point between TSN AF and CHF defined in clause 4.2 of TS 32.282 [42].

**N105**: Reference point between TSCTSF and CHF defined in clause 4.2 of TS 32.282 [42].

**N106**: Reference point between GMLC and CHF defined in clause 4.4 of TS 32.271 [31].

**N107**: Reference point between two CHFs defined in clause 4.2 of TS 32.255 [15] and clause 4.2.2 of TS 32.256 [16]

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| **End of change** |