**3GPP TSG-SA5 Meeting #158 S5-246972**

Orlando, USA, 18 - 22 November 2024

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** | **0504** | **rev** | **2** | **Current version:** | **9.1.0** |  |
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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:*** | Rel-19 Add CHF-CHF Interface | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Amdocs, MATRIXX Software, Nokia | | | | | | | | | |
| ***Source to TSG:*** | SA5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI18 | | | | |  | ***Date:*** | | | 2024-11-20 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | A |  | | | | | ***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 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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
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| ***Reason for change:*** | | CHF-CHF interface is missing in charging architecture  In Figure 4.2.3.2, the Reference points from SMF and from AMF are not aligned with their definition | | | | | | | | |
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| ***Summary of change:*** | | Add CHF-CHF interface and reference points in charging architecture  Correct the Reference points from AMF and from SMF | | | | | | | | |
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| ***Consequences if not approved:*** | | The charging architecture would be incomplete and can cause confusion between CHF and consumer implementations | | | | | | | | |
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| ***Clauses affected:*** | | 2, 4.2.3 | | | | | | | | |
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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 ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Revision of S5-245565  Revision of S5-245897 | | | | | | | | |

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| **First Change** |

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] - [9] Void.

[10] 3GPP TS 32.250: "Telecommunication management; Charging management; Circuit Switched (CS) domain charging".

[11] 3GPP TS 32.251: "Telecommunication management; Charging management; Packet Switched (PS) domain charging".

[12] Void.

[13] 3GPP TS 32.253: "Telecommunication management; Charging management; Control Plane (CP) data transfer domain charging".

[14] 3GPP TS 32.254: "Telecommunication management; Charging management; Exposure function Northbound Application Program Interfaces (APIs) charging".

[15] 3GPP TS 32.255: "Telecommunication management; Charging management; 5G Data connectivity domain charging; stage 2".

[16] 3GPP TS 32.256: "Telecommunication management; Charging management; 5G connection and mobility domain charging; stage 2".

[17] 3GPP TS 32.257: "Telecommunication management; Charging management; Edge Computing domain charging".

[18] - [19] Void.

[20] 3GPP TS 32.260: "Telecommunication management; Charging management; IP Multimedia Subsystem (IMS) charging".

[21] - [29] Void.

[30] 3GPP TS 32.270: "Telecommunication management; Charging management; Multimedia Messaging Service (MMS) charging".

[31] 3GPP TS 32.271: "Telecommunication management; Charging management; Location Services (LCS) charging".

[32] 3GPP TS 32.272: "Telecommunication management; Charging management; Push-to-talk over Cellular (PoC) charging".

[33] 3GPP TS 32.273: "Telecommunication management; Charging management; Multimedia Broadcast and Multicast Service (MBMS) charging".

[34] 3GPP TS 32.274: "Telecommunication management; Charging management; Short Message Service (SMS) charging".

[35] 3GPP TS 32.275: "Telecommunication management; Charging management; MultiMedia Telephony (MMTel) charging".

[36] 3GPP TS 32.276: "Telecommunication management; Charging management; Voice Call Service Charging".

[37] 3GPP TS 32.277: "Telecommunication management; Charging management; Proximity-based Services (ProSe) Charging".

[38] 3GPP TS 32.278: "Telecommunication management; Charging management; Monitoring Event charging".

[39] 3GPP TS 32.279: "5G Multicast-broadcast Services charging; stage 2".

[40] 3GPP TS 32.280: "Telecommunication management; Charging management; Advice of Charge (AoC) service".

[41] 3GPP TS 32.281: "Telecommunication management; Charging management; Announcement service".

[42] 3GPP TS 32.282: "Charging management; Time-Sensitive Networking (TSN) charging".

[43] - [49] Void.

[50] 3GPP TS 32.299: "Telecommunication management; Charging management; Diameter charging application".

[51] 3GPP TS 32.298: "Telecommunication management; Charging management; Charging Data Record (CDR) parameter description".

[52] 3GPP TS 32.297: "Telecommunication management; Charging management; Charging Data Record (CDR) file format and transfer".

[53] 3GPP TS 32.296: "Telecommunication management; Charging management; Online Charging System (OCS) applications and interfaces".

[54] 3GPP TS 32.295: "Telecommunication management; Charging management; Charging Data Record (CDR) transfer".

[55] Void.

[56] 3GPP TS 32.293: "Telecommunication management; Charging management; Proxy Function".

[57] 3GPP TS 32.290: "Telecommunication management; Charging management; 5G system; Services, operations and procedures of charging using Service Based Interface (SBI)".

[58] 3GPP TS 32.291: "Telecommunication management; Charging management; 5G system; Charging service, stage 3".

[59] - [69] Void.

[70] 3GPP TS 28.201: "Charging management; Network slice performance and analytics charging in the 5G System (5GS); Stage 2".

[71] 3GPP TS 28.202: "Charging management; Network slice management charging in the 5G System (5GS); Stage 2".

[72] 3GPP TS 28.203: "Charging management; Network slice admission control charging in the 5G System (5GS)".

[73] 3GPP TS 28.204: "Charging management; Network slice-specific authentication and authorization charging in the 5G System (5GS); Stage 2".

[74] - [99] Void.

[100] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[101] 3GPP TS 22.115: "Service aspects; Charging and billing".

[102] - [199] Void.

[200] - [206] Void.

[207] 3GPP TS 23.078: "Customized Applications for Mobile network Enhanced Logic (CAMEL); Stage 2".

[208] 3GPP TS 23.203: "Policy and charging control architecture".

[209] 3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".

[210] Void.

[211] 3GPP TS 24.229: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

[212] 3GPP TS 23.272: "Circuit Switched (CS) fallback in Evolved Packet System (EPS); Stage 2".

[213] 3GPP TS 24.002: "GSM - UMTS Public Land Mobile Network (PLMN) access reference configuration".

[214] 3GPP TS 23.502:"Procedures for the 5G System".

[215] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".

[216] 3GPP TS 28.533: "Management and orchestration; Architecture framework".

[217] 3GPP TS 23.548: "5G System Enhancements for Edge Computing".

[218] 3GPP TS 23.558: "Architecture for enabling Edge Applications".

[219] 3GPP TS 28.541: " Management and orchestration; 5G Network Resource Model (NRM); Stage 2 and stage 3".

[220] 3GPP TS 28.554: "Management and orchestration; 5G end to end Key Performance Indicators (KPI)".

[221] - [296] Void.

[297] 3GPP TS 23.503: “Policy and charging control framework for the 5G System (5GS); Stage 2”.

[298] EU Roaming regulation III; "Structural Solutions; High Level Technical Specifications".

[299] EU Roaming regulation III; "Interface & Protocol; Detailed Technical Specifications".

[300] ITU-T Recommendation D.93: "Charging and accounting in the international land mobile telephone service (provided via cellular radio systems)".

[301] - [399] Void.

[400] - [401] Void.

[402] IETF RFC 4006 (2005): "Diameter Credit-Control Application".

[403] - [499] Void.

[500] GSMA PRD BA.27: "Charging Principles".

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| **Second 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 3GPP TS 23.502 [214] and 3GPP TS 23.503 [297].

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| **End of changes** |