**3GPP TSG-SA5 Meeting #155 *S5-242772rev1***

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

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
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|  |  | **CR** |  | **rev** | **1** | **Current version:** |  |  |
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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:***  | MLC for Ranging and Sidelink Positioning Charging  |
|  |  |
| ***Source to WG:*** | China Telecom |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | DUMMY |  | ***Date:*** | 2024-05-16 |
|  |  |  |  |  |
| ***Category:*** |  |  | ***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 [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 TS 32.271 specifies Ranging and Sidelink Positioning Charging and TS 32.290 misses GMLC as a CHF converged charging consumer. |
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| ***Summary of change:*** | Introduce GMLC for Ranging and Sidelink Positioning Charging |
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| ***Consequences if not approved:*** | Ranging and Sidelink Positioning Charging is not supported |
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| ***Clauses affected:*** | 2, 3.3, 6.2.1, 6.2.2 |
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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:*** |  |

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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] 3GPP TS 32.240: "Telecommunication management; Charging management; Charging architecture and principles".

[2] - [29] Void.

[30] 3GPP TS 32.255: "Telecommunication management; Charging management; 5G Data connectivity domain charging; stage 2".

[31] 3GPP TS 32.260: "Telecommunication management; Charging management; IP Multimedia Subsystem (IMS) charging".

[32] 3GPP TS 32.254: "Telecommunication management; Charging management; Exposure function Northbound Application Program Interfaces (APIs) charging".

[33] 3GPP TS 32.256: "Telecommunication management; Charging management; 5G connection and mobility domain charging; Stage 2".

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

[35] 3GPP TS 28.201: "Telecommunication management; Charging management; Network slice performance and analytics charging in the 5G System (5GS); Stage 2".

[36] 3GPP TS 28.202: "Telecommunication management; Charging management; Network slice management charging in the 5G System (5GS); Stage 2".

[37] 3GPP TS 32.270: "Telecommunication management; Charging management; Multimedia Messaging Service (MMS) charging".

[38] 3GPP TS 32.257: "Telecommunication management; Charging management; Edge computing domain charging".

[39] 3GPP TS 28.203: "Charging management; Network slice admission control charging in the 5G System (5GS)".

[40] 3GPP TS 28.204: "Charging management; Network slice-specific authentication and authorization charging in the 5G System (5GS); Stage 2".

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

[41] - [42] Void.

[43] 3GPP TS 32.282: "Charging management; Time-Sensitive Networking (TSN) charging".

[44] - [50] Void.

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

[51] - [54] Void.

[55] - [57] Void.

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

[59] - [99] Void.

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

[101] - [200] Void.

[201] 3GPP TS 23.501: "System Architecture for the 5G System; Stage 2".

[202] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".

[203] - [206] Void.

[207] - [299] Void.

[300] 3GPP TS 29.510: " 5G System; Network function repository services; Stage 3".

[301] - [370] Void.

[371] - [399] Void.

[400] - [499] Void.

[500] - [599] Void.

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| **Next change** |

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [100] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [100].

5GC 5G Core Network

5GS 5G System

AMF Access and Mobility Management Function

CCS Converged Charging System

CEF Charging Enablement Function

CHF Charging Function

GMLC Gateway MLC

IEC Immediate Event Charging

MB-SMF Multicast/Broadcast Session Management Function

MMS Multimedia Messaging Service

MnS Management Service

NF Network Function

NSACF Network Slice Admission Control Function

NSSAAF Network Slice-Specific Authentication and Authorization Function

PCF Policy Control Function

SBI Service based Interface

SMSF Short Message Service Function

SMF Session Management Function

TSCTSF Time Sensitive Communication and Time Synchronization Function

TSN AF Time Sensitive Networking Application Function

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| **Next change** |

### 6.2.1 General

**Service description:** The ConvergedCharging service provides charging for session and event based NF services. This ConvergedCharging service offers charging:

- With quota management (online; this includes support for both blocking mode and non-blocking mode)

- Without quota management (offline)

- Charging information record generation

The following table shows the CHF Services and CHF Service Operations.

**Table 6.2.1-1: NF services provided by the CHF**

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| **Service Name** | **Service Operations** | **Operation****Semantics** | **Known NF Consumer(s)** |
| Nchf\_ConvergedCharging | Create | Request/Response | SMF, SMSF, AMF, SMF+PGW-C, NEF, IMS-Node, MMS-Node, CEF, MnS Producer, EES, MB-SMF, NSACF, NSSAAF, CHF, TSN AF, TSCTSF, GMLC |
| Update | Request/Response | SMF, SMF+PGW-C, IMS-Node, MB-SMF, NSACF, CHF |
| Release | Request/Response | SMF, SMSF, AMF, NEF, SMF+PGW-C, IMS-Node, MMS-Node, MB-SMF, NSACF, NSSAAF, CHF, TSN AF, TSCTSF |
| Notify | Notify | SMF, SMF+PGW-C, IMS-Node, NSACF, CHF |

The applicability of ConvergedCharging service to:

- SMF, MB-SMF and SMF+PGW-C as consumer is specified in TS 32.255 [30] for 5G data connectivity domain charging;

- IMS-Node as consumer is specified in TS 32.260 [31] for IMS charging;

- NEF as consumer is specified in TS 32.254 [32] for exposure function Northbound Application Program Interfaces charging;

- AMF as consumer is specified in the TS 32.256 [33] for 5G connection and mobility domain charging;

- SMSF as consumer is specified in TS 32.274 [34] for short message service charging;

- CEF as consumer is specified in the TS 28.201 [35] and TS 28.202[36] for Network slice charging and edge computing charging;

- MnS Producer as consumer is specified in the TS 28.201 [35] and TS 28.202 [36] for Network slice charging.

- MMS-Node as consumer is specified in TS 32.270 [37] for multimedia messaging service charging.

- EES as consumer is specified in the TS 32.257 [38] for edge computing charging.

- NSACF as consumer is specified in TS 28.203 [39] for Network slice admission control charging.

- NSSAAF as consumer is specified in TS 28.204 [40] for Network slice-specific authentication and authorization charging.

- CHF as consumer is specified in TS 32.255 [30] for LBO roaming 5G data connectivity domain charging and the TS 32.256 [33] for roaming 5G connection and mobility domain charging.

- TSN AF and TSCTSF as consumers are specified in the TS 32.282 [43] for time sensitive networking domain charging.

- GMLC as consumer is specified in the TS 32.271 [xx] for Ranging and Sidelink Positioning charging.The input and output parameters described in the clauses below are common to all NF Consumers. The usage of these common parameters and additional NF Consumer specific parameters are specified in dedicated charging specifications.

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| **Next change** |

### 6.2.2 Nchf\_ConvergedCharging\_Create service operation

**Service operation name:** Nchf\_ConvergedCharging\_Create

**Description:** Provides charging capabilities before service delivery, offers charging with and without quota management, as well as charging information record generation. It is used for both session and event based charging. Provides means for the NF Consumer to create the resource of the charging session. If it is used for session based charging the operation also makes an implicit subscribe to notification of events in CHF that requires re-authorization or abort.

The service operation may be used to request quota authorisation for service delivery and may open a CDR in the CHF, based on the information provided by the NF Consumer.

**Known NF Consumers:** SMF, SMSF, AMF, IMS-Node, MMS-Node, SMF+PGW-C, NEF, CEF, MnS Producer, EES, MB-SMF, NSACF, NSSAAF, CHF, TSN AF, TSCTSF, GMLC.

**Inputs, Required:** Subscriber identifier, either service identification or rating group.

**Inputs, Optional:** Requested service units, one-time event, destination address, provider, location information, time and date.

**Outputs, Required:** Result indication.

**Outputs, Optional:** Granted service units, validity time, triggers.

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| **End of changes** |