**3GPP TSG-SA5 Meeting #155 *S5-242697rev1***

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

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **32.271** | **CR** | **0019** | **rev** | **1** | **Current version:** | **18.0.0** |  |
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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 Ranging and Sidelink Positioning Charging | | | | | | | | | |
|  |  | | | | | | | | | |
| ***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 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:*** | | To support Ranging and Sidelink Positioning Charging, new terms needs to be introduced. | | | | | | | | |
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| ***Summary of change:*** | | Add new terms for Ranging and Sidelink Positioning | | | | | | | | |
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| ***Consequences if not approved:*** | | Charging for Ranging and Sidelink Positioning will not be supported | | | | | | | | |
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| ***Clauses affected:*** | | 1, 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:*** | |  | | | | | | | | |

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| **First change** |

# 1 Scope

The present document is part of a series of Technical Specifications (TSs) that specify charging functionality and charging management in 3GPP networks. The 3GPP core network charging architecture and principles are specified in TS 32.240 [1], which provides an umbrella for other charging management documents that specify

- the content of the CDRs per domain and subsystem (converged and offline charging);

- the content of real-time charging events per domain / subsystem (converged charging);

- the functionality of online and offline charging for those domains and subsystems;

- the interfaces that are used in the charging framework to transfer the charging information (i.e. CDRs or charging events).

The complete document structure for these TSs is defined in TS 32.240 [1].

The present document specifies the LCS Offline and Online Charging description for the LCS domain, based on the functional stage 2 description of the LCS in TS 23.271 [201], and the Ranging and Sidelink Positioning Converged Charging description based on TS 23.586 [xx]. This charging description includes the offline and online charging architecture and scenarios specific to the LCS and converged charging architecture and scenarios specific to the Ranging and Sidelink Positioning, as well as the mapping of the common 3GPP architecture specified in TS 32.240 [1] onto the LCS domain including Ranging and Sidelink Positioning. It further specifies the structure and content of the CDRs for offline charging and the charging events for online charging. The present document is related to other 3GPP charging TSs as follows:

- The common 3GPP charging architecture is specified in TS 32.240 [1];

- The parameters, abstract syntax and encoding rules for these CDR types are specified in TS 32.298 [51].

- A transaction based mechanism for the transfer of CDRs within the network is specified in TS 32.295 [54].

- The file based mechanism used to transfer the CDRs from the network to the operator’s billing domain (e.g. the billing system or a mediation device) is specified in TS 32.297 [52].

- The 3GPP Diameter application that is used for LCS domain offline and online charging is specified in TS 32.299 [50].

- The services, operations and procedures of charging, using Service Based Interface are specified in TS 32.290 [yy].

- The charging service of 5G system is specified in TS 32.291 [zz].

All terms, definitions and abbreviations, used in the present document, that are common across 3GPP TSs, are defined in TR 21.905 [100]. Those that are common across charging management in GSM/UMTS domains, services, or subsystems are provided in the umbrella document TS 32.240 [1] and are copied into clause 3 of the present document for ease of reading. Finally, those items that are specific to the present document are defined exclusively in the present document.

Furthermore, requirements that govern the charging work are specified in TS 22.115 [101].

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| **Next 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] - [9] Void.

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

[11] - [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] - [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) encoding rules 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".

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

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

[55] - [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] Void.

[201] 3GPP TS 23.271: "Functional stage 2 description of Location Services (LCS)".

[202] Void.

[203] 3GPP TS 25.305: "Stage 2 functional specification of User Equipment (UE) positioning in UTRAN".

[204] 3GPP TS 43.059: "Functional stage 2 description of Location Services (LCS) in GERAN".

[205] 3GPP TS 24.002: "GSM - UMTS Public Land Mobile Network (PLMN) Access Reference Configuration".

[xx] 3GPP TS 23.586: “Architectural Enhancements to support Ranging based services and Sidelink Positioning”.

[206] - [299] Void.

[301] - [399] Void.

[400] Void.

[401] Void.

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

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| **Next change** |

# 3 Definitions, symbols and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions defined in TR 21.905 [100], TS 32.240 [1], TS 23.271 [201] and TS 23.586 [xx].

## 3.2 Symbols

For the purposes of the present document, the following symbols apply:

Bl Reference point for the CDR file transfer from the GMLC CGF to the BD,

Lr Interface between Gateway MLCs

Nchf Service based interface exhibited by CHF.

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations defined in TR 21.905 [100], TS 23.271 [20] and TS 32.240 [1], and the following apply:

3G 3rd Generation

3GPP 3rd Generation Partnership Project

AVP Attribute Value Pair

BD Billing Domain

CCA Credit-Control-Answer

CCR Credit-Control-Request

CDF Charging Data Function

CDR Charging Data Records

CGF Charging Gateway Function

CHF Charging Function

CS Circuit-Switched

CTF Charging Trigger Function

DCCA Diameter Credit-Control Application

ECUR Event Charging with Unit Reservation

FTAM File Transfer, Access and Management

GERAN GSM EDGE Radio Access Network

GGSN Gateway GPRS Support Node

GMLC Gateway MLC

GPRS General Packet Radio Service

GSM Global System for Mobile communication

gsmSCF GSM Service Control Function

H-GMLC Home GMLC

HLR Home Location Register

HPLMN Home PLMN

HSS Home Subscriber Server

IE Information Element

IEC Immediate Event Charging

IETF Internet Engineering Task Force

IMS IP Multimedia Subsystem

IMSI International Mobile Subscriber Identity

IP Internet Protocol

ITU-T International Telecommunication Union - Telecommunications standardization sector

LCS LoCation Service

MAP Mobile Application Part

ME Mobile Equipment

MO Mobile Originated

MO-LR Mobile Originated Location Request

MS Mobile Station

MSISDN Mobile Station Integrated Services Data Network

MT Mobile Terminated

MT-LR Mobile Terminated Location Request

NI-LR Network Induced Location Request

OCS Online Charging System

PLMN Public Land Mobile Network

PMD Pseudonym Mediation Device functionality

PPR Privacy Profile Register

PS Packet Switched

RAN Radio Access Network

R-GMLC Requesting GMLC

RPC Reduced Partial CDR

SGSN Serving GPRS Support Node

TR Technical Report

TS Technical Specification

UE User Equipment

UMTS Universal Mobile Telecommunications System

USIM User Service Identity Module

UTRAN Universal Terrestrial Radio Access Network

V-GMLC Visited GMLC

VPLMN Visited PLMN

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| **End of changes** |