**3GPP TSG-SA5 Meeting #155 *S5-244225rev2***

**Maastricht, NL, 19 - 23 August 2024**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **32.271** | **CR** | **0024** | **rev** | **-** | **Current version:** | **19.0.0** |  |
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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:*** | Add message flows of converged charging for Ranging and Sidelink Positioning service exposure | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | China Telecom | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | Ranging\_SL\_CH | | | | |  | ***Date:*** | | | 2024-08-09 |
|  |  | | | |  | |  | | |  |
| ***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:*** | | Message flows of converged charging for UE positioning assisted by Sidelink Positioning and involving 5GC are missing | | | | | | | | |
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| ***Summary of change:*** | | Add message flows of converged charging for UE positioning assisted by Sidelink Positioning and involving 5GC | | | | | | | | |
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| ***Consequences if not approved:*** | | Converged charging for UE positioning assisted by Sidelink Positioning and involving 5GC will not be supported | | | | | | | | |
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| ***Clauses affected:*** | | 2, 5.x.2 (new) | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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] - [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".

[55] 3GPP TS 32.290: "Telecommunication management; Charging management; 5G system; Services, operations and procedures of charging using Service Based Interface (SBI)".

[56] 3GPP TS 32.291: " Telecommunication management; Charging management 5G system; Charging service, stage 3".

[57] - [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] 3GPP TS 23.273: "5G System (5GS) Location Services (LCS); Stage 2".

[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".

[206] 3GPP TS 23.586: “Architectural Enhancements to support Ranging based services and Sidelink Positioning”.

[207] - [299] Void.

[301] - [399] Void.

[400] Void.

[401] Void.

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

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| **Next change** |

#### 5.4.1.2 Applicable Triggers in the GMLC

##### 5.4.1.2.1 General

When a charging event is issued towards the CHF, it includes details such as Subscriber identifier (e.g. SUPI).

Each trigger condition (i.e. chargeable event) defined for the LCS converged charging functionality, is specified with the associated behaviour when they are met.

Table 5.4.1.2.1.1 summarizes the set of default trigger conditions and their category which shall be supported by the GMLC when charging is active for the corresponding GMLC functionality related to Ranging and Sidelink Positioning. For "immediate report" category, the table also provides the corresponding Charging Data Request message sent from GMLC towards the CHF.

Table 5.4.1.2.1.1: Default Trigger conditions in GMLC

| Trigger Conditions | Trigger level | Default category | CHF allowed to change category | CHF allowed to enable and disable | Message when "immediate reporting" category |
| --- | --- | --- | --- | --- | --- |
| Receive User Location from AMF | - | Immediate | Not Applicable | Not Applicable | PEC: Charging Data Request [Event] |
| Send Ranging/SL Positioning Service Respond to trusted AF or LCS Client | - | Immediate | Not Applicable | Not Applicable | PEC: Charging Data Request [Event] |

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| **Next change** |

#### 5.4.1.x Ranging/SL Positioning service exposure without NEF

###### 5.4.1.x.1 Message flow for SL Positioning Service Exposure without NEF to the trusted AF charging - PEC



**Figure 5.4.1.x.1.1: Message flow for SL Positioning Service Exposure without NEF to the trusted AF charging - PEC**

1. The trusted AF send a Ranging/SL Positioning Service Request to GMLC for Ranging/Sidelink Positioning location results for the UEs (e.g. absolute locations, relative locations or distances and/or directions related to the UEs).
2. The GMLC obtains the location results of the UEs with the detailed steps defined in TS 23.273 [202] clause 6.20.3.
3. Target UE sends a response message to the trusted AF with the location results of the UEs.

3ch-a. The GMLC (CTF) triggers Charging Data Request [Event] to CHF.

3ch-b. The CHF creates a CDR.

3ch-c. The CHF returns Charging Data Response.

NOTE: The procedure can also be applicable to the LCS client.

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| **End of changes** |