**3GPP TSG-SA5 Meeting #142-e *S5-222230rev2***

**e-meeting, 4th –12th April 2022** Revision of S5-222230

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **32.254** | **CR** | **0** | **rev** | **1** | **Current version:** | **17.0.0** |  |
|  | | | | | | | | |
| *For* [***HELP***](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:*** | Addition of the 5G VN group management Charging | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GLAN\_CH | | | | |  | ***Date:*** | | | 2022-04-08 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | B |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | For the support of 5G LAN service charging, the general description about 5G VN group management and communication charging is introduced. The detailed 5G LAN service membership charging is required. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add the description for the support of 5G LAN service membership charging | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The support of the 5G LAN is incomplete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | Annex X.2.4(New), Annex X.2.5(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** |

### X.2.4 Charging Information

#### X.2.4.1 Data description for 5G VN group management charging

The Charging Data Request and Charging Data Response are specified in subclause 5.1.2.2.1 of TS 32.290 [57].

Table X.2.4.1-1 describes the use of these messages for 5G VN group management charging.

Table X.2.4.1-1: 5G LAN VN group management messages reference table

|  |  |  |
| --- | --- | --- |
| **Message** | **Source** | **Destination** |
| Charging Data Request | CEF/NEF | CHF |
| Charging Data Response | CHF | CEF/NEF |

Table X.2.4.1-2 illustrates the basic structure of a Charging Data Request message from the CEF as used for 5G VN group management charging.

Table X.2.4.1-2: Charging Data Request message contents

| **Information Element** | **Category for converged charging** | **Description** |
| --- | --- | --- |
| Session Identifier | OC | Described in TS 32.290 [57] |
| Subscriber Identifier | - | This field is not applicable. |
| NF Consumer Identification | OC | Described in TS 32.290 [57] |
| Charging Identifier | - | This field is not applicable. |
| Invocation Timestamp | M | Described in TS 32.290 [57] |
| Invocation Sequence Number | M | Described in TS 32.290 [57] |
| One-time Event | OC | Described in TS 32.290 [57] |
| One-time Event Type | OC | Described in TS 32.290 [57] |
| Retransmission Indicator | OC | Described in TS 32.290 [57] |
| Notify URI | - | This field is not applicable. |
| Supported Features | OC | Described in TS 32.290 [57] |
| Service Specification Information | OC | Described in TS 32.290 [57] |
| Triggers | OC | This field holds the specific triggers described in clause X.2.3.2.1. |
| Multiple Unit Usage | - | This field is not applicable. |
| 5G VNGM Charging Information | OM | This field is mapped to the NEF API Charging information defined in clause 6.3 for 5G VN group management charging |

Table X.2.4.1-3 illustrates the basic structure of a Charging Data Response message from the CHF to CEF as used for 5G VN group management charging.

Table X.2.4.1-3: Charging Data Response message contents

| **Information Element** | **Category for converged charging** | **Description** |
| --- | --- | --- |
| Session Identifier | OC | Described in TS 32.290 [57] |
| Invocation Timestamp | M | Described in TS 32.290 [57] |
| Invocation Result | OC | Described in TS 32.290 [57] |
| Invocation Sequence Number | M | Described in TS 32.290 [57] |
| Session Failover | - | This field is not applicable. |
| Supported Features | OC | Described in TS 32.290 [57] |
| Triggers | - | This field is not applicable. |
| Multiple Unit Information | - | This field is not applicable. |

Details of the Ga message contents are specified in TS 32.295 [54].

The following table X.2.4.1-4 provide a brief description of each CDR parameter. The category in the tables is used according to the charging data configuration defined in clause 5.4. Full definitions of the CDR parameters, sorted by the name in alphabetical order, are provided in TS 32.298 [51].

Table X.2.4.1-4 5G VN group management charging CHF record data

| Field | Category | Description |
| --- | --- | --- |
| Record Type | M | CHF record. |
| Recording Network Function ID | OM | This field holds the name of the recording entity, i.e. the CEF id. |
| Subscriber Identifier | - | This field is not applicable. |
| NF Consumer Information | M | This field holds the information of the entity that used the charging service (i.e. Service Producer (CTF), CEF). |
| NF Functionality | M | This field contains the function of the entity: Service Producer (CTF) or CEF |
| NF Name | OC | This field holds the name of the entity. |
| NF Address | OC | This field holds the IP Address of the entity |
| NF PLMN ID | Oc | This field holds the PLMN identifier (MCC MNC) of the entity. |
| Record Opening Time | M | Described in TS 32.298 [57] |
| Duration | M | Described in TS 32.298 [57] |
| Record Sequence Number | C | Described in TS 32.298 [57] |
| Cause for Record Closing | M | Described in TS 32.298 [57] |
| Diagnostics | OM | Described in TS 32.298 [57] |
| Local Record Sequence Number | OM | Described in TS 32.298 [57] |
| Record Extensions | OC | Described in TS 32.298 [57] |
| 5G VNGM Charging Information | OM | This field is mapped to the NEF API Charging information defined in clause 6.3 for 5G VN group management charging. |

#### X.2.4.2 Definition of 5G VN group management charging information



The 5G VN Group Management Charging information is mapped to in the "NEF API Charging Information" in the table X.2.4.2-1.

Table X.2.4.2-1: Structure of NEF API Charging Information for 5G VNGM Charging Information

| 5G VNGM Charging Information  (Mapped to NEF API Charging Information) | Category | Description |
| --- | --- | --- |
| External Group Identifier | OC | This field contains the External Group ID associated to the provided Internal Group ID |
| Internal Group Identifier | OC | This field contain the Internal Group ID associated to the provided External Group ID. |
| External Individual Identifier | OC | The list of the UE identifiers in the 5G VN group. |
| API Direction | - | This fiels is not applicable |
| API Target Network Function | - | This fiels is not applicable |
| API Result Code | - | This fiels is not applicable |
| API Name | - | This fiels is not applicable |
| API Reference | - | This fiels is not applicable |
| API Content | OC | The API content includes the 5G VN group data, including the Single Nssai  DNN and PDU Session Types. |

#### X.2.4.3 Detailed message format for converged charging

The following clause specifies per Operation Type the charging data that are sent by CEF for 5G VN group management converged charging.

The Operation Types are listed in the following order: I (Initial)/T (Termination)/E (Event). Therefore, when all Operation Types are possible it is marked as ITE. If only some Operation Types are allowed for a node, only the appropriate letters are used (i.e. IT or E) as indicated in the table heading. The omission of an Operation Type for a particular field is marked with "-" (i.e. I-E). Also, when an entire field is not allowed in a node the entire cell is marked as "-".

Table X.2.4.3-1 defines the basic structure of the supported fields in the *Charging Data Request* message for CEF converged charging.

Table X.2.4.3-1: Supported fields in *Charging Data Request* message

| Information Element | Analytics and Performance | CEF |
| --- | --- | --- |
| Supported Operation Types | E |
| Session Identifier | | E |
| Subscriber Identifier | | - |
| NF Consumer Identification | | E |
| Charging Identifier | | - |
| Invocation Timestamp | | E |
| Invocation Sequence Number | | E |
| One-time Event | | E |
| One-time Event Type | | E |
| Retransmission Indicator | | E |
| Notify URI | | - |
| Supported Features | | E |
| Service Specification Information | | E |
| Triggers | | E |
| Multiple Unit Usage | | - |
| 5G VNGM Charging Information | | E |

Table X.2.4.3-2 defines the basic structure of the supported fields in the *Charging Data Response* message for CEF converged charging.

Table X.2.4.3-2: Supported fields in *Charging Data Response* message

| Information Element | **Analytics and Performance** | CEF |
| --- | --- | --- |
| Supported Operation Types | E |
| Session Identifier | | E |
| Invocation Timestamp | | E |
| Invocation Result | | E |
| Invocation Sequence Number | | E |
| Session Failover | | - |
| Supported Features | | E |
| Triggers | | E |
| Multiple Unit information | | - |

### X.2.5 Bindings for 5G VN group management converged charging

This mapping between the Information Elements, resource attributes and CHF CDR parameters for 5G VN group management and communication converged charging is described in clause 7 of TS 32.291 [51].

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| **End of change** |