**3GPP TSG-SA5 Meeting #156 *S5-244550***

Maastricht, Netherlands, 19 - 23 August 2024

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **32.255** | **CR** | **0558** | **rev** | **1** | **Current version:** | **18.4.0** |  |
|  | | | | | | | | |
| *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:*** | Rel-18 CR 32.255 Correction Inter-CHF Information handling | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson LM | | | | | | | | | |
| ***Source to TSG:*** | SA5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | CHRACHF | | | | |  | ***Date:*** | | | 2024-08-09 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The handling of Remote CHF resource is missing. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Addition of Remote CHF resource handling. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Inconsistent may lead till interoperability issues. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.2.1.6 and 6.2.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 S5-244154 | | | | | | | | |

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| **First change** |

6.2.1.6 Definition of Inter-CHF information

Specific charging information used for information when the V-CHF have a connection to the H-CHF, or C-CHF have a connection to the B-CHF.

The detailed structure of the Inter-CHF Information can be found in table 6.2.1.6.1.

**Table 6.2.1.4.1: Structure of Inter-CHF Information**

|  |  |  |
| --- | --- | --- |
| **Information Element** | **Category** | **Description** |
| Remote CHF resource | OC | This field holds the reference the Charging Data resource in the CHF not directly connected to the NF (i.e., H-CHF) (NOTE 1).  If received by the original NF consumer it may be returned in the next request. |
| Original NF Consumer Id | OC | This field holds information on the NF triggering the request i.e., SMF (NOTE 2). |
| NOTE 1: The Remote CHF resource is included in the response to the original NF if inter-CHF communication has been used.  NOTE 2: The Original NF Consumer Id is included in the request from the original NF if inter-CHF is expected to be used. | | |

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| **Second change** |

6.2.2 Detailed message format for converged charging

The following clause specifies per Operation Type the charging data that are sent by SMF for 5G data connectivity converged charging or offline only charging.

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

Table 6.2.2.1 defines the basic structure of the supported fields in the *Charging Data* Request message for 5G data connectivity converged charging or offline only charging.

**Table 6.2.2.1: Supported fields in *Charging Data Request* message**

| **Information Element** | | **Functionality of SMF** | **FBC** | | **QBC** | | **FBC** | | **QBC** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Charging Service** | **Converged Charging** | | **Converged Charging** | | **Offline Only Charging** | | **Offline Only Charging** | |
| **Supported Operation Types** | **I/U/T/E** | | **I/U/T/E** | | **I/U/T/E** | | **I/U/T/E** | |
| Session Identifier | | | -UT- | | -UT- | | -UT- | | -UT- | |
| Subscriber Identifier | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Tenant Identifier | | | IUT- | | - | | IUT- | | - | |
| NF Consumer Identification | | | IUT- | | IUT- | | IUT- | | IUT- | |
| NF Functionality | | | IUT- | | IUT- | | IUT- | | IUT- | |
| NF Name | | | IUT- | | IUT- | | IUT- | | IUT- | |
| NF Address | | | IUT- | | IUT- | | IUT- | | IUT- | |
| NF PLMN ID | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Invocation Timestamp | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Invocation Sequence Number | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Retransmission Indicator | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Notify URI | | | IU- | | IU- | | IU- | | IU- | |
| Supported Features | | | IU- | | IU- | | - | | - | |
| Service Specification Information | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Triggers | | | -UT- | | -UT- | | -UT- | | -UT- | |
| Multiple Unit Usage | | | IUT- | | - | | IUT- | | - | |
| Rating Group | | | IUT- | | - | | IUT- | | - | |
| Requested Unit | | | IU-- | | - | | - | | - | |
| Time | | | IU-- | | - | | - | | - | |
| Total Volume | | | IU-- | | - | | - | | - | |
| Uplink Volume | | | IU-- | | - | | - | | - | |
| Downlink Volume | | | IU-- | | - | | - | | - | |
| Used Unit Container | | | -UT- | | - | | -UT- | | - | |
| Service Identifier | | | -UT- | | - | | -UT- | | - | |
| Quota management Indicator | | | -UT- | | - | | -UT- | | - | |
| Triggers | | | -UT- | | - | | -UT- | | - | |
| Trigger Timestamp | | | -UT- | | - | | -UT- | | - | |
| Time | | | -UT- | | - | | -UT- | | - | |
| Total Volume | | | -UT- | | - | | -UT- | | - | |
| Uplink Volume | | | -UT- | | - | | -UT- | | - | |
| Downlink Volume | | | -UT- | | - | | -UT- | | - | |
| Local Sequence Number | | | -UT- | | - | | -UT- | | - | |
| PDU Container Information | | | -UT- | | - | | -UT- | | - | |
| UPF ID | | | IUT- | | - | | IUT- | | - | |
| multi-homed PDU address | | | IUT- | | - | | IUT- | | - | |
| PDU Session Charging Information | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Charging Id | | | IUT- | | IUT- | | IUT- | | IUT- | |
| SMF Charging Id | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Home Provided Charging Id | | | -UT- | | -UT- | | -UT- | | -UT- | |
| SMF Home Provided Charging Id | | | -UT- | | -UT- | | -UT- | | -UT- | |
| User Information | | | IUT- | | IUT- | | IUT- | | IUT- | |
| User Location Info | | | IUT- | | IUT- | | IUT- | | IUT- | |
| IMS Session Information | | | IUT- | | IUT- | | IUT- | | IUT- | |
| MA PDU Non 3GPP User Location Info | | | IUT- | | IUT- | | IUT- | | IUT- | |
| User Location Time | | | IUT- | | IUT- | | IUT- | | IUT- | |
| MA PDU Non 3GPP User Location Time | | | IUT- | | IUT- | | IUT- | | IUT- | |
| UE Time Zone | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Presence Reporting Area Information | | | -UT- | | -UT- | | -UT- | | -UT- | |
| PDU Session Information | | | IUT- | | IUT- | | IUT- | | IUT- | |
| PDU Session ID | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Network Slice Instance Identifier | | | IUT- | | IUT- | | IUT- | | IUT- | |
| PDU Type | | | IUT- | | IUT- | | IUT- | | IUT- | |
| PDU Address | | | IUT- | | IUT- | | IUT- | | IUT- | |
| SSC Mode | | | IUT- | | IUT- | | IUT- | | IUT- | |
| MA PDU session information | | | IUT- | | IUT- | | IUT- | | IUT- | |
| SUPI PLMN ID | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Serving Network Function ID | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Serving CN PLMN ID | | | IUT- | | IUT- | | IUT- | | IUT- | |
| RAT Type | | | IUT- | | IUT- | | IUT- | | IUT- | |
| MA PDU Non 3GPP RAT Type | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Data Network Name Identifier | | | IUT- | | IUT- | | IUT- | | IUT- | |
| DNN Selection Mode | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Authorized QoS Information | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Subscribed QoS Information | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Authorized Session-AMBR | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Subscribed Session-AMBR | | | IUT- | | IUT- | | IUT- | | IUT- | |
| PDU session start Time | | | I--- | | I--- | | I--- | | I--- | |
| PDU session stop Time | | | --T- | | --T- | | --T- | | --T- | |
| Diagnostics | | | --T- | | --T- | | --T- | | --T- | |
| Enhanced Diagnostics | | | --T- | | --T- | | --T- | | --T- | |
| Charging Characteristics | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Charging Characteristics Selection Mode | | | IUT- | | IUT- | | IUT- | | IUT- | |
| 3GPP PS Data Off Status | | | IUT- | | IUT- | | IUT- | | IUT- | |
| Session Stop Indicator | | | --T- | | --T- | | --T- | | --T- | |
| Redundant Transmission Type | | | IUT- | | IUT- | | IUT- | | IUT- | |
| PDU Session Pair ID | | | IUT- | | IUT- | | IUT- | | IUT- | |
| 5G LAN Type Service | | | IUT- | | IUT- | | IUT- | | IUT- | |
| SNPN Information | | | IUT- | | IUT- | | IUT- | | IUT- | |
| 5GS Bridge Information | | | IUT- | | - | | - | | - | |
| 5G Multicast Service | | | IUT- | | IUT- | | IUT- | | IUT- | |
| 5G Satellite Access Indicator | | | IUT- | | IUT- | | - | | - | |
| Satellite backhaul Information | | | IUT- | | IUT- | | - | | - | |
| Unit Count Inactivity Timer | | | IU-- | | - | | IU-- | | - | |
| RAN Secondary RAT Usage Report | | | -UT- | | -UT- | | -UT- | | -UT- | |
| Roaming QBC information | | | - | | IUT- | | - | | IUT- | |
| Multiple QFI container | | | - | | IUT- | | - | | IUT- | |
| UPF ID | | | - | | IUT- | | - | | IUT- | |
| Roaming Charging Profile | | | - | | IU-- | | - | | IU-- | |
| Inter-CHF Information | | | IUT- | | IUT- | | - | | - | |
| Remote CHF resource | | | -UT- | | -UT- | | - | | - | |
| Original NF Consumer Id | | | IUT- | | IUT- | | - | | - | |

Table 6.2.2.2 defines the basic structure of the supported fields in the *Charging Data* Response message for 5G data connectivity converged charging or offline only charging.

**Table 6.2.2.2: Supported fields in *Charging Data Response* message**

| **Information Element** | **Functionality of SMF** | **FBC** | **QBC** | **FBC** | **QBC** |
| --- | --- | --- | --- | --- | --- |
| **Charging Service** | **Converged Charging** | **Converged Charging** | **Offline Only Charging** | **Offline Only Charging** |
| **Supported Operation Types** | **I/U/T/E** | **I/U/T/E** | **I/U/T/E** | **I/U/T/E** |
| Session Identifier | | I--- | I--- | I--- | I--- |
| Invocation Timestamp | | IUT- | IUT- | IUT- | IUT- |
| Invocation Result | | IUT- | IUT- | IUT- | IUT- |
| Invocation Result Code | | IUT- | IUT- | IUT- | IUT- |
| Failed Parameter | | IUT- | IUT- | IUT- | IUT- |
| Failure Handling | | IUT- | IUT- | IUT- | IUT- |
| Invocation Sequence Number | | IUT- | IUT- | IUT- | IUT- |
| Session Failover | | IU-- | IUT- | IU-- | IUT- |
| Supported Features | | IU-- | IU-- | - | - |
| Triggers | | IU-- | IU-- | IU-- | IU-- |
| Multiple Unit information | | IU-- | - | IU-- | - |
| Result Code | | IU-- | - | IU-- | - |
| Rating Group | | IU-- | - | IU-- | - |
| UPF ID | | IU-- | - | IU-- | - |
| Granted Unit | | IU-- | - | - | - |
| Validity Time | | IU-- | - | - | - |
| Final Unit Indication | | IU-- | - | - | - |
| Time Quota Threshold | | IU-- | - | - | - |
| Volume Quota Threshold | | IU-- | - | - | - |
| Unit Quota Threshold | | IU-- | - | - | - |
| Quota Holding Time | | IU-- | - | - | - |
| Triggers | | IU-- | - | IU-- | - |
| PDU Session Charging Information | | IU-- | IU-- | IU-- | IU-- |
| Presence Reporting Area Information | | IU-- | IU-- | IU-- | IU-- |
| Unit Count Inactivity Timer | | IU-- | - | - | - |
| Roaming QBC information | | - | IU-- | - | IU-- |
| Roaming Charging Profile | | - | IU-- | - | IU-- |
| Inter-CHF Information | | IUT- | IUT- | - | - |
| Remote CHF resource | | IUT- | IUT- | - | - |

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| **End of changes** |