**3GPP TSG- Meeting #**

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| *CR-Form-v12.0* | | | | | | | | |
| **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:*** | Clarify Charging information 5GC interworking with EPC | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GIEPC\_CH | | | | |  | ***Date:*** | | |  |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | |  |
|  | *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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In 5GC interworking with EPC, the Multiple QFI Container information over Nchf from PGW-C+SMF is also applicable in non-roaming scenario for matching with the SGW per bearer charging, and the current description only addresses the roaming home routed case. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Clarify Multiple QFI Container is also applicable in non-roaming for 5GC interworking with EPC:   * Update the Roaming QBC information field description in the Charging Data Request. * Improve the Annex description by introduction of tables reflecting differences with tables in main body of the document | | | | | | | | |
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| ***Consequences if not approved:*** | | Settlement between Operators is not possible | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | B.2.1.3, B.2.2.1, B.2.2.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | |  | | |
| ***affected:*** | |  | **X** | Test specifications | | | |  | | |
| ***(show related CRs)*** | | **X** |  | O&M Specifications | | | | TS 32.291 CR #0245. | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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| **First change** |

#### B.2.1.3 CDR description on the Bd interface

The CDR description defined in clause 6.1.3.2 with Roaming QBC information per clause B.2.2.1.1 is used for interworking with EPC scenario.

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| **Next change** |

#### B.2.2.1 Definition of Interworking charging information

##### B.2.2.1.1 Message content

The charging information defined in clause 6.2.1 is used for interworking with EPC scenario.

The specific information used for PS charging when UE is connected to P-GW+SMF via EPC is provided within the Charging Data Request message, as defined in clause 6.1.1.2, with the following difference:

Table B.2.2.1.1-1: Charging Data Request message contents

|  |  |  |
| --- | --- | --- |
| Information Element | Category | Description |
| Roaming QBC information | OC | This field holds the QBC information specific to 5GC interworking with EPC as defined in clause B.2.2.1.2.  This field is applicable in both non-roaming and roaming Home Routed scenario. |

##### B.2.2.1.2 QBC information

The QBC information specific to 5GC interworking with EPC is defined under the Roaming QBC information per clause 6.1.2.4 with the following differences:

Table B.2.2.1.2-1: Roaming QBC information

|  |  |  |
| --- | --- | --- |
| Information Element | Category | Description |
| Multiple QFI Container | OC | This field holds the containers associated to a charging condition change on an IP-CAN bearer. This is included when triggers conditions are met (Qos change, tariff time change ...).  It may have multiple occurences. |
| Time | OC | This field is not applicable |
| Total Volume | OC | This field is not applicable |
| QFI Container information | OC | This field holds the data container information defined in clause B.2.2.1.3 |

##### B.2.2.1.3 QFI Container Information

The QFI Container Information specific to 5GC interworking with EPC is per clause 6.1.2.5 with the following differences:

Table B.2.2.1.3-1: QFI Container Information

| Information Element | Category | Description |
| --- | --- | --- |
| QoS Flow Id | OM | This field is not applicable |
| Time of First Usage | OC | This field is not applicable |
| Time of Last Usage | OC | This field is not applicable |
| UE Time Zone | OC | This field is not applicable |
| Serving Network Function ID | OC | This field is not applicable |
| **Additional Information Elements** | | |
| EPS bearer Charging Id | OM | This field holds the Charging Id associated to the bearer the QoS flow is mapped to. |
| Diagnostics | OM | This field holds a more detailed reason for the release of the IP-CAN bearer, when a single cause is applicable. |
| Enhanced Diagnostics | OC | This field holds a more detailed reason for the release of the IP-CAN bearer, when a set of causes is applicable. |

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| **Next change** |

#### B.2.2.2 Detailed message format for Interworking charging

The message format defined in clause 6.2.2 is used for interworking with EPC scenario.

The supported fields in table 6.2.2.1 for the converged charging message shall apply to the P-GW+SMF for the applicable fields, with the difference that SMF is replaced by P-GW+SMF, and the table B.2.2.2-1 describes the reuse and extension of Multiple QFI Container for interworking.

Table B.2.2.2-1: Reuse the MultipleQFIContainer fields for Interworking

|  |  |  |
| --- | --- | --- |
| Information Element for 5G Data connectivity | Information Element for Interworking | Corresponding to 32.298 [51] |
| Multiple QFI Container | Yes | Traffic data volumes |
| Triggers | Yes | Change condition |
| Trigger Timestamp | Yes | Change Time |
| Time | No | - |
| Total Volume | No | - |
| Uplink Volume | Yes | Data Volume Uplink |
| Downlink Volume | Yes | Data Volume Downlink |
| Local Sequence Number | yes | - |
| QFI Container Information | Yes | - |
| QFI | No | - |
| Time of First Usage | No | - |
| Time of Last Usage | No | - |
| QoS Information | Yes | EPC QoS Information |
| User Location Information | Yes | User Location Information |
| UE Time Zone | No | - |
| Presence Reporting Area Information | Yes | Presence Reporting Area Status |
| RAT Type | Yes | RAT Type |
| Serving Network Function ID | No | - |
| 3GPP PS Data Off Status | Yes | 3GPP PS Data Off Status |
| - | 3GPP Charging Id | Charging Id |
| - | Enhanced Diagnostics | Enhanced Diagnostics |
| - | Diagnostics | Diagnostics |
| - | No | UWAN User Location Information |
| - | No | User CSG information |
| - | No | Access Availability Change Reason |
| - | No | Related Change of Charging Condition |
| - | No | CP CIoT EPS optimisation indicator |
| - | No | Serving PLMN Rate Control |

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| **End of changes** |