**3GPP TSG-SA5 Meeting #132e *S5-204228rev1***

**e-meeting 17th 28th August 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **32.255** | **CR** | **0243** | **rev** | **1** | **Current version:** | **16.5.0** |  |
|  | | | | | | | | |
| *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 ePDG as serving node | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5GIEPC\_CH | | | | |  | ***Date:*** | | | 2020-08-25 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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)* | |
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| ***Reason for change:*** | | EPC/ePDG interworking with 5GS is not covered in TS 32.255. The serving node as ePDG is added in this change request. | | | | | | | | |
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| ***Summary of change:*** | | To add ePDG as serving node, include ePDG as one of Serving Network Function Functionality | | | | | | | | |
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| ***Consequences if not approved:*** | | The ePDG can not be included as serving ndoe in TS 32.255. | | | | | | | | |
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| ***Clauses affected:*** | | 5.2.5.2 | | | | | | | | |
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|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  |  | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

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| **1st Change** |

#### 6.2.1.2 Definition of PDU session charging information

PDU session specific charging information used for 5G data connectivity charging is provided within the PDU session charging Information.

The detailed structure of the PDU Session Charging Information can be found in table 6.2.1.2.1.

Table 6.2.1.2.1: Structure of PDU Session Charging Information

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| Information Element | Category | Description |
| Charging Id | OM | This field holds the Charging Id for PDU session. |
| Home Provided Charging Id | OC | This field holds the Charging Id generated by H-SMF.This field is only applicable in V-SMF in the home routed roaming scenario for EPS to 5GS interworking. |
| User Information | OM | Group of user information. |
| User Identifier | OC | This field contains the identification of the user (i.e. GPSI). |
| User Equipment Info | OC | This field holds the identification of the terminal (i.e. PEI, MAC Address)  It is used for identifying the user in case SUPI is not present during emergency service. The detail identification of the wireline access is specified in clause 4.7.7 of TS 23.316 [203]. |
| unauthenticatedFlag | OC | This field indicates the served SUPI is not authenticated. |
| Roamer In Out | OC | This field holds an indication if the roamer is in-bound or out-bound. This field is present only if UE is identified as a roamer. |
| User Location Info | OC | This field indicates details of where the UE is currently located (access-specific user location information).  For MA PDU session, this field holds the user location associated to the 3GPP access |
| MA PDU Non 3GPP User Location info | OC | This field holds the user location associated to the non 3GPP access for MA PDU session. |
| User Location Time | OC | The NTP time at which the UE was last known to be in the location.  For MA PDU session, this field holds the user location time associated to the 3GPP access. |
| MA PDU Non 3GPP User Location Time | OC | This field holds the user location time associated to the non 3GPP access for MA PDU session. |
| UE Time Zone | OC | This field holds the Time Zone of where the UE is located, if available where the UE currently resides. |
| Presence Reporting Area Information | OC | This field contains part of the Presence Reporting Area Information of UE as defined in TS 23.501[200], comprising the Presence Reporting Area identifier(s) and an indication on whether the UE is inside or outside the Presence Reporting Area, if available. |
| PDU Session Information | M | Group of PDU session information. |
| PDU Session ID | M | This field holds identifier of PDU session. |
| Network Slice Instance Identifier | OM | This field holds network slice information the PDU session belongs to. |
| PDU Type | OM | This field holds the type of PDU session. |
| PDU Address | Oc | Group of UE IP address. |
| PDU Ipv4 Address | OC | This field holds the IP Address of the served SUPI allocated for PDU session, i.e. IPv4 address. |
| PDU IPv6 Address with Prefix | OC | This field holds the IP Address of the served SUPI allocated for PDU session, i.e. IPv6 prefix. |
| PDU Address prefix length | OC | PDP/PDN Address prefix length of an IPv6 typed Served PDU Address. The field needs not available for prefix length of 64 bits. |
| IPv4 Dynamic Address Flag | OC | This field indicates whether served PDP/PDN address for IPv4 is dynamically allocated. This field is missing if address is static. |
| IPv6 Dynamic Address Flag | OC | This field indicates whether served PDP/PDN address for IPv6 is dynamically allocated. This field is missing if address is static. |
| SSC Mode | OC | This field holds SSC mode of PDU session. |
| MA PDU session information | OC | This field holds information associated to the MA PDU session. |
| MA PDU session indicator | OC | This field indicates the PDU session is a MA PDU session requested by the UE or requested by Network modification based ATSSS capabilities provided by the UE and the Network. |
| ATSSS capability | OC | This field holds the ATSSS capability supported by the MA PDU session |
| SUPI PLMN ID | OC | This field holds PLMN ID of the SUPI. |
| Serving Network Function ID | Oc | Group of serving Network Function identifier |
| Serving Network Function Functionality | M | This field holds the functionality of the Serving Network Function: i.e. AMF, SMF, SGW, I-SMF, ePDG.  When this field holds "AMF" then it is related to AMF in the same PLMN as the SMF consuming the charging service.  When this field holds "SMF" then it is related to V-SMF for home routed roaming.  This field holds "I-SMF" when a PDU session is served by SMF + I-SMF.  This field holds "ePDG" when handover between EPC/ePDG and 5GS. |
| Serving Network Function Name | OC | This field holds the name of the serving Network Function (i.e. AMF). |
| Serving Network Function Addresses | OC | This field holds the IP Addresses of the Serving Network Function. |
| Serving Network Function FQDN | OC | This field holds the FQDN the Serving Network Function. When the the Serving Network Function is an AMF, this FQDN is the AMF name as defined in subclause 5.9.5 of 3GPP TS 23.501 [200]. |
| Serving Network Function PLMN ID | OC | This field holds the PLMN ID of the network the Serving Network Function belongs to. |
| AMF Identifier | OC | This field holds the AMF identifier. |
| Serving CN PLMN ID | Oc | This field holds the serving Core Network Operator PLMN ID selected by the UE if different from SMF PLMN ID. |
| RAT Type | OC | This field holds the Radio Access Technology (RAT) currently serving the UE.  For MA PDU session, this field holds the Radio Access Technology (RAT) associated to the 3GPP access |
| MA PDU Non 3GPP RAT Type | OC | This field holds the Radio Access Technology (RAT) serving the UE in non 3GPP access for MA PDU session. |
| Data Network Name Identifier | M | This field contains the identifier of the DNN the user is connected to. |
| DNN Selection Mode | OC | This field indicates whether the requested DNN corresponds to an explicitly subscribed DNN or to the usage of a wildcard subscription. |
| Authorized QoS Information | OC | This field holds the authorized QoS applied to PDU session. |
| Subscribed QoS Information | OC | This field holds the subscribed default QoS for the PDU session. |
| Authorized Session-AMBR | OC | This field holds the authorized Session-AMBR for the PDU session. |
| Subscribed Session-AMBR | OC | This field holds the subscribed Session-AMBR for the PDU session. |
| PDU session start Time | OC | This field holds the timestamp when PDU session starts. |
| PDU session stop Time | OC | This field holds the timestamp when PDU session terminates. |
| Diagnostics | OC | This field holds a more detailed reason for the release of the PDU session and complements the "Change Condition" information. |
| Charging Characteristics | OC | This field holds the Charging Characteristics for this PDU session. |
| Charging Characteristics  Selection Mode | OC | This field holds information about how the "Charging Characteristics" was selected. |
| 3GPP PS Data Off Status | OC | This field holds the 3GPP Data off Status when UE's 3GPP Data Off status is Activated or Deactivated. |
| Session Stop Indicator | OC | This field indicates to the CHF that the PDU session has been terminated. |
| Unit Count Inactivity Timer | OC | This field holds the threshold for the time period when no units has been counted by the SMF. It holds either the value configured in SMF, if it is supported, or the value to be used as received from the CHF. A value of zero indicates that this mechanism shall not be used.  This field is not applicable to QBC. |
| RAN Secondary RAT Usage Report | OC | This field holds the secondary RAT usage reported from NG-RAN. |
| NG RAN Secondary RAT Type | OC | This field holds the value of Secondary RAT Type, as provided by the NG-RAN. |
| Qos Flows Usage Reports | OC | This field holds a list of containers per QFI with volumes reported, each container is time stamped. |
| QoS Flow Id | OM | This field holds the QoS flow Identifier (QFI) |
| Start Timestamp | OC | This field holds the start timestamp of the collected usage. |
| End Timestamp | OC | This field holds the end timestamp of the collected usage. |
| Downlink Volume | OC | This field holds the amount of used volume in downlink direction. |
| Uplink Volume | OC | This field holds the amount of used volume in uplink direction. |

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| **End of change** |