3GPP TSG SA WG5 Meeting 137-e S5-213258

**electronic meeting, online, 10 - 19 May 2021**

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| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **32.291** | **CR** | **-** | **rev** | **1** | **Current version:** | **16.7.0** |  |
|  |
| *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:***  | Update URLLC Charging Information |
|  |  |
| ***Source to WG:*** | Huawei |
| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | 5G\_URLLC |  | ***Date:*** | 2021-04-11 |
|  |  |  |  |  |
| ***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 canbe 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:*** | As per the description of URLLC service charging specified in TS 32.255, the corresponding data type for URLLC service charging should be added. |
|  |  |
| ***Summary of change:*** | Add the URLLC charging information  |
|  |  |
| ***Consequences if not approved:*** | Can not support the URLLC service charging. |
|  |  |
| ***Clauses affected:*** | 6.1.6.2.2.8, 6.1.6.2.2.9, 6.1.6.2.2.16, 6.1.6.3.6, 6.1.6.3.X(New),7.2,A.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:*** |  |

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| **First change** |

###### 6.1.6.2.2.8 Type PDUSessionInformation

Table 6.1.6.2.2.8-1: Definition of type PDUSessionInformation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| networkSlicingInfo | NetworkSlicingInfo  | OM | 0..1 | information of network slice serving the PDU session |  |
| pduSessionID | PduSessionId | M | 1 |  |  |
| pduType | PduSessionType | OM | 0..1 | type of the PDU session |  |
| sscMode | SscMode | OC | 0..1 | information of SSC Mode type. |  |
| hPlmnId | PlmnId | OC | 0..1 | PLMN identifier of the home network |  |
| servingNetworkFunctionID | ServingNetworkFunctionID | OC | 0..1 | This field holds serving Network Function identifier. |  |
| servingCNPlmnId | PlmnId | OC | 0..1 | Serving Core Network Operator PLMN ID selected by the UE in shared networks. |  |
| ratType | RatType | OC | 0..1 | the RAT Type of the PDU session |  |
| mAPDUNon3GPPRATType | RatType | OC | 0..1 | the RAT Type of non-3GPP access for the MA PDU session | ATSSS |
| dnnId | Dnn | M | 1 | a Data Network Name |  |
| dnnSelectionMode | DnnSelectionMode | OC | 0..1 | This field indicates how the DNN was selected. |  |
| chargingCharacteristics | string | OC | 0..1 | the Charging Characteristics for this PDU session.It carries the value in hexadecimal representationPattern: '^[0-9a-fA-F]{1,4}$' |  |
| chargingCharacteristicsSelectionMode | ChargingCharacteristicsSelectionMode | OC | 0..1 | information about how the "Charging Characteristics" was selected.  |  |
| startTime | DateTime | OC | 0..1 | the UTC time which represents the start of a PDU session at the SMF |  |
| stopTime | DateTime | OC | 0..1 | the UTC time which represents the stop of a PDU session at the SMF |  |
| 3gppPSDataOffStatus | 3GPPPSDataOffStatus | OC | 0..1 | This field holds the 3GPP Data off Status when UE’s 3GPP Data Off status is Activated or Deactivated. |  |
| sessionStopIndicator | boolean | OC | 0..1 | This field indicates to the CHF that the PDU session has been terminated. |  |
| pduAddress | PDUAddress | OC | 0..1 | Group of user ip address/prefix |  |
| diagnostics | Diagnostics | OC | 0..1 | provides a detailed cause value from SMF. |  |
| enhancedDiagnostics | EnhancedDiagnostics5G | OC | 0..N | provides a more detailed cause value from SMF. | EnhancedDiagnostics |
| authorizedQoSInformation | AuthorizedDefaultQos | OC | 0..1 | This field holds the authorized QoS applied to PDU session. |  |
| subscribedQoSInformation | SubscribedDefaultQos | OC | 0..1 | This field holds the subscribed Default QoS  |  |
| authorizedSessionAMBR | Ambr | OC | 0..1 | This field holds the authorized session-AMBR. |  |
| subscribedSessionAMBR | Ambr | OC | 0..1 | This field holds the subscribed session-AMBR. |  |
| mAPDUSessionInformation | MAPDUSessionInformation | OC | 0..1 | This field holds the MA PDU session information. | ATSSS |
| redundantTransmissionType | RedundantTransmissionType | OC | 0..1 | Indicates the redundant transmission type. | URLLC |

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| **Next change** |

###### 6.1.6.2.2.9 Type PDUContainerInformation

Table 6.1.6.2.2.9-1: Definition of type PDUContainerInformation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| timeofFirstUsage | DateTime | OC | 0..1 | the UTC time indicating time stamp for the first IP packet to be transmitted and mapped to the reporting used unit. |  |
| timeofLastUsage | DateTime | OC | 0..1 | the UTC time indicating time stamp for the last IP packet to be transmitted and mapped to the reporting used unit. |  |
| qoSInformation | QoSData | OC | 0..1 | the QoS applied for the reporting used unit. In case gbrUl or gbrDl are present for GBR flow, the GBR targets are "GUARANTEED", otherwise, are " NOT\_GUARANTEED". |  |
| qoSCharacteristics | QosCharacteristics | OC | 0..1 | Map of QoS characteristics for non standard 5QIs and non-preconfigured 5QIs. |  |
| afChargingIdentifier | ChargingId | OC | 0..1 | An identifier, provided from the AF, may be used to correlate the measurement for the Charging key/Service identifier values in this PCC rule with application level reports. |  |
| afChargingIdString | ApplicationChargingId | OC | 0..1 | Used instead of afChargingIdentifier when feature is active. | AF\_Charging\_Identifier |
| userLocationInformation | UserLocation | OC | 0..1 | provides information on the location |  |
| uetimeZone | TimeZone | OC | 0..1 | the UE Time Zone during the used unit container interval. |  |
| rATType | RatType | OC | 0..1 | the RAT Type of the used unit |  |
| servingNodeID | array(ServingNetworkFunctionID) | OC | 0..N | the list of serving node identifiers during the used unit container interval. |  |
| presenceReportingAreaInformation | map(PresenceInfo) | OC | 0..N | the Presence Reporting Area status of UE during the used unit container interval. |  |
| 3gppPSDataOffStatus | 3GPPPSDataOffStatus | OC | 0..1 | the 3GPP Data off Status during the used unit container interval. |  |
| sponsorIdentity | string | OC | 0..1 | an identifier of the sponsor. |  |
| applicationserviceProviderIdentity | string | OC | 0..1 | an identifier of the application service provider |  |
| chargingRuleBaseName | string | OC | 0..1 | the reference to group of PCC rules predefined at the SMF. |  |
| mAPDUSteeringFunctionality | SteeringFunctionality | OC | 0..1 | Steering functionality. | ATSSS |
| mAPDUSteeringMode | SteeringMode | OC | 0..1 | Steering Mode | ATSSS |
| redundantTransmissionIndication | boolean | OC | 0..1 | Redundant Transmission Indication | URLLC |

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| **Next change** |

###### 6.1.6.2.2.16 Type QFIContainerInformation

Table 6.1.6.2.1.16-1: Definition of type QFIContainerInformation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| qFI | Qfi | OM | 0..1 | QoS Flow Identifier (QFI) |  |
| reportTime | DateTime | M | 1 | the UTC time indicating time stamp when the QFI data container was closed |  |
| timeofFirstUsage | DateTime | OC | 0..1 | the UTC time indicating time stamp for the first IP packet to be transmitted and mapped to the QFI container |  |
| timeofLastUsage | DateTime | OC | 0..1 | the UTC time indicating time stamp for the last IP packet to be transmitted and mapped to the QFI container. |  |
| qoSInformation | QoSData | OC | 0..1 | the QoS applied to QFI container. In case gbrUl or gbrDl are present for GBR QoS flow, the GBR targets are "GUARANTEED", otherwise, are " NOT\_GUARANTEED". |  |
| qoSCharacteristics | QosCharacteristics | OC | 0..1 | Map of QoS characteristics for non standard 5QIs and non-preconfigured 5Qis. |  |
| userLocationInformation | UserLocation | OC | 0..1 | provides information on the location |  |
| uetimeZone | TimeZone | OC | 0..1 | UE Time Zone the UE is currently located |  |
| presenceReportingAreaInformation | map(PresenceInfo) | OC | 0..N | the Presence Reporting Area status of UE during the used unit container interval. |  |
| rATType | RatType | OC | 0..1 | the RAT Type of the used unit |  |
| servingNetworkFunctionID | array(ServingNetworkFunctionI) | OC | 0..N | the list of serving Node Identifiers during the used unit container interval. |  |
| 3gppPSDataOffStatus | 3GPPPSDataOffStatus | OC | 0..1 | the 3GPP Data off Status during the used unit container interval. |  |
| 3gppChargingId | ChargingId | OC | 0..1 | IP-CAN bearer Charging identifier used to identify this IP-CAN bearer in different records created by PGW-C+SMF.Charging Id is generated by P-GW at IP-CAN bearer activation and is included in all containers in order to identify the containers which pertain to the IP-CAN bearer. Only applicable for 5GS and EPS interworking. | 5GIEPC\_CH |
| diagnostics | Diagnostics | OC | 0..1 | provides a more detailed cause value for the release.Only applicable for 5GS and EPS interworking. | 5GIEPC\_CH |
| enhancedDiagnostics | array(string) | OC | 0..N | provides a set of causes for the releaseOnly applicable for 5GS and EPS interworking. | 5GIEPC\_CH |
| redundantTransmissionIndication | boolean | OC | 0..1 | Redundant Transmission Indication | URLLC |

Editor’s Note: the diagnostics for interworking is ffs.

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| **Next change** |

##### 6.1.6.3.6 Enumeration: TriggerType

Table 6.1.6.3.6-1: Enumeration TriggerType

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| QUOTA\_THRESHOLD | the quota threshold has been reached |  |
| QHT | the quota holding time specified in a previous response has been hit (i.e. the quota has been unused for that period of time) |  |
| FINAL | a service normal termination has occurred. |  |
| QUOTA\_EXHAUSTED | the quota has been exhausted |  |
| VALIDITY\_TIME | the credit authorization lifetime provided from CHF has expired |  |
| OTHER\_QUOTA\_TYPE | usage reporting of the particular quota type indicated in the used unit container where it appears is that, for a multi-dimensional quota, one reached a trigger condition and the other quota is being reported. |  |
| FORCED\_REAUTHORISATION | a Server initiated re-authorization procedure, i.e. receipt of notify service operation |  |
| UNIT\_COUNT\_INACTIVITY\_TIMER | the unit count inactivity timer has expired |  |
| ABNORMAL\_RELEASE | a service abnormal termination has occurred. |  |
| QOS\_CHANGE | In request message, this value is used to indicate that QoS change has happened. Any of elements of QoSData may result in QoS change.In response message, this value is used to indicate that a change of authorized QoS shall cause the service consumer to ask for a re-authorization of the associated quota. |  |
| VOLUME\_LIMIT | Volume limit has been reached. |  |
| TIME\_LIMIT | Time limit has been reached |  |
| EVENT\_LIMIT | Event limit has been reached |  |
| PLMN\_CHANGE | PLMN has been changed. |  |
| USER\_LOCATION\_CHANGE | In request message, this value is used to indicate that User location has been changed.In response message, this value is used to indicate that a change in the end user location shall cause the service consumer to ask for a re-authorization of the associated quota |  |
| RAT\_CHANGE | In request message, this value is used to indicate that RAT type has been changed.In response message, this value is used to indicate that a change in the radio access technology shall cause the service consumer to ask for a re-authorization of the associated quota |  |
| SESSION\_AMBR\_CHANGE | In request message, this value is used to indicate that Session AMBR has been changed.In response message, this value is used to indicate that a change in the session AMBR shall cause the service consumer to ask for a re-authorization of the associated quota. |  |
| GFBR\_GUARANTEED\_STATUS\_CHANGE | In request message,this value is used to indicate that GFBR targets for the indicated SDFs are changed ("NOT\_GUARANTEED" or "GUARANTEED" again). In response message, this value is used to indicate that a NF Consumer (CTF) needs to ensure requesting the notification from the access network and that a change in the GFBR targets shall cause the service consumer to ask for a re-authorization of the associated quota. |  |
| UE\_TIMEZONE\_CHANGE | In request message, this value is used to indicate that UE timezone has been changed.In response message, this value is used to indicate that a change in the time zone where the end user is located shall cause the service consumer to ask for a re-authorization of the associated quota. |  |
| TARIFF\_TIME\_CHANGE | Tariff time change has happened. |  |
| MAX\_NUMBER\_OF\_CHANGES\_IN\_CHARGING\_CONDITIONS | Max number of change has been reached |  |
| MANAGEMENT\_INTERVENTION | Management intervention |  |
| CHANGE\_OF\_UE\_PRESENCE\_IN\_PRESENCE\_REPORTING\_AREA | In request message, this value is used to indicate that Change of UE presence in PRA has happened.In response message, this value is used to indicate a request of reporting the event that the user enters/leaves the area(s) as indicated in the presenceReportingArea Attribute |  |
| CHANGE\_OF\_3GPP\_PS\_DATA\_OFF\_STATUS | In request message, this value is used to indicate that Change of 3GPP PS Data off status has happened. In response message, this value is used to indicate that a change in the 3GPP PS Data off status shall cause the service consumer to ask for a re-authorization of the associated quota |  |
| SERVING\_NODE\_CHANGE | A serving node (e.g., AMF) change in the NF Consumer |  |
| REMOVAL\_OF\_UPF | A used UPF is removed |  |
| ADDITION\_OF\_UPF | A new UPF is added. |  |
| INSERTION\_OF\_ISMF | A new I-SMF is inserted |  |
| REMOVAL\_OF\_ISMF | A used I-SMF is removed |  |
| CHANGE\_OF\_ISMF | A used I-SMF is removed, and a new I-SMF is inserted |  |
| START\_OF\_SERVICE\_DATA\_FLOW | A Service Data Flow has started |  |
| HANDOVER\_CANCEL | The handover is canceled. |  |
| HANDOVER\_START | The handover is start. |  |
| HANDOVER\_COMPLETE | The handover is completed. |  |
| ECGI\_CHANGE | In request message, this value is used to indicate that ECGI has been changed.In response message, this value is used to indicate that a change in the end user location shall cause the service consumer to ask for a re-authorization of the associated quota | 5GIEPC\_CH |
| TAI\_CHANGE | In request message, this value is used to indicate that TAI has been changed.In response message, this value is used to indicate that a change in the end user location shall cause the service consumer to ask for a re-authorization of the associated quota | 5GIEPC\_CH |
| ADDITION\_OF\_ACCESS | Addition of access to the MA PDU session | ATSSS |
| REMOVAL\_OF\_ACCESS | Removal of access to the MA PDU session | ATSSS |
| START\_OF\_SDF\_ADDITIONAL\_ACCESS | Start of service data flow on additional access in a MA PDU session | ATSSS |
| REDUNDANT\_TRANSMISSION\_CHANGE | In request message, this value is used to indicate whether redundant transmission has been activated or not.In response message, this value is used to indicate that a change for the redendant transmission shall cause the service consumer to ask for a re-authorization and reporting. | URLLC |

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| **Next change** |

##### 6.1.6.3.X Enumeration: RedundantTransmissionType

Table 6.1.6.3.6-1: Enumeration RedundantTransmissionType

|  |  |  |
| --- | --- | --- |
| Enumeration value | Description | Applicability |
| NON\_REDUNDANT\_TRANSMISSION | Transmission without redundancy |  |
| END\_TO\_END\_ REDUNDANT\_USER\_ PLANE\_PATHS | Dual Connectivity based end to end Redundant User Plane Paths |  |
| REDUNDANT\_TRANSMISSION\_ON\_ N3/N9  | Redundant transmission on N3/N9 interfaces |  |
| REDUNDANT\_TRANSMISSION\_AT\_TRANSPORT\_LAYER | Redundant transmission at transport layer |  |

## 7.2 Bindings for 5G data connectivity

Table 7.2-1: Bindings of 5G data connectivity CDR field, Information Element and Resource Attribute

| Information Element | CDR Field | Resource Attribute |
| --- | --- | --- |
|  |  | **ChargingDataRequest** |
| Supported Features | - | **/**supportedFeatures |
| Multiple Unit Usage |  List of Multiple Unit Usage | /multipleUnitUsage |
| UPF ID | UPF ID | /multipleUnitUsage/uPFID |
| multi-homed PDU address | Multi-homed PDU address | /multipleUnitUsage/multihomedPDUAddress |
| Used Unit Container | Used Unit Container  | /multipleUnitUsage/usedUnitContainer |
| PDU Container Information | PDU Container Information | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation |
| Time of First Usage | Time of First Usage | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/timeofFirstUsage |
| Time of Last Usage | Time of Last Usage | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/timeofLastUsage |
| QoS Information | QoS Information | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/qoSInformation |
| QoS Characteristics | QoS Characteristics | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/qoSCharacteristics |
| AF Charging Identifier | AF Charging Identifier | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/afChargingIdentifier |
| AF Charging Id String | AF Charging Id String | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/afChargingIdString |
| User Location Information | User Location Information | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/userLocationInformation |
| UE Time Zone | UE Time Zone | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/uetimeZone |
| RAT Type | RAT Type | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/rATType |
| Serving Network Function ID | Serving Network Function ID | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/servingNodeID |
| Presence Reporting Area Information | Presence Reporting AreaInformation | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/ presenceReportingAreaInformation |
| 3GPP PS Data Off Status | 3GPP PS Data Off Status | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/3gppPSDataOffStatus |
| Sponsor Identity | Sponsor Identity | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/sponsorIdentity |
| Application Service Provider Identity | Application Service ProviderIdentity | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/applicationserviceProviderIdentity |
| Charging Rule Base Name | Charging Rule Base Name | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/chargingRuleBaseName |
| Redundant Transmission Indication | Redundant Transmission Indication | /multipleUnitUsage/usedUnitContainer/pDUContainerInformation/redundantTransmissionIndication |
| PDU Session Charging Information | PDU Session Charging Information | /pDUSessionChargingInformation  |
| Charging Id | Charging Id | /pDUSessionChargingInformation/chargingId |
| Home Provided ChargingId | Home Provided ChargingId | /pDUSessionChargingInformation/ homeProvidedChargingId |
| User Information | User Information | /pDUSessionChargingInformation/ userInformation |
| User Identifier | User Identifier | /pDUSessionChargingInformation/userInformation/servedGPSI |
| User Equipment Info | User Equipment Info | /pDUSessionChargingInformation/userInformation/ servedPEI |
| Unauthenticated Flag | Unauthenticated Flag | /pDUSessionChargingInformation/userInformation/ unauthenticatedFlag |
| Roamer In Out | Roamer In Out | /pDUSessionChargingInformation/userInformation/ roamerInOut |
| User Location Info | User Location Info | /pDUSessionChargingInformation/ userLocationinfo |
| UE Time Zone | UE Time Zone | /pDUSessionChargingInformation/uEtimeZone |
| Presence Reporting AreaInformation | Presence Reporting AreaInformation | /pDUSessionChargingInformation/ presenceReportingAreaInformation |
| PDU Session Information | PDU Session Information | /pDUSessionChargingInformation/pduSessionInformation |
| PDU Session ID | PDU Session ID | /pDUSessionChargingInformation/pduSessionInformation/pduSessionID |
| Network Slice InstanceIdentifier | Network Slice Instance Identifier | /pDUSessionChargingInformation/pduSessionInformation/networkSlicingInfo |
| PDU Type | PDU Type | /pDUSessionChargingInformation /pduSessionInformation/pduType |
| PDU Address | PDU Address | /pDUSessionChargingInformation /pduSessionInformation/pduAddress |
| PDU IPv4 Address | PDU IPv4 Address | /pDUSessionChargingInformation/pduSessionInformation/pduAddress/pduIPv4Address |
| PDU IPv6 Address withprefix | PDU IPv6 Address with prefix | /pDUSessionChargingInformation/pduSessionInformation/pduAddress/pduIPv6Addresswithprefix |
| PDU Address prefix length | PDU Address prefix length | /pDUSessionChargingInformation /pduSessionInformation/pduAddress/pduAddressprefixlength |
| IPv4 Dynamic AddressFlag | IPv4 Dynamic Address Flag | /pDUSessionChargingInformation /pduSessionInformation/pduAddress/ iPv4dynamicAddressFlag |
| IPv6 Dynamic Address Flag | IPv6 Dynamic Prefix Flag | pDUSessionChargingInformation /pduSessionInformation/pduAddress/ iPv6dynamicPrefixFlag |
| SSC Mode | SSC Mode | /pDUSessionChargingInformation /pduSessionInformation/sscMode |
| SUPI PLMN ID | SUPI PLMN ID | /pDUSessionChargingInformation /pduSessionInformation/hPlmnId |
| Serving Network Function ID | Serving Network Function ID | /pDUSessionChargingInformation /pduSessionInformation/ servingNetworkFunctionID |
| Serving CN PLMN ID | Serving CN PLMN ID | /pDUSessionChargingInformation/pduSessionInformation/servingCNPlmnId |
| RAT Type | RAT Type | /pDUSessionChargingInformation /pduSessionInformation/ratType |
| Data Network Name Identifier | Data Network Name Identifier | /pDUSessionChargingInformation /pduSessionInformation/dnnid |
| DNN Selection Mode | DNN Selection Mode | /pDUSessionChargingInformation /pduSessionInformation/dNNselectionMode |
| Authorized QoS information | Authorized Qos Information | /pDUSessionChargingInformation /pduSessionInformation/authorized qoSInformation |
| Subscribed QoS Information | Subscribed QoS Information | /pDUSessionChargingInformation /pduSessionInformation/subscribedQoSInformation |
| Authorized Session-AMBR | Authorized Session-AMBR | /pDUSessionChargingInformation /pduSessionInformation/authorizedSessionAMBR |
| Subscribed Session-AMBR | Subscribed Session-AMBR | /pDUSessionChargingInformation /pduSessionInformation/subscribedSessionAMBR |
| Charging Characteristics | Charging Characteristics | /pDUSessionChargingInformation /pduSessionInformation/ chargingCharacteristics |
| Charging CharacteristicsSelection Mode | Charging Characteristics Selection Mode | /pDUSessionChargingInformation /pduSessionInformation/chargingCharacteristicsSelectionMode |
| PDU session start Time | PDU session start Time | /pDUSessionChargingInformation /pduSessionInformation/startTime |
| PDU session stop Time | PDU session stop Time | /pDUSessionChargingInformation /pduSessionInformation/stopTime |
| Diagnostics | Diagnostics | /pDUSessionChargingInformation /pduSessionInformation/diagnostics |
| Enhanced Diagnostics | Enhanced Diagnostics | /pDUSessionChargingInformation /pduSessionInformation/enhancedDiagnostics |
| 3GPP PS Data Off Status | 3GPP PS Data Off Status | /pDUSessionChargingInformation /pduSessionInformation/3gppPSDataOffStatus |
| Session Stop Indicator | Session Stop Indicator | /pDUSessionChargingInformation /pduSessionInformation/sessionStopIndicator  |
| Redundant Transmission Type | Redundant Transmission Type | /pDUSessionChargingInformation /pduSessionInformation/redundantTransmissionType |
| Unit Count Inactivity Timer | - | /pDUSessionChargingInformation/unitCountInactivityTimer |
| RAN Secondary RAT Usage Report | RAN Secondary RAT Usage Report | /pDUSessionChargingInformation/rANSecondaryRATUsageReport |
| NG RAN Secondary RAT Type | NG RAN Secondary RAT Type | /pDUSessionChargingInformation/rANSecondaryRATUsageReport/rANSecondaryRATType |
| Qos Flows Usage Reports | Qos Flows Usage Reports | /pDUSessionChargingInformation/rANSecondaryRATUsageReport/qosFlowsUsageReports |
| Roaming QBC information | Roaming QBC information | /roamingQBCInformation |
| Multiple QFI container | Multiple QFI container | /roamingQBCInformation/multipleQFIcontainer |
| Triggers | Triggers | /roamingQBCInformation/multipleQFIcontainer/triggers |
| Trigger Timestamp | Trigger Timestamp | /roamingQBCInformation/multipleQFIcontainer/triggerTimestamp |
| Time | Time | /roamingQBCInformation/multipleQFIcontainer/time |
| Total Volume | Total Volume | /roamingQBCInformation/multipleQFIcontainer/totalVolume |
| Uplink Volume | Uplink Volume | /roamingQBCInformation/multipleQFIcontainer/uplinkVolume |
| Downlink Volume | Downlink Volume | /roamingQBCInformation/multipleQFIcontainer/downlinkVolume |
| Local Sequence Number | Local Sequence Number | /roamingQBCInformation/multipleQFIcontainer/localSequenceNumber |
| QFI Container information | QFI Container information | /roamingQBCInformation/multipleQFIcontainer/qFIContainerInformation |
| QoS Flow Id | QoS Flow Id | /roamingQBCInformation/multipleQFIcontainer/ qFIContainerInformation/qFI |
| Time of First Usage | Time of First Usage | /roamingQBCInformation/multipleQFIcontainer/qFIContainerInformation/ timeofFirstUsage |
| Time of Last Usage | Time of Last Usage | /roamingQBCInformation/multipleQFIcontainer/qFIContainerInformation/timeofLastUsage |
| QoS Information | QoS Information | /roamingQBCInformation/multipleQFIcontainer/qFIContainerInformation/qoSInformation |
| QoS Characteristics | QoS Characteristics | /roamingQBCInformation/multipleQFIcontainer/ qFIContainerInformation/qoSCharacteristics |
| User Location Information | User Location Information | /roamingQBCInformation/multipleQFIcontainer/qFIContainerInformation/ userLocationInformation |
| UE Time Zone | UE Time Zone | /roamingQBCInformation/multipleQFIcontainer/qFIContainerInformation/uetimeZone |
| Presence Reporting Area Information | Presence Reporting Area Information | /roamingQBCInformation/multipleQFIcontainer/qFIContainerInformation/presenceReportingAreaInformation |
| RAT Type | RAT Type | /roamingQBCInformation/multipleQFIcontainer/qFIContainerInformation/rATType |
| Report Time | Report Time | /roamingQBCInformation/multipleQFIcontainer/ qFIContainerInformation/reportTime |
| Serving Network Function ID  | Serving Network Function ID  | /roamingQBCInformation/multipleQFIcontainer/qFIContainerInformation/ servingNetworkFunctionID |
| 3GPP PS Data Off Status | 3GPP PS Data Off Status | /roamingQBCInformation/multipleQFIcontainer/qFIContainerInformation/3gppPSDataOffStatus |
| EPS bearer Charging Id | EPS bearer Charging Id | /roamingQBCInformation/multipleQFIcontainer/qFIContainerInformation/3gppChargingId |
| Diagnostics | Diagnostics | /roamingQBCInformation/multipleQFIcontainer/qFIContainerInformation/diagnostics |
| Enhanced Diagnostics | Enhanced Diagnostics | /roamingQBCInformation/multipleQFIcontainer/qFIContainerInformation/enhancedDiagnostics |
| Redundant Transmission Indication | Redundant Transmission Indication | /roamingQBCInformation/multipleQFIcontainer/qFIContainerInformation/redundantTransmissionIndication |
| UPF ID | UPF ID | /roamingQBCInformation/uPFID |
| Roaming Charging Profile | Roaming Charging Profile | /roamingQBCInformation/roamingChargingProfile |
| Trigger  | Trigger  | /roamingQBCInformationroamingChargingProfile/trigger |
| Partial record method | Partial record method | /roamingQBCInformation/roamingChargingProfile/partialRecordMethod |
|  |  | **ChargingDataResponse** |
| Supported Features | - | **/**supportedFeatures |
| Multiple Unit information | - | /multipleUnitInformation |
| UPF ID | - | /multipleUnitInformation/uPFID |
| PDU Session Charging Information | - | /pDUSessionChargingInformation  |
| Presence Reporting AreaInformation | - | /pDUSessionChargingInformation/ presenceReportingAreaInformation |
| Unit Count Inactivity Timer | - | /pDUSessionChargingInformation/unitCountInactivityTimer |
| Roaming QBC information | - | /roamingQBCInformation |
| Roaming Charging Profile | - | /roamingQBCInformation/roamingChargingProfile |

|  |
| --- |
| **Next change** |

## A.2 Nchf\_ConvergedCharging API

openapi: 3.0.0

info:

 title: Nchf\_ConvergedCharging

 version: 3.0.2

 description: |

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externalDocs:

 description: >

 3GPP TS 32.291 V16.7.0: Telecommunication management; Charging management;

 5G system, charging service; Stage 3.

 url: 'http://www.3gpp.org/ftp/Specs/archive/32\_series/32.291/'

servers:

 - url: '{apiRoot}/nchf-convergedcharging/v3'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in subclause 4.4 of 3GPP TS 29.501.

security:

 - {}

 - oAuth2ClientCredentials:

 - nchf-convergedcharging

paths:

 /chargingdata:

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/ChargingDataRequest'

 responses:

 '201':

 description: Created

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/ChargingDataResponse'

 '400':

 description: Bad request

 content:

 application/problem+json:

 schema:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ProblemDetails'

 '403':

 description: Forbidden

 content:

 application/problem+json:

 schema:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ProblemDetails'

 '404':

 description: Not Found

 content:

 application/problem+json:

 schema:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ProblemDetails'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '410':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/410'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 callbacks:

 chargingNotification:

 '{$request.body#/notifyUri}':

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/ChargingNotifyRequest'

 responses:

 '204':

 description: 'No Content, Notification was succesfull'

 '400':

 description: Bad request

 content:

 application/problem+json:

 schema:

 $ref: >-

 TS29571\_CommonData.yaml#/components/schemas/ProblemDetails

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 '/chargingdata/{ChargingDataRef}/update':

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/ChargingDataRequest'

 parameters:

 - name: ChargingDataRef

 in: path

 description: a unique identifier for a charging data resource in a PLMN

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK. Updated Charging Data resource is returned

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/ChargingDataResponse'

 '400':

 description: Bad request

 content:

 application/problem+json:

 schema:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ProblemDetails'

 '403':

 description: Forbidden

 content:

 application/problem+json:

 schema:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ProblemDetails'

 '404':

 description: Not Found

 content:

 application/problem+json:

 schema:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ProblemDetails'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '410':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/410'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 '/chargingdata/{ChargingDataRef}/release':

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/ChargingDataRequest'

 parameters:

 - name: ChargingDataRef

 in: path

 description: a unique identifier for a charging data resource in a PLMN

 required: true

 schema:

 type: string

 responses:

 '204':

 description: No Content.

 '404':

 description: Not Found

 content:

 application/problem+json:

 schema:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ProblemDetails'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '410':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/410'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{nrfApiRoot}/oauth2/token'

 scopes:

 nchf-convergedcharging: Access to the Nchf\_ConvergedCharging API

 schemas:

 ChargingDataRequest:

 type: object

 properties:

 subscriberIdentifier:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Supi'

 tenantIdentifier:

 type: string

 chargingId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ChargingId'

 mnSConsumerIdentifier:

 type: string

 nfConsumerIdentification:

 $ref: '#/components/schemas/NFIdentification'

 invocationTimeStamp:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 invocationSequenceNumber:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 retransmissionIndicator:

 type: boolean

 oneTimeEvent:

 type: boolean

 oneTimeEventType:

 $ref: '#/components/schemas/oneTimeEventType'

 notifyUri:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 supportedFeatures:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

 serviceSpecificationInfo:

 type: string

 multipleUnitUsage:

 type: array

 items:

 $ref: '#/components/schemas/MultipleUnitUsage'

 minItems: 0

 triggers:

 type: array

 items:

 $ref: '#/components/schemas/Trigger'

 minItems: 0

 pDUSessionChargingInformation:

 $ref: '#/components/schemas/PDUSessionChargingInformation'

 roamingQBCInformation:

 $ref: '#/components/schemas/RoamingQBCInformation'

 sMSChargingInformation:

 $ref: '#/components/schemas/SMSChargingInformation'

 nEFChargingInformation:

 $ref: '#/components/schemas/NEFChargingInformation'

 registrationChargingInformation:

 $ref: '#/components/schemas/RegistrationChargingInformation'

 n2ConnectionChargingInformation:

 $ref: '#/components/schemas/N2ConnectionChargingInformation'

 locationReportingChargingInformation:

 $ref: '#/components/schemas/LocationReportingChargingInformation'

 nSPAChargingInformation:

 $ref: '#/components/schemas/NSPAChargingInformation'

 nSMChargingInformation:

 $ref: '#/components/schemas/NSMChargingInformation'

 required:

 - nfConsumerIdentification

 - invocationTimeStamp

 - invocationSequenceNumber

 ChargingDataResponse:

 type: object

 properties:

 invocationTimeStamp:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 invocationSequenceNumber:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 invocationResult:

 $ref: '#/components/schemas/InvocationResult'

 sessionFailover:

 $ref: '#/components/schemas/SessionFailover'

 supportedFeatures:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

 multipleUnitInformation:

 type: array

 items:

 $ref: '#/components/schemas/MultipleUnitInformation'

 minItems: 0

 triggers:

 type: array

 items:

 $ref: '#/components/schemas/Trigger'

 minItems: 0

 pDUSessionChargingInformation:

 $ref: '#/components/schemas/PDUSessionChargingInformation'

 roamingQBCInformation:

 $ref: '#/components/schemas/RoamingQBCInformation'

 required:

 - invocationTimeStamp

 - invocationSequenceNumber

 ChargingNotifyRequest:

 type: object

 properties:

 notificationType:

 $ref: '#/components/schemas/NotificationType'

 reauthorizationDetails:

 type: array

 items:

 $ref: '#/components/schemas/ReauthorizationDetails'

 minItems: 0

 required:

 - notificationType

 ChargingNotifyResponse:

 type: object

 properties:

 invocationResult:

 $ref: '#/components/schemas/InvocationResult'

 NFIdentification:

 type: object

 properties:

 nFName:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 nFIPv4Address:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

 nFIPv6Address:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

 nFPLMNID:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PlmnId'

 nodeFunctionality:

 $ref: '#/components/schemas/NodeFunctionality'

 nFFqdn:

 type: string

 required:

 - nodeFunctionality

 MultipleUnitUsage:

 type: object

 properties:

 ratingGroup:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RatingGroup'

 requestedUnit:

 $ref: '#/components/schemas/RequestedUnit'

 usedUnitContainer:

 type: array

 items:

 $ref: '#/components/schemas/UsedUnitContainer'

 minItems: 0

 uPFID:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 multihomedPDUAddress:

 $ref: '#/components/schemas/PDUAddress'

 required:

 - ratingGroup

 InvocationResult:

 type: object

 properties:

 error:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ProblemDetails'

 failureHandling:

 $ref: '#/components/schemas/FailureHandling'

 Trigger:

 type: object

 properties:

 triggerType:

 $ref: '#/components/schemas/TriggerType'

 triggerCategory:

 $ref: '#/components/schemas/TriggerCategory'

 timeLimit:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DurationSec'

 volumeLimit:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 volumeLimit64:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 eventLimit:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 maxNumberOfccc:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 tariffTimeChange:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 required:

 - triggerType

 - triggerCategory

 MultipleUnitInformation:

 type: object

 properties:

 resultCode:

 $ref: '#/components/schemas/ResultCode'

 ratingGroup:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RatingGroup'

 grantedUnit:

 $ref: '#/components/schemas/GrantedUnit'

 triggers:

 type: array

 items:

 $ref: '#/components/schemas/Trigger'

 minItems: 0

 validityTime:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DurationSec'

 quotaHoldingTime:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DurationSec'

 finalUnitIndication:

 $ref: '#/components/schemas/FinalUnitIndication'

 timeQuotaThreshold:

 type: integer

 volumeQuotaThreshold:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 unitQuotaThreshold:

 type: integer

 uPFID:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 required:

 - ratingGroup

 RequestedUnit:

 type: object

 properties:

 time:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 totalVolume:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 uplinkVolume:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 downlinkVolume:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 serviceSpecificUnits:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 UsedUnitContainer:

 type: object

 properties:

 serviceId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ServiceId'

 quotaManagementIndicator:

 $ref: '#/components/schemas/QuotaManagementIndicator'

 triggers:

 type: array

 items:

 $ref: '#/components/schemas/Trigger'

 minItems: 0

 triggerTimestamp:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 time:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 totalVolume:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 uplinkVolume:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 downlinkVolume:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 serviceSpecificUnits:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 eventTimeStamps:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 minItems: 0

 localSequenceNumber:

 type: integer

 pDUContainerInformation:

 $ref: '#/components/schemas/PDUContainerInformation'

 nSPAContainerInformation:

 $ref: '#/components/schemas/NSPAContainerInformation'

 required:

 - localSequenceNumber

 GrantedUnit:

 type: object

 properties:

 tariffTimeChange:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 time:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 totalVolume:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 uplinkVolume:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 downlinkVolume:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 serviceSpecificUnits:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 FinalUnitIndication:

 type: object

 properties:

 finalUnitAction:

 $ref: '#/components/schemas/FinalUnitAction'

 restrictionFilterRule:

 $ref: '#/components/schemas/IPFilterRule'

 filterId:

 type: string

 redirectServer:

 $ref: '#/components/schemas/RedirectServer'

 required:

 - finalUnitAction

 RedirectServer:

 type: object

 properties:

 redirectAddressType:

 $ref: '#/components/schemas/RedirectAddressType'

 redirectServerAddress:

 type: string

 required:

 - redirectAddressType

 - redirectServerAddress

 ReauthorizationDetails:

 type: object

 properties:

 serviceId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ServiceId'

 ratingGroup:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RatingGroup'

 quotaManagementIndicator:

 $ref: '#/components/schemas/QuotaManagementIndicator'

 PDUSessionChargingInformation:

 type: object

 properties:

 chargingId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ChargingId'

 homeProvidedChargingId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ChargingId'

 userInformation:

 $ref: '#/components/schemas/UserInformation'

 userLocationinfo:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

 mAPDUNon3GPPUserLocationInfo:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

 presenceReportingAreaInformation:

 type: object

 additionalProperties:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PresenceInfo'

 minProperties: 0

 uetimeZone:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/TimeZone'

 pduSessionInformation:

 $ref: '#/components/schemas/PDUSessionInformation'

 unitCountInactivityTimer:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DurationSec'
 rANSecondaryRATUsageReport:

 $ref: '#/components/schemas/RANSecondaryRATUsageReport'

 UserInformation:

 type: object

 properties:

 servedGPSI:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Gpsi'

 servedPEI:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Pei'

 unauthenticatedFlag:

 type: boolean

 roamerInOut:

 $ref: '#/components/schemas/RoamerInOut'

 PDUSessionInformation:

 type: object

 properties:

 networkSlicingInfo:

 $ref: '#/components/schemas/NetworkSlicingInfo'

 pduSessionID:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionId'

 pduType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PduSessionType'

 sscMode:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SscMode'

 hPlmnId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PlmnId'

 servingNetworkFunctionID:

 $ref: '#/components/schemas/ServingNetworkFunctionID'

 ratType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

 mAPDUNon3GPPRATType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

 dnnId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Dnn'

 dnnSelectionMode:

 $ref: '#/components/schemas/dnnSelectionMode'

 chargingCharacteristics:

 type: string

 pattern: '^[0-9a-fA-F]{1,4}$'

 chargingCharacteristicsSelectionMode:

 $ref: '#/components/schemas/ChargingCharacteristicsSelectionMode'

 startTime:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 stopTime:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 3gppPSDataOffStatus:

 $ref: '#/components/schemas/3GPPPSDataOffStatus'

 sessionStopIndicator:

 type: boolean

 pduAddress:

 $ref: '#/components/schemas/PDUAddress'

 diagnostics:

 $ref: '#/components/schemas/Diagnostics'

 authorizedQoSInformation:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/AuthorizedDefaultQos'

 subscribedQoSInformation:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SubscribedDefaultQos'

 authorizedSessionAMBR:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ambr'

 subscribedSessionAMBR:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ambr'

 servingCNPlmnId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PlmnId'

 mAPDUSessionInformation:

 $ref: '#/components/schemas/MAPDUSessionInformation'

 enhancedDiagnostics:

 $ref: '#/components/schemas/EnhancedDiagnostics5G'

 redundantTransmissionType:

 $ref: '#/components/schemas/RedundantTransmissionType'

 required:

 - pduSessionID

 - dnnId

 PDUContainerInformation:

 type: object

 properties:

 timeofFirstUsage:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 timeofLastUsage:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 qoSInformation:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/QosData'

 qoSCharacteristics:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/QosCharacteristics'

 afChargingIdentifier:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ChargingId'

 afChargingIdString:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ApplicationChargingId'

 userLocationInformation:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

 uetimeZone:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/TimeZone'

 rATType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

 servingNodeID:

 type: array

 items:

 $ref: '#/components/schemas/ServingNetworkFunctionID'

 minItems: 0

 presenceReportingAreaInformation:

 type: object

 additionalProperties:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PresenceInfo'

 minProperties: 0

 3gppPSDataOffStatus:

 $ref: '#/components/schemas/3GPPPSDataOffStatus'

 sponsorIdentity:

 type: string

 applicationserviceProviderIdentity:

 type: string

 chargingRuleBaseName:

 type: string

 mAPDUSteeringFunctionality:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/SteeringFunctionality'

 mAPDUSteeringMode:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/SteeringMode'

 redundantTransmissionIndication:

 type: boolean

 NSPAContainerInformation:

 type: object

 properties:

 latency:

 type: integer

 throughput:

 $ref: '#/components/schemas/Throughput'

 maximumPacketLossRate:

 type: string

 serviceExperienceStatisticsData:

 $ref: 'TS29520\_Nnwdaf\_EventsSubscription.yaml#/components/schemas/ServiceExperienceInfo'

 theNumberOfPDUSessions:

 type: integer

 theNumberOfRegisteredSubscribers:

 type: integer

 loadLevel:

 $ref: 'TS29520\_Nnwdaf\_EventsSubscription.yaml#/components/schemas/NsiLoadLevelInfo'

 NSPAChargingInformation:

 type: object

 properties:

 singleNSSAI:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

 required:

 - singleNSSAI

 NetworkSlicingInfo:

 type: object

 properties:

 sNSSAI:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

 required:

 - sNSSAI

 PDUAddress:

 type: object

 properties:

 pduIPv4Address:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv4Addr'

 pduIPv6AddresswithPrefix:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Addr'

 pduAddressprefixlength:

 type: integer

 iPv4dynamicAddressFlag:

 type: boolean

 iPv6dynamicPrefixFlag:

 type: boolean

 ServingNetworkFunctionID:

 type: object

 properties:

 servingNetworkFunctionInformation:

 $ref: '#/components/schemas/NFIdentification'

 aMFId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/AmfId'

 required:

 - servingNetworkFunctionInformation

 RoamingQBCInformation:

 type: object

 properties:

 multipleQFIcontainer:

 type: array

 items:

 $ref: '#/components/schemas/MultipleQFIcontainer'

 minItems: 0

 uPFID:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 roamingChargingProfile:

 $ref: '#/components/schemas/RoamingChargingProfile'

 MultipleQFIcontainer:

 type: object

 properties:

 triggers:

 type: array

 items:

 $ref: '#/components/schemas/Trigger'

 minItems: 0

 triggerTimestamp:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 time:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 totalVolume:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 uplinkVolume:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 downlinkVolume:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 localSequenceNumber:

 type: integer

 qFIContainerInformation:

 $ref: '#/components/schemas/QFIContainerInformation'

 required:

 - localSequenceNumber

 QFIContainerInformation:

 type: object

 properties:

 qFI:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Qfi'

 reportTime:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 timeofFirstUsage:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 timeofLastUsage:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 qoSInformation:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/QosData'

 qoSCharacteristics:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/QosCharacteristics'

 userLocationInformation:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

 uetimeZone:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/TimeZone'

 presenceReportingAreaInformation:

 type: object

 additionalProperties:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PresenceInfo'

 minProperties: 0

 rATType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

 servingNetworkFunctionID:

 type: array

 items:

 $ref: '#/components/schemas/ServingNetworkFunctionID'

 minItems: 0

 3gppPSDataOffStatus:

 $ref: '#/components/schemas/3GPPPSDataOffStatus'

 3gppChargingId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ChargingId'

 diagnostics:

 $ref: '#/components/schemas/Diagnostics'

 enhancedDiagnostics:

 type: array

 items:

 type: string

 redundantTransmissionIndication:

 type: boolean

 required:

 - reportTime

 RoamingChargingProfile:

 type: object

 properties:

 triggers:

 type: array

 items:

 $ref: '#/components/schemas/Trigger'

 minItems: 0

 partialRecordMethod:

 $ref: '#/components/schemas/PartialRecordMethod'

 SMSChargingInformation:

 type: object

 properties:

 originatorInfo:

 $ref: '#/components/schemas/OriginatorInfo'

 recipientInfo:

 type: array

 items:

 $ref: '#/components/schemas/RecipientInfo'

 minItems: 0

 userEquipmentInfo:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Pei'

 roamerInOut:

 $ref: '#/components/schemas/RoamerInOut'

 userLocationinfo:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

 uetimeZone:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/TimeZone'

 rATType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

 sMSCAddress:

 type: string

 sMDataCodingScheme:

 type: integer

 sMMessageType:

 $ref: '#/components/schemas/SMMessageType'

 sMReplyPathRequested:

 $ref: '#/components/schemas/ReplyPathRequested'

 sMUserDataHeader:

 type: string

 sMStatus:

 type: string

 pattern: '^[0-7]?[0-9a-fA-F]$'

 sMDischargeTime:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 numberofMessagesSent:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 sMServiceType:

 $ref: '#/components/schemas/SMServiceType'

 sMSequenceNumber:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 sMSresult:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 submissionTime:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 sMPriority:

 $ref: '#/components/schemas/SMPriority'

 messageReference:

 type: string

 messageSize:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 messageClass:

 $ref: '#/components/schemas/MessageClass'

 deliveryReportRequested:

 $ref: '#/components/schemas/DeliveryReportRequested'

 OriginatorInfo:

 type: object

 properties:

 originatorSUPI:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Supi'

 originatorGPSI:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Gpsi'

 originatorOtherAddress:

 $ref: '#/components/schemas/SMAddressInfo'

 originatorReceivedAddress:

 $ref: '#/components/schemas/SMAddressInfo'

 originatorSCCPAddress:

 type: string

 sMOriginatorInterface:

 $ref: '#/components/schemas/SMInterface'

 sMOriginatorProtocolId:

 type: string

 RecipientInfo:

 type: object

 properties:

 recipientSUPI:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Supi'

 recipientGPSI:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Gpsi'

 recipientOtherAddress:

 $ref: '#/components/schemas/SMAddressInfo'

 recipientReceivedAddress:

 $ref: '#/components/schemas/SMAddressInfo'

 recipientSCCPAddress:

 type: string

 sMDestinationInterface:

 $ref: '#/components/schemas/SMInterface'

 sMrecipientProtocolId:

 type: string

 SMAddressInfo:

 type: object

 properties:

 sMaddressType:

 $ref: '#/components/schemas/SMAddressType'

 sMaddressData:

 type: string

 sMaddressDomain:

 $ref: '#/components/schemas/SMAddressDomain'

 RecipientAddress:

 type: object

 properties:

 recipientAddressInfo:

 $ref: '#/components/schemas/SMAddressInfo'

 sMaddresseeType:

 $ref: '#/components/schemas/SMAddresseeType'

 MessageClass:

 type: object

 properties:

 classIdentifier:

 $ref: '#/components/schemas/ClassIdentifier'

 tokenText:

 type: string

 SMAddressDomain:

 type: object

 properties:

 domainName:

 type: string

 3GPPIMSIMCCMNC:

 type: string

 SMInterface:

 type: object

 properties:

 interfaceId:

 type: string

 interfaceText:

 type: string

 interfacePort:

 type: string

 interfaceType:

 $ref: '#/components/schemas/InterfaceType'

 RANSecondaryRATUsageReport:

 type: object

 properties:

 rANSecondaryRATType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

 qosFlowsUsageReports:

 type: array

 items:

 $ref: '#/components/schemas/QosFlowsUsageReport'

 Diagnostics:

 type: integer

 IPFilterRule:

 type: string

 QosFlowsUsageReport:

 type: object

 properties:

 qFI:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Qfi'

 startTimestamp:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 endTimestamp:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 uplinkVolume:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 downlinkVolume:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint64'

 NEFChargingInformation:

 type: object

 properties:

 externalIndividualIdentifier:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Gpsi'

 externalGroupIdentifier:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ExternalGroupId'

 groupIdentifier:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/GroupId'

 aPIDirection:

 $ref: '#/components/schemas/APIDirection'

 aPITargetNetworkFunction:

 $ref: '#/components/schemas/NFIdentification'

 aPIResultCode:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint32'

 aPIName:

 type: string

 aPIReference:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 aPIContent:

 type: string

 required:

 - aPIName

 RegistrationChargingInformation:

 type: object

 properties:

 registrationMessagetype:

 $ref: '#/components/schemas/RegistrationMessageType'

 userInformation:

 $ref: '#/components/schemas/UserInformation'

 userLocationinfo:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

 pSCellInformation:

 $ref: '#/components/schemas/PSCellInformation'

 uetimeZone:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/TimeZone'

 rATType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

 5GMMCapability:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Bytes'

 mICOModeIndication:

 $ref: '#/components/schemas/MICOModeIndication'

 smsIndication:

 $ref: '#/components/schemas/SmsIndication'

 taiList:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Tai'

 minItems: 0

 serviceAreaRestriction:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ServiceAreaRestriction'

 minItems: 0

 requestedNSSAI:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

 minItems: 0

 allowedNSSAI:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

 minItems: 0

 rejectedNSSAI:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

 minItems: 0

 nSSAIMapList:

 type: array

 items:

 $ref: '#/components/schemas/NSSAIMap'

 minItems: 0

 amfUeNgapId:

 type: integer

 ranUeNgapId:

 type: integer

 ranNodeId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/GlobalRanNodeId'

 required:

 - registrationMessagetype

 PSCellInformation:

 type: object

 properties:

 nrcgi:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ncgi'

 ecgi:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Ecgi'

 NSSAIMap:

 type: object

 properties:

 servingSnssai:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

 homeSnssai:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

 required:

 - servingSnssai

 - homeSnssai

 N2ConnectionChargingInformation:

 type: object

 properties:

 n2ConnectionMessageType:

 $ref: '#/components/schemas/N2ConnectionMessageType'

 userInformation:

 $ref: '#/components/schemas/UserInformation'

 userLocationinfo:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

 pSCellInformation:

 $ref: '#/components/schemas/PSCellInformation'

 uetimeZone:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/TimeZone'

 rATType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

 amfUeNgapId:

 type: integer

 ranUeNgapId:

 type: integer

 ranNodeId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/GlobalRanNodeId'

 restrictedRatList:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

 minItems: 0

 forbiddenAreaList:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Area'

 minItems: 0

 serviceAreaRestriction:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/ServiceAreaRestriction'

 minItems: 0

 restrictedCnList:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/CoreNetworkType'

 minItems: 0

 allowedNSSAI:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

 minItems: 0

 rrcEstCause:

 type: string

 pattern: '^[0-9a-fA-F]+$'

 required:

 - n2ConnectionMessageType

 LocationReportingChargingInformation:

 type: object

 properties:

 locationReportingMessageType:

 $ref: '#/components/schemas/LocationReportingMessageType'

 userInformation:

 $ref: '#/components/schemas/UserInformation'

 userLocationinfo:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/UserLocation'

 pSCellInformation:

 $ref: '#/components/schemas/PSCellInformation'

 uetimeZone:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/TimeZone'

 rATType:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/RatType'

 presenceReportingAreaInformation:

 type: object

 additionalProperties:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/PresenceInfo'

 minProperties: 0

 required:

 - locationReportingMessageType

 N2ConnectionMessageType:

 type: integer

 LocationReportingMessageType:

 type: integer

 NSMChargingInformation:

 type: object

 properties:

 managementOperation:

 $ref: '#/components/schemas/ManagementOperation'

 idNetworkSliceInstance:

 type: string

 listOfserviceProfileChargingInformation:

 type: array

 items:

 $ref: '#/components/schemas/ServiceProfileChargingInformation'

 minItems: 0

 managementOperationStatus:

 $ref: '#/components/schemas/ManagementOperationStatus'

# To be introduced once the reference to 'generic.yaml is resolved

# managementOperationalState:

# $ref: 'genericNrm.yaml#/components/schemas/OperationalState'

# managementAdministrativeState:

# $ref: 'genericNrm.yaml#/components/schemas/AdministrativeState'

 required:

 - managementOperation

 ServiceProfileChargingInformation:

 type: object

 properties:

 serviceProfileIdentifier:

 type: string

 sNSSAIList:

 type: array

 items:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Snssai'

 minItems: 0

# To be introduced once the reference to 'nrNrm.yaml is resolved

# sST:

# $ref: 'nrNrm.yaml#/components/schemas/Sst'

 latency:

 type: integer

 availability:

 type: number

# To be introduced once the reference to sliceNrm.yaml is resolved

# resourceSharingLevel:

# $ref: 'sliceNrm.yaml#/components/schemas/SharingLevel'

 jitter:

 type: integer

 reliability:

 type: string

 maxNumberofUEs:

 type: integer

 coverageArea:

 type: string

# To be introduced once the reference to sliceNrm.yaml is resolved

# uEMobilityLevel:

# $ref: 'sliceNrm.yaml#/components/schemas/MobilityLevel'

# delayToleranceIndicator:

# $ref: 'sliceNrm.yaml#/components/schemas/Support'

 dLThptPerSlice:

 $ref: '#/components/schemas/Throughput'

 dLThptPerUE:

 $ref: '#/components/schemas/Throughput'

 uLThptPerSlice:

 $ref: '#/components/schemas/Throughput'

 uLThptPerUE:

 $ref: '#/components/schemas/Throughput'

 maxNumberofPDUsessions:

 type: integer

 kPIMonitoringList:

 type: string

 supportedAccessTechnology:

 type: integer

# To be introduced once the reference to sliceNrm.yaml is resolved

# v2XCommunicationModeIndicator:

# $ref: 'sliceNrm.yaml#/components/schemas/Support'

 addServiceProfileInfo:

 type: string

 Throughput:

 type: object

 properties:

 guaranteedThpt:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Float'

 maximumThpt:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Float'

 MAPDUSessionInformation:

 type: object

 properties:

 mAPDUSessionIndicator:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/MaPduIndication'

 aTSSSCapability:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/AtsssCapability'

 EnhancedDiagnostics5G:

 $ref: '#/components/schemas/RanNasCauseList'

 RanNasCauseList:

 type: array

 items:

 $ref: 'TS29512\_Npcf\_SMPolicyControl.yaml#/components/schemas/RanNasRelCause'

 NotificationType:

 anyOf:

 - type: string

 enum:

 - REAUTHORIZATION

 - ABORT\_CHARGING

 - type: string

 NodeFunctionality:

 anyOf:

 - type: string

 enum:

 - AMF

 - SMF

 - SMS

 - PGW\_C\_SMF

 - NEFF # Included for backwards compatibility, shall not be used

 - SGW

 - I\_SMF

 - ePDG

 - CEF

 - NEF

 - MnS\_Producer

 - type: string

 ChargingCharacteristicsSelectionMode:

 anyOf:

 - type: string

 enum:

 - HOME\_DEFAULT

 - ROAMING\_DEFAULT

 - VISITING\_DEFAULT

 - type: string

 TriggerType:

 anyOf:

 - type: string

 enum:

 - QUOTA\_THRESHOLD

 - QHT

 - FINAL

 - QUOTA\_EXHAUSTED

 - VALIDITY\_TIME

 - OTHER\_QUOTA\_TYPE

 - FORCED\_REAUTHORISATION

 - UNUSED\_QUOTA\_TIMER # Included for backwards compatibility, shall not be used

 - UNIT\_COUNT\_INACTIVITY\_TIMER

 - ABNORMAL\_RELEASE

 - QOS\_CHANGE

 - VOLUME\_LIMIT

 - TIME\_LIMIT

 - EVENT\_LIMIT

 - PLMN\_CHANGE

 - USER\_LOCATION\_CHANGE

 - RAT\_CHANGE

 - SESSION\_AMBR\_CHANGE

 - UE\_TIMEZONE\_CHANGE

 - TARIFF\_TIME\_CHANGE

 - MAX\_NUMBER\_OF\_CHANGES\_IN\_CHARGING\_CONDITIONS

 - MANAGEMENT\_INTERVENTION

 - CHANGE\_OF\_UE\_PRESENCE\_IN\_PRESENCE\_REPORTING\_AREA

 - CHANGE\_OF\_3GPP\_PS\_DATA\_OFF\_STATUS

 - SERVING\_NODE\_CHANGE

 - REMOVAL\_OF\_UPF

 - ADDITION\_OF\_UPF

 - INSERTION\_OF\_ISMF

 - REMOVAL\_OF\_ISMF

 - CHANGE\_OF\_ISMF

 - START\_OF\_SERVICE\_DATA\_FLOW

 - ECGI\_CHANGE

 - TAI\_CHANGE

 - HANDOVER\_CANCEL

 - HANDOVER\_START

 - HANDOVER\_COMPLETE

 - GFBR\_GUARANTEED\_STATUS\_CHANGE

 - ADDITION\_OF\_ACCESS

 - REMOVAL\_OF\_ACCESS

 - START\_OF\_SDF\_ADDITIONAL\_ACCESS

 - REDUNDANT\_TRANSMISSION\_CHANGE

 - type: string

 FinalUnitAction:

 anyOf:

 - type: string

 enum:

 - TERMINATE

 - REDIRECT

 - RESTRICT\_ACCESS

 - type: string

 RedirectAddressType:

 anyOf:

 - type: string

 enum:

 - IPV4

 - IPV6

 - URL

 - type: string

 TriggerCategory:

 anyOf:

 - type: string

 enum:

 - IMMEDIATE\_REPORT

 - DEFERRED\_REPORT

 - type: string

 QuotaManagementIndicator:

 anyOf:

 - type: string

 enum:

 - ONLINE\_CHARGING

 - OFFLINE\_CHARGING

 - QUOTA\_MANAGEMENT\_SUSPENDED

 - type: string

 FailureHandling:

 anyOf:

 - type: string

 enum:

 - TERMINATE

 - CONTINUE

 - RETRY\_AND\_TERMINATE

 - type: string

 SessionFailover:

 anyOf:

 - type: string

 enum:

 - FAILOVER\_NOT\_SUPPORTED

 - FAILOVER\_SUPPORTED

 - type: string

 3GPPPSDataOffStatus:

 anyOf:

 - type: string

 enum:

 - ACTIVE

 - INACTIVE

 - type: string

 ResultCode:

 anyOf:

 - type: string

 enum:

 - SUCCESS

 - END\_USER\_SERVICE\_DENIED

 - QUOTA\_MANAGEMENT\_NOT\_APPLICABLE

 - QUOTA\_LIMIT\_REACHED

 - END\_USER\_SERVICE\_REJECTED

 - USER\_UNKNOWN

 - RATING\_FAILED

 - QUOTA\_MANAGEMENT

 - type: string

 PartialRecordMethod:

 anyOf:

 - type: string

 enum:

 - DEFAULT

 - INDIVIDUAL

 - type: string

 RoamerInOut:

 anyOf:

 - type: string

 enum:

 - IN\_BOUND

 - OUT\_BOUND

 - type: string

 SMMessageType:

 anyOf:

 - type: string

 enum:

 - SUBMISSION

 - DELIVERY\_REPORT

 - SM\_SERVICE\_REQUEST

 - DELIVERY

 - type: string

 SMPriority:

 anyOf:

 - type: string

 enum:

 - LOW

 - NORMAL

 - HIGH

 - type: string

 DeliveryReportRequested:

 anyOf:

 - type: string

 enum:

 - YES

 - NO

 - type: string

 InterfaceType:

 anyOf:

 - type: string

 enum:

 - UNKNOWN

 - MOBILE\_ORIGINATING

 - MOBILE\_TERMINATING

 - APPLICATION\_ORIGINATING

 - APPLICATION\_TERMINATING

 - type: string

 ClassIdentifier:

 anyOf:

 - type: string

 enum:

 - PERSONAL

 - ADVERTISEMENT

 - INFORMATIONAL

 - AUTO

 - type: string

 SMAddressType:

 anyOf:

 - type: string

 enum:

 - EMAIL\_ADDRESS

 - MSISDN

 - IPV4\_ADDRESS

 - IPV6\_ADDRESS

 - NUMERIC\_SHORTCODE

 - ALPHANUMERIC\_SHORTCODE

 - OTHER

 - IMSI

 - type: string

 SMAddresseeType:

 anyOf:

 - type: string

 enum:

 - TO

 - CC

 - BCC

 - type: string

 SMServiceType:

 anyOf:

 - type: string

 enum:

 - VAS4SMS\_SHORT\_MESSAGE\_CONTENT\_PROCESSING

 - VAS4SMS\_SHORT\_MESSAGE\_FORWARDING

 - VAS4SMS\_SHORT\_MESSAGE\_FORWARDING\_MULTIPLE\_SUBSCRIPTIONS

 - VAS4SMS\_SHORT\_MESSAGE\_FILTERING

 - VAS4SMS\_SHORT\_MESSAGE\_RECEIPT

 - VAS4SMS\_SHORT\_MESSAGE\_NETWORK\_STORAGE

 - VAS4SMS\_SHORT\_MESSAGE\_TO\_MULTIPLE\_DESTINATIONS

 - VAS4SMS\_SHORT\_MESSAGE\_VIRTUAL\_PRIVATE\_NETWORK(VPN)

 - VAS4SMS\_SHORT\_MESSAGE\_AUTO\_REPLY

 - VAS4SMS\_SHORT\_MESSAGE\_PERSONAL\_SIGNATURE

 - VAS4SMS\_SHORT\_MESSAGE\_DEFERRED\_DELIVERY

 - type: string

 ReplyPathRequested:

 anyOf:

 - type: string

 enum:

 - NO\_REPLY\_PATH\_SET

 - REPLY\_PATH\_SET

 - type: string

 oneTimeEventType:

 anyOf:

 - type: string

 enum:

 - IEC

 - PEC

 - type: string

 dnnSelectionMode:

 anyOf:

 - type: string

 enum:

 - VERIFIED

 - UE\_DNN\_NOT\_VERIFIED

 - NW\_DNN\_NOT\_VERIFIED

 - type: string

 APIDirection:

 anyOf:

 - type: string

 enum:

 - INVOCATION

 - NOTIFICATION

 - type: string

 RegistrationMessageType:

 anyOf:

 - type: string

 enum:

 - INITIAL

 - MOBILITY

 - PERIODIC

 - EMERGENCY

 - DEREGISTRATION

 - type: string

 MICOModeIndication:

 anyOf:

 - type: string

 enum:

 - MICO\_MODE

 - NO\_MICO\_MODE

 - type: string

 SmsIndication:

 anyOf:

 - type: string

 enum:

 - SMS\_SUPPORTED

 - SMS\_NOT\_SUPPORTED

 - type: string

 ManagementOperation:

 anyOf:

 - type: string

 enum:

 - CreateMOI

 - ModifyMOIAttributes

 - DeleteMOI

 - type: string

 ManagementOperationStatus:

 anyOf:

 - type: string

 enum:

 - OPERATION\_SUCCEEDED

 - OPERATION\_FAILED

 - type: string

 RedundantTransmissionType:

 anyOf:

 - type: string

 enum:

 - NON\_REDUNDANT\_TRANSMISSION

 - END\_TO\_END\_ REDUNDANT\_USER\_ PLANE\_PATHS

 - REDUNDANT\_TRANSMISSION\_ON\_ N3/N9

 - REDUNDANT\_TRANSMISSION\_AT\_TRANSPORT\_LAYER

 - type: string

|  |
| --- |
| **Next change** |