**3GPP TSG-SA5 Meeting #154 *S5-241734rev1***

Changsha, China, 15 - 19 April 2024

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **32.291** | **CR** | **0558** | **rev** | **1** | **Current version:** | **18.5.0** |  |
|  | | | | | | | | |
| *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:*** | Correction on some issues of 5G MBS charging | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5MBS\_CH | | | | |  | ***Date:*** | | | 2024-04-18 |
|  |  | | | |  | |  | | |  |
| ***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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The feature 5MBS\_CH indicates 5G multicast-broadcast services charging. It should be supported by both SMF and MB-SMF. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Correct the description of 5MBS\_CH by removing “supported by SMF”. Remove mBSSessionChargingInformation in Type ChargingDataResponse.Remove mBUPFID in Type MultipleUnitInformation, also in bindings. Update MB-SMF TriggerType in data types and Nchf\_ConvergedCharging API to align with triggers in TS 32.279. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Errors exist in stage 3. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.1.6.2.14, 6.1.6.3.6, 6.1.8, 7.12, 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** |

##### 6.1.6.2.14 5G MBS Specified Data Type

###### 6.1.6.2.14.1 Type ChargingDataRequest

This clause is additional attributes of the type ChargingDataRequest for 5G MBS charging.

Table 6.1.6.2.14.1-1: 5MBS Specified attribute of type ChargingDataRequest

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| mBSSessionChargingInformation | MBSSessionChargingInformation | OM | 0..1 | This field holds the 5G MBS specific information. |  |

###### 6.1.6.2.14.2 Type ChargingDataResponse

This clause is additional attributes of the type ChargingDataResponse for 5G MBS charging.

Table 6.1.6.2.14.2-1: 5MBS Specified attribute of type ChargingDataResponse

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| mBSSessionChargingInformation | MBSSessionChargingInformation | OM | 0..1 | This field holds the 5G MBS specific information. | 5MBS\_CH |

###### 6.1.6.2.14.3 Type MultipleUnitUsage

This clause is additional attributes of the type MultipleUnitUsage defined in clause 6.1.6.2.1.5 for 5G MBS charging described in 3GPP TS 32.279[39].

Table 6.1.6.2.14.3-1: 5G Data Connectivity Specified attribute of type MultipleUnitUsage

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| mBUPFID | NfInstanceId | OC | 0..1 | identifier of MB-UPF |  |

###### 6.1.6.2.14.4 Type MultipleUnitInformation

This clause is additional attributes of the type MultipleUnitInformationdefined in clause 6.1.6.2.1.8 for 5G MBS charging described in 3GPP TS 32.279[39].

Table 6.1.6.2.14.4-1: 5G Data Connectivity Specified attribute of type MultipleUnitInformation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| mBUPFID | NfInstanceId | Oc | 0..1 | identifier of MB-UPF |  |

###### 6.1.6.2.14.5 Type UsedUnitContainer

This clause is additional portion of the type UsedUnitContainer in clause 6.1.6.2.1.10 for 5G MBS charging described in 3GPP TS 32.279[39]..

Table 6.1.6.2.14.5-1: 5MBS Specified portion of type UsedUnitContainer

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| mBSContainerInformation | MBSContainerInformation | OC | 0..1 | the 5G MBS container information. | 5MBS\_CH |

###### 6.1.6.2.14.6 Type MBSSessionChargingInformation

Table 6.1.6.2.14.6-1: Definition of type MBSSessionChargingInformation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| mBSSessionID | MbsSessionId | M | 1 | MBS session identifier (TMGI and/or SSM, and NID for an SNPN). |  |
| mBSServiceType | MbsServiceType | M | 1 | MBS Service Type (either multicast or broadcast service). |  |
| serviceArea | ServiceArea | OC | 0..1 | MBS Service Area or a list of gNBs and UPFs. |  |
| mBSStartTime | DateTime | OC | 0..1 | the UTC time which represents the start of an MBS session at the MB-SMF. |  |
| mBSStopTime | DateTime | OC | 0..1 | the UTC time which represents the stop of an MBS session at the MB-SMF. |  |
| servingNetworkFunctionID | ServingNetworkFunctionID | OC | 0..1 | the serving Network Function identifier. |  |

###### 6.1.6.2.14.7 Type ServiceArea

Table 6.1.6.2.14.7-1: Definition of type ServiceArea

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| mBSServiceArea | MbsServiceArea | OC | 0..1 | MBS Service Area. |  |
| uPFIDs | array(NfInstanceId) | OC | 0..N | list of UPF identifiers. |  |
| ranNodeIDs | array(GlobalRanNodeId) | OC | 0..N | list of RAN Node IDs. |  |

###### 6.1.6.2.14.8 Type MBSContainerInformation

Table 6.1.6.2.14.8-1: Definition of type MBSContainerInformation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 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". |  |
| establishedConnectionInfo | EstablishedConnectionInfo | OC | 0..1 | a list of NG-RAN nodes establishing connection, or a list of UPFs establishing connection with MB-UPF. |  |

###### 6.1.6.2.14.9 Type EstablishedConnectionInfo

Table 6.1.6.2.14.9-1: Definition of type EstablishedConnectionInfo

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Attribute name | Data type | P | Cardinality | Description | Applicability |
| uPFIDs | array(NfInstanceId) | OC | 0..N | list of UPF identifiers. |  |
| ranNodeIDs | array(GlobalRanNodeId) | OC | 0..N | list of RAN Node IDs. |  |

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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 |
| SMF Trigger | | |
| 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.  For IMS this could be indicated by a SIP MESSAGE with a change of PLMN ID during an ongoing call. |  |
| USER\_LOCATION\_CHANGE | In request message, this value is used to indicate that User location has been changed. The change in location information that triggered reporting is included.  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,thisvalue 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 | ETSUN |
| REMOVAL\_OF\_ISMF | A used I-SMF is removed | ETSUN |
| CHANGE\_OF\_ISMF | A used I-SMF is removed, and a new I-SMF is inserted | ETSUN |
| START\_OF\_SERVICE\_DATA\_FLOW | A Service Data Flow has started |  |
| HANDOVER\_CANCEL | The handover is cancelled. |  |
| 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 |
| CGI\_SAI\_CHANGE | In request message, this value is used to indicate that CGI-SAI 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 | TEI17\_NIESGU |
| RAI\_CHANGE | In request message, this value is used to indicate that RAI 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 | TEI17\_NIESGU |
| VSMF\_CHANGE | In initial request message, this value is used to indicate a new V-SMF is inserted during the mobility procedure.  In terminate request message, this value is used to indicate a used V-SMF is removed during mobility procedure. |  |
| S NSSAI\_REPLACEMENT | S NSSAI replaced by Alternative S NSSAI | NSREP |
| JOIN\_MULTICAST | UE joins a new multicast MBS session. | 5MBS\_CH |
| MBS\_DELIVERY\_METHOD\_CHANGE | MBS traffic delivery method has been changed. | 5MBS\_CH |
| LEAVE\_MULTICAST | UE leaves an existing multicast MBS session. | 5MBS\_CH |
| **IMS Trigger** | | |
| SIP\_INVITE | SIP invite | IMS |
| SIP\_RE-INVITE\_OR\_UPDATE | SIP re-invite or update (e.g. change in media components terminating identity change) | IMS |
| SIP\_2XX\_ACKNOWLEDGING | SIP 2xx acknowledging a sip invite re-invite or update (e.g. change in media components) | IMS |
| SIP\_1XX\_PROVISIONAL\_RESPONSE | SIP 1xx provisional response mid-dialog requests mid-dialog responses and SIP info embedding rtti xml body | IMS |
| SIP\_4XX\_5XX\_OR\_6XX\_RESPONSE | SIP 4xx 5xx or 6xx response indicating an unsuccessful sip re-invite or update | IMS |
| OTHER\_SIP\_MESSAGE | Other SIP message during a sip session that allows the sip session to continue | IMS |
| SIP\_BYE\_MESSAGE | SIP bye message is received by IMS node | IMS |
| SIP\_2XX\_ACKNOWLEDGING\_A\_SIP\_BYE | SIP 2xx acknowledging a SIP bye message is received by IMS node | IMS |
| ABORTING\_A\_SIP\_SESSION\_SETUP | aborting a SIP session set-up procedure using an internal trigger or a SIP cancel message is received by IMS node | IMS |
| SIP\_3XX\_FINAL\_OR\_REDIRECTION\_RESPONSE | SIP 3xx final or redirection response | IMS |
| SIP\_4XX\_5XX\_OR\_6XX\_FINAL\_RESPONSE | SIP 4xx 5xx or 6xx final response indicating an unsuccessful procedure | IMS |
| NSAC\_THRESHOLD\_INITIAL | The NSAC units threshold is reached for initial | NSACF |
| NSAC\_THRESHOLD\_UPWARDS\_REACHED | The NSAC units threshold going upwards is reached | NSACF |
| NSAC\_THRESHOLD\_UPWARDS\_CROSSED | TheNSAC units threshold crossed when going upwards | NSACF |
| NSAC\_THRESHOLD\_DOWNWARDS\_CROSSED | The NSAC units threshold crossed when going downwards | NSACF |
| NSAC\_QUOTA\_THRESHOLD | The NSAC units quota threshold is reached | NSACF |
| NSAC\_QUOTA\_EXHAUSTED | The NSAC units quota exhausted | NSACF |
| NSAC\_VALIDITY\_TIME | Expiry of NSAC units quota validity time | NSACF |
| NSAC\_QHT | Expiry of NSAC units quota holding time | NSACF |
| NSAC\_THRESHOLD\_TERMINATION | The NSAC units threshold is reached for termination | NSACF |
| NS\_TERMINATION | Network slice termination | NSACF |
| **MB-SMF Trigger** | | |
| ADDITION\_OF\_NG-RAN | A new NG-RAN node has established connection with MB-UPF in the MBS session. | 5MBS\_CH |
| REMOVAL\_OF\_NG-RAN | A used NG-RAN node has released connection with MB-UPF in the MBS session. | 5MBS\_CH |
| ADDITION\_OF\_UPF | A new UPF has established connection with MB-UPF in the MBS session. | 5MBS\_CH |
| REMOVAL\_OF\_UPF | A used UPF has released connection with MB-UPF in the MBS session. | 5MBS\_CH |
| TARIFF\_TIME\_CHANGE | Tariff time change has happened. | 5MBS\_CH |
| QUOTA\_THRESHOLD | Quota threshold has been reached. | 5MBS\_CH |
| QUOTA\_EXHAUSTED | Quota has been exhausted. | 5MBS\_CH |
| VOLUME\_LIMIT | Volume limit has been reached. | 5MBS\_CH |
| TIME\_LIMIT | Time limit has been reached. | 5MBS\_CH |
| MAX\_NUMBER\_OF\_CHANGES\_IN\_CHARGING\_CONDITIONS | Max number of change has been reached. | 5MBS\_CH |

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| **Next change** |

### 6.1.8 Feature negotiation

The optional features in table 6.1.8-1 are defined for the Nchf\_ConvergedCharging API. They shall be negotiated using the extensibility mechanism defined in subclause 6.6 of 3GPP TS 29.500 [299].

Table 6.1.8-1: Supported Features

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Feature number | | Feature Name | | Description | |
| 1 | | CHFCQM | | CHF-controlled quota management i.e. support for temporary offline. | |
| 2 | | AF\_Charging\_Identifier | | Indicates the support of long character strings as charging identifiers. | |
| 3 | | 5GIEPC\_CH | | 5GS interworking with EPC. | |
| 4 | | ATSSS | | This feature indicates support of Access Traffic Steering, Switching, Splitting (ATSSS). | |
| 5 | | ETSUN | | This feature indicates support of Enhancing Topology of SMF and UPF in 5G Networks (ETSUN). | |
| 6 | | EnhancedDiagnostics | | Support the enhanced diagnostics. | |
| 7 | | AMF\_subs\_PRA | | PRA(s) subscription by CHF in AMF. | |
| 8 | | FilterRuleList | | Support of multiple filter rules in the final unit indication. | |
| 9 | | TEI17\_NIESGU | | This feature indicates support of GERAN/UTRAN access. | |
| 10 | | IMS | | This feature indicates support of IMS. | |
| 11 | | QoSMonitoring | | This feature indicates support of QoS Monitoring. | |
| 12 | | Announcement | | This feature indicates support of announcements. | |
| 13 | | 5GLAN | | This feature indicates support of 5G LAN-type services. | |
| 14 | | URLLC | | This feature indicates support of URLLC. | |
| 15 | | NotifyInfoResponse | | This feature indicates support of response with information for a notification. | |
| 16 | | ES4xx | | Extended Support of HTTP 400, 403, 404 allowing use of either ChargingDataResponse or ProblemDetails in the response. | |
| 17 | | ES3xx | | Extended Support of HTTP 307 and 308 redirections, an NF that does not support this feature does only support HTTP redirection as specified for 3GPP Release 15 and 16. | |
| 18 | | EdgeComputing | | This feature indicates support of edge computing domain charging. | |
| 19 | | 5GSCIoT | | This feature indicates support of 5GS control plane CIoT optimization. | |
| 20 | | SMF\_Charging\_Id | | Indicates the support of strings as SMF charging identifiers. | |
| 21 | | SNPN | | This feature indicates support of Stand-alone Non-Public Network. | |
| 22 | | IDC\_CH | | This feature indicates support of IMS Data Channel charging. | |
| 23 | | 5MBS\_CH | | This feature indicates 5G multicast-broadcast services charging. | |
| 24 | | SatelliteAccess | | This feature indicates support of NR satellite access. | |
| 25 | | NSREP | | This feature indicates support of Network slice replacement charging. | |
| 26 | | TSN | | This feature indicates support of time sensitive networking. | |
| 27 | | 5GSATB | | This feature indicates support of satellite backhaul. | |
| 28 | | NSAC\_CH | | This feature indicates support of Network slice admission control charging | |
| 29 | | NSSAA | | This feature indicates support of Network slice-specific authentication and authorization charging | |

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| **Next change** |

## 7.12 Bindings for 5G MBS Session charging

Table 7.12-1: Bindings of CDR field, Information Element and Resource Attribute for 5G MBS Session charging

| Information Element | CDR Field | Resource Attribute |
| --- | --- | --- |
|  |  | **ChargingDataRequest** |
| Multiple Unit Usage | List of Multiple Unit Usage | /multipleUnitUsage |
| MB-UPF ID | MB-UPF ID | /multipleUnitUsage/mBUPFID |
| Used Unit Container | Used Unit Container | /multipleUnitUsage/usedUnitContainer |
| MBS Container Information | MBS Container Information | /multipleUnitUsage/usedUnitContainer/mBSContainerInformation |
| Time of First Usage | Time of First Usage | /multipleUnitUsage/usedUnitContainer/mBSContainerInformation/timeofFirstUsage |
| Time of Last Usage | Time of Last Usage | /multipleUnitUsage/usedUnitContainer/mBSContainerInformation/timeofLastUsage |
| QoS Information | QoS Information | /multipleUnitUsage/usedUnitContainer/mBSContainerInformation/qoSInformation |
| Established Connection Info | Established Connection Info | /multipleUnitUsage/usedUnitContainer/mBSContainerInformation/establishedConnectionInfo |
| MBS Session Charging Information | MBS Session Charging Information | /mBSSessionChargingInformation |
| MBS Session ID | MBS Session ID | /mBSSessionChargingInformation /mBSSessionID |
| MBS Service Type | MBS Service Type | /mBSSessionChargingInformation /mBSServiceType |
| Service Area | Service Area | /mBSSessionChargingInformation /serviceArea |
| MBS Start Time | MBS Start Time | /mBSSessionChargingInformation /mBSStartTime |
| MBS End Time | MBS End Time | /mBSSessionChargingInformation /mBSEndTime |
| Serving Network Function ID | Serving Network Function ID | /mBSSessionChargingInformation /servingNetworkFunctionID |
|  |  | **ChargingDataResponse** |
| Multiple Unit information | - | /multipleUnitInformation |
| MB-UPF ID | - | /multipleUnitInformation/mBUPFID |

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| **Next change** |

## A.2 Nchf\_ConvergedCharging API

openapi: 3.0.0

info:

title: Nchf\_ConvergedCharging

version: 3.2.0-alpha.5

description: |

ConvergedCharging Service © 2023, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).

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externalDocs:

description: >

3GPP TS 32.291 V18.5.0: 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:

oneOf:

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

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

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'401':

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

'403':

description: Forbidden

content:

application/problem+json:

schema:

oneOf:

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

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

'404':

description: Not Found

content:

application/problem+json:

schema:

oneOf:

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

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

'405':

$ref: 'TS29571\_CommonData.yaml#/components/responses/405'

'408':

$ref: 'TS29571\_CommonData.yaml#/components/responses/408'

'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:

'200':

description: OK.

content:

application/ json:

schema:

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

'204':

description: 'No Content, Notification was succesfull'

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

description: Bad request

content:

application/problem+json:

schema:

oneOf:

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

- $ref: '#/components/schemas/ChargingNotifyResponse'

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'

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'400':

description: Bad request

content:

application/problem+json:

schema:

oneOf:

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

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

'401':

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

'403':

description: Forbidden

content:

application/problem+json:

schema:

oneOf:

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

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

'404':

description: Not Found

content:

application/problem+json:

schema:

oneOf:

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

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

'405':

$ref: 'TS29571\_CommonData.yaml#/components/responses/405'

'408':

$ref: 'TS29571\_CommonData.yaml#/components/responses/408'

'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.

'307':

$ref: 'TS29571\_CommonData.yaml#/components/responses/307'

'308':

$ref: 'TS29571\_CommonData.yaml#/components/responses/308'

'401':

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

'404':

description: Not Found

content:

application/problem+json:

schema:

oneOf:

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

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

'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

easid:

type: string

ednid:

type: string

eASProviderIdentifier:

type: string

aMFId:

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

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'

mMTelChargingInformation:

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

iMSChargingInformation:

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

edgeInfrastructureUsageChargingInformation':

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

eASDeploymentChargingInformation:

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

directEdgeEnablingServiceChargingInformation:

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

exposedEdgeEnablingServiceChargingInformation:

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

proSeChargingInformation:

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

mMSChargingInformation:

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

mBSSessionChargingInformation:

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

tSNChargingInformation:

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

interCHFInformation:

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

nSACFChargingInformation:

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

nSSAAChargingInformation:

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

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'

locationReportingChargingInformation:

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

mBSSessionChargingInformation:

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

interCHFInformation:

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

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'

allocateUnit:

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

usedUnitContainer:

type: array

items:

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

minItems: 0

allocatedUnit:

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

uPFID:

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

multihomedPDUAddress:

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

mBUPFID:

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

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:

- triggerCategory

MultipleUnitInformation:

type: object

properties:

resultCode:

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

ratingGroup:

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

grantedUnit:

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

allocatedUnit:

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

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'

announcementInformation:

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

mBUPFID:

$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'

pC5ContainerInformation:

$ref: '#/components/schemas/PC5ContainerInformation'

mBSContainerInformation:

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

required:

- localSequenceNumber

AllocateUnit:

type: object

properties:

allocateUnitIndicator:

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

nSACContainerInformation:

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

AllocatedUnit:

type: object

properties:

quotaManagementIndicator:

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

triggers:

type: array

items:

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

minItems: 0

triggerTimestamp:

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

localSequenceNumber:

type: integer

nSACContainerInformation:

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

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'

restrictionFilterRuleList:

type: array

items:

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

minItems: 1

filterId:

type: string

filterIdList:

type: array

items:

type: string

minItems: 1

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'

sMFchargingId:

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

homeProvidedChargingId:

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

sMFHomeProvidedChargingId:

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

userInformation:

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

userLocationinfo:

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

iMSSessionInformation:

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

mAPDUNon3GPPUserLocationInfo:

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

non3GPPUserLocationTime:

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

mAPDUNon3GPPUserLocationTime:

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

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'

pDUSessionPairID:

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

cpCIoTOptimisationIndicator:

type: boolean

5GSControlPlaneOnlyIndicator:

type: boolean

smallDataRateControlIndicator:

type: boolean

5GLANTypeService:

$ref: '#/components/schemas/5GLANTypeService'

sNPNInformation:

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

5GMulticastService:

$ref: '#/components/schemas/5GMulticastService'

5GSBridgeInformation:

$ref: '#/components/schemas/5GSBridgeInformation'

satelliteAccessIndicator:

type: boolean

satelliteBackhaulInformation:

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

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'

trafficForwardingWay:

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

qosMonitoringReport:

type: array

items:

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

minItems: 0

mBSSessionID:

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

mBSDeliveryMethod:

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

NSPAContainerInformation:

type: object

properties:

uplinkLatency:

type: integer

downlinkLatency:

type: integer

uplinkThroughput:

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

downlinkThroughput:

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

maximumPacketLossRateUL:

type: integer

maximumPacketLossRateDL:

type: integer

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'

hPlmnSNSSAI:

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

alternativeSNSSAI:

$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

addIpv6AddrPrefixes:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

addIpv6AddrPrefixList:

type: array

items:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Ipv6Prefix'

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: # Included for backwards compatibility and

# can be included based on operators requirement

$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

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'

5GLANTypeService:

type: object

properties:

internalGroupIdentifier:

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

5GSBridgeInformation:

type: object

properties:

bridgeId:

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

nWTTPortNumber:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint16'

dSTTPortNumber:

$ref: 'TS29571\_CommonData.yaml#/components/schemas/Uint16'

required:

- bridgeId

NEFChargingInformation:

type: object

properties:

externalIndividualIdentifier:

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

externalIndividualIdList:

type: array

items:

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

minItems: 1

internalIndividualIdentifier:

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

internalIndividualIdList:

type: array

items:

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

minItems: 1

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'

aPIOperation:

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

aPIContent:

type: string

required:

- aPIName

SNPNInformation:

type: object

properties:

sNPNID:

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

accessType:

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

n3IwfFqdn:

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

required:

- sNPNID

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

alternativeNSSAIMap:

type: array

items:

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

minItems: 0

amfUeNgapId:

type: integer

ranUeNgapId:

type: integer

ranNodeId:

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

sNPNID:

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

cAGIDList:

type: array

items:

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

minItems: 0

satelliteAccessIndicator:

type: boolean

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

AlternativeNSSAIMap:

type: object

properties:

snssai:

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

alternativeSnssai:

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

required:

- snssai

- alternativeSnssai

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

nSSAIMapList:

type: array

items:

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

minItems: 0

rrcEstCause:

type: string

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

satelliteAccessIndicator:

type: boolean

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

satelliteAccessIndicator:

type: boolean

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'

managementOperationalState:

$ref: 'TS28623\_ComDefs.yaml#/components/schemas/OperationalState'

managementAdministrativeState:

$ref: 'TS28623\_ComDefs.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

sST:

$ref: 'TS28541\_NrNrm.yaml#/components/schemas/Sst'

latency:

type: integer

availability:

type: number

resourceSharingLevel:

$ref: 'TS28541\_SliceNrm.yaml#/components/schemas/SharingLevel'

jitter:

type: integer

reliability:

type: string

maxNumberofUEs:

type: integer

coverageArea:

type: string

uEMobilityLevel:

$ref: 'TS28541\_SliceNrm.yaml#/components/schemas/MobilityLevel'

delayToleranceIndicator:

$ref: 'TS28541\_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

v2XCommunicationModeIndicator:

$ref: 'TS28541\_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'

QosMonitoringReport:

description: Contains reporting information on QoS monitoring.

type: object

properties:

ulDelays:

type: array

items:

type: integer

minItems: 0

dlDelays:

type: array

items:

type: integer

minItems: 0

rtDelays:

type: array

items:

type: integer

minItems: 0

AnnouncementInformation:

type: object

properties:

announcementIdentifier:

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

announcementReference:

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

variableParts:

type: array

items:

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

minItems: 0

timeToPlay:

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

quotaConsumptionIndicator:

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

announcementPriority:

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

playToParty:

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

announcementPrivacyIndicator:

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

Language:

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

VariablePart:

type: object

properties:

variablePartType:

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

variablePartValue:

type: array

items:

type: string

minItems: 1

variablePartOrder:

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

required:

- variablePartType

- variablePartValue

Language:

type: string

MMTelChargingInformation:

type: object

properties:

supplementaryServices:

type: array

items:

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

minItems: 1

SupplementaryService:

type: object

properties:

supplementaryServiceType:

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

supplementaryServiceMode:

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

numberOfDiversions:

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

associatedPartyAddress:

type: string

conferenceId:

type: string

participantActionType:

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

changeTime:

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

numberOfParticipants:

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

cUGInformation:

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

IMSChargingInformation:

type: object

properties:

eventType:

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

iMSNodeFunctionality:

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

roleOfNode:

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

userInformation:

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

userLocationInfo:

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

ueTimeZone:

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

3gppPSDataOffStatus:

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

isupCause:

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

controlPlaneAddress:

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

vlrNumber:

$ref: '#/components/schemas/E164'

mscAddress:

$ref: '#/components/schemas/E164'

userSessionID:

type: string

outgoingSessionID:

type: string

sessionPriority:

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

callingPartyAddresses:

type: array

items:

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

minItems: 1

calledPartyAddress:

type: string

numberPortabilityRoutinginformation:

type: string

carrierSelectRoutingInformation:

type: string

alternateChargedPartyAddress:

type: string

requestedPartyAddress:

type: array

items:

type: string

minItems: 1

calledAssertedIdentities:

type: array

items:

type: string

minItems: 1

calledIdentityChanges:

type: array

items:

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

minItems: 1

associatedURI:

type: array

items:

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

minItems: 1

timeStamps:

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

applicationServerInformation:

type: array

items:

type: string

minItems: 1

interOperatorIdentifier:

type: array

items:

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

minItems: 1

imsChargingIdentifier:

type: string

relatedICID:

type: string

relatedICIDGenerationNode:

type: string

transitIOIList:

type: array

items:

type: string

minItems: 1

earlyMediaDescription:

type: array

items:

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

minItems: 1

sdpSessionDescription:

type: array

items:

type: string

minItems: 1

sdpMediaComponent:

type: array

items:

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

minItems: 1

servedPartyIPAddress:

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

serverCapabilities:

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

trunkGroupID:

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

bearerService:

type: string

imsServiceId:

type: string

messageBodies:

type: array

items:

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

minItems: 1

accessNetworkInformation:

type: array

items:

type: string

minItems: 1

additionalAccessNetworkInformation:

type: string

cellularNetworkInformation:

type: string

accessTransferInformation:

type: array

items:

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

minItems: 1

accessNetworkInfoChange:

type: array

items:

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

minItems: 1

imsCommunicationServiceID:

type: string

imsApplicationReferenceID:

type: string

causeCode:

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

reasonHeader:

type: array

items:

type: string

minItems: 1

initialIMSChargingIdentifier:

type: string

nniInformation:

type: array

items:

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

minItems: 1

fromAddress:

type: string

imsEmergencyIndication:

type: boolean

imsVisitedNetworkIdentifier:

type: string

sipRouteHeaderReceived:

type: string

sipRouteHeaderTransmitted:

type: string

tadIdentifier:

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

feIdentifierList:

type: string

EdgeInfrastructureUsageChargingInformation:

type: object

properties:

meanVirtualCPUUsage:

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

meanVirtualMemoryUsage:

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

meanVirtualDiskUsage:

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

measuredInBytes:

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

measuredOutBytes:

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

durationStartTime:

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

durationEndTime:

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

EASDeploymentChargingInformation:

type: object

properties:

eEASDeploymentRequirements:

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

lCMEventType:

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

lCMStartTime:

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

lCMEndTime:

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

satelliteBackhaulInformation:

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

MMSChargingInformation:

type: object

properties:

mmOriginatorInfo:

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

mmRecipientInfoList:

type: array

items:

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

minItems: 0

userLocationinfo:

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

uetimeZone:

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

rATType:

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

correlationInformation:

type: string

submissionTime:

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

mmContentType:

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

mmPriority:

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

messageID:

type: string

messageType:

type: string

messageSize:

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

messageClass:

type: string

deliveryReportRequested:

type: boolean

readReplyReportRequested:

type: boolean

applicID:

type: string

replyApplicID:

type: string

auxApplicInfo:

type: string

contentClass:

type: string

dRMContent:

type: boolean

adaptations:

type: boolean

vasID:

type: string

vaspID:

type: string

MMOriginatorInfo:

type: object

properties:

originatorSUPI:

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

originatorGPSI:

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

originatorOtherAddress:

type: array

items:

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

minItems: 0

MMRecipientInfo:

type: object

properties:

recipientSUPI:

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

recipientGPSI:

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

recipientOtherAddress:

type: array

items:

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

TSNChargingInformation:

type: object

properties:

dNN:

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

sNSSAI:

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

internalGroupIdentifier:

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

externalIndividualIdList:

type: array

items:

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

minItems: 0

5GSBridgeInformation:

$ref: '#/components/schemas/5GSBridgeInformation'

tSNQoSInformation:

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

tSCAssistanceInformation:

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

timeSynchronizationInformation:

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

TSNQoSInformation:

type: object

properties:

priority:

type: integer

bridgeDelay:

type: array

items:

type: integer

minItems: 0

TSCAssistanceInformation:

type: object

properties:

flowDirection:

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

periodicity:

type: integer

TimeSynchronizationInformation:

type: object

properties:

distributionMethod:

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

tSNtimeDomainNumber:

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

temporalValidityInformation:

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

spatialValidityInformation:

type: array

items:

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

minItems: 0

timeSynchronizationErrorBudget:

type: integer

synchronizationState:

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

clockQuality:

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

parentTimeSource:

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

PC5ContainerInformation:

type: object

properties:

coverageInfoList:

type: array

items:

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

radioParameterSetInfoList:

type: array

items:

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

transmitterInfoList:

type: array

items:

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

minItems: 0

timeOfFirst Transmission:

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

timeOfFirst Reception:

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

CoverageInfo:

type: object

properties:

coverageStatus:

type: boolean

changeTime:

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

locationInfo:

type: array

items:

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

minItems: 0

RadioParameterSetInfo:

type: object

properties:

radioParameterSetValues:

type: array

items:

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

minItems: 0

changeTimestamp:

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

TransmitterInfo:

type: object

properties:

proseSourceIPAddress:

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

proseSourceL2Id:

type: string

ProseChargingInformation:

type: object

properties:

announcingPlmnID:

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

announcingUeHplmnIdentifier:

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

announcingUeVplmnIdentifier:

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

monitoringUeHplmnIdentifier:

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

monitoringUeVplmnIdentifier:

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

discovererUeHplmnIdentifier:

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

discovererUeVplmnIdentifier:

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

discovereeUeHplmnIdentifier:

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

discovereeUeVplmnIdentifier:

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

monitoredPlmnIdentifier:

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

proseApplicationID:

type: string

ApplicationId:

type: string

applicationSpecificDataList:

type: array

items:

type: string

minItems: 0

proseFunctionality:

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

proseEventType:

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

directDiscoveryModel:

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

validityPeriod:

type: integer

roleOfUE:

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

proseRequestTimestamp:

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

pC3ProtocolCause:

type: integer

monitoringUEIdentifier:

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

requestedPLMNIdentifier:

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

timeWindow:

type: integer

rangeClass:

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

proximityAlertIndication:

type: boolean

proximityAlertTimestamp:

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

proximityCancellationTimestamp:

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

relayIPAddress:

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

proseUEToNetworkRelayUEID :

type: string

proseDestinationLayer2ID:

type: string

pFIContainerInformation:

type: array

items:

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

minItems: 0

transmissionDataContainer:

type: array

items:

$ref: '#/components/schemas/PC5DataContainer'

minItems: 0

receptionDataContainer:

type: array

items:

$ref: '#/components/schemas/PC5DataContainer'

minItems: 0

required:

- aPIName

InterCHFInformation:

type: object

properties:

remoteCHFResource:

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

originalNFConsumerId:

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

NSACFChargingInformation:

type: object

properties:

nSACChargingIndicator:

type: boolean

NSACContainerInformation:

type: object

properties:

numberOfUEs:

type: integer

numberOfPDUs:

type: integer

NSSAAChargingInformation:

type: object

properties:

nSSAAMessageType:

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

userIdentification:

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

aAAPAddress:

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

aAASAddress:

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

eAPIDResponse:

type: string

eAPauthstatus:

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

aMFId:

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

required:

- nSSAAMessageType

- userIdentification

PFIContainerInformation:

type: object

properties:

pFI:

type: string

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

PC5DataContainer:

type: object

properties:

localSequenceNumber:

type: string

changeTime:

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

coverageStatus:

type: boolean

userLocationInformation:

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

dataVolume:

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

changeCondition:

type: string

radioResourcesId:

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

radioFrequency:

type: string

pC5RadioTechnology:

type: string

OctetString:

type: string

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

E164:

type: string

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

IMSAddress:

type: object

properties:

ipv4Addr:

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

ipv6Addr:

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

e164:

$ref: '#/components/schemas/E164'

anyOf:

- required: [ ipv4Addr ]

- required: [ ipv6Addr ]

- required: [ e164 ]

ServingNodeAddress:

type: object

properties:

ipv4Addr:

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

ipv6Addr:

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

anyOf:

- required: [ ipv4Addr ]

- required: [ ipv6Addr ]

SIPEventType:

type: object

properties:

sIPMethod:

type: string

eventHeader:

type: string

expiresHeader:

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

ISUPCause:

type: object

properties:

iSUPCauseLocation:

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

iSUPCauseValue:

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

iSUPCauseDiagnostics:

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

enhancedDiagnostics:

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

CalledIdentityChange:

type: object

properties:

calledIdentity:

type: string

changeTime:

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

InterOperatorIdentifier:

type: object

properties:

originatingIOI:

type: string

terminatingIOI:

type: string

EarlyMediaDescription:

type: object

properties:

sDPTimeStamps:

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

sDPMediaComponent:

type: array

items:

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

minItems: 0

sDPSessionDescription:

type: array

items:

type: string

minItems: 0

SDPTimeStamps:

type: object

properties:

sDPOfferTimestamp:

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

sDPAnswerTimestamp:

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

SDPMediaComponent:

type: object

properties:

sDPMediaName:

type: string

SDPMediaDescription:

type: array

items:

type: string

minItems: 0

localGWInsertedIndication:

type: boolean

ipRealmDefaultIndication:

type: boolean

transcoderInsertedIndication:

type: boolean

mediaInitiatorFlag:

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

mediaInitiatorParty:

type: string

threeGPPChargingId:

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

accessNetworkChargingIdentifierValue:

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

sDPType:

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

ServerCapabilities:

type: object

properties:

mandatoryCapability:

type: array

items:

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

minItems: 0

optionalCapability :

type: array

items:

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

minItems: 0

serverName:

type: array

items:

type: string

minItems: 0

TrunkGroupID:

type: object

properties:

incomingTrunkGroupID:

type: string

outgoingTrunkGroupID:

type: string

MessageBody:

type: object

properties:

contentType:

type: string

contentLength:

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

contentDisposition:

type: string

originator:

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

required:

- contentType

- contentLength

AccessTransferInformation:

type: object

properties:

accessTransferType:

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

accessNetworkInformation:

type: array

items:

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

minItems: 0

cellularNetworkInformation:

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

interUETransfer:

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

userEquipmentInfo:

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

instanceId:

type: string

relatedIMSChargingIdentifier:

type: string

relatedIMSChargingIdentifierNode:

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

changeTime:

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

AccessNetworkInfoChange:

type: object

properties:

accessNetworkInformation:

type: array

items:

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

minItems: 0

cellularNetworkInformation:

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

changeTime:

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

NNIInformation:

type: object

properties:

sessionDirection:

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

nNIType:

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

relationshipMode:

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

neighbourNodeAddress:

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

EASRequirements:

type: object

properties:

requiredEASservingLocation:

$ref: 'TS28538\_EdgeNrm.yaml#/components/schemas/ServingLocation'

softwareImageInfo:

$ref: 'TS28538\_EdgeNrm.yaml#/components/schemas/SoftwareImageInfo'

affinityAntiAffinity:

$ref: 'TS28538\_EdgeNrm.yaml#/components/schemas/AffinityAntiAffinity'

serviceContinuity:

type: boolean

virtualResource:

$ref: 'TS28538\_EdgeNrm.yaml#/components/schemas/VirtualResource'

MMContentType:

type: object

properties:

typeNumber:

type: string

addtypeInfo:

type: string

contentSize:

type: integer

mmAddContentInfo:

type: array

items:

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

minItems: 0

MMAddContentInfo:

type: object

properties:

typeNumber:

type: string

addtypeInfo:

type: string

contentSize:

type: integer

APIOperation:

type: object

properties:

name:

type: string

description:

type: string

5GMulticastService:

type: object

properties:

mBSSessionIdList:

type: array

items:

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

minItems: 1

MBSSessionChargingInformation:

type: object

properties:

mBSSessionID:

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

mBSServiceType:

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

serviceArea:

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

mBSStartTime:

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

mBSEndTime:

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

servingNetworkFunctionID:

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

required:

- mBSSessionID

- mBSServiceType

ServiceArea:

type: object

properties:

mBSServiceArea:

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

uPFIDs:

type: array

items:

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

minItems: 0

ranNodeIDs:

type: array

items:

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

minItems: 0

MBSContainerInformation:

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'

establishedConnectionInfo:

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

EstablishedConnectionInfo:

type: object

properties:

uPFIDs:

type: array

items:

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

minItems: 0

ranNodeIDs:

type: array

items:

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

minItems: 0

SatelliteBackhaulInformation:

type: object

properties:

satelliteBackhaulCategory:

type: array

items:

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

minItems: 0

gEOSatelliteID:

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

NotificationType:

anyOf:

- type: string

enum:

- REAUTHORIZATION

- ABORT\_CHARGING

- type: string

NodeFunctionality:

anyOf:

- type: string

enum:

- AMF

- SMF

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

- SMSF

- PGW\_C\_SMF

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

- SGW

- I\_SMF

- ePDG

- CEF

- NEF

- MnS\_Producer

- SGSN

- V\_SMF

- 5G\_DDNMF

- IMS\_Node

- MMS\_Node

- EES

- PCF

- UDM

- UPF

- TSN\_AF

- TSCTSF

- MB\_SMF

- type: string

ChargingCharacteristicsSelectionMode:

anyOf:

- type: string

enum:

- HOME\_DEFAULT

- ROAMING\_DEFAULT

- VISITING\_DEFAULT

- type: string

TriggerType:

anyOf:

- type: string

enum:

# SMF TriggerType

- 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

- CGI\_SAI\_CHANGE

- RAI\_CHANGE

- JOIN\_MULTICAST

- MBS\_DELIVERY\_METHOD\_CHANGE

- LEAVE\_MULTICAST

- VSMF\_CHANGE

- SNSSAI\_REPLACEMENT

# IMS TriggerType

- SIP\_INVITE

- SIP\_RE-INVITE\_OR\_UPDATE

- SIP\_2XX\_ACKNOWLEDGING

- SIP\_1XX\_PROVISIONAL\_RESPONSE

- SIP\_4XX\_5XX\_OR\_6XX\_RESPONSE

- ANY\_OTHER\_SIP\_MESSAGE - SIP\_BYE\_MESSAGE

- SIP\_2XX\_ACKNOWLEDGING\_A\_SIP\_BYE

- ABORTING\_A\_SIP\_SESSION\_SET-UP

- SIP\_3XX\_FINAL\_OR\_REDIRECTION\_RESPONSE

- SIP\_4XX\_5XX\_OR\_6XX\_FINAL\_RESPONSE

# MB-SMF TriggerType

- ADDITION\_OF\_NG\_RAN

- REMOVAL\_OF\_NG\_RAN

- ADDITION\_OF\_UPF

- REMOVAL\_OF\_UPF

- TARIFF\_TIME\_CHANGE

- QUOTA\_THRESHOLD

- QUOTA\_EXHAUSTED

- VOLUME\_LIMIT

- TIME\_LIMIT

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

# NSAC TriggerType

- NSAC\_THRESHOLD\_INITIAL

- NSAC\_THRESHOLD\_UPWARDS\_REACHED

- NSAC\_THRESHOLD\_UPWARDS\_CROSSED

- NSAC\_THRESHOLD\_DOWNWARDS\_CROSSED

- NSAC\_QUOTA\_THRESHOLD

- NSAC\_QUOTA\_EXHAUSTED

- NSAC\_VALIDITY\_TIME

- NSAC\_QHT

- NSAC\_THRESHOLD\_TERMINATION

- NS\_TERMINATION

FinalUnitAction:

anyOf:

- type: string

enum:

- TERMINATE

- REDIRECT

- RESTRICT\_ACCESS

- type: string

RedirectAddressType:

anyOf:

- type: string

enum:

- IPV4

- IPV6

- URL

- URI

- 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 #Included for backwards compatibility, shall not be used

- 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 #Included for backwards compatibility, shall not be used

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

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

- CREATE\_MOI

- MODIFY\_MOI\_ATTR

- DELETE\_MOI

- NOTIFY\_MOI\_CREATION

- NOTIFY\_MOI\_ATTR\_CHANGE

- NOTIFY\_MOI\_DELETION

- type: string

ManagementOperationStatus:

anyOf:

- type: string

enum:

- OPERATION\_SUCCEEDED

- OPERATION\_FAILED

- type: string

RedundantTransmissionType:

anyOf:

- type: string

enum:

- NON\_TRANSMISSION

- END\_TO\_END\_USER\_PLANE\_PATHS

- N3/N9

- TRANSPORT\_LAYER

- type: string

VariablePartType:

anyOf:

- type: string

enum:

- INTEGER

- NUMBER

- TIME

- DATE

- CURRENCY

- type: string

QuotaConsumptionIndicator:

anyOf:

- type: string

enum:

- QUOTA\_NOT\_USED

- QUOTA\_IS\_USED

- type: string

PlayToParty:

anyOf:

- type: string

enum:

- SERVED

- REMOTE

- type: string

AnnouncementPrivacyIndicator:

anyOf:

- type: string

enum:

- NOT\_PRIVATE

- PRIVATE

- type: string

SupplementaryServiceType:

anyOf:

- type: string

enum:

- OIP

- OIR

- TIP

- TIR

- HOLD

- CB

- CDIV

- CW

- MWI

- CONF

- FA

- CCBS

- CCNR

- MCID

- CAT

- CUG

- PNM

- CRS

- ECT

- type: string

SupplementaryServiceMode:

anyOf:

- type: string

enum:

- CFU

- CFB

- CFNR

- CFNL

- CD

- CFNRC

- ICB

- OCB

- ACR

- BLIND\_TRANFER

- CONSULTATIVE\_TRANFER

- type: string

ParticipantActionType:

anyOf:

- type: string

enum:

- CREATE

- JOIN

- INVITE\_INTO

- QUIT

- type: string

TrafficForwardingWay:

anyOf:

- type: string

enum:

- N6

- N19

- LOCAL\_SWITCH

- type: string

IMSNodeFunctionality:

anyOf:

- type: string

enum:

# The applicable IMS Nodes are MRFC, IMS-GWF (connected to S-CSCF using ISC) and SIP AS.

- S\_CSCF

- P\_CSCF

- I\_CSCF

- MRFC

- MGCF

- BGCF

- AS

- IBCF

- S-GW

- P-GW

- HSGW

- E-CSCF

- MME

- TRF

- TF

- ATCF

- PROXY

- EPDG

- TDF

- TWAG

- SCEF

- IWK\_SCEF

- IMS\_GWF

- type: string

RoleOfIMSNode:

anyOf:

- type: string

enum:

- ORIGINATING

- TERMINATING

- FORWARDING

- type: string

IMSSessionPriority:

anyOf:

- type: string

enum:

- PRIORITY\_0

- PRIORITY\_1

- PRIORITY\_2

- PRIORITY\_3

- PRIORITY\_4

- type: string

MediaInitiatorFlag:

anyOf:

- type: string

enum:

- CALLED\_PARTY

- CALLING\_PARTY

- UNKNOWN

- type: string

SDPType:

anyOf:

- type: string

enum:

- OFFER

- ANSWER

- type: string

OriginatorPartyType:

anyOf:

- type: string

enum:

- CALLING

- CALLED

- type: string

AccessTransferType:

anyOf:

- type: string

enum:

- PS\_TO\_CS

- CS\_TO\_PS

- PS\_TO\_PS

- CS\_TO\_CS

- type: string

UETransferType:

anyOf:

- type: string

enum:

- INTRA\_UE

- INTER\_UE

- type: string

NNISessionDirection:

anyOf:

- type: string

enum:

- INBOUND

- OUTBOUND

- type: string

NNIType:

anyOf:

- type: string

enum:

- NON\_ROAMING

- ROAMING\_NO\_LOOPBACK

- ROAMING\_LOOPBACK

- type: string

NNIRelationshipMode:

anyOf:

- type: string

enum:

- TRUSTED

- NON\_TRUSTED

- type: string

TADIdentifier:

anyOf:

- type: string

enum:

- CS

- PS

- type: string

ProseFunctionality:

anyOf:

- type: string

enum:

- DIRECT\_DISCOVERY

- DIRECT\_COMMUNICATION

- type: string

ProseEventType:

anyOf:

- type: string

enum:

- ANNOUNCING

- MONITORING

- MATCH\_REPORT

- type: string

DirectDiscoveryModel:

anyOf:

- type: string

enum:

- MODEL\_A

- MODEL\_B

- type: string

RoleOfUE:

anyOf:

- type: string

enum:

- ANNOUNCING\_UE

- MONITORING\_UE

- REQUESTOR\_UE

- REQUESTED\_UE

- type: string

RangeClass:

anyOf:

- type: string

enum:

- RESERVED

- 50\_METER

- 100\_METER

- 200\_METER

- 500\_METER

- 1000\_METER

- UNUSED

- type: string

RadioResourcesIndicator:

anyOf:

- type: string

enum:

- OPERATOR\_PROVIDED

- CONFIGURED

- type: string

MbsDeliveryMethod:

anyOf:

- type: string

enum:

- SHARED

- INDIVIDUAL

- type: string

TSCFlowDirection:

anyOf:

- type: string

enum:

- UPLINK

- DOWNLINK

- type: string

TimeDistributionMethod:

anyOf:

- type: string

enum:

- GPTP

- ASTI

- type: string

AllocateUnitIndicator:

anyOf:

- type: string

enum:

- CHF\_DETERMINED

- CTF\_DETERMINED

- type: string

NSSAAMessageType:

anyOf:

- type: string

enum:

- Authenticate

- Re-Authentication-Notification

- Revocation Notification

- type: string

|  |
| --- |
| **End of change** |