**3GPP TSG-SA5 Meeting #133e *S5-205173***

**e-meeting 12th - 21st October 2020**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **32.298** | **CR** | **0842** | **rev** | **1** | **Current version:** | **15.11.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
|  | | | | | | | | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Correcting charging id availability for all NF in CHF CDR | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI15 | | | | |  | ***Date:*** | | | 2020-10-02 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-15 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) Rel-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The retry mechanism relies on the charging identifiers, this is however not available for all network functions. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Adding Charging Identifier on the top level. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The retry and duplicate handling will only be possible for the SMF. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.1.5.0, 5.2.5.2 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 32.290 CR 0136  TS 32.291 CR 0284 | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | | Revision of 205173. | | | | | | | | |

|  |
| --- |
| **First change** |

#### 5.1.5.0 CHF record (CHF-CDR)

If enabled, CHF records shall be produced for chargeable events, with or without quota management. The generic fields in the record are specified in table 5.1.5.0.1. The NF specific parts will be concatenated to this e.g. the PDU Session Information, PDU Container Information and Roaming QBC Information are concatenated for the SMF.

Table 5.1.5.0.1: CHF record (CHF-CDR)

|  |  |  |
| --- | --- | --- |
| Field | Category | Description |
| Record Type | M | CHF record. |
| Recording Network Function ID | OM | This field holds the name of the recording entity, i.e. the CHF id. |
| Charging Session Identifier | OC | This field holds the Session Identifier described in TS 32.290 [57]. |
| Subscriber Identifier | M | This field holds the 5G Subscription Permanent Identifier (SUPI) of the served party, if available. |
| NF Consumer Information | M | This field holds the information of the NF consumer of the charging service. |
| NF Functionality | M | This field holds the type of functionality the NF provides. |
| NF Name | OC | This field holds the name of the NF used. |
| NF Address | OC | This field holds the IP Address of the NF used. |
| NF PLMN ID | OC | This field holds the PLMN identifier (MCC MNC) of the NF. |
| Charging Identifier | OM | Charging identifier for correlation between different records. Only applicable if not available in the service specific information. |
| Triggers | OC | This field holds the triggers that are common to all Multiple Unit Information. Can be the same as in Used Unit Container. |
| SMF Triggers | OC | This field holds the 5G data connectivity specific triggers described in TS 32.255 [15]. |
| List of Multiple Unit Information | OC | This field holds the parameters for the unit reporting. It may have multiple occurrences. |
| Rating Group | M | This filed holds the rating group. The parameter corresponds to the Charging Key as specified in TS 23.203 [203] |
| Used Unit Container | OC | This field holds the used units and information connected to the reported units. |
| Service Identifier | OC | This field holds the Service Identifier. |
| Quota management Indicator | Oc | This field holds an indicator on whether the reported used units are with or without quota management control. If the field is not present, it indicates the used unit is without quota management applied. |
| Local Sequence Number | OM | This field holds the container sequence number. |
| Time | OC | This field holds the amount of used time. |
| Uplink Volume | OC | This field holds the amount of used volume in uplink direction. |
| Downlink Volume | OC | This field holds the amount of used volume in downlink direction. |
| Total Volume | OC | This field holds the amount of used volume in both uplink and downlink directions. |
| Service Specific Units | Oc | This field holds the amount of used service specific units. |
| Event Time Stamp | OC | This field holds the timestamps of the event reported in the Service Specific Units, if the reported units are event based. |
| Rating Indicator | OC | This field indicates if the units have been rated or not. |
| Triggers | OC | This field holds the triggers that caused the Used Unit Container to be reported, independently on if they are PDU Session or RG level triggers. |
| SMF Triggers |  | This field holds the 5G data connectivity specific triggers described in TS 32.255 [15]. |
| Trigger Time Stamp | Oc | This field holds the timestamp of the trigger. |
| PDU Container Information | OC | This field holds the 5G data connectivity specific information described in TS 32.255 [15]. |
| UPF ID | OC | This field holds the UPF identifier used to identify the UPF when reporting the usage for the UPF. |
| Record Opening Time | OC | Time stamp when the PDU session is activated in the SMF or record opening time on subsequent partial records. |
| Duration | M | This field holds the duration of this record. |
| Record Sequence Number | C | Partial record sequence number, only present in case of partial records. |
| Cause for Record Closing | M | The reason for the release of the record. |
| Local Record Sequence Number | OM | Consecutive record number created by the CDF. The number is allocated sequentially including all CDR types. |
| Record Extensions | OC | A set of network operator/manufacturer specific extensions to the record. Conditioned upon the existence of an extension.  This field can be used to capture the specific information for charging. |
| Service Specification Information | OC | Identifies service specific document that applies to the request, e.g. the service specific document ('middle tier' TS) and 3GPP release the service specific document is based upon. |
| PDU Session Charging Information | OM | This field holds the 5G data connectivity specific information described in TS 32.255 [15] |
| Roaming QBC Information | OM | This field holds the roaming 5G data connectivity specific information described in TS 32.255 [15] |
| SMS Charging Information | OC | This field holds the SMS specific information described in TS 32.274 [34]. |

|  |
| --- |
| **First change** |

#### 5.2.5.2 CHF CDRs

This subclause contains the abstract syntax definitions that are specific to the CHF CDR types defined in this document.

.$CHFChargingDataTypes {itu-t (0) identified-organization (4) etsi (0) mobileDomain (0) charging (5) chfChargingDataTypes (15) asn1Module (0) version1 (0)}

DEFINITIONS IMPLICIT TAGS ::=

BEGIN

-- EXPORTS everything

IMPORTS

CallDuration,

CauseForRecClosing,

ChargingID,

DataVolumeOctets,

Diagnostics,

DynamicAddressFlag,

InvolvedParty,

IPAddress,

LocalSequenceNumber,

ManagementExtensions,

MessageClass,

MessageReference,

MSTimeZone,

NodeAddress,

PLMN-Id,

PriorityType,

RATType,

RecordType,

ServiceSpecificInfo,

Session-Id,

SubscriberEquipmentNumber,

SubscriptionID,

ThreeGPPPSDataOffStatus,

TimeStamp

FROM GenericChargingDataTypes {itu-t (0) identified-organization (4) etsi(0) mobileDomain (0) charging (5) genericChargingDataTypes (0) asn1Module (0) version2 (1)}

AddressString

FROM MAP-CommonDataTypes {itu-t identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-CommonDataTypes (18) version18 (18) }

ChargingCharacteristics,

ChargingRuleBaseName,

ChChSelectionMode,

EventBasedChargingInformation,

PresenceReportingAreaInfo,

RatingGroupId,

ServiceIdentifier

FROM GPRSChargingDataTypes {itu-t (0) identified-organization (4) etsi (0) mobileDomain (0) charging (5) gprsChargingDataTypes (2) asn1Module (0) version2 (1)}

OriginatorInfo,

RecipientInfo,

SMMessageType,

SMSResult,

SMSStatus

FROM SMSChargingDataTypes {itu-t (0) identified-organization (4) etsi(0) mobileDomain (0) charging (5) smsChargingDataTypes (10) asn1Module (0) version2 (1)}

;

--

-- CHF RECORDS

--

CHFRecord ::= CHOICE

--

-- Record values 200..201 are specific

--

{

chargingFunctionRecord [200] ChargingRecord

}

ChargingRecord ::= SET

{

recordType [0] RecordType,

recordingNetworkFunctionID [1] NetworkFunctionName,

subscriberIdentifier [2] SubscriptionID OPTIONAL,

nFunctionConsumerInformation [3] NetworkFunctionInformation,

triggers [4] SEQUENCE OF Trigger OPTIONAL,

listOfMultipleUnitUsage [5] SEQUENCE OF MultipleUnitUsage OPTIONAL,

recordOpeningTime [6] TimeStamp,

duration [7] CallDuration,

recordSequenceNumber [8] INTEGER OPTIONAL,

causeForRecClosing [9] CauseForRecClosing,

diagnostics [10] Diagnostics OPTIONAL,

localRecordSequenceNumber [11] LocalSequenceNumber OPTIONAL,

recordExtensions [12] ManagementExtensions OPTIONAL,

pDUSessionChargingInformation [13] PDUSessionChargingInformation OPTIONAL,

roamingQBCInformation [14] RoamingQBCInformation OPTIONAL,

sMSChargingInformation [15] SMSChargingInformation OPTIONAL,

chargingSessionIdentifier [16] ChargingSessionIdentifier OPTIONAL,

serviceSpecificationInformation [17] OCTET STRING OPTIONAL,

chargingID [27] ChargingID OPTIONAL

}

--

-- PDU Session Charging Information

--

PDUSessionChargingInformation ::= SET

{

pDUSessionChargingID [0] ChargingID,

userIdentifier [1] InvolvedParty OPTIONAL,

userEquipmentInfo [2] SubscriberEquipmentNumber OPTIONAL,

userLocationInformation [3] UserLocationInformation OPTIONAL,

userRoamerInOut [4] RoamerInOut OPTIONAL,

presenceReportingAreaInfo [5] PresenceReportingAreaInfo OPTIONAL,

pDUSessionId [6] PDUSessionId,

networkSliceInstanceID [7] NetworkSliceInstanceID OPTIONAL,

pDUType [8] PDUSessionType OPTIONAL,

sSCMode [9] SSCMode OPTIONAL,

sUPIPLMNIdentifier [10] PLMN-Id OPTIONAL,

servingNetworkFunctionID [11] SEQUENCE OF ServingNetworkFunctionID OPTIONAL,

rATType [12] RATType OPTIONAL,

dataNetworkNameIdentifier [13] DataNetworkNameIdentifier OPTIONAL,

pDUAddress [14] PDUAddress OPTIONAL,

authorizedQoSInformation [15] AuthorizedQoSInformation OPTIONAL,

uETimeZone [16] MSTimeZone OPTIONAL,

pDUSessionstartTime [17] TimeStamp OPTIONAL,

pDUSessionstopTime [18] TimeStamp OPTIONAL,

diagnostics [19] Diagnostics OPTIONAL,

chargingCharacteristics [20] ChargingCharacteristics,

-- if chargingCharacteristics is not available a CHF configured value shall be used.

chChSelectionMode [21] ChChSelectionMode OPTIONAL,

threeGPPPSDataOffStatus [22] ThreeGPPPSDataOffStatus OPTIONAL,

rANSecondaryRATUsageReport [23] SEQUENCE OF NGRANSecondaryRATUsageReport OPTIONAL,

subscribedQoSInformation [24] SubscribedQoSInformation OPTIONAL,

authorizedSessionAMBR [25] SessionAMBR OPTIONAL,

subscribedSessionAMBR [26] SessionAMBR OPTIONAL,

servingCNPLMNID [27] PLMN-Id OPTIONAL,

sUPIunauthenticatedFlag [28] NULL OPTIONAL,

dNNSelectionMode [29] DNNSelectionMode OPTIONAL

}

--

-- Roaming QBC Information

--

RoamingQBCInformation ::= SET

{

multipleQFIcontainer [0] SEQUENCE OF MultipleQFIContainer OPTIONAL,

uPFID [1] NetworkFunctionName OPTIONAL,

roamingChargingProfile [2] RoamingChargingProfile OPTIONAL

}

--

-- SMS Charging Information

--

SMSChargingInformation ::= SET

{

sMSNodeAddress [0] AddressString,

originatorInfo [1] OriginatorInfo OPTIONAL,

recipientInfos [2] SEQUENCE OF RecipientInfo OPTIONAL,

userEquipmentInfo [3] SubscriberEquipmentNumber OPTIONAL,

userLocationInformation [4] UserLocationInformation OPTIONAL,

uETimeZone [5] MSTimeZone OPTIONAL,

rATType [6] RATType OPTIONAL,

sMSCAddress [7] AddressString OPTIONAL,

eventtimestamp [8] TimeStamp,

-- 9 to 19 is for future use

sMDataCodingScheme [20] INTEGER OPTIONAL,

sMMessageType [21] SMMessageType OPTIONAL,

sMReplyPathRequested [22] SMReplyPathRequested OPTIONAL,

sMUserDataHeader [23] OCTET STRING OPTIONAL,

sMSStatus [24] SMSStatus OPTIONAL,

sMDischargeTime [25] TimeStamp OPTIONAL,

sMTotalNumber [26] INTEGER OPTIONAL,

sMServiceType [27] SMServiceType OPTIONAL,

sMSequenceNumber [28] INTEGER OPTIONAL,

sMSResult [29] SMSResult OPTIONAL,

submissionTime [30] TimeStamp OPTIONAL,

sMPriority [31] PriorityType OPTIONAL,

messageReference [32] MessageReference,

messageSize [33] INTEGER OPTIONAL,

messageClass [34] MessageClass OPTIONAL,

sMdeliveryReportRequested [35] SMdeliveryReportRequested OPTIONAL

}

--

-- PDU Container Information

--

PDUContainerInformation ::= SEQUENCE

{

chargingRuleBaseName [0] ChargingRuleBaseName OPTIONAL,

aFCorrelationInformation [1] OCTET STRING OPTIONAL,

timeOfFirstUsage [2] TimeStamp OPTIONAL,

timeOfLastUsage [3] TimeStamp OPTIONAL,

qoSInformation [4] FiveGQoSInformation OPTIONAL,

userLocationInformation [5] UserLocationInformation OPTIONAL,

presenceReportingAreaInfo [6] PresenceReportingAreaInfo OPTIONAL,

rATType [7] RATType OPTIONAL,

sponsorIdentity [8] OCTET STRING OPTIONAL,

applicationServiceProviderIdentity [9] OCTET STRING OPTIONAL,

servingNetworkFunctionID [10] SEQUENCE OF ServingNetworkFunctionID OPTIONAL,

uETimeZone [11] MSTimeZone OPTIONAL,

threeGPPPSDataOffStatus [12] ThreeGPPPSDataOffStatus OPTIONAL

}

--

-- QFI Container Information

--

MultipleQFIContainer ::= SEQUENCE

{

qosFlowId [0] QoSFlowId OPTIONAL,

triggers [1] SEQUENCE OF Trigger,

triggerTimeStamp [2] TimeStamp OPTIONAL,

dataTotalVolume [3] DataVolumeOctets OPTIONAL,

dataVolumeUplink [4] DataVolumeOctets OPTIONAL,

dataVolumeDownlink [5] DataVolumeOctets OPTIONAL,

localSequenceNumber [6] LocalSequenceNumber OPTIONAL,

timeOfFirstUsage [8] TimeStamp OPTIONAL,

timeOfLastUsage [9] TimeStamp OPTIONAL,

qoSInformation [10] FiveGQoSInformation OPTIONAL,

userLocationInformation [11] UserLocationInformation OPTIONAL,

uETimeZone [12] MSTimeZone OPTIONAL,

presenceReportingAreaInfo [13] PresenceReportingAreaInfo OPTIONAL,

rATType [14] RATType OPTIONAL,

reportTime [15] TimeStamp,

-- if reportTime is not available a CHF configured value shall be used.

servingNetworkFunctionID [16] SEQUENCE OF ServingNetworkFunctionID OPTIONAL,

threeGPPPSDataOffStatus [17] ThreeGPPPSDataOffStatus OPTIONAL

}

--

-- CHF CHARGING TYPES

--

--

-- A

--

AllocationRetentionPriority ::= SEQUENCE

{

priorityLevel [1] INTEGER,

preemptionCapability [2] PreemptionCapability,

preemptionVulnerability [3] PreemptionVulnerability

}

AMFID ::= OCTET STRING (SIZE(6))

-- See subclause 2.10.1 of 3GPP TS 23.003 [7] for encoding.

-- AMFID is defined as an OCTET STRING with 3 bytes length, and is presented in first 3 bytes of this form, the last 3 bytes shall be padded with “FFF”

AuthorizedQoSInformation ::= SEQUENCE

--

-- See TS 32.291 [58] for more information

--

{

fiveQi [1] INTEGER,

-- if fiveQi is not available a CHF configured value shall be used.

aRP [2] AllocationRetentionPriority,

-- if aRPs not available a CHF configured value shall be used.

priorityLevel [3] INTEGER OPTIONAL,

averWindow [4] INTEGER OPTIONAL,

maxDataBurstVol [5] INTEGER OPTIONAL

}

--

-- B

--

Bitrate ::= OCTET STRING

--

-- See 3GPP TS 29.571 [249] Bitrate data type.

--

--

-- C

--

ChargingSessionIdentifier ::= OCTET STRING

-- See 3GPP TS 32.290 [57] for details.

--

-- D

--

DataNetworkNameIdentifier ::= IA5String (SIZE(1..63))

--

-- Network Identifier part of DNN in dot representation.

-- For example, if the complete DNN is 'apn1a.apn1b.apn1c.mnc022.mcc111.gprs'

-- The Identifier is 'apn1a.apn1b.apn1c' and is presented in this form in the CDR.

--

DNNSelectionMode ::= ENUMERATED

--

-- See Information Elements TS 29.502 [250] for more information

--

{

uEorNetworkProvidedSubscriptionVerified (0),

uEProvidedSubscriptionNotVerified (1),

networkProvidedSubscriptionNotVerified (2)

}

--

-- F

--

FiveGQoSInformation ::= SEQUENCE

--

-- See TS 32.291 [58] for more information

--

{

fiveQi [1] INTEGER,

-- if fiveQi is not available a CHF configured value shall be used.

aRP [2] AllocationRetentionPriority,

-- if aRP is not available a CHF configured value shall be used.

qoSNotificationControl [3] BOOLEAN OPTIONAL,

reflectiveQos [4] BOOLEAN OPTIONAL,

maxbitrateUL [5] Bitrate OPTIONAL,

maxbitrateDL [6] Bitrate OPTIONAL,

guaranteedbitrateUL [7] Bitrate OPTIONAL,

guaranteedbitrateDL [8] Bitrate OPTIONAL,

priorityLevel [9] INTEGER OPTIONAL,

averWindow [10] INTEGER OPTIONAL,

maxDataBurstVol [11] INTEGER OPTIONAL,

maxPacketLossRateDL [12] INTEGER OPTIONAL,

maxPacketLossRateUL [13] INTEGER OPTIONAL

}

--

-- M

--

MultipleUnitUsage ::= SEQUENCE

{

ratingGroup [0] RatingGroupId,

usedUnitContainers [1] SEQUENCE OF UsedUnitContainer OPTIONAL,

uPFID [2] NetworkFunctionName OPTIONAL

}

--

-- N

--

NetworkFunctionality ::= ENUMERATED

{

cHF (0), -- this value is not used

sMF (1),

aMF (2),

sMSF (3)

}

NetworkFunctionInformation ::= SEQUENCE

{

networkFunctionality [0] NetworkFunctionality,

networkFunctionName [1] NetworkFunctionName OPTIONAL,

networkFunctionIPv4Address [2] IPAddress OPTIONAL,

networkFunctionPLMNIdentifier [3] PLMN-Id OPTIONAL,

networkFunctionIPv6Address [4] IPAddress,

-- if networkFunctionIPv6Address is not available a CHF configured value shall be used.

networkFunctionFQDN [5] NodeAddress

-- if networkFunctionFQDN is not available a CHF configured value shall be used.

}

NetworkFunctionName ::= IA5String (SIZE(1.. 36))

-- Shall be a Universally Unique Identifier (UUID) version 4, as described in IETF RFC 4122 [410]

NetworkSliceInstanceID ::= SEQUENCE

-- See S-NSSAI subclause 28.4.2 of TS 23.003 [200] for encoding.

{

sST [0] SliceServiceType,

sD [1] SliceDifferentiator OPTIONAL

}

NGRANSecondaryRATType ::= OCTET STRING

--

-- "NR" or "EUTRA"

--

NGRANSecondaryRATUsageReport ::= SEQUENCE

{

nGRANSecondaryRATType [0] NGRANSecondaryRATType OPTIONAL,

qosFlowsUsageReports [1] SEQUENCE OF QosFlowsUsageReport OPTIONAL

}

--

-- Q

--

QoSFlowId ::= INTEGER

QosFlowsUsageReport ::= SEQUENCE

{

qosFlowId [0] QoSFlowId OPTIONAL,

startTime [1] TimeStamp,

endTime [2] TimeStamp,

dataVolumeDownlink [3] DataVolumeOctets,

dataVolumeUplink [4] DataVolumeOctets

}

--

-- P

--

PartialRecordMethod ::= ENUMERATED

{

default (0),

individual (1)

}

PDUAddress ::= SEQUENCE

{

pDUIPv4Address [0] IPAddress OPTIONAL,

pDUIPv6AddresswithPrefix [1] IPAddress OPTIONAL,

iPV4dynamicAddressFlag [2] DynamicAddressFlag OPTIONAL,

iPV6dynamicPrefixFlag [3] DynamicAddressFlag OPTIONAL

}

PDUSessionId ::= INTEGER (0..255)

--

-- See 3GPP TS 29.571 [249] for details

--

PDUSessionType ::= ENUMERATED

{

iPv4v6 (0),

iPv4 (1),

iPv6 (2),

unstructured (3),

ethernet (4)

}

-- See 3GPP TS 29.571 [249] for details.

PreemptionCapability ::= ENUMERATED

{

nOT-PREEMPT (0),

mAY-PREEMPT (1)

}

PreemptionVulnerability ::= ENUMERATED

{

nOT-PREEMPTABLE (0),

pREEMPTABLE (1)

}

--

-- R

--

RatingIndicator ::= BOOLEAN

-- Included if the units have been rated.

RoamingChargingProfile ::= SEQUENCE

{

roamingTriggers [0] SEQUENCE OF RoamingTrigger OPTIONAL,

partialRecordMethod [1] PartialRecordMethod OPTIONAL

}

RoamerInOut ::= ENUMERATED

{

roamerInBound (0),

roamerOutBound (1)

}

RoamingTrigger ::= SEQUENCE

{

trigger [0] SMFTrigger OPTIONAL,

triggerCategory [1] TriggerCategory OPTIONAL,

timeLimit [2] CallDuration OPTIONAL,

volumeLimit [3] DataVolumeOctets OPTIONAL,

maxNbChargingConditions [4] INTEGER OPTIONAL

}

--

-- S

--

ServingNetworkFunctionID ::= SEQUENCE

{

servingNetworkFunctionInformation [0] NetworkFunctionInformation,

aMFIdentifier [1] AMFID OPTIONAL

}

SessionAMBR ::= SEQUENCE

{

ambrUL [1] Bitrate,

ambrDL [2] Bitrate

}

SliceDifferentiator ::= OCTET STRING (SIZE(3))

--

-- See subclause 28.4.2 TS 23.003 [200]

--

SliceServiceType ::= INTEGER (0..255)

--

-- See subclause 28.4.2 TS 23.003 [200]

--

SMdeliveryReportRequested ::= ENUMERATED

{

yes (0),

no (1)

}

SMFTrigger ::= INTEGER

{

startOfPDUSession (1),

startOfServiceDataFlowNoSession (2),

-- Change of Charging conditions

qoSChange (100),

userLocationChange (101),

servingNodeChange (102),

presenceReportingAreaChange (103),

threeGPPPSDataOffStatusChange (104),

tariffTimeChange (105),

uETimeZoneChange (106),

pLMNChange (107),

rATTypeChange (108),

sessionAMBRChange (109),

additionOfUPF (110),

removalOfUPF (111),

gFBRGuaranteedStatusChange (115),

-- Limit per PDU session

pDUSessionExpiryDataTimeLimit (200),

pDUSessionExpiryDataVolumeLimit (201),

pDUSessionExpiryDataEventLimit (202),

pDUSessionExpiryChargingConditionChanges (203),

-- Limit per Rating group

ratingGroupDataTimeLimit (300),

ratingGroupDataVolumeLimit (301),

ratingGroupDataEventLimit (302),

-- Quota management

timeThresholdReached (400),

volumeThresholdReached (401),

unitThresholdReached (402),

timeQuotaExhausted (403),

volumeQuotaExhausted (404),

unitQuotaExhausted (405),

expiryOfQuotaValidityTime (406),

reAuthorizationRequest (407),

startOfServiceDataFlowNoValidQuota (408),

otherQuotaType (409),

-- Others

terminationOfServiceDataFlow (500),

managementIntervention (501),

unitCountInactivityTimer (502),

endOfPDUSession (503),

cHFResponseWithSessionTermination (504),

cHFAbortRequest (505),

abnormalRelease (506),

-- Limit per QoS Flow

qoSFlowExpiryDataTimeLimit (600),

qoSFlowExpiryDataVolumeLimit (601)

}

-- See TS 32.255 [15] for details.

SMReplyPathRequested ::= ENUMERATED

{

noReplyPathSet (0),

replyPathSet (1)

}

SMServiceType ::= INTEGER

{

-- 0 to 10 VAS4SMS Short Message, see TS TS 22.142 [x] for details

contentProcessing (0),

forwarding (1),

forwardingMultipleSubscriptions (2),

filtering (3),

receipt (4),

networkStorage (5),

toMultipleDestinations (6),

virtualPrivateNetwork (7),

autoreply (8),

personalSignature (9),

deferredDelivery (10)

-- 11 to 99 Reserved for 3GPP defined SM services

-- 100 to 199 Vendor specific SM services

}

SSCMode ::= INTEGER

{

sSCMode1 (1),

sSCMode2 (2),

sSCMode3 (3)

}

-- See 3GPP TS 29.501 [248] for details.

SubscribedQoSInformation ::= SEQUENCE

--

-- See TS 32.291 [58] for more information

--

{

fiveQi [1] INTEGER,

-- if fiveQi is not available a CHF configured value shall be used.

aRP [2] AllocationRetentionPriority OPTIONAL,

priorityLevel [3] INTEGER OPTIONAL

}

--

-- T

--

Trigger ::= CHOICE

{

sMFTrigger [0] SMFTrigger

}

TriggerCategory ::= ENUMERATED

{

immediateReport (0),

deferredReport (1)

}

--

-- U

--

UsedUnitContainer ::= SEQUENCE

{

serviceIdentifier [0] ServiceIdentifier OPTIONAL,

time [1] CallDuration OPTIONAL,

triggers [2] SEQUENCE OF Trigger,

triggerTimeStamp [3] TimeStamp OPTIONAL,

dataTotalVolume [4] DataVolumeOctets OPTIONAL,

dataVolumeUplink [5] DataVolumeOctets OPTIONAL,

dataVolumeDownlink [6] DataVolumeOctets OPTIONAL,

serviceSpecificUnits [7] INTEGER OPTIONAL,

eventTimeStamp [8] TimeStamp OPTIONAL,

localSequenceNumber [9] LocalSequenceNumber OPTIONAL,

ratingIndicator [10] RatingIndicator OPTIONAL,

pDUContainerInformation [11] PDUContainerInformation OPTIONAL,

quotaManagementIndicator [12] BOOLEAN OPTIONAL

}

UserLocationInformation ::= OCTET STRING

--

-- This data is converted from JSON format of the User Location as described in TS 29.571 [249].

--

.#END

|  |
| --- |
| **End of changes** |