**3GPP TSG-SA5 Meeting #129-e *S5-201243***

**Online, , 24th Feb 2020 - 4th Mar 2020**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **32.298** | **CR** | **0797** | **rev** | **-** | **Current version:** | **16.3.0** |  |
|  | | | | | | | | |
| *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:*** | Heading corrections | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Ericsson | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI16, 5GS\_Ph1-SBI\_CH | | | | |  | ***Date:*** | | | 2020-02-14 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) Rel-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The use of heading tags as well as the sorting of attributes are faulty in many places. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Correction and addition of headers. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Updates as well as finding fault in the specification will be complicated and error prone. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.1.4.4.2, 5.1.4.7.23A, 5.2.2.4, 5.2.2.5, 5.2.3.1, 5.2.4.7, 5.2.4.8 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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

##### 5.1.4.4.2 MBMS 2G 3G Indicator

The MBMS 2G 3G Indicator is used to indicate the radio access type that can receive the MBMS bearer service.

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| --- |
| **Second change** |

##### 5.1.4.7.23A ProSe UE-to-Network Relay UE ID

The fiels holds a link layer identifier that uniquely represents the ProSe UE-to-Network relay UE in the context of ProSe Direct Communication via UE-to-Network.

|  |
| --- |
| **Third change** |

#### 5.2.2.4 CP data transfer domain CDRs

This subclause contains the abstract syntax definitions that are specific to the CP data transfer CDR types defined in TS 32.253 [13].

.$CPDTChargingDataTypes {itu-t (0) identified-organization (4) etsi (0) mobileDomain (0) charging (5) cpdtChargingDataTypes (13) asn1Module (0) version2 (1)}

DEFINITIONS IMPLICIT TAGS ::=

BEGIN

-- EXPORTS everything

IMPORTS

CallDuration,

ChargingID,

DiameterIdentity,

Diagnostics,

LocalSequenceNumber,

ManagementExtensions,

MSISDN,

NodeID,

PLMN-Id,

RATType,

RecordType,

ServiceContextID,

SubscriptionID,

TimeStamp

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

IMEI,

IMSI

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

-- from TS 29.002 [214]

AccessPointNameNI,

APNRateControl,

ChargingCharacteristics,

ChChSelectionMode,

DataVolumeGPRS,

ServingPLMNRateControl

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

;

--

-- CP data transfer RECORDS

--

CPDTRecord ::= CHOICE

--

-- Record values 105 to 106 are CP data transfer specific

--

{

cPDTSCERecord [105] CPDTSCERecord,

cPDTSNNRecord [106] CPDTSNNRecord

}

CPDTSCERecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

servedIMSI [2] IMSI OPTIONAL,

servedMSISDN [3] MSISDN OPTIONAL,

chargingID [4] ChargingID,

serviceContextID [5] ServiceContextID OPTIONAL,

nodeID [6] NodeID OPTIONAL,

recordOpeningTime [7] TimeStamp,

duration [8] CallDuration,

accessPointNameNI [9] AccessPointNameNI OPTIONAL,

sCEFID [10] DiameterIdentity OPTIONAL,

chargingCharacteristics [11] ChargingCharacteristics,

chChSelectionMode [12] ChChSelectionMode OPTIONAL,

servingNodeIdentity [13] DiameterIdentity OPTIONAL,

servingPLMNRateControl [14] ServingPLMNRateControl OPTIONAL,

listOfNIDDsubmission [15] SEQUENCE OF NIDDsubmission OPTIONAL,

causeForRecClosing [16] CPCauseForRecClosing,

diagnostics [17] Diagnostics OPTIONAL,

localSequenceNumber [18] LocalSequenceNumber OPTIONAL,

recordSequenceNumber [19] INTEGER OPTIONAL,

recordExtensions [20] ManagementExtensions OPTIONAL,

externalIdentifier [21] SubscriptionID OPTIONAL,

aPNRateControl [22] APNRateControl OPTIONAL,

rATType [23] RATType OPTIONAL,

servingNodePLMNIdentifier [24] PLMN-Id OPTIONAL,

servedIMEI [25] IMEI OPTIONAL

}

CPDTSNNRecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

servedIMSI [2] IMSI OPTIONAL,

servedMSISDN [3] MSISDN OPTIONAL,

chargingID [4] ChargingID,

serviceContextID [5] ServiceContextID OPTIONAL,

nodeID [6] NodeID OPTIONAL,

recordOpeningTime [7] TimeStamp,

duration [8] CallDuration,

accessPointNameNI [9] AccessPointNameNI OPTIONAL,

sCEFID [10] DiameterIdentity OPTIONAL,

chargingCharacteristics [11] ChargingCharacteristics,

chChSelectionMode [12] ChChSelectionMode OPTIONAL,

servingNodeIdentity [13] DiameterIdentity OPTIONAL,

servingPLMNRateControl [14] ServingPLMNRateControl OPTIONAL,

listOfNIDDsubmission [15] SEQUENCE OF NIDDsubmission OPTIONAL,

causeForRecClosing [16] CPCauseForRecClosing,

diagnostics [17] Diagnostics OPTIONAL,

localSequenceNumber [18] LocalSequenceNumber OPTIONAL,

recordSequenceNumber [19] INTEGER OPTIONAL,

recordExtensions [20] ManagementExtensions OPTIONAL,

externalIdentifier [21] SubscriptionID OPTIONAL,

aPNRateControl [22] APNRateControl OPTIONAL,

rATType [23] RATType OPTIONAL,

servingNodePLMNIdentifier [24] PLMN-Id OPTIONAL,

servedIMEI [25] IMEI OPTIONAL

}

--

-- CP data transfer DATA TYPES

--

--

-- C

--

CPCauseForRecClosing ::= INTEGER

{

normalRelease (0),

abnormalRelease (1),

volumeLimit (2),

timeLimit (3),

maxNIDDsubmissions (4),

servingNodeChange (5),

pLMNChange (6),

servingPLMNRateControlChange (7),

aPNRateControlChange (8),

rATTypeChange (9),

managementIntervention (10)

}

--

-- N

--

NIDDsubmission ::= SEQUENCE

{

submissionTimestamp [0] TimeStamp OPTIONAL,

eventTimestamp [1] TimeStamp OPTIONAL,

dataVolumeGPRSUplink [2] DataVolumeGPRS OPTIONAL,

dataVolumeGPRSDownlink [3] DataVolumeGPRS OPTIONAL,

submissionResultCode [4] SubmissionResultCode OPTIONAL,

serviceChangeCondition [5] ServiceChangeCondition OPTIONAL

}

--

-- S

--

ServiceChangeCondition ::= BIT STRING

{

nIDDsubmissionResponseReceipt (0),

nIDDsubmissionResponseSending (1),

nIDDdeliveryToUE (2),

nIDDdeliveryFromUEerror (3),

nIDDsubmissionTimeout (4)

}

SubmissionResultCode ::= INTEGER

--

-- Result-Code AVP and Experimental-Result AVP Values as specified in TS 29.128 [244]

-- for MO/MT data transfer

--

.#END

|  |
| --- |
| **Fourth change** |

#### 5.2.2.5 Exposure Function API CDRs

This subclause contains the abstract syntax definitions that are specific to the Exposure Function API CDR types defined in TS 32.254 [14].

.$ExposureFunctionAPIChargingDataTypes {itu-t (0) identified-organization (4) etsi (0) mobileDomain (0) charging (5) exposureFunctionAPIChargingDataTypes (14) asn1Module (0) version2 (1)}

DEFINITIONS IMPLICIT TAGS ::=

BEGIN

-- EXPORTS everything

IMPORTS

DiameterIdentity,

IPAddress,

LocalSequenceNumber,

ManagementExtensions,

MSTimeZone,

NodeID,

RecordType,

SCSASAddress,

ServiceContextID,

SubscriptionID,

TimeStamp

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

;

--

-- ExposureFunctionAPI RECORDS

--

ExposureFunctionAPIRecordType ::= CHOICE

--

-- Record values 120 are ExposureFunctionAPI specific

--

{

eASCERecord [120] EASCERecord

}

EASCERecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

serviceContextID [2] ServiceContextID OPTIONAL,

nodeId [3] NodeID OPTIONAL,

sCEFID [4] DiameterIdentity OPTIONAL,

sCEFAddress [5] IPAddress OPTIONAL,

aPIIdentifier [6] OCTET STRING OPTIONAL,

tLTRI [7] INTEGER OPTIONAL,

sCSASAddress [9] SCSASAddress OPTIONAL,

eventTimestamp [10] TimeStamp OPTIONAL,

aPIInvocationTimestamp [11] TimeStamp OPTIONAL,

aPIDirection [12] APIDirection OPTIONAL,

aPINetworkServiceNode [13] APINetworkServiceNode OPTIONAL,

aPIContent [14] UTF8String OPTIONAL,

aPISize [15] INTEGER OPTIONAL,

aPIresultCode [16] INTEGER OPTIONAL,

externalIdentifier [17] SubscriptionID OPTIONAL,

localRecordSequenceNumber [18] LocalSequenceNumber OPTIONAL,

recordExtensions [19] ManagementExtensions OPTIONAL,

startTime [20] TimeStamp OPTIONAL,

stopTime [21] TimeStamp OPTIONAL

}

--

-- ExposureFunctionAPI DATA TYPES

--

--

-- A

--

APIDirection ::= ENUMERATED

--

-- Used for distinguish the API invocation or API notification

--

{

invocation (0),

notification (1)

}

APINetworkServiceNode ::= ENUMERATED

{

mME (0),

sGSN (1),

hSS (2),

pCRF (3),

pFDF (4),

bMSC (5),

cCSCF (6),

rCAF (7)

}

.#END

|  |
| --- |
| **Fifth change** |

#### 5.2.3.1 IMS CDRs

This subclause contains the abstract syntax definitions that are specific to the CDR types defined in TS 32.260 [20].

.$IMSChargingDataTypes {itu-t (0) identified-organization (4) etsi(0) mobileDomain (0) charging (5) imsChargingDataTypes (4) asn1Module (0) version2 (1)}

DEFINITIONS IMPLICIT TAGS ::=

BEGIN

-- EXPORTS everything

IMPORTS

InvolvedParty,

IPAddress,

LocalSequenceNumber,

ManagementExtensions,

NodeAddress,

MSCAddress,

MSTimeZone,

RecordType,

ServiceContextID,

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)}

;

--

-- IMS RECORDS

--

IMSRecord ::= CHOICE

--

-- Record values 63-69, 82, 89, ,90, 91 are IMS specific

--

{

sCSCFRecord [63] SCSCFRecord,

pCSCFRecord [64] PCSCFRecord,

iCSCFRecord [65] ICSCFRecord,

mRFCRecord [66] MRFCRecord,

mGCFRecord [67] MGCFRecord,

bGCFRecord [68] BGCFRecord,

aSRecord [69] ASRecord,

eCSCFRecord [70] ECSCFRecord,

iBCFRecord [82] IBCFRecord,

tRFRecord [89] TRFRecord,

tFRecord [90] TFRecord,

aTCFRecord [91] ATCFRecord

}

SCSCFRecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

sIP-Method [2] SIP-Method OPTIONAL,

role-of-Node [3] Role-of-Node OPTIONAL,

nodeAddress [4] NodeAddress OPTIONAL,

session-Id [5] Session-Id OPTIONAL,

list-Of-Calling-Party-Address [6] ListOfInvolvedParties OPTIONAL,

called-Party-Address [7] InvolvedParty OPTIONAL,

privateUserID [8] GraphicString OPTIONAL,

serviceRequestTimeStamp [9] TimeStamp OPTIONAL,

serviceDeliveryStartTimeStamp [10] TimeStamp OPTIONAL,

serviceDeliveryEndTimeStamp [11] TimeStamp OPTIONAL,

recordOpeningTime [12] TimeStamp OPTIONAL,

recordClosureTime [13] TimeStamp OPTIONAL,

interOperatorIdentifiers [14] InterOperatorIdentifierList OPTIONAL,

localRecordSequenceNumber [15] LocalSequenceNumber OPTIONAL,

recordSequenceNumber [16] INTEGER OPTIONAL,

causeForRecordClosing [17] CauseForRecordClosing OPTIONAL,

incomplete-CDR-Indication [18] Incomplete-CDR-Indication OPTIONAL,

iMS-Charging-Identifier [19] IMS-Charging-Identifier OPTIONAL,

list-Of-SDP-Media-Components [21] SEQUENCE OF Media-Components-List OPTIONAL,

gGSNaddress [22] NodeAddress OPTIONAL,

serviceReasonReturnCode [23] UTF8String OPTIONAL,

list-Of-Message-Bodies [24] SEQUENCE OF MessageBody OPTIONAL,

recordExtensions [25] ManagementExtensions OPTIONAL,

expiresInformation [26] INTEGER OPTIONAL,

list-Of-Associated-URI [27] ListOfInvolvedParties OPTIONAL,

event [28] UTF8String OPTIONAL,

accessNetworkInformation [29] OCTET STRING OPTIONAL,

serviceContextID [30] ServiceContextID OPTIONAL,

list-of-subscription-ID [31] SEQUENCE OF SubscriptionID OPTIONAL,

list-Of-Early-SDP-Media-Components [32] SEQUENCE OF Early-Media-Components-List OPTIONAL,

iMSCommunicationServiceIdentifier [33] IMSCommunicationServiceIdentifier OPTIONAL,

numberPortabilityRouting [34] NumberPortabilityRouting OPTIONAL,

carrierSelectRouting [35] CarrierSelectRouting OPTIONAL,

sessionPriority [36] SessionPriority OPTIONAL,

serviceRequestTimeStampFraction [37] Milliseconds OPTIONAL,

serviceDeliveryStartTimeStampFraction [38] Milliseconds OPTIONAL,

serviceDeliveryEndTimeStampFraction [39] Milliseconds OPTIONAL,

applicationServersInformation [40] SEQUENCE OF ApplicationServersInformation OPTIONAL,

requested-Party-Address [41] InvolvedParty OPTIONAL,

list-Of-Called-Asserted-Identity [42] ListOfInvolvedParties OPTIONAL,

online-charging-flag [43] NULL OPTIONAL,

realTimeTariffInformation [44] SEQUENCE OF RealTimeTariffInformation OPTIONAL,

userLocationInformation [47] OCTET STRING OPTIONAL,

mSTimeZone [48] MSTimeZone OPTIONAL,

nNI-Information [46] NNI-Information OPTIONAL,

fromAddress [51] OCTET STRING OPTIONAL,

iMSEmergencyIndicator [52] NULL OPTIONAL,

transit-IOI-Lists [53] TransitIOILists OPTIONAL,

iMSVisitedNetworkIdentifier [54] OCTET STRING OPTIONAL,

listOfReasonHeader [55] ListOfReasonHeader OPTIONAL,

additionalAccessNetworkInformation [56] OCTET STRING OPTIONAL,

instanceId [57] OCTET STRING OPTIONAL,

subscriberEquipmentNumber [58] SubscriberEquipmentNumber OPTIONAL,

routeHeaderReceived [59] OCTET STRING OPTIONAL,

routeHeaderTransmitted [60] OCTET STRING OPTIONAL,

list-Of-AccessNetworkInfoChange [62] SEQUENCE OF AccessNetworkInfoChange OPTIONAL,

listOfCalledIdentityChanges [63] SEQUENCE OF CalledIdentityChange OPTIONAL,

cellularNetworkInformation [64] OCTET STRING OPTIONAL,

fEIdentifierList [65] FEIdentifierList OPTIONAL

}

PCSCFRecord ::= SET

--

-- This record is also applicable for P-CSCF with collocated ATCF

-- ATCF-specific fields which are not applicable to P-CSCF are indicated.

--

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

sIP-Method [2] SIP-Method OPTIONAL,

role-of-Node [3] Role-of-Node OPTIONAL,

nodeAddress [4] NodeAddress OPTIONAL,

session-Id [5] Session-Id OPTIONAL,

list-Of-Calling-Party-Address [6] ListOfInvolvedParties OPTIONAL,

called-Party-Address [7] InvolvedParty OPTIONAL,

privateUserID [8] GraphicString OPTIONAL,

serviceRequestTimeStamp [9] TimeStamp OPTIONAL,

serviceDeliveryStartTimeStamp [10] TimeStamp OPTIONAL,

serviceDeliveryEndTimeStamp [11] TimeStamp OPTIONAL,

recordOpeningTime [12] TimeStamp OPTIONAL,

recordClosureTime [13] TimeStamp OPTIONAL,

interOperatorIdentifiers [14] InterOperatorIdentifiers OPTIONAL,

localRecordSequenceNumber [15] LocalSequenceNumber OPTIONAL,

recordSequenceNumber [16] INTEGER OPTIONAL,

causeForRecordClosing [17] CauseForRecordClosing OPTIONAL,

incomplete-CDR-Indication [18] Incomplete-CDR-Indication OPTIONAL,

iMS-Charging-Identifier [19] IMS-Charging-Identifier OPTIONAL,

list-Of-SDP-Media-Components [21] SEQUENCE OF Media-Components-List OPTIONAL,

gGSNaddress [22] NodeAddress OPTIONAL,

serviceReasonReturnCode [23] UTF8String OPTIONAL,

list-Of-Message-Bodies [24] SEQUENCE OF MessageBody OPTIONAL,

recordExtensions [25] ManagementExtensions OPTIONAL,

expiresInformation [26] INTEGER OPTIONAL,

list-Of-Associated-URI [27] ListOfInvolvedParties OPTIONAL,

event [28] UTF8String OPTIONAL,

accessNetworkInformation [29] OCTET STRING OPTIONAL,

serviceContextID [30] ServiceContextID OPTIONAL,

list-of-subscription-ID [31] SEQUENCE OF SubscriptionID OPTIONAL,

list-Of-Early-SDP-Media-Components [32] SEQUENCE OF Early-Media-Components-List OPTIONAL,

iMSCommunicationServiceIdentifier [33] IMSCommunicationServiceIdentifier OPTIONAL,

sessionPriority [36] SessionPriority OPTIONAL,

serviceRequestTimeStampFraction [37] Milliseconds OPTIONAL,

serviceDeliveryStartTimeStampFraction [38] Milliseconds OPTIONAL,

serviceDeliveryEndTimeStampFraction [39] Milliseconds OPTIONAL,

list-of-Requested-Party-Address [41] ListOfInvolvedParties OPTIONAL, -- ATCF only

list-Of-Called-Asserted-Identity [42] ListOfInvolvedParties OPTIONAL,

nNI-Information [46] NNI-Information OPTIONAL,

userLocationInformation [47] OCTET STRING OPTIONAL,

mSTimeZone [48] MSTimeZone OPTIONAL,

servedPartyIPAddress [50] ServedPartyIPAddress OPTIONAL,

fromAddress [51] OCTET STRING OPTIONAL,

iMSEmergencyIndicator [52] NULL OPTIONAL,

transit-IOI-Lists [53] TransitIOILists OPTIONAL,

iMSVisitedNetworkIdentifier [54] OCTET STRING OPTIONAL,

listOfReasonHeader [55] ListOfReasonHeader OPTIONAL,

additionalAccessNetworkInformation [56] OCTET STRING OPTIONAL,

instanceId [57] OCTET STRING OPTIONAL,

subscriberEquipmentNumber [58] SubscriberEquipmentNumber OPTIONAL,

routeHeaderReceived [59] OCTET STRING OPTIONAL,

routeHeaderTransmitted [60] OCTET STRING OPTIONAL,  
 list-Of-AccessNetworkInfoChange [62] SEQUENCE OF AccessNetworkInfoChange OPTIONAL,

listOfCalledIdentityChanges [63] SEQUENCE OF CalledIdentityChange OPTIONAL,

cellularNetworkInformation [64] OCTET STRING OPTIONAL,

initialIMS-Charging-Identifier [105] IMS-Charging-Identifier OPTIONAL, -- ATCF only

list-Of-AccessTransferInformation [106] SEQUENCE OF AccessTransferInformation OPTIONAL,

-- ATCF only

relatedICID [107] IMS-Charging-Identifier OPTIONAL,

relatedICIDGenerationNode [108] NodeAddress OPTIONAL,

fEIdentifierList [109] FEIdentifierList OPTIONAL

}

ICSCFRecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

sIP-Method [2] SIP-Method OPTIONAL,

role-of-Node [3] Role-of-Node OPTIONAL,

nodeAddress [4] NodeAddress OPTIONAL,

session-Id [5] Session-Id OPTIONAL,

list-Of-Calling-Party-Address [6] ListOfInvolvedParties OPTIONAL,

called-Party-Address [7] InvolvedParty OPTIONAL,

serviceRequestTimeStamp [9] TimeStamp OPTIONAL,

interOperatorIdentifiers [14] InterOperatorIdentifiers OPTIONAL,

localRecordSequenceNumber [15] LocalSequenceNumber OPTIONAL,

causeForRecordClosing [17] CauseForRecordClosing OPTIONAL,

incomplete-CDR-Indication [18] Incomplete-CDR-Indication OPTIONAL,

iMS-Charging-Identifier [19] IMS-Charging-Identifier OPTIONAL,

serviceReasonReturnCode [23] UTF8String OPTIONAL,

recordExtensions [25] ManagementExtensions OPTIONAL,

expiresInformation [26] INTEGER OPTIONAL,

list-Of-Associated-URI [27] ListOfInvolvedParties OPTIONAL,

event [28] UTF8String OPTIONAL,

accessNetworkInformation [29] OCTET STRING OPTIONAL,

serviceContextID [30] ServiceContextID OPTIONAL,

numberPortabilityRouting [34] NumberPortabilityRouting OPTIONAL,

carrierSelectRouting [35] CarrierSelectRouting OPTIONAL,

sessionPriority [36] SessionPriority OPTIONAL,

serviceRequestTimeStampFraction [37] Milliseconds OPTIONAL,

transit-IOI-List [45] GraphicString OPTIONAL,

userLocationInformation [47] OCTET STRING OPTIONAL,

mSTimeZone [48] MSTimeZone OPTIONAL,

fromAddress [51] OCTET STRING OPTIONAL,

iMSEmergencyIndicator [52] NULL OPTIONAL,

listOfReasonHeader [55] ListOfReasonHeader OPTIONAL,

additionalAccessNetworkInformation [56] OCTET STRING OPTIONAL,

routeHeaderTransmitted [60] OCTET STRING OPTIONAL,

s-CSCF-Information [61] S-CSCF-Information OPTIONAL,

cellularNetworkInformation [64] OCTET STRING OPTIONAL,

fEIdentifierList [65] FEIdentifierList OPTIONAL

}

MRFCRecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

sIP-Method [2] SIP-Method OPTIONAL,

nodeAddress [4] NodeAddress OPTIONAL,

session-Id [5] Session-Id OPTIONAL,

list-Of-Calling-Party-Address [6] ListOfInvolvedParties OPTIONAL,

called-Party-Address [7] InvolvedParty OPTIONAL,

serviceRequestTimeStamp [9] TimeStamp OPTIONAL,

serviceDeliveryStartTimeStamp [10] TimeStamp OPTIONAL,

serviceDeliveryEndTimeStamp [11] TimeStamp OPTIONAL,

recordOpeningTime [12] TimeStamp OPTIONAL,

recordClosureTime [13] TimeStamp OPTIONAL,

interOperatorIdentifiers [14] InterOperatorIdentifiers OPTIONAL,

localRecordSequenceNumber [15] LocalSequenceNumber OPTIONAL,

recordSequenceNumber [16] INTEGER OPTIONAL,

causeForRecordClosing [17] CauseForRecordClosing OPTIONAL,

incomplete-CDR-Indication [18] Incomplete-CDR-Indication OPTIONAL,

iMS-Charging-Identifier [19] IMS-Charging-Identifier OPTIONAL,

list-Of-SDP-Media-Components [21] SEQUENCE OF Media-Components-List OPTIONAL,

gGSNaddress [22] NodeAddress OPTIONAL,

serviceReasonReturnCode [23] UTF8String OPTIONAL,

recordExtensions [25] ManagementExtensions OPTIONAL,

expiresInformation [26] INTEGER OPTIONAL,

event [28] UTF8String OPTIONAL,

accessNetworkInformation [29] OCTET STRING OPTIONAL,

serviceContextID [30] ServiceContextID OPTIONAL,

list-of-subscription-ID [31] SEQUENCE OF SubscriptionID OPTIONAL,

list-Of-Early-SDP-Media-Components [32] SEQUENCE OF Early-Media-Components-List OPTIONAL,

sessionPriority [36] SessionPriority OPTIONAL,

serviceRequestTimeStampFraction [37] Milliseconds OPTIONAL,

serviceDeliveryStartTimeStampFraction [38] Milliseconds OPTIONAL,

serviceDeliveryEndTimeStampFraction [39] Milliseconds OPTIONAL,

applicationServersInformation [40] SEQUENCE OF ApplicationServersInformation OPTIONAL,

online-charging-flag [43] NULL OPTIONAL,

transit-IOI-List [45] GraphicString OPTIONAL,

userLocationInformation [47] OCTET STRING OPTIONAL,

mSTimeZone [48] MSTimeZone OPTIONAL,

fromAddress [51] OCTET STRING OPTIONAL,

listOfReasonHeader [55] ListOfReasonHeader OPTIONAL,

additionalAccessNetworkInformation [56] OCTET STRING OPTIONAL,  
 list-Of-AccessNetworkInfoChange [62] SEQUENCE OF AccessNetworkInfoChange OPTIONAL,

cellularNetworkInformation [64] OCTET STRING OPTIONAL,

service-Id [70] Service-Id OPTIONAL,

requested-Party-Address [71] InvolvedParty OPTIONAL,

list-Of-Called-Asserted-Identity [72] ListOfInvolvedParties OPTIONAL,

fEIdentifierList [73] FEIdentifierList OPTIONAL

}

MGCFRecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

sIP-Method [2] SIP-Method OPTIONAL,

role-of-Node [3] Role-of-Node OPTIONAL,

nodeAddress [4] NodeAddress OPTIONAL,

session-Id [5] Session-Id OPTIONAL,

list-Of-Calling-Party-Address [6] ListOfInvolvedParties OPTIONAL,

called-Party-Address [7] InvolvedParty OPTIONAL,

serviceRequestTimeStamp [9] TimeStamp OPTIONAL,

serviceDeliveryStartTimeStamp [10] TimeStamp OPTIONAL,

serviceDeliveryEndTimeStamp [11] TimeStamp OPTIONAL,

recordOpeningTime [12] TimeStamp OPTIONAL,

recordClosureTime [13] TimeStamp OPTIONAL,

interOperatorIdentifiers [14] InterOperatorIdentifiers OPTIONAL,

localRecordSequenceNumber [15] LocalSequenceNumber OPTIONAL,

recordSequenceNumber [16] INTEGER OPTIONAL,

causeForRecordClosing [17] CauseForRecordClosing OPTIONAL,

incomplete-CDR-Indication [18] Incomplete-CDR-Indication OPTIONAL,

iMS-Charging-Identifier [19] IMS-Charging-Identifier OPTIONAL,

list-Of-SDP-Media-Components [21] SEQUENCE OF Media-Components-List OPTIONAL,

serviceReasonReturnCode [23] UTF8String OPTIONAL,

recordExtensions [25] ManagementExtensions OPTIONAL,

expiresInformation [26] INTEGER OPTIONAL,

event [28] UTF8String OPTIONAL,

accessNetworkInformation [29] OCTET STRING OPTIONAL,

serviceContextID [30] ServiceContextID OPTIONAL,

list-Of-Early-SDP-Media-Components [32] SEQUENCE OF Early-Media-Components-List OPTIONAL,

numberPortabilityRouting [34] NumberPortabilityRouting OPTIONAL,

carrierSelectRouting [35] CarrierSelectRouting OPTIONAL,

sessionPriority [36] SessionPriority OPTIONAL,

serviceRequestTimeStampFraction [37] Milliseconds OPTIONAL,

serviceDeliveryStartTimeStampFraction [38] Milliseconds OPTIONAL,

serviceDeliveryEndTimeStampFraction [39] Milliseconds OPTIONAL,

realTimeTariffInformation [44] SEQUENCE OF RealTimeTariffInformation OPTIONAL,

transit-IOI-List [45] GraphicString OPTIONAL,

fromAddress [51] OCTET STRING OPTIONAL,

listOfReasonHeader [55] ListOfReasonHeader OPTIONAL,

additionalAccessNetworkInformation [56] OCTET STRING OPTIONAL,   
 list-Of-AccessNetworkInfoChange [62] SEQUENCE OF AccessNetworkInfoChange OPTIONAL,

cellularNetworkInformation [64] OCTET STRING OPTIONAL,

trunkGroupID [80] TrunkGroupID OPTIONAL,

bearerService [81] TransmissionMedium OPTIONAL,

iSUPCause [82] ISUPCause OPTIONAL,

fEIdentifierList [83] FEIdentifierList OPTIONAL

}

BGCFRecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

sIP-Method [2] SIP-Method OPTIONAL,

role-of-Node [3] Role-of-Node OPTIONAL,

nodeAddress [4] NodeAddress OPTIONAL,

session-Id [5] Session-Id OPTIONAL,

list-Of-Calling-Party-Address [6] ListOfInvolvedParties OPTIONAL,

called-Party-Address [7] InvolvedParty OPTIONAL,

serviceRequestTimeStamp [9] TimeStamp OPTIONAL,

interOperatorIdentifiers [14] InterOperatorIdentifiers OPTIONAL,

localRecordSequenceNumber [15] LocalSequenceNumber OPTIONAL,

causeForRecordClosing [17] CauseForRecordClosing OPTIONAL,

incomplete-CDR-Indication [18] Incomplete-CDR-Indication OPTIONAL,

iMS-Charging-Identifier [19] IMS-Charging-Identifier OPTIONAL,

serviceReasonReturnCode [23] UTF8String OPTIONAL,

recordExtensions [25] ManagementExtensions OPTIONAL,

expiresInformation [26] INTEGER OPTIONAL,

event [28] UTF8String OPTIONAL,

accessNetworkInformation [29] OCTET STRING OPTIONAL,

serviceContextID [30] ServiceContextID OPTIONAL,

numberPortabilityRouting [34] NumberPortabilityRouting OPTIONAL,

carrierSelectRouting [35] CarrierSelectRouting OPTIONAL,

sessionPriority [36] SessionPriority OPTIONAL,

serviceRequestTimeStampFraction [37] Milliseconds OPTIONAL,

serviceDeliveryStartTimeStampFraction [38] Milliseconds OPTIONAL,

serviceDeliveryEndTimeStampFraction [39] Milliseconds OPTIONAL,

transit-IOI-List [45] GraphicString OPTIONAL,

nNI-Information [46] NNI-Information OPTIONAL,

fromAddress [51] OCTET STRING OPTIONAL,

listOfReasonHeader [55] ListOfReasonHeader OPTIONAL,

additionalAccessNetworkInformation [56] OCTET STRING OPTIONAL,

cellularNetworkInformation [64] OCTET STRING OPTIONAL,

fEIdentifierList [65] FEIdentifierList OPTIONAL

}

ASRecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

sIP-Method [2] SIP-Method OPTIONAL,

role-of-Node [3] Role-of-Node OPTIONAL,

nodeAddress [4] NodeAddress OPTIONAL,

session-Id [5] Session-Id OPTIONAL,

list-Of-Calling-Party-Address [6] ListOfInvolvedParties OPTIONAL,

called-Party-Address [7] InvolvedParty OPTIONAL,

privateUserID [8] GraphicString OPTIONAL,

serviceRequestTimeStamp [9] TimeStamp OPTIONAL,

serviceDeliveryStartTimeStamp [10] TimeStamp OPTIONAL,

serviceDeliveryEndTimeStamp [11] TimeStamp OPTIONAL,

recordOpeningTime [12] TimeStamp OPTIONAL,

recordClosureTime [13] TimeStamp OPTIONAL,

interOperatorIdentifiers [14] InterOperatorIdentifiers OPTIONAL,

localRecordSequenceNumber [15] LocalSequenceNumber OPTIONAL,

recordSequenceNumber [16] INTEGER OPTIONAL,

causeForRecordClosing [17] CauseForRecordClosing OPTIONAL,

incomplete-CDR-Indication [18] Incomplete-CDR-Indication OPTIONAL,

iMS-Charging-Identifier [19] IMS-Charging-Identifier OPTIONAL,

list-Of-SDP-Media-Components [21] SEQUENCE OF Media-Components-List OPTIONAL,

gGSNaddress [22] NodeAddress OPTIONAL,

serviceReasonReturnCode [23] UTF8String OPTIONAL,

list-Of-Message-Bodies [24] SEQUENCE OF MessageBody OPTIONAL,

recordExtensions [25] ManagementExtensions OPTIONAL,

expiresInformation [26] INTEGER OPTIONAL,

event [28] UTF8String OPTIONAL,

accessNetworkInformation [29] OCTET STRING OPTIONAL,

serviceContextID [30] ServiceContextID OPTIONAL,

list-of-subscription-ID [31] SEQUENCE OF SubscriptionID OPTIONAL,

list-Of-Early-SDP-Media-Components [32] SEQUENCE OF Early-Media-Components-List OPTIONAL,

iMSCommunicationServiceIdentifier [33] IMSCommunicationServiceIdentifier OPTIONAL,

numberPortabilityRouting [34] NumberPortabilityRouting OPTIONAL,

carrierSelectRouting [35] CarrierSelectRouting OPTIONAL,

sessionPriority [36] SessionPriority OPTIONAL,

serviceRequestTimeStampFraction [37] Milliseconds OPTIONAL,

serviceDeliveryStartTimeStampFraction [38] Milliseconds OPTIONAL,

serviceDeliveryEndTimeStampFraction [39] Milliseconds OPTIONAL,

list-of-Requested-Party-Address [41] ListOfInvolvedParties OPTIONAL,

online-charging-flag [43] NULL OPTIONAL,

realTimeTariffInformation [44] SEQUENCE OF RealTimeTariffInformation OPTIONAL,

nNI-Information [46] NNI-Information OPTIONAL,

userLocationInformation [47] OCTET STRING OPTIONAL,

mSTimeZone [48] MSTimeZone OPTIONAL,

fromAddress [51] OCTET STRING OPTIONAL,

transit-IOI-Lists [53] TransitIOILists OPTIONAL,

iMSVisitedNetworkIdentifier [54] OCTET STRING OPTIONAL,

listOfReasonHeader [55] ListOfReasonHeader OPTIONAL,

additionalAccessNetworkInformation [56] OCTET STRING OPTIONAL,

instanceId [57] OCTET STRING OPTIONAL,

subscriberEquipmentNumber [58] SubscriberEquipmentNumber OPTIONAL,

list-Of-AccessNetworkInfoChange [62] SEQUENCE OF AccessNetworkInfoChange OPTIONAL,

listOfCalledIdentityChanges [63] SEQUENCE OF CalledIdentityChange OPTIONAL,

cellularNetworkInformation [64] OCTET STRING OPTIONAL,

serviceSpecificInfo [100] SEQUENCE OF ServiceSpecificInfo OPTIONAL,

requested-Party-Address [101] InvolvedParty OPTIONAL,

list-Of-Called-Asserted-Identity [102] ListOfInvolvedParties OPTIONAL,

alternateChargedPartyAddress [103] UTF8String OPTIONAL,

outgoingSessionId [104] Session-Id OPTIONAL,

initialIMS-Charging-Identifier [105] IMS-Charging-Identifier OPTIONAL,

list-Of-AccessTransferInformation [106] SEQUENCE OF AccessTransferInformation OPTIONAL,

tADS-Identifier [109] TADIdentifier OPTIONAL,

vlr-Number [110] MSCAddress OPTIONAL,

msc-Address [111] MSCAddress OPTIONAL,

threeGPPPSDataOffStatus [112] ThreeGPPPSDataOffStatus OPTIONAL,

fEIdentifierList [113] FEIdentifierList OPTIONAL

}

ECSCFRecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

sIP-Method [2] SIP-Method OPTIONAL,

role-of-Node [3] Role-of-Node OPTIONAL,

nodeAddress [4] NodeAddress OPTIONAL,

session-Id [5] Session-Id OPTIONAL,

list-Of-Calling-Party-Address [6] ListOfInvolvedParties OPTIONAL,

called-Party-Address [7] InvolvedParty OPTIONAL,

serviceRequestTimeStamp [9] TimeStamp OPTIONAL,

serviceDeliveryStartTimeStamp [10] TimeStamp OPTIONAL,

serviceDeliveryEndTimeStamp [11] TimeStamp OPTIONAL,

recordOpeningTime [12] TimeStamp OPTIONAL,

recordClosureTime [13] TimeStamp OPTIONAL,

interOperatorIdentifiers [14] InterOperatorIdentifierList OPTIONAL,

localRecordSequenceNumber [15] LocalSequenceNumber OPTIONAL,

recordSequenceNumber [16] INTEGER OPTIONAL,

causeForRecordClosing [17] CauseForRecordClosing OPTIONAL,

incomplete-CDR-Indication [18] Incomplete-CDR-Indication OPTIONAL,

iMS-Charging-Identifier [19] IMS-Charging-Identifier OPTIONAL,

list-Of-SDP-Media-Components [21] SEQUENCE OF Media-Components-List OPTIONAL,

gGSNaddress [22] NodeAddress OPTIONAL,

serviceReasonReturnCode [23] UTF8String OPTIONAL,

list-Of-Message-Bodies [24] SEQUENCE OF MessageBody OPTIONAL,

recordExtensions [25] ManagementExtensions OPTIONAL,

expiresInformation [26] INTEGER OPTIONAL,

event [28] UTF8String OPTIONAL,

accessNetworkInformation [29] OCTET STRING OPTIONAL,

serviceContextID [30] ServiceContextID OPTIONAL,

list-of-subscription-ID [31] SEQUENCE OF SubscriptionID OPTIONAL,

list-Of-Early-SDP-Media-Components [32] SEQUENCE OF Early-Media-Components-List OPTIONAL,

iMSCommunicationServiceIdentifier [33] IMSCommunicationServiceIdentifier OPTIONAL,

sessionPriority [36] SessionPriority OPTIONAL,

serviceRequestTimeStampFraction [37] Milliseconds OPTIONAL,

serviceDeliveryStartTimeStampFraction [38] Milliseconds OPTIONAL,

serviceDeliveryEndTimeStampFraction [39] Milliseconds OPTIONAL,

applicationServersInformation [40] SEQUENCE OF ApplicationServersInformation OPTIONAL,

requested-Party-Address [41] InvolvedParty OPTIONAL,

list-Of-Called-Asserted-Identity [42] ListOfInvolvedParties OPTIONAL,

userLocationInformation [47] OCTET STRING OPTIONAL,

mSTimeZone [48] MSTimeZone OPTIONAL,

fromAddress [51] OCTET STRING OPTIONAL,

transit-IOI-Lists [53] TransitIOILists OPTIONAL,

listOfReasonHeader [55] ListOfReasonHeader OPTIONAL,

additionalAccessNetworkInformation [56] OCTET STRING OPTIONAL,

list-Of-AccessNetworkInfoChange [62] SEQUENCE OF AccessNetworkInfoChange OPTIONAL,

listOfCalledIdentityChanges [63] SEQUENCE OF CalledIdentityChange OPTIONAL,

cellularNetworkInformation [64] OCTET STRING OPTIONAL,

fEIdentifierList [65] FEIdentifierList OPTIONAL

}

IBCFRecord ::= SET

--

-- This record is also applicable for IBCF with collocated ATCF

-- ATCF-specific fields which are not applicable to IBCF are indicated.

--

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

sIP-Method [2] SIP-Method OPTIONAL,

role-of-Node [3] Role-of-Node OPTIONAL,

nodeAddress [4] NodeAddress OPTIONAL,

session-Id [5] Session-Id OPTIONAL,

list-Of-Calling-Party-Address [6] ListOfInvolvedParties OPTIONAL,

called-Party-Address [7] InvolvedParty OPTIONAL,

privateUserID [8] GraphicString OPTIONAL, -- ATCF only

serviceRequestTimeStamp [9] TimeStamp OPTIONAL,

serviceDeliveryStartTimeStamp [10] TimeStamp OPTIONAL,

serviceDeliveryEndTimeStamp [11] TimeStamp OPTIONAL,

recordOpeningTime [12] TimeStamp OPTIONAL,

recordClosureTime [13] TimeStamp OPTIONAL,

interOperatorIdentifiers [14] InterOperatorIdentifiers OPTIONAL,

localRecordSequenceNumber [ 15] LocalSequenceNumber OPTIONAL,

recordSequenceNumber [16] INTEGER OPTIONAL,

causeForRecordClosing [17] CauseForRecordClosing OPTIONAL,

incomplete-CDR-Indication [18] Incomplete-CDR-Indication OPTIONAL,

iMS-Charging-Identifier [19] IMS-Charging-Identifier OPTIONAL,

list-Of-SDP-Media-Components [21] SEQUENCE OF Media-Components-List OPTIONAL,

gGSNaddress [22] NodeAddress OPTIONAL, -- ATCF only

serviceReasonReturnCode [23] UTF8String OPTIONAL,

list-Of-Message-Bodies [24] SEQUENCE OF MessageBody OPTIONAL,

recordExtensions [25] ManagementExtensions OPTIONAL,

expiresInformation [26] INTEGER OPTIONAL,

event [28] UTF8String OPTIONAL,

accessNetworkInformation [29] OCTET STRING OPTIONAL,

serviceContextID [30] ServiceContextID OPTIONAL,

list-of-subscription-ID [31] SEQUENCE OF SubscriptionID OPTIONAL, -- ATCF only

list-Of-Early-SDP-Media-Components [32] SEQUENCE OF Early-Media-Components-List OPTIONAL,

iMSCommunicationServiceIdentifier [33] IMSCommunicationServiceIdentifier OPTIONAL,

sessionPriority [36] SessionPriority OPTIONAL,

serviceRequestTimeStampFraction [37] Milliseconds OPTIONAL,

serviceDeliveryStartTimeStampFraction [38] Milliseconds OPTIONAL,

serviceDeliveryEndTimeStampFraction [39] Milliseconds OPTIONAL,

list-of-Requested-Party-Address [41] ListOfInvolvedParties OPTIONAL, -- ATCF only

list-Of-Called-Asserted-Identity [42] ListOfInvolvedParties OPTIONAL, -- ATCF only realTimeTariffInformation [44] SEQUENCE OF RealTimeTariffInformation OPTIONAL,

transit-IOI-List [45] GraphicString OPTIONAL,

nNI-Information [46] SEQUENCE OF NNI-Information OPTIONAL,

userLocationInformation [47] OCTET STRING OPTIONAL,

mSTimeZone [48] MSTimeZone OPTIONAL,

fromAddress [51] OCTET STRING OPTIONAL,

listOfReasonHeader [55] ListOfReasonHeader OPTIONAL,

additionalAccessNetworkInformation [56] OCTET STRING OPTIONAL,

routeHeaderReceived [59] OCTET STRING OPTIONAL,   
 list-Of-AccessNetworkInfoChange [62] SEQUENCE OF AccessNetworkInfoChange OPTIONAL,

cellularNetworkInformation [64] OCTET STRING OPTIONAL,

initialIMS-Charging-Identifier [105] IMS-Charging-Identifier OPTIONAL, -- ATCF only

list-Of-AccessTransferInformation [106] SEQUENCE OF AccessTransferInformation OPTIONAL,

-- ATCF only

fEIdentifierList [107] FEIdentifierList OPTIONAL

}

TRFRecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

sIP-Method [2] SIP-Method OPTIONAL,

role-of-Node [3] Role-of-Node OPTIONAL,

nodeAddress [4] NodeAddress OPTIONAL,

session-Id [5] Session-Id OPTIONAL,

list-Of-Calling-Party-Address [6] ListOfInvolvedParties OPTIONAL,

called-Party-Address [7] InvolvedParty OPTIONAL,

serviceRequestTimeStamp [9] TimeStamp OPTIONAL,

serviceDeliveryStartTimeStamp [10] TimeStamp OPTIONAL,

serviceDeliveryEndTimeStamp [11] TimeStamp OPTIONAL,

recordOpeningTime [12] TimeStamp OPTIONAL,

recordClosureTime [13] TimeStamp OPTIONAL,

interOperatorIdentifiers [14] InterOperatorIdentifierList OPTIONAL,

localRecordSequenceNumber [15] LocalSequenceNumber OPTIONAL,

recordSequenceNumber [16] INTEGER OPTIONAL,

causeForRecordClosing [17] CauseForRecordClosing OPTIONAL,

incomplete-CDR-Indication [18] Incomplete-CDR-Indication OPTIONAL,

iMS-Charging-Identifier [19] IMS-Charging-Identifier OPTIONAL,

list-Of-SDP-Media-Components [21] SEQUENCE OF Media-Components-List OPTIONAL,

serviceReasonReturnCode [23] UTF8String OPTIONAL,

list-Of-Message-Bodies [24] SEQUENCE OF MessageBody OPTIONAL,

recordExtensions [25] ManagementExtensions OPTIONAL,

expiresInformation [26] INTEGER OPTIONAL,

event [28] UTF8String OPTIONAL,

serviceContextID [30] ServiceContextID OPTIONAL,

list-of-subscription-ID [31] SEQUENCE OF SubscriptionID OPTIONAL,

list-Of-Early-SDP-Media-Components [32] SEQUENCE OF Early-Media-Components-List OPTIONAL,

iMSCommunicationServiceIdentifier [33] IMSCommunicationServiceIdentifier OPTIONAL,

numberPortabilityRouting [34] NumberPortabilityRouting OPTIONAL,

carrierSelectRouting [35] CarrierSelectRouting OPTIONAL,

sessionPriority [36] SessionPriority OPTIONAL,

serviceRequestTimeStampFraction [37] Milliseconds OPTIONAL,

serviceDeliveryStartTimeStampFraction [38] Milliseconds OPTIONAL,

serviceDeliveryEndTimeStampFraction [39] Milliseconds OPTIONAL,

applicationServersInformation [40] SEQUENCE OF ApplicationServersInformation OPTIONAL,

requested-Party-Address [41] InvolvedParty OPTIONAL,

list-Of-Called-Asserted-Identity [42] ListOfInvolvedParties OPTIONAL,

nNI-Information [46] SEQUENCE OF NNI-Information OPTIONAL,

userLocationInformation [47] OCTET STRING OPTIONAL,

mSTimeZone [48] MSTimeZone OPTIONAL,

transit-IOI-Lists [53] TransitIOILists OPTIONAL,

listOfReasonHeader [55] ListOfReasonHeader OPTIONAL,

routeHeaderReceived [59] OCTET STRING OPTIONAL,

listOfCalledIdentityChanges [63] SEQUENCE OF CalledIdentityChange OPTIONAL,

fEIdentifierList [64] FEIdentifierList OPTIONAL

}

ATCFRecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

sIP-Method [2] SIP-Method OPTIONAL,

role-of-Node [3] Role-of-Node OPTIONAL,

nodeAddress [4] NodeAddress OPTIONAL,

session-Id [5] Session-Id OPTIONAL,

list-Of-Calling-Party-Address [6] ListOfInvolvedParties OPTIONAL,

called-Party-Address [7] InvolvedParty OPTIONAL,

privateUserID [8] GraphicString OPTIONAL,

serviceRequestTimeStamp [9] TimeStamp OPTIONAL,

serviceDeliveryStartTimeStamp [10] TimeStamp OPTIONAL,

serviceDeliveryEndTimeStamp [11] TimeStamp OPTIONAL,

recordOpeningTime [12] TimeStamp OPTIONAL,

recordClosureTime [13] TimeStamp OPTIONAL,

interOperatorIdentifiers [14] InterOperatorIdentifiers OPTIONAL,

localRecordSequenceNumber [15] LocalSequenceNumber OPTIONAL,

recordSequenceNumber [16] INTEGER OPTIONAL,

causeForRecordClosing [17] CauseForRecordClosing OPTIONAL,

incomplete-CDR-Indication [18] Incomplete-CDR-Indication OPTIONAL,

iMS-Charging-Identifier [19] IMS-Charging-Identifier OPTIONAL,

list-Of-SDP-Media-Components [21] SEQUENCE OF Media-Components-List OPTIONAL,

gGSNaddress [22] NodeAddress OPTIONAL,

serviceReasonReturnCode [23] UTF8String OPTIONAL,

list-Of-Message-Bodies [24] SEQUENCE OF MessageBody OPTIONAL,

recordExtensions [25] ManagementExtensions OPTIONAL,

expiresInformation [26] INTEGER OPTIONAL,

event [28] UTF8String OPTIONAL,

accessNetworkInformation [29] OCTET STRING OPTIONAL,

serviceContextID [30] ServiceContextID OPTIONAL,

list-of-subscription-ID [31] SEQUENCE OF SubscriptionID OPTIONAL,

list-Of-Early-SDP-Media-Components [32] SEQUENCE OF Early-Media-Components-List OPTIONAL,

iMSCommunicationServiceIdentifier [33] IMSCommunicationServiceIdentifier OPTIONAL,

sessionPriority [36] SessionPriority OPTIONAL,

serviceRequestTimeStampFraction [37] Milliseconds OPTIONAL,

serviceDeliveryStartTimeStampFraction [38] Milliseconds OPTIONAL,

serviceDeliveryEndTimeStampFraction [39] Milliseconds OPTIONAL,

list-of-Requested-Party-Address [41] ListOfInvolvedParties OPTIONAL,

list-Of-Called-Asserted-Identity [42] ListOfInvolvedParties OPTIONAL,

nNI-Information [46] NNI-Information OPTIONAL,

userLocationInformation [47] OCTET STRING OPTIONAL,

mSTimeZone [48] MSTimeZone OPTIONAL,

fromAddress [51] OCTET STRING OPTIONAL,

listOfReasonHeader [55] ListOfReasonHeader OPTIONAL,

additionalAccessNetworkInformation [56] OCTET STRING OPTIONAL,

routeHeaderReceived [59] OCTET STRING OPTIONAL,

routeHeaderTransmitted [60] OCTET STRING OPTIONAL,   
 list-Of-AccessNetworkInfoChange [62] SEQUENCE OF AccessNetworkInfoChange OPTIONAL,

listOfCalledIdentityChanges [63] SEQUENCE OF CalledIdentityChange OPTIONAL,

cellularNetworkInformation [64] OCTET STRING OPTIONAL,

initialIMS-Charging-Identifier [105] IMS-Charging-Identifier OPTIONAL,

list-Of-AccessTransferInformation [106] SEQUENCE OF AccessTransferInformation OPTIONAL,

fEIdentifierList [107] FEIdentifierList OPTIONAL

}

TFRecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

sIP-Method [2] SIP-Method OPTIONAL,

role-of-Node [3] Role-of-Node OPTIONAL,

nodeAddress [4] NodeAddress OPTIONAL,

session-Id [5] Session-Id OPTIONAL,

list-Of-Calling-Party-Address [6] ListOfInvolvedParties OPTIONAL,

called-Party-Address [7] InvolvedParty OPTIONAL,

serviceRequestTimeStamp [9] TimeStamp OPTIONAL,

serviceDeliveryStartTimeStamp [10] TimeStamp OPTIONAL,

serviceDeliveryEndTimeStamp [11] TimeStamp OPTIONAL,

recordOpeningTime [12] TimeStamp OPTIONAL,

recordClosureTime [13] TimeStamp OPTIONAL,

interOperatorIdentifiers [14] InterOperatorIdentifierList OPTIONAL,

localRecordSequenceNumber [15] LocalSequenceNumber OPTIONAL,

recordSequenceNumber [16] INTEGER OPTIONAL,

causeForRecordClosing [17] CauseForRecordClosing OPTIONAL,

incomplete-CDR-Indication [18] Incomplete-CDR-Indication OPTIONAL,

iMS-Charging-Identifier [19] IMS-Charging-Identifier OPTIONAL,

list-Of-SDP-Media-Components [21] SEQUENCE OF Media-Components-List OPTIONAL,

serviceReasonReturnCode [23] UTF8String OPTIONAL,

list-Of-Message-Bodies [24] SEQUENCE OF MessageBody OPTIONAL,

recordExtensions [25] ManagementExtensions OPTIONAL,

expiresInformation [26] INTEGER OPTIONAL,

event [28] UTF8String OPTIONAL,

serviceContextID [30] ServiceContextID OPTIONAL,

list-Of-Early-SDP-Media-Components [32] SEQUENCE OF Early-Media-Components-List OPTIONAL,

iMSCommunicationServiceIdentifier [33] IMSCommunicationServiceIdentifier OPTIONAL,

numberPortabilityRouting [34] NumberPortabilityRouting OPTIONAL,

carrierSelectRouting [35] CarrierSelectRouting OPTIONAL,

sessionPriority [36] SessionPriority OPTIONAL,

serviceRequestTimeStampFraction [37] Milliseconds OPTIONAL,

serviceDeliveryStartTimeStampFraction [38] Milliseconds OPTIONAL,

serviceDeliveryEndTimeStampFraction [39] Milliseconds OPTIONAL,

applicationServersInformation [40] SEQUENCE OF ApplicationServersInformation OPTIONAL,

requested-Party-Address [41] InvolvedParty OPTIONAL,

list-Of-Called-Asserted-Identity [42] ListOfInvolvedParties OPTIONAL,

nNI-Information [46] NNI-Information OPTIONAL,

fromAddress [51] OCTET STRING OPTIONAL,

transit-IOI-Lists [53] TransitIOILists OPTIONAL,

listOfReasonHeader [55] ListOfReasonHeader OPTIONAL,

routeHeaderReceived [59] OCTET STRING OPTIONAL,

routeHeaderTransmitted [60] OCTET STRING OPTIONAL,

listOfCalledIdentityChanges [63] SEQUENCE OF CalledIdentityChange OPTIONAL,

fEIdentifierList [64] FEIdentifierList OPTIONAL

}

--

-- IMS DATA TYPES

--

--

-- A

--

AccessCorrelationID ::= CHOICE

--

-- gPRS-Charging-Id is used for GPRS, EPS and 5GS

--

{

gPRS-Charging-Id [2] INTEGER (0..4294967295),

accessNetworkChargingIdentifier [4] GraphicString

}

AccessNetworkInfoChange ::= SEQUENCE

{

accessNetworkInformation [0] OCTET STRING OPTIONAL,

additionalAccessNetworkInformation [1] OCTET STRING OPTIONAL,

accessChangeTime [2] TimeStamp OPTIONAL,

cellularNetworkInformation [3] OCTET STRING OPTIONAL

}

AccessTransferType ::= ENUMERATED

{

pSToCS (0),

cSToPS (1) ,

pSToPS (2),

cSToCS (3)

}

AccessTransferInformation ::= SEQUENCE

{

accessTransferType [0] AccessTransferType OPTIONAL,

accessNetworkInformation [1] OCTET STRING OPTIONAL,

additionalAccessNetworkInformation [2] OCTET STRING OPTIONAL,

inter-UE-Transfer [3] NULL OPTIONAL,

relatedICID [4] IMS-Charging-Identifier OPTIONAL,

relatedICIDGenerationNode [5] NodeAddress OPTIONAL,

accessTransferTime                [6] TimeStamp OPTIONAL,

subscriberEquipmentNumber [7] SubscriberEquipmentNumber OPTIONAL,

instanceId [8] OCTET STRING OPTIONAL,

cellularNetworkInformation [9] OCTET STRING OPTIONAL

}

ACRInterimLost ::= ENUMERATED

{

no (0),

yes (1),

unknown (2)

}

AoCCostInformation ::= SEQUENCE

{

accumulatedCost [0] REAL,

incrementalCost [1] REAL,

currencyCode [2] INTEGER

}

AoCInformation ::= SET

{

tariffInformation [0] TariffInformation OPTIONAL,

aoCCostInformation [1] AoCCostInformation OPTIONAL

}

ApplicationServersInformation ::= SEQUENCE

{

applicationServersInvolved [0] NodeAddress OPTIONAL,

applicationProvidedCalledParties [1] SEQUENCE OF InvolvedParty OPTIONAL,

sTatus [2] Status OPTIONAL

}

--

-- C

--

CalledIdentityChange ::= SEQUENCE

{

calledIdentity [0] InvolvedParty OPTIONAL,

changeTime [1] TimeStamp OPTIONAL

}

CarrierSelectRouting ::= GraphicString

CauseForRecordClosing ::= ENUMERATED

{

serviceDeliveryEndSuccessfully (0),

unSuccessfulServiceDelivery (1),

timeLimit (3),

serviceChange (4), -- e.g. change in media due to Re-Invite,

-- Access Transfer

managementIntervention (5) -- partial record generation reasons to be added

-- Additional codes are for further study

}

--

-- E

--

Early-Media-Components-List ::= SEQUENCE

{

sDP-Offer-Timestamp [0] TimeStamp OPTIONAL,

sDP-Answer-Timestamp [1] TimeStamp OPTIONAL,

sDP-Media-Components [2] SEQUENCE OF SDP-Media-Component OPTIONAL,

mediaInitiatorFlag [3] NULL OPTIONAL,

sDP-Session-Description [4] SEQUENCE OF GraphicString OPTIONAL,

sDP-Type [5] SDP-Type OPTIONAL

}

--

-- F

--

FEIdentifierList ::= SEQUENCE OF GraphicString

--

-- I

--

IMS-Charging-Identifier ::= OCTET STRING

IMSCommunicationServiceIdentifier ::= OCTET STRING

Incomplete-CDR-Indication ::= SET

{

aCRStartLost [0] BOOLEAN, -- TRUE if ACR[Start] was lost, FALSE otherwise

aCRInterimLost [1] ACRInterimLost,

aCRStopLost [2] BOOLEAN -- TRUE if ACR[Stop] was lost, FALSE otherwise

}

InterOperatorIdentifierList ::= SEQUENCE OF InterOperatorIdentifiers

InterOperatorIdentifiers ::= SEQUENCE

{

originatingIOI [0] GraphicString OPTIONAL,

terminatingIOI [1] GraphicString OPTIONAL

}

ISUPCause ::= SEQUENCE

{

iSUPCauseLocation [0] INTEGER OPTIONAL,

iSUPCauseValue [1] INTEGER OPTIONAL,

iSUPCauseDiagnostics [2] OCTET STRING OPTIONAL

}

--

-- L

--

ListOfInvolvedParties ::= SEQUENCE OF InvolvedParty

ListOfReasonHeader ::= SEQUENCE OF ReasonHeaderInformation

--

-- M

--

Media-Components-List ::= SEQUENCE

--

-- MediaInitiatorParty is used to identify the initiator of the media

-- multi-participants session e.g. in AS PoC Server

--

{

sIP-Request-Timestamp [0] TimeStamp OPTIONAL,

sIP-Response-Timestamp [1] TimeStamp OPTIONAL,

sDP-Media-Components [2] SEQUENCE OF SDP-Media-Component OPTIONAL,

mediaInitiatorFlag [3] NULL OPTIONAL,

sDP-Session-Description [4] SEQUENCE OF GraphicString OPTIONAL,

mediaInitiatorParty [5] InvolvedParty OPTIONAL,

sIP-Request-Timestamp-Fraction [6] Milliseconds OPTIONAL,

sIP-Response-Timestamp-Fraction [7] Milliseconds OPTIONAL,

sDP-Type [8] SDP-Type OPTIONAL

}

MessageBody ::= SEQUENCE

{

content-Type [0] GraphicString,

content-Disposition [1] GraphicString OPTIONAL,

content-Length [2] INTEGER,

originator [3] InvolvedParty OPTIONAL

}

Milliseconds ::= INTEGER (0..999)

--

-- N

--

NNI-Information ::= SEQUENCE

{

sessionDirection [0] SessionDirection OPTIONAL,

nNIType [1] NNIType OPTIONAL,

relationshipMode [2] RelationshipMode OPTIONAL,

neighbourNodeAddress [3] IPAddress OPTIONAL

}

NNIType ::= ENUMERATED

{

non-roaming (0),

roaming-without-loopback (1),

roaming-with-loopback (2)

}

NumberPortabilityRouting ::= GraphicString

--

-- R

--

RateElement ::= SEQUENCE

{

unitType [0] INTEGER,

unitValue [1] REAL,

unitCost [2] REAL,

unitQuotaThreshold [3] REAL

}

RealTimeTariffInformation ::= CHOICE

{

tariffInformation [0] TariffInformation,

tariffXml [1] UTF8String

}

ReasonHeaderInformation ::= GraphicString

RelationshipMode ::= ENUMERATED

{

trusted (0),

non-trusted (1)

}

Role-of-Node ::= ENUMERATED

{

originating (0),

terminating (1)

}

--

-- S

--

S-CSCF-Information ::= SEQUENCE

{

mandatoryCapabilities [0] SEQUENCE OF GraphicString OPTIONAL,

optionalCapabilities [1] SEQUENCE OF GraphicString OPTIONAL,

serverName [2] GraphicString OPTIONAL

}

SDP-Media-Component ::= SEQUENCE

{

sDP-Media-Name [0] GraphicString OPTIONAL,

sDP-Media-Descriptions [1] SDP-Media-Description OPTIONAL,

accessCorrelationID AccessCorrelationID OPTIONAL, -- not used in MGCF

-- [2] is used by gPRS-Charging-Id

-- [4] is used by accessNetworkChargingIdentifier

localGWInsertedIndication [5] BOOLEAN OPTIONAL,

iPRealmDefaultIndication [6] BOOLEAN OPTIONAL,

transcoderInsertedIndication [7] BOOLEAN OPTIONAL

}

SDP-Media-Description ::= SEQUENCE OF GraphicString

ServedPartyIPAddress ::= IPAddress

Service-Id ::= GraphicString

SessionDirection ::= ENUMERATED

{

inbound (0),

outbound (1)

}

SessionPriority ::= ENUMERATED

--

-- PRIORITY-0 is the highest priority and Priority-4 is the lowest priority. See TS 29.229[232]

--

{

pRIORITY-0 (0),

pRIORITY-1 (1),

pRIORITY-2 (2),

pRIORITY-3 (3),

pRIORITY-4 (4)

}

SIP-Method ::= GraphicString

SDP-Type ::= ENUMERATED

{

sDP-offer (0),

sDP-answer (1)

}

Status ::= ENUMERATED

{

fourxx (0),

fivexx (1),

time-out (2)

}

--

-- T

--

TADIdentifier ::= ENUMERATED

{

cS (0),

pS (1)

}

TariffInformation ::= SEQUENCE

{

currencyCode [0] INTEGER,

scaleFactor [1] REAL,

rateElements [2] SEQUENCE OF RateElement OPTIONAL

}

TransitIOILists ::= SEQUENCE OF GraphicString

TransmissionMedium ::= SEQUENCE

{

tMR [0] OCTET STRING (SIZE (1)) OPTIONAL, -- required TM, refer to Q.763

tMU [1] OCTET STRING (SIZE (1)) OPTIONAL -- used TM, refer to Q.763

}

TrunkGroupID ::= CHOICE

{

incoming [0] GraphicString,

outgoing [1] GraphicString

}

.#END

|  |
| --- |
| **Sixth change** |

#### 5.2.4.7 ProSe CDRs

This subclause contains the abstract syntax definitions that are specific to the ProSe CDR types defined in TS 32.277 [36].

.$ProSeChargingDataTypes {itu-t (0) identified-organization (4) etsi (0) mobileDomain (0) charging (5) proseChargingDataType (11) asn1Module (0) version2 (1)}

DEFINITIONS IMPLICIT TAGS ::=

BEGIN

-- EXPORTS everything

IMPORTS

IPAddress,

LocalSequenceNumber,

ManagementExtensions,

NodeID,

PLMN-Id,

RecordType,

ServiceContextID,

TimeStamp

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

IMSI

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

-- from TS 29.002 [214]

ChargingCharacteristics,

ChChSelectionMode,

DataVolumeGPRS

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

;

--

-- ProSe RECORDS

--

ProSeRecordType ::= CHOICE

--

-- Record values 100..102 are ProSe specific

--

{

pFDDRecord [100] PFDDRecord,

pFEDRecord [101] PFEDRecord,

pFDCRecord [102] PFDCRecord

}

PFDDRecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

serviceContextID [2] ServiceContextID OPTIONAL,

servedIMSI [3] IMSI OPTIONAL,

proSeFunctionIPAddress [4] IPAddress OPTIONAL,

chargingCharacteristics [5] ChargingCharacteristics,

chChSelectionMode [6] ChChSelectionMode OPTIONAL,

recordExtensions [7] ManagementExtensions OPTIONAL,

proSeRequestTimestamp [8] TimeStamp OPTIONAL,

roleofUE [9] ProSeUERole OPTIONAL,

pCThreeControlProtocolCause [10] INTEGER OPTIONAL,

roleofProSeFunction [11] ProSeFunctionRole OPTIONAL,

proSeApplicationID [12] UTF8String OPTIONAL,

proSeEventType [13] ProSeEventType OPTIONAL,

nodeID [14] NodeID OPTIONAL,

proseFunctionId [15] UTF8String OPTIONAL,

announcingUEHPLMNIdentifier [16] PLMN-Id OPTIONAL,

announcingUEVPLMNIdentifier [17] PLMN-Id OPTIONAL,

monitoringUEHPLMNIdentifier [18] PLMN-Id OPTIONAL,

monitoringUEVPLMNIdentifier [19] PLMN-Id OPTIONAL,

monitoredPLMNIdentifier [20] PLMN-Id OPTIONAL,

applicationID [21] UTF8String OPTIONAL,

directDiscoveryModel [22] UTF8String OPTIONAL,

validityPeriod [23] INTEGER OPTIONAL,

monitoringUEIdentifier [24] IMSI OPTIONAL,

discovererUEHPLMNIdentifier [25] PLMN-Id OPTIONAL,

discovererUEVPLMNIdentifier [26] PLMN-Id OPTIONAL,

discovereeUEHPLMNIdentifier [27] PLMN-Id OPTIONAL,

discovereeUEVPLMNIdentifier [28] PLMN-Id OPTIONAL,

announcingPLMNID [29] PLMN-Id OPTIONAL,

pc5RadioTechnology [30] PC5RadioTechnology OPTIONAL

}

PFEDRecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

serviceContextID [2] ServiceContextID OPTIONAL,

servedIMSI [3] IMSI OPTIONAL,

proSeFunctionIPAddress [4] IPAddress OPTIONAL,

chargingCharacteristics [5] ChargingCharacteristics,

chChSelectionMode [6] ChChSelectionMode OPTIONAL,

recordExtensions [7] ManagementExtensions OPTIONAL,

proSeRequestTimestamp [8] TimeStamp OPTIONAL,

roleofUE [9] ProSeUERole OPTIONAL,

pCThreeEPCControlProtocolCause [10] INTEGER OPTIONAL,

proseFunctionPLMNIdentifier [11] PLMN-Id OPTIONAL,

proseFunctionId [12] UTF8String OPTIONAL,

recordOpeningTime [13] TimeStamp OPTIONAL,

recordClosureTime [14] TimeStamp OPTIONAL,

applicationID [15] UTF8String OPTIONAL,

requestorApplicationLayerUserID [16] UTF8String OPTIONAL,

wLANLinkLayerID [17] UTF8String OPTIONAL,

requestorEPCProSeUserID [18] UTF8String OPTIONAL,

requestedApplicationLayerUserID [19] UTF8String OPTIONAL,

requestedPLMNIdentifier [20] PLMN-Id OPTIONAL,

timeWindow [21] INTEGER OPTIONAL,

rangeClass [22] RangeClass OPTIONAL,

uELocation [23] OCTET STRING OPTIONAL,

proximityAlertIndication [24] ProximityAlertIndication OPTIONAL,

proximityAlertTimestamp [25] TimeStamp OPTIONAL,

proximityCancellationTimestamp [26] TimeStamp OPTIONAL,

reasonforCancellation [27] ReasonforCancellation OPTIONAL,

causeForRecClosing [28] ProSeCauseForRecClosing,

proximityRequestRenewalInfoBlockList [29] SEQUENCE OF ProximityRequestRenewalInfoBlock OPTIONAL

}

PFDCRecord ::= SET

{

-- General CDR information

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

serviceContextID [2] ServiceContextID OPTIONAL,

servedIMSI [3] IMSI OPTIONAL,

proSeFunctionIPAddress [4] IPAddress OPTIONAL,

chargingCharacteristics [5] ChargingCharacteristics,

chChSelectionMode [6] ChChSelectionMode OPTIONAL,

recordExtensions [7] ManagementExtensions OPTIONAL,

nodeID [8] NodeID OPTIONAL,

proseFunctionPLMNIdentifier [9] PLMN-Id OPTIONAL,

proseFunctionId [10] UTF8String OPTIONAL,

recordOpeningTime [11] TimeStamp OPTIONAL,

recordClosureTime [12] TimeStamp OPTIONAL,

-- Common ProSe information. The same data is provided in all currently open group-level CDRs

listOfCoverageInfo [13] SEQUENCE OF CoverageInfo OPTIONAL,

listOfRadioParameterSet [14] SEQUENCE OF RadioParameterSetInfo OPTIONAL,

-- Group-specific information. This data could be different in each open group-level CDR

proSeUEID [15] OCTET STRING OPTIONAL,

sourceIPaddress [16] IPAddress OPTIONAL,

layerTwoGroupID [17] OCTET STRING OPTIONAL,

proSeGroupIPmulticastaddress [18] IPAddress OPTIONAL,

timeOfFirstTransmission [19] TimeStamp OPTIONAL,

timeOfFirstReception [20] TimeStamp OPTIONAL,

listOfTransmitters [21] SEQUENCE OF TransmitterInfo OPTIONAL,

listOfTransmissionData [22] SEQUENCE OF ChangeOfProSeCondition OPTIONAL,

listOfReceptionData [23] SEQUENCE OF ChangeOfProSeCondition OPTIONAL,

causeForRecClosing [24] ProSeCauseForRecClosing,

listOfAppSpecificData [25] SEQUENCE OF AppSpecificData,

targetIPaddress [26] IPAddress OPTIONAL,

relayIPaddress [27] IPAddress OPTIONAL,

proSeUEtoNetworkRelayUEID [28] OCTET STRING OPTIONAL,

proSeTargetLayerTwoID [29] OCTET STRING OPTIONAL

}

--

-- ProSe DATA TYPES

--

--

-- A

--

--

-- C

--

ChangeOfProSeCondition ::= SEQUENCE

--

-- Used for transmitted and received data container

--

{

changeConditionTimestamp [0] TimeStamp OPTIONAL,

coverageStatus [1] CoverageStatus OPTIONAL,

uELocation [2] OCTET STRING OPTIONAL,

dataVolume [3] DataVolumeGPRS OPTIONAL,

serviceChangeCondition [4] ServiceChangeCondition OPTIONAL,

localSequenceNumber [5] LocalSequenceNumber OPTIONAL,

usageInformationReportSequenceNumber [6] INTEGER OPTIONAL,

radioResourcesInd [7] RadioResourcesIndicator OPTIONAL,

radiofrequency [8] RadioFrequency OPTIONAL,

vPLMNIdentifier [9] PLMN-Id OPTIONAL

}

CoverageInfo ::= SEQUENCE

{

coverageStatus [0] CoverageStatus,

timeStamp [1] TimeStamp OPTIONAL,

listOfLocation [2] SEQUENCE OF LocationInfo OPTIONAL

}

CoverageStatus ::= ENUMERATED

{

outOfCoverage (0),

inCoverage (1)

}

--

-- L

--

LocationInfo ::= SEQUENCE

{

uELocation [0] OCTET STRING OPTIONAL,

timeStamp [1] TimeStamp OPTIONAL

}

--

-- P

--

PC5RadioTechnology ::= ENUMERATED

{

eUTRA (0),

wLAN (1),

bothEUTRAAndWLAN (2)

}

ProSeCauseForRecClosing ::= ENUMERATED

{

proximityAlerted (0),

timeExpiredWithNoRrenewal (1),

requestorCancellation (2),

timeLimited (3),

maxNumberOfReports (4),

abnormalRelease (5)

}

ProSeEventType ::= ENUMERATED

{

openAnnouncing (0),

openMonitoring (1),

openMatchReport (2),

restrictedAnnouncing (3),

restrictedMonitoring (4),

restrictedMatchReport (5),

restrictedDiscoveryRequest (6),

restrictedDiscoveryReporting (7)

}

ProSeFunctionRole ::= ENUMERATED

{

hPLMN (0),

vPLMN (1),

localPLMN (2)

}

ProSeUERole ::= ENUMERATED

{

annoucingUE (0),

monitoringUE (1),

requestorUE (2),

requestedUE (3),

discovererUE (4),

discovereeUE (5)

}

ProximityAlertIndication ::= ENUMERATED

{

alerted (0),

noAlert (1)

}

ProximityRequestRenewalInfoBlock ::= SEQUENCE

--

-- Used for EPC-level discovery charging

--

{

proSeRequestTimestamp [0] TimeStamp OPTIONAL,

timeWindow [1] INTEGER OPTIONAL,

rangeClass [2] RangeClass OPTIONAL,

uELocation [3] OCTET STRING OPTIONAL

}

--

-- R

--

RadioFrequency ::= OCTET STRING

--

-- Format of the value is according to the carrierFreq-r12 ASN.1 data type described in TS

-- 36.331 [241].

--

RadioParameterSetInfo ::= SEQUENCE

--

-- Format of the params value is according to the ProsePreconfiguration-r12 ASN.1 data type

-- described in TS 36.331 [241].

--

{

timeStamp [0] TimeStamp OPTIONAL,

params [1] OCTET STRING

}

RadioResourcesIndicator ::= INTEGER

{

operatorProvided (1),

configured (2)

}

RangeClass ::= ENUMERATED

{

reserved (0),

fiftyMeter (1),

onehundredMeter (2),

twohundredMeter (3),

fivehundredMeter (4),

onethousandMeter (5)

}

ReasonforCancellation ::= ENUMERATED

{

proximityAlerted (0),

timeExpiredWithNoRrenewal (1),

requestorCancellation (2)

}

--

-- S

--

ServiceChangeCondition ::= BIT STRING

{

pLMNchange (0),

coverageStatusChange (1),

locationChange (2)

}

--

-- T

--

TransmitterInfo ::= SEQUENCE

{

sourceIPaddress [0] IPAddress,

proSeUEID [1] OCTET STRING

}

.#END

|  |
| --- |
| **Seventh change** |

#### 5.2.4.8 Monitoring Event CDRs

This subclause contains the abstract syntax definitions that are specific to the Monitoring Event CDR types defined in TS 32.278 [38].

.$MONTEChargingDataTypes {itu-t (0) identified-organization (4) etsi (0) mobileDomain (0) charging (5) mONTEChargingDataType (12) asn1Module (0) version2 (1)}

DEFINITIONS IMPLICIT TAGS ::=

BEGIN

-- EXPORTS everything

IMPORTS

DiameterIdentity,

LocalSequenceNumber,

ManagementExtensions,

NodeID,

RecordType,

ServiceContextID,

TimeStamp

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

IMSI

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

-- from TS 29.002 [214]

UserCSGInformation

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

;

--

-- Monitoring Event RECORDS

--

MERecordType ::= CHOICE

--

-- Record values 103..104 are Monitoring Event specific

--

{

mECORecord [103] MECORecord,

mERERecord [104] MERERecord

}

MECORecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

serviceContextID [2] ServiceContextID OPTIONAL,

nodeID [3] NodeID OPTIONAL,

recordTimeStamp [4] TimeStamp OPTIONAL,

eventTimestamp [5] TimeStamp OPTIONAL,

monitoringEventConfigurationActivity [6] MonitoringEventConfigurationActivity OPTIONAL,

sCEFReferenceID [7] SCEFReferenceID OPTIONAL,

sCEFID [8] DiameterIdentity OPTIONAL,

monitoringType [9] MonitoringType OPTIONAL,

maximumNumberofReports [10] INTEGER OPTIONAL,

monitoringDuration [11] TimeStamp OPTIONAL,

chargeablePartyIdentifier [12] UTF8String OPTIONAL,

monitoredUser [13] IMSI OPTIONAL,

maximumDetectionTime [14] INTEGER OPTIONAL,

localRecordSequenceNumber [15] LocalSequenceNumber OPTIONAL,

reachabilityConfiguration [16] ReachabilityConfiguration OPTIONAL,

locationType [17] LocationType OPTIONAL,

accuracy [18] Accuracy OPTIONAL,

listofLocations [19] SEQUENCE OF EPSLocationInfo OPTIONAL,

monitoringEventConfigStatus [20] MonitoringEventConfigStatus OPTIONAL,

recordExtensions [21] ManagementExtensions OPTIONAL

}

MERERecord ::= SET

{

recordType [0] RecordType,

retransmission [1] NULL OPTIONAL,

serviceContextID [2] ServiceContextID OPTIONAL,

nodeID [3] NodeID OPTIONAL,

recordTimeStamp [4] TimeStamp OPTIONAL,

localRecordSequenceNumber [5] LocalSequenceNumber OPTIONAL,

listofMonitoringEventReportData [6] SEQUENCE OF MonitoringEventReportData OPTIONAL, recordExtensions [7] ManagementExtensions OPTIONAL

}

--

-- Monitoring Event DATA TYPES

--

--

-- A

--

Accuracy ::= ENUMERATED

--

-- Note: value "3" is not used in this specification: it is provided to reflect

-- the full list specified in TS 29.336 Accuracy AVP

--

{

cGIECGI (0),

eNB (1),

lATARA (2),

pRA (3)

}

CauseType ::= ENUMERATED

{

radioNetworkLayer (0),

transportLayer (1),

nAS (2),

protocol (3),

miscellaneous (4)

}

--

-- C

--

CommunicationFailureInfo ::= SEQUENCE

{

causeType [0] CauseType OPTIONAL,

s1APCause [1] INTEGER OPTIONAL,

rANAPCause [2] INTEGER OPTIONAL,

bSSGPCause [3] INTEGER OPTIONAL,

gMMCause [4] INTEGER OPTIONAL,

sMCause [5] INTEGER OPTIONAL

}

CurrentLocationRetrieved ::= ENUMERATED

{

activeLocationRetrieval (0)

}

--

-- E

--

EPSLocationInfo ::= SEQUENCE

--

-- Only one element is present.

--

{

mMELocationInformation [0] MMELocationInformation OPTIONAL,

sGSNLocationInformation [1] SGSNLocationInformation OPTIONAL

}

--

-- L

--

LocationType ::= ENUMERATED

{

currentLocation (0),

lastKnownLocation (1)

}

--

-- M

--

MMELocationInformation ::= SEQUENCE

{

eUTRANCellGlobalIdentity [0] OCTET STRING OPTIONAL,

trackingAreaIdentity [1] OCTET STRING OPTIONAL,

geographicalInformation [2] OCTET STRING OPTIONAL,

geodeticInformation [3] OCTET STRING OPTIONAL,

currentLocationRetrieved [4] CurrentLocationRetrieved OPTIONAL,

ageOfLocationInformation [5] INTEGER OPTIONAL,

userCSGInformation [6] UserCSGInformation OPTIONAL,

eNodeBID [7] OCTET STRING OPTIONAL

}

MonitoringEventConfigStatus ::= SEQUENCE

{

serviceResult [0] ServiceResult OPTIONAL,

sCEFReferenceID [1] SCEFReferenceID OPTIONAL,

sCEFID [2] DiameterIdentity OPTIONAL

}

MonitoringEventConfigurationActivity ::= ENUMERATED

{

create (0),

transfer (1),

update (2),

delete (3)

}

MonitoringEventReportData ::= SEQUENCE

{

eventTimestamp [0] TimeStamp OPTIONAL,

sCEFReferenceID [1] SCEFReferenceID OPTIONAL,

sCEFID [2] DiameterIdentity OPTIONAL,

monitoringEventReportNumber [3] INTEGER OPTIONAL,

chargeablePartyIdentifier [4] UTF8String OPTIONAL,

monitoredUser [5] IMSI OPTIONAL,

monitoringType [6] MonitoringType OPTIONAL,

reachabilityInformation [7] ReachabilityType OPTIONAL,

reportedLocation [8] EPSLocationInfo OPTIONAL,

communicationFailureInformation [9] SEQUENCE OF CommunicationFailureInfo OPTIONAL,

listOfNumberOfUEPerLocationReport [10] SEQUENCE OF NumberOfUEPerLocationReport OPTIONAL

}

MonitoringType ::= ENUMERATED

--

-- Note: value "3" and "4" are not used in this specification: they are provided to reflect the full

-- list specified in TS 29.336 Monitoring-Type AVP.

--

{

lossOfConnectivity (0),

ueReachability (1),

locationReporting (2),

changeOfIMSIIMEISVAssociation (3),

roamingStatus (4),

communicationFailure (5),

availabilityAfterDDNFailure (6),

numberOfUEPerLocation (7)

}

--

-- N

--

NumberOfUEPerLocationReport ::= SEQUENCE

{

ePSLocationInformation [0] EPSLocationInfo OPTIONAL,

uECount [1] INTEGER OPTIONAL

}

--

-- R

--

ReachabilityConfiguration ::= SEQUENCE

{

reachabilityType [0] ReachabilityType OPTIONAL,

maximumLatency [1] INTEGER OPTIONAL,

maximumResponseTime [2] INTEGER OPTIONAL

}

ReachabilityType ::= ENUMERATED

{

reachabilityforSMS (0),

reachabilityforData (1)

}

--

-- S

--

SGSNLocationInformation ::= SEQUENCE

{

cellGlobalIdentity [0] OCTET STRING OPTIONAL,

locationAreaIdentity [1] OCTET STRING OPTIONAL,

serviceAreaIdentity [2] OCTET STRING OPTIONAL,

routingAreaIdentity [3] OCTET STRING OPTIONAL,

geographicalInformation [4] OCTET STRING OPTIONAL,

geodeticInformation [5] OCTET STRING OPTIONAL,

currentLocationRetrieved [6] CurrentLocationRetrieved OPTIONAL,

ageOfLocationInformation [7] INTEGER OPTIONAL,

userCSGInformation [8] UserCSGInformation OPTIONAL

}

SCEFReferenceID ::= INTEGER (0..4294967295)

--

-- 0..4294967295 is equivalent to 0..2\*\*32-1

--

ServiceResult ::= SEQUENCE

{

vendorId [0] INTEGER OPTIONAL,

serviceResultCode [1] INTEGER OPTIONAL

}

.#END

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