Technical Specification Group Services and System Aspects Meeting #10, Bangkok, Thailand, 11-14 December 2000

Source: SA WG5

Title: CRs to Telecommunications Management; Charging and billing;

3G call and event data for the Circuit Switched (CS) domain

(32.005)

Document for: Approval

Agenda Item: 7.5.3

Doc-1st-	Doc-2nd-	Spec	CR	Rev	Phase	Cat	Subject	Version-Current	Version-New	Work
Level	Level									item
SP-000523	S5-000535	32.005	002		R99	F	Support 3G CS by adding "system type" parameter to CDRs (same as in 3G PS)	3.2.0	3.3.0	OAM-CH
SP-000523	S5-000536	32.005	003		R99	F	Correction of parameter Location Area and Cell	3.2.0	3.3.0	OAM-CH
SP-000523	S5-000537	32.005	004		R99	F	Correction of parameter CallEventRecord	3.2.0	3.3.0	OAM-CH

3GPP TSG-SA5 (Telecom Management) Meeting #15, Girdwood, Alaska, USA, 16 - 20 October 2000

SA5#15(00)0535 Tdoc S5B000055

	СН	ANGE REC		ase see embedded help fi e for instructions on how t	
		32.005 CR		Current Versi	
GSM (AA.BB) or 30	G (AA.BBB) specification nur	mber ↑	↑ CR numb	er as allocated by MCC su	upport team
For submission		for approva for information		strate non-strate	(
Form: CR cove Proposed chang (at least one should be m		SMG The latest version of		ftp://ftp.3gpp.org/Infor	Core Network X
Source:	SA5#15			Date:	20/10/2000
Subject:	Support 3G CS by	vadding "system ty	<mark>pe" parameter to</mark>	CDRs (same as	in 3G PS)
Work item:	OAM-CH				
Category: A (only one category shall be marked with an X)	Corresponds to a Addition of feature Functional modific	cation of feature	arlier release	X Release:	Phase 2 Release 96 Release 97 Release 98 Release 99 Release 00
Reason for change:	2G air interface for		service. With t		te the use of 3G or definition, the billing
Clauses affected	4: A.9, B.2 and	B.3			
Affected:	Other 3G core spec Other GSM core sp MS test specification BSS test specification O&M specifications	ecifications ns	 → List of CRs: 	_	
Other comments:					

A.9 Abstract syntax

```
GSM1205-DataTypes { ccitt (0) identified-organization (4) etsi (0) mobileDomain (0) gsm-Operation-
Maintenance (3) gsm-12-05 (5) informationModel (0) asnlModule (2) 1 }
DEFINITIONS IMPLICIT TAGS
BEGIN
-- EXPORTS everything
TMPORTS
NumberOfForwarding, CallReferenceNumber
FROM MAP-CH-DataTypes { ccitt identified-organization (4) etsi(0) mobileDomain (0) gsmNetworkId (1)
moduleId (3) map-CH-DataTypes (13) version2 (2) }
AddressString, ISDN-AddressString, BasicServiceCode, IMSI, IMEI
FROM MAP-CommonDataTypes { ccitt identified-organization (4) etsi(0) mobileDomain (0) gsmNetworkId
(1) moduleId (3) map-CommonDataTypes (18) version2 (2) }
DestinationRoutingAddress,
FROM CAP-DataTypes { ccitt identified-organization (4) etsi(0) mobileDomain (0)
gsm-Network(1) modules(3) cap-datatypes (52) version1 (0) }
ServiceKey, DefaultCallHandling, DefaultSMS-Handling
FROM MAP-MS-DataTypes { ccitt identified-organization (4) etsi(0) mobileDomain (0)
gsm-Network(1) modules(3) map-MS-DataTypes (11) version6 (6) }
BearerServiceCode
 \begin{tabular}{ll} FROM $MAP-BS-Code { ccitt identified-organization (4) etsi(0) mobile} Domain(0) gsmNetworkId (1) \\ \end{tabular} }
moduleId (3) map-BS-Code (20) version2 (2) }
TeleserviceCode
FROM MAP-TS-Code { ccitt identified-organization (4) etsi(0) mobileDomain(0) gsmNetworkId (1)
moduleId (3) map-TS-Code (19) version2 (2) }
FROM MAP-SS-Code { ccitt identified-organization (4) etsi(0) mobileDomain(0) gsmNetworkId (1)
moduleId (3) map-SS-Code (15) version2 (2) }
FROM Basic-Service-Elements { ccitt identified-organization (4) etsi (0)
196 basic-service-elements (8) }
-- See "Digital Subscriber Signalling System No. one (DSS1) protocol"
-- ETS 300 196
ObjectInstance
FROM CMIP-1 {joint-iso-ccitt ms(9) cmip(1) version1 (1) protocol (3)}
Management Extension
FROM Attribute-ASN1Module {joint-iso-ccitt ms(9) smi(3) part2 (2) asn1Module(2) 1}
FROM ACSE-1 {joint-iso-ccitt association-control(2) abstract-syntax(1) apdus(0) version(1) };
-- Note that the syntax of AE-title to be used is from
-- ITU-T Rec. X.227 / ISO 8650 corrigendum and not "ANY"
-- CALL AND EVENT RECORDS
CallEventRecord ::= CHOICE
    moCallRecord
                        [0] MOCallRecord,
    mtCallRecord
                        [1] MTCallRecord,
                        [2] RoamingRecord,
    roamingRecord
    incGatewayRecord
                        [3] IncGatewayRecord,
                        [4] OutGatewayRecord,
    outGatewayRecord
    transitRecord
                        [5] TransitCallRecord,
                        [6] MOSMSRecord,
    moSMSRecord
    mtSMSRecord
                        [7] MTSMSRecord,
                        [8] MOSMSIWRecord,
    moSMSIWRecord
    mtSMSGWRecord
                        [9] MTSMSGWRecord.
                        [10] SSActionRecord,
    ssActionRecord
                        [11] HLRIntRecord,
    hlrIntRecord
    locUpdateHLRRecord [12] LocUpdateHLRRecord,
```

locUpdateVLRRecord [13] LocUpdateVLRRecord,

```
[14] CommonEquipRecord,
    commonEquipRecord
    recTypeExtensions
                         [15] ManagementExtensions,
    termCAMELIntRecord [16] TermCAMELIntRecord
MOCallRecord
                ::= SET
    recordType
                         [0] CallEventRecordType,
    servedIMSI
                         [1] IMSI OPTIONAL,
    servedIMEI
                         [2] IMEI OPTIONAL,
                         [3] MSISDN OPTIONAL
    servedMSISDN
                         [4] CallingNumber OPTIONAL,
[5] CalledNumber OPTIONAL,
    callingNumber
    calledNumber
    translatedNumber
                         [6] TranslatedNumber OPTIONAL,
                         [7] ConnectedNumber OPTIONAL,
    connectedNumber
                         [8] RoamingNumber OPTIONAL,
    roamingNumber
                         [9] RecordingEntity,
    recordingEntity
                         [10] TrunkGroup OPTIONAL, [11] TrunkGroup OPTIONAL,
    mscIncomingTKGP
    mscOutgoingTKGP
                         [12] LocationAreaAndCell OPTIONAL,
    location
    changeOfLocation
                         [13] SEQUENCE OF LocationChange OPTIONAL,
    basicService
                         [14] BasicServiceCode OPTIONAL,
    transparencyIndicator
                            [15] TransparencyInd OPTIONAL,
                         [16] SEQUENCE OF ChangeOfService OPTIONAL, [17] SEQUENCE OF SuppServiceUsed OPTIONAL,
    changeOfService
    supplServicesUsed
                         [18] AOCParameters OPTIONAL,
    aocParameters
    changeOfAOCParms
                         [19] SEQUENCE OF AOCParmChange OPTIONAL,
                         [20] Classmark OPTIONAL,
    msClassmark
                         [21] ChangeOfClassmark OPTIONAL,
    changeOfClassmark
                         [22] TimeStamp OPTIONAL,
    seizureTime
    answerTime
                         [23] TimeStamp OPTIONAL,
                         [24] TimeStamp OPTIONAL,
    releaseTime
    callDuration
                         [25] CallDuration,
                         [26] DataVolume OPTIONAL,
    dataVolume
    radioChanRequested [27] RadioChanRequested OPTIONAL,
                         [28] TrafficChannel OPTIONAL,
    radioChanUsed
    changeOfRadioChan
                         [29] ChangeOfRadioChannel OPTIONAL,
    causeForTerm
                         [30] CauseForTerm,
                         [31] Diagnostics OPTIONAL,
    diagnostics
                         [32] CallReference,
    callReference
                         [33] INTEGER OPTIONAL,
    sequenceNumber
    additionalChgInfo
                         [34] AdditionalChgInfo OPTIONAL,
                         [35] ManagementExtensions OPTIONAL,
    recordExtensions
    qsm-SCFAddress
                         [36] Gsm-SCFAddress OPTIONAL,
    serviceKey
                         [37] ServiceKey OPTIONAL,
    networkCallReference
                             [38] NetworkCallReference OPTIONAL,
    mSCAddress
                             [39] MSCAddress OPTIONAL,
    cAMELInitCFIndicator
                             [40] CAMELInitCFIndicator OPTIONAL,
    defaultCallHandling
                             [41] DefaultCallHandling OPTIONAL,
    hSCSDChanRequested
                             [42] NumOfHSCSDChanRequested OPTIONAL,
    hSCSDChanAllocated
                             [43] NumOfHSCSDChanAllocated OPTIONAL,
    changeOfHSCSDParms
                             [44] SEQUENCE OF HSCSDParmsChange OPTIONAL,
                             [45] Fnur OPTIONAL,
    fnur
    aiurRequested
                             [46] AiurRequested OPTIONAL,
                           [47] SEQUENCE OF ChannelCoding OPTIONAL,
    chanCodingsAcceptable
    chanCodingUsed
                             [48] ChannelCoding OPTIONAL,
    speechVersionSupported [49] SpeechVersionIdentifier OPTIONAL,
    speechVersionUsed
                             [50] SpeechVersionIdentifier OPTIONAL,
    numberOfDPEncountered [51] INTEGER OPTIONAL,
    levelOfCAMELService
                             [52] LevelOfCAMELService OPTIONAL,
    freeFormatData
                             [53] FreeFormatData OPTIONAL,
    cAMELCallLegInformation [54] SEQUENCE OF CAMELINformation OPTIONAL,
                            [55] BOOLEAN OPTIONAL,
    freeFormatDataAppend
    defaultCallHandling_2
                            [56] DefaultCallHandling OPTIONAL,
    gsm-SCFAddress_2
                            [57] Gsm-SCFAddress OPTIONAL,
    serviceKey_2
freeFormatData_2
                             [58] ServiceKey OPTIONAL,
                             [59] FreeFormatData OPTIONAL,
    freeFormatDataAppend_2 [60] BOOLEAN OPTIONAL
    systemType
                             [61] SystemType OPTIONAL
                        ::= SET
MTCallRecord
    recordType
                        [0] CallEventRecordType,
    servedIMSI
                         [1] IMSI,
    servedIMEI
                         [2] IMEI OPTIONAL,
    servedMSISDN
                         [3] CalledNumber OPTIONAL,
    callingNumber
                         [4] CallingNumber OPTIONAL
    connectedNumber
                         [5] ConnectedNumber OPTIONAL,
    recordingEntity
                         [6] RecordingEntity,
    mscIncomingTKGP
                         [7] TrunkGroup OPTIONAL,
                         [8] TrunkGroup OPTIONAL,
    mscOutgoingTKGP
                         [9] LocationAreaAndCell OPTIONAL,
    location
    changeOfLocation
                         [10] SEQUENCE OF LocationChange OPTIONAL,
```

```
[11] BasicServiceCode OPTIONAL,
    basicService
    transparencyIndicator [12] TransparencyInd OPTIONAL,
                          [13] SEQUENCE OF ChangeOfService OPTIONAL,
    changeOfService
                          [14] SEQUENCE OF SuppServiceUsed OPTIONAL,
    supplServicesUsed
    aocParameters [15] AOCParameters OPTIONAL, changeOfAOCParms [16] SEQUENCE OF AOCParmChange OPTIONAL,
    msClassmark
                          [17] Classmark OPTIONAL,
    changeOfClassmark [18] ChangeOfClassmark OPTIONAL,
    seizureTime
                         [19] TimeStamp OPTIONAL,
[20] TimeStamp OPTIONAL,
    answerTime
    releaseTime
                          [21] TimeStamp OPTIONAL,
    callDuration
                          [22] CallDuration,
                          [23] DataVolume OPTIONAL,
    dataVolume
    radioChanRequested [24] RadioChanRequested OPTIONAL,
    radioChanUsed [25] TrafficChannel OPTIONAL, changeOfRadioChan [26] ChangeOfRadioChannel OPTIONAL,
    causeForTerm [27] CauseForTerm,
diagnostics [28] Diagnostics OPTIONAL,
    callReference [29] CallReference, sequenceNumber [30] INTEGER OPTIONAL,
    additionalChgInfo [31] AdditionalChgInfo OPTIONAL,
    recordExtensions
                         [32] ManagementExtensions OPTIONAL,
    networkCallReference
                             [33] NetworkCallReference OPTIONAL,
    mSCAddress
                               [34] MSCAddress OPTIONAL,
    hSCSDChanRequested
                               [35] NumOfHSCSDChanRequested OPTIONAL,
    hSCSDChanAllocated
                               [36] NumOfHSCSDChanAllocated OPTIONAL,
    changeOfHSCSDParms
                               [37] SEQUENCE OF HSCSDParmsChange OPTIONAL,
                               [38] Fnur OPTIONAL,
    fnur
    aiurRequested
                               [39] AiurRequested OPTIONAL,
                              [40] SEQUENCE OF ChannelCoding OPTIONAL,
    chanCodingsAcceptable
                               [41] ChannelCoding OPTIONAL,
    chanCodingUsed
    speechVersionSupported [42] SpeechVersionIdentifier OPTIONAL,
    speechVersionUsed
                              [43] SpeechVersionIdentifier OPTIONAL,
    gsm-SCFAddress
                               [44] Gsm-SCFAddress OPTIONAL,
    serviceKey
                              [45] ServiceKey OPTIONAL,
    networkCallReference
                              [46] NetworkCallReference OPTIONAL,
                              [47] MSCAddress OPTIONAL,
    mSCAddress
    defaultCallHandling
                              [48] DefaultCallHandling OPTIONAL,
    freeFormatData
                              [49] FreeFormatData OPTIONAL,
    freeFormatDataAppend
                               [50] BOOLEAN OPTIONAL
                               [51] SystemType OPTIONAL
    systemType
                         ::= SET
RoamingRecord
                          [0] CallEventRecordType,
[1] IMSI,
    recordType
    servedIMSI
    servedMSISDN
                         [2] MSISDN OPTIONAL,
    callingNumber
                          [3] CallingNumber OPTIONAL,
                         [4] RoamingNumber OPTIONAL,
    roamingNumber
    recordingEntity
                         [5] RecordingEntity,
                         [6] TrunkGroup OPTIONAL,
[7] TrunkGroup OPTIONAL,
    mscIncomingTKGP
    mscOutgoingTKGP
                         [8] BasicServiceCode OPTIONAL,
    basicService
    transparencyIndicator
                              [9] TransparencyInd OPTIONAL,
    changeOfService [10] SEQUENCE OF ChangeOfService OPTIONAL, supplServiceSused [11] SEQUENCE OF SuppServiceUsed OPTIONAL, seizureTime [12] TimeStamp OPTIONAL, answerTime [13] TimeStamp OPTIONAL,
                         [14] TimeStamp OPTIONAL,
    releaseTime
    callDuration
                         [15] CallDuration,
                         [16] DataVolume OPTIONAL,
    dataVolume
    causeForTerm
                         [17] CauseForTerm,
                         [18] Diagnostics OPTIONAL,
    diagnostics
    callReference
                          [19] CallReference,
                        [20] INTEGER OPTIONAL,
    sequenceNumber
                         [21] ManagementExtensions OPTIONAL,
e [22] NetworkCallReference OPTIONAL,
    recordExtensions
    networkCallReference
                          [23] MSCAddress OPTIONAL
    mSCAddress
}
TermCAMELIntRecord ::= SET
    recordtype
                                   [0] CallEventRecordType,
    servedIMSI
                                   [1] IMSI,
                                   [2] MSISDN OPTIONAL,
    servedMSISDN
    recordingEntity
                                   [3] RecordingEntity,
    interrogationTime
                                   [4] TimeStamp,
    destinationRoutingAddress
                                  [5] DestinationRoutingAddress,
    gsm-SCFAddress
                                   [6] Gsm-SCFAddress,
    serviceKey
                                   [7] ServiceKey,
    networkCallReference
                                   [8] NetworkCallReference OPTIONAL,
    mSCAddress
                                   [9] MSCAddress OPTIONAL,
    defaultCallHandling
                                   [10] DefaultCallHandling OPTIONAL,
    recordExtensions
                                   [11] ManagementExtensions OPTIONAL,
    calledNumber
                                   [12] CalledNumber,
```

```
[13] CallingNumber OPTIONAL,
    callingNumber
    mscIncomingTKGP
                                [14] TrunkGroup OPTIONAL,
                                [15] TrunkGroup OPTIONAL,
    mscOutgoingTKGP
                                [16] TimeStamp OPTIONAL,
   seizureTime
                                [17] TimeStamp OPTIONAL,
    answerTime
                                [18] TimeStamp OPTIONAL,
   releaseTime
    callDuration
                                [19] CallDuration,
                                [20] DataVolume OPTIONAL,
    dataVolume
    causeForTerm
                                [21] CauseForTerm,
                                [22] Diagnostics OPTIONAL,
    diagnostics
                                [23] CallReference,
    callReference
                                [24] INTEGER OPTIONAL,
    sequenceNumber
                                [25] INTEGER OPTIONAL,
[26] LevelOfCAMELService OPTIONAL,
    numberOfDPEncountered
    levelOfCAMELService
                                [27] FreeFormatData OPTIONAL,
    freeFormatData
    cAMELCallLegInformation
                                [28] SEQUENCE OF CAMELInformation OPTIONAL,
                                [29] BOOLEAN OPTIONAL
    freeFormatDataAppend
                       ::= SET
IncGatewayRecord
    recordType
                       [0] CallEventRecordType
    callingNumber
                       [1] CallingNumber OPTIONAL,
                       [2] CalledNumber,
    calledNumber
    recordingEntity
                       [3] RecordingEntity
                        [4] TrunkGroup OPTIONAL,
    mscIncomingTKGP
    mscOutgoingTKGP
                       [5] TrunkGroup OPTIONAL,
    seizureTime
                        [6] TimeStamp OPTIONAL,
                       [7] TimeStamp OPTIONAL,
    answerTime
                       [8] TimeStamp OPTIONAL,
    releaseTime
                       [9] CallDuration,
    callDuration
    dataVolume
                        [10] DataVolume OPTIONAL,
    causeForTerm
                       [11] CauseForTerm,
    diagnostics
                       [12] Diagnostics OPTIONAL,
                       [13] CallReference,
   callReference
    sequenceNumber
                        [14] INTEGER OPTIONAL,
   recordExtensions
                       [15] ManagementExtensions OPTIONAL
}
OutGatewayRecord
                        ::= SET
                        [0] CallEventRecordType,
   recordType
                        [1] CallingNumber OPTIONAL,
   callingNumber
                       [2] CalledNumber,
   calledNumber
   recordingEntity
                        [3] RecordingEntity
                       [4] TrunkGroup OPTIONAL,
[5] TrunkGroup OPTIONAL,
   mscIncomingTKGP
   mscOutgoingTKGP
    seizureTime
                       [6] TimeStamp OPTIONAL,
    answerTime
                        [7] TimeStamp OPTIONAL,
    releaseTime
                       [8] TimeStamp OPTIONAL,
                       [9] CallDuration,
    callDuration
    dataVolume
                       [10] DataVolume OPTIONAL,
    causeForTerm
                        [11] CauseForTerm,
                       [12] Diagnostics OPTIONAL,
    diagnostics
    callReference
                        [13] CallReference,
                        [14] INTEGER OPTIONAL,
    sequenceNumber
    recordExtensions
                        [15] ManagementExtensions OPTIONAL
TransitCallRecord
                       ::= SET
   recordType
                       [0] CallEventRecordType,
                       [1] RecordingEntity,
   recordingEntity
                       [2] TrunkGroup OPTIONAL,
   mscIncomingTKGP
   mscOutgoingTKGP
                        [3] TrunkGroup OPTIONAL,
                        [4] CallingNumber OPTIONAL,
   callingNumber
                       [5] CalledNumber,
[6] BasicService OPTIONAL,
    calledNumber
    isdnBasicService
                        [7] TimeStamp OPTIONAL,
[8] TimeStamp OPTIONAL,
    seizureTimestamp
    answerTimestamp
                        [9] TimeStamp OPTIONAL,
    releaseTimestamp
                        [10] CallDuration,
    callDuration
                        [11] DataVolume OPTIONAL,
    dataVolume
    causeForTerm
                        [12] CauseForTerm,
                       [13] Diagnostics OPTIONAL,
    diagnostics
    callReference
                        [14] CallReference,
    sequenceNumber
                        [15] INTEGER OPTIONAL,
    recordExtensions
                        [16] ManagementExtensions OPTIONAL
}
MOSMSRecord
                        ::= SET
    recordType
                                         [0] CallEventRecordType,
    servedIMSI
                                         [1] IMSI,
                                         [2] IMEI OPTIONAL,
    servedIMEI
    servedMSISDN
                                         [3] MSISDN OPTIONAL,
```

```
msClassmark
                                         [4] Classmark,
                                         [5] AddressString,
    serviceCentre
    recordingEntity
                                         [6] RecordingEntity,
                                         [7] LocationAreaAndCell OPTIONAL,
    location
    messageReference
                                         [8] MessageReference,
                                         [9] TimeStamp,
    originationTime
    smsResult
                                         [10] SMSResult OPTIONAL,
    recordExtensions
                                         [11] ManagementExtensions OPTIONAL,
                                         [12] CalledNumber OPTIONAL,
    destinationNumber
    cAMELSMSInformation
                                         [13] CAMELSMSInformation OPTIONAL,
                                         [14] SystemType OPTIONAL
    systemType
MTSMSRecord
                        ::= SET
    recordType
                       [0] CallEventRecordType,
                       [1] AddressString,
[2] IMSI,
    serviceCentre
    servedIMSI
                        [3] IMEI OPTIONAL,
    servedIMEI
                        [4] MSISDN OPTIONAL,
    servedMSISDN
    msClassmark
                       [5] Classmark,
    recordingEntity
                       [6] RecordingEntity,
    location
                        [7] LocationAreaAndCell OPTIONAL,
    deliveryTime
                        [8] TimeStamp,
    smsResult
                        [9] SMSResult OPTIONAL,
    recordExtensions
                        [10] ManagementExtensions OPTIONAL,
                        [11] SystemType OPTIONAL
    systemType
MOSMSIWRecord
                        ::= SET
    recordType
                        [0] CallEventRecordType,
                        [1] AddressString,
    serviceCentre
    servedIMSI
                        [2] IMSI,
                        [3] RecordingEntity,
    recordingEntity
    eventTime
                        [4] TimeStamp,
                        [5] SMSResult OPTIONAL,
    smsResult
    recordExtensions
                        [6] ManagementExtensions OPTIONAL
}
                        ::= SET
MTSMSGWRecord
    recordType
                        [0] CallEventRecordType,
    serviceCentre

    AddressString,

                        [2] IMSI,
    servedIMSI
                        [3] MSISDN OPTIONAL,
    servedMSISDN
    recordingEntity
                        [4] RecordingEntity,
    eventTime
                        [5] TimeStamp,
    smsResult
                        [6] SMSResult OPTIONAL,
    recordExtensions
                       [7] ManagementExtensions OPTIONAL
SSActionRecord
                        ::= SET
    recordType
                        [0] CallEventRecordType,
                        [1] IMSI,
    servedIMEI
                        [2] IMEI OPTIONAL,
    servedMSISDN
                        [3] MSISDN OPTIONAL,
                        [4] Classmark,
    msClassmark
    recordingEntity
                       [5] RecordingEntity,
    location
                        [6] LocationAreaAndCell OPTIONAL,
    basicServices
                        [7] BasicServices OPTIONAL,
    supplService
                        [8] SS-Code OPTIONAL,
                        [9] SSActionType OPTIONAL,
    ssAction
    ssActionTime
                        [10] TimeStamp,
                        [11] SSParameters OPTIONAL,
    ssParameters
                        [12] SSActionResult OPTIONAL,
[13] CallReference,
    ssActionResult
    callReference
    recordExtensions
                        [14] ManagementExtensions OPTIONAL,
    systemType
                        [15] SystemType OPTIONAL
HLRIntRecord
                        ::= SET
    recordType
                        [0] CallEventRecordType,
                        [1] IMSI,
    servedIMSI
    servedMSISDN
                       [2] MSISDN,
    recordingEntity
                        [3] RecordingEntity,
                        [4] BasicServiceCode OPTIONAL,
    basicService
    routingNumber
                        [5] RoutingNumber,
    interrogationTime
                        [6] TimeStamp,
    numberOfForwarding
                        [7] NumberOfForwarding OPTIONAL,
    interrogationResult [8] HLRIntResult OPTIONAL,
                        [9] ManagementExtensions OPTIONAL
    recordExtensions
}
```

```
LocUpdateHLRRecord
                         ::= SET
    recordType
                         [0] CallEventRecordType,
                         [1] IMSI,
    servedIMSI
                         [2] RecordingEntity,
    recordingEntity
    oldLocation
                        [3] Location-info OPTIONAL,
    newLocation
                         [4] Location-info,
                        [5] TimeStamp,
    updateTime
                        [6] LocUpdResult OPTIONAL,
[7] ManagementExtensions OPTIONAL
    updateResult
    recordExtensions
}
LocUpdateVLRRecord
                         ::= SET
    recordType
                         [0] CallEventRecordType,
    servedIMSI
                         [1] IMSI,
                        [2] MSISDN OPTIONAL,
[3] RecordingEntity,
    servedMSISDN
    recordingEntity
    oldLocation
                        [4] Location-info OPTIONAL,
    newLocation
                         [5] Location-info,
                        [6] Classmark,
[7] TimeStamp,
    msClassmark
    updateTime
    updateResult
                         [8] LocUpdResult OPTIONAL,
    recordExtensions
                        [9] ManagementExtensions OPTIONAL
CommonEquipRecord
                         ::= SET
    recordType
                         [0] CallEventRecordType,
                        [1] EquipmentType,
    equipmentType
    equipmentId
                         [2] EquipmentId,
                        [3] IMSI,
    servedIMSI
                        [4] MSISDN OPTIONAL, [5] RecordingEntity,
    servedMSISDN
    recordingEntity
                        [6] BasicServiceCode OPTIONAL,
    basicService
                         [7] SEQUENCE OF ChangeOfService OPTIONAL,
    changeOfService
    supplServicesUsed [8] SEQUENCE OF SuppServiceUsed OPTIONAL, seizureTime [9] TimeStamp,
    seizureTime
                        [10] TimeStamp OPTIONAL,
    releaseTime
    callDuration
                         [11] CallDuration,
                        [12] CallReference,
[13] INTEGER OPTIONAL,
    callReference
    sequenceNumber
    recordExtensions
                       [14] ManagementExtensions OPTIONAL
    OBSERVED IMEI TICKETS
ObservedIMEITicket
                         ::= SET
    servedIMEI
                        [0] IMEI,
                        [1] IMEIStatus,
    imeiStatus
    servedIMSI
                        [2] IMSI,
    servedMSISDN
                        [3] MSISDN OPTIONAL,
                        [4] RecordingEntity,
    recordingEntity
                        [5] TimeStamp,
    eventTime
    location
                         [6] LocationAreaAndCell
                        [7] IMEICheckEvent OPTIONAL,
    imeiCheckEvent
    callReference
                        [8] CallReference OPTIONAL,
                        [9] ManagementExtensions OPTIONAL
    recordExtensions
}
   FTAM FILE CONTENTS
CallEventDataFile
                         ::= SEQUENCE
                        [0] HeaderRecord,
    headerRecord
                       [1] SEQUENCE OF CallEventRecord,
[2] TrailerRecord,
    callEventRecords
    trailerRecord
                         [3] ManagementExtensions
    extensions
ObservedIMEITicketFile ::= SEQUENCE
    productionDateTime [0] TimeStamp,
    observedIMEITickets [1] SEQUENCE OF ObservedIMEITicket,
                         [2] INTEGER,
    noOfRecords
```

```
extensions
                       [3] ManagementExtensions
}
HeaderRecord
                       ::= SEQUENCE
   productionDateTime [0] TimeStamp,
   recordingEntity
                      [1] RecordingEntity,
                      [2] ManagementExtensions
   extensions
TrailerRecord
                      ::= SEOUENCE
   productionDateTime [0] TimeStamp,
                       [1] RecordingEntity,
   recordingEntity
   firstCallDateTime
                      [2] TimeStamp,
   lastCallDateTime
                       [3] TimeStamp,
   noOfRecords
                       [4] INTEGER,
    extensions
                       [5] ManagementExtensions
   OBJECT IDENTIFIERS
gsm1205InformationModel OBJECT IDENTIFIER ::=
    { ccitt (0) identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Operation-Maintenance (3) gsm-12-05 (5) informationModel (0) }
                 OBJECT IDENTIFIER
gsm1205ASN1Module
                                     : : =
   { gsm1205InformationModel asn1Module(2) }
gsm1205ManagedObjectClass OBJECT IDENTIFIER ::=
   { gsm1205InformationModel managedObjectClass(3) }
gsm1205Package OBJECT IDENTIFIER ::=
   { gsm1205InformationModel package(4) }
gsm1205NameBinding OBJECT IDENTIFIER ::=
    { gsm1205InformationModel nameBinding(6) }
gsm1205Attribute OBJECT IDENTIFIER ::=
    { gsm1205InformationModel attribute(7) }
gsm1205Action OBJECT IDENTIFIER ::=
    { gsm1205InformationModel action(9) }
gsm1205Notification OBJECT IDENTIFIER
    { gsm1205InformationModel notification(10) }
   COMMON DATA TYPES
      ______
SystemType ::= ENUMERATED
   umtsRel99
                       (1)
}
END
```

B.2 Record contents

The following tables describe the contents of each of the call and event records defined in the present document. Each table contains the name of the field, a key indicating whether or not the field is mandatory, and a description of the contents.

The key field has the following meaning:

- M This field is mandatory and always present. Any exceptions to this rule are explicitly described.
- C This field is only available under certain conditions. If available the field is present. The conditions under which the field is available are individually described.
- O This field is optional and configurable either via additional TMN management functions or manufacturer specific means. For the avoidance of doubt, optional does not mean that the parameter is not supported by the

network element. Equipment manufacturers shall be capable of providing all of these fields in order to claim conformance with the present document.

B.2.1 Mobile originated call attempt

If the generation of these records is enabled then an MOC record shall be created for each outgoing call attempt made by a mobile station. These MOC records shall be produced in the originating MSC.

Table B.1: MOC record

Field		Description
Record Type	М	Mobile originated.
Served IMSI	М	IMSI of the calling party.
Served IMEI	С	IMEI of the calling ME, if available.
Served MSISDN	0	The primary MSISDN of the calling party.
Called Number	M	The address of the called party e.g. the number dialled by the calling sub.
Translated Number	0	The called number after digit translation within the MSC (if applicable)
Connected Number	0	The number of the connected party if different to the Called Number
Roaming Number	0	The Mobile Station Roaming Number employed to route this connection, if applicable.
Recording Entity	М	The E.164 number of the visited MSC producing the record.
Incoming TKGP	0	The MSC trunk group on which the call originated , usually from the BSS
Outgoing TKGP	0	The trunk group on which the call left the MSC
Location	М	The identity of the cell in which the call originated including the location area code.
Change of Location	0	A list of changes in Location Area Code / Cell Id. each time-stamped.
Basic service	M	Bearer or teleservice employed.
Transparency Indicator	С	Only provided for those teleservices which may be employed in both transparent and non-transparent mode.
ChangeOfService	0	A list of changes of basic service during a connection each time-stamped.
Supp. Services	С	Supplementary services invoked as a result of this connection.
AOC Parameters	0	The charge advice parameters sent to the MS on call set-up
Change of AOC Parms	0	New AOC parameters sent to the MS e.g. as a result of a tariff switch over, including the time at which the new set was applied.
MS Classmark	М	The mobile station classmark employed on call set-up.
Change of Classmark	0	A list of changes to the classmark during the connection each time-stamped
Event time stamps:	С	Seizure of incoming traffic channel (for unsuccessful call attempts)
	C	Answer (for successful calls)
Call direction	0	Release of traffic channel
Call duration	М	The chargeable duration of the connection for successful calls, the holding time for call attempts.
Radio Chan. Requested	0	The type of radio traffic channel (full / half etc.) requested by the MS.
Radio Chan. Used	M	The type of radio channel actually used (full or half rate).
Change of Rad. Chan.	0	A list of changes each time stamped
Cause for termination	M	The reason for the release of the connection. A more detailed reason for the release of the connection.
Diagnostics Data volume	O C	The number of data segments transmitted if available at the MSC
Sequence no.	С	Partial record sequence number, only present in case of partial records.
Call reference	M	A local identifier distinguishing between transactions on the same MS
Additional Chg. Info	0	Charge/no charge indicator and additional charging parameters
Record extensions	0	A set of network/ manufacturer specific extensions to the record.
gsmSCF address	C	Identifies the CAMEL server serving the subscriber.
Service key	C	The CAMEL service logic to be applied.
Network call reference	С	An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied.
MSC Address	С	This field contains the E.164 number assigned to the MSC that generated the network call reference.
Default call handling	0	Indicates whether or not a CAMEL call encountered default call handling. This field shall be present only if default call handling has been applied.
Number of HSCSD Channels Requested	С	The maximum number of HSCSD channels requested as received from the MS at call set-up
Number of HSCSD Channels Allocated	С	The number of HSCSD channels allocated to the MS at call set-up
Change of HSCSD	С	A list of network or user initiated changes of number of HSCSD channels during a
Parameters		connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure.
Fixed Network User Rate	0	May be present for HSCSD connections.
Air Interface User Rate Requested	С	The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections.
Channel Coding	С	A list of the traffic channels codings accepted by the MS. Shall only be present for HSCSD connections.
Accepted Channel Coding Used	С	The traffic channels codings negotiated between the MS and the network at call
Choop Varaian Haad		setup. Shall only be present for HSCSD connections.
Speech Version Used	0	Speech version used for that call

Speech Version Supported	0	Speech version supported by the MS with highest priority indicated by MS
Number of DP encountered	0	Number that counts how often armed detection points (TDP and EDP) were encountered.
Level of CAMEL service	0	Indicator for the complexity of the CAMEL feature used.
Free format Data	С	This field contains data sent by the gsmSCF in the FCI message(s). The data can be sent either in one FCI message or several FCI messages with append indicator.
CAMEL call leg information	С	Set of CAMEL information IEs. Each of these IEs contains information related to one outgoing CAMEL call leg.
Free format data append indicator	С	Indicator if free format data from this CDR is to be appended to free format data in previous partial CDR.
Free format Data	С	This field contains data sent by the gsmSCF in the FCI messages. The data can be sent either in one FCI message or several FCI messages with append indicator.
CAMEL call leg information	С	Set of CAMEL information IEs. Each of these IEs contains information related to one outgoing CAMEL call leg.
Free format data append indicator	С	Indicator if free format data from this CDR is to be appended to free format data in previous partial CDR.
Default call handling 2	0	Indicates whether or not a CAMEL call encountered default call handling for 2 nd service such as dialled service. This field shall be present only if default call handling has been applied.
GsmSCF address 2	С	Identifies the CAMEL server serving the subscriber for 2 nd service such as dialled service.
Service key 2	С	The CAMEL service logic to be applied for 2 nd service such as dialled service.
Free format Data 2	С	This field contains data sent by the gsmSCF in the FCI message(s) for 2 nd service such as dialled service. The data can be sent either in one FCI message or several FCI messages with append indicator.
Free format data append indicator 2	С	Indicator if free format data for 2 nd service from this CDR is to be appended to free format data in previous partial CDR.
System Type	<u>C</u>	Indicates 3G-UMTS System; Not present for GSM.

B.2.2 Mobile originated emergency call attempt

If the generation of MOC records is enabled then an MOC emergency record shall be created for each outgoing emergency call attempt made by a mobile station. These records shall be produced in the originating MSC.

Table B.2: MOC emergency record

Field		Description			
Record Type	М	Mobile originated.			
Served IMSI	С	IMSI of the calling party in case of an emergency call with a SIM card.			
Served IMEI	С	IMEI of the calling mobile equipment if available.			
Served MSISDN	0	The primary MSISDN of the calling party.			
Translated Number	0	The called number after digit translation within the MSC (if applicable)			
Recording Entity	M	The E.164 number of the visited MSC producing the record.			
Incoming TKGP	0	The MSC trunk group on which the call originated, usually from the BSS			
Outgoing TKGP	0	The trunk group on which the call left the MSC			
Location	М	The identity of the cell in which the call originated including the location area			
		code.			
Change of Location	0	A list of changes in Location Area Code / Cell Id. each time-stamped.			
Basic service	М	Teleservice 'emergency call'.			
AOC Parameters	0	The charge advice parameters sent to the MS on call set-up			
Change of AOC Parms	0	New AOC parameters sent to the MS e.g. as a result of a tariff switch over,			
		including the time at which the new set was applied.			
MS Classmark	М	The mobile station classmark employed on call set-up.			
Change of classmark	0	A list of changes to the classmark during the connection each time-stamped			
Event time stamps:	С	Seizure of incoming traffic channel (for unsuccessful call attempts)			
	С	Answer (for successful calls)			
	0	Release of traffic channel			
Call duration	М	The chargeable duration of the connection for successful calls, the holding time for call attempts.			
Radio Chan. Requested	0	The type of radio traffic channel (full / half etc.) requested by the MS.			
Radio Chan. Used	M	The type of radio channel used (full or half rate).			
Change of Rad. Chan.	0	A list of changes each time stamped			
Cause for termination	М	The reason for the release of the connection.			
Diagnostics	0	A more detailed reason for the release of the connection.			
Sequence no.	С	Partial record sequence number, only present in case of partial records.			
Call reference M		A local identifier distinguishing between transactions on the same MS			
Record extensions	0	A set of network/ manufacturer specific extensions to the record.			
System Type	<u>C</u>	Indicates 3G-UMTS System; Not present for GSM.			

B.2.4 Mobile terminated call attempt

If the generation of these records is enabled, then an MTC record shall be created for each incoming call attempt made for a mobile station. The MTC records shall be produced in the terminating MSC.

Table B.4: MTC record

Record Type Served IMSI MISI of the called ME. Served MISISDN O IMEI of the called ME. Served MISISDN O Office called party. Calling Number C C The number of the called party. Calling Number C C The number of the called party. Calling Number C C The number of the called party. Calling Number C C The number of the called party. Calling Number C C The number of the calling party if available. Recording Entity M The E.164 number of the visited (terminating) MSC Incoming TKGP O The trunk group on which the call originated. Cutogoing TKGP O The trunk group on which the call originated. Change of Location C Change of Location C Change of Location C Change of Location D A list of changes in Location Area Code / Cell Id. each time-stamped. Basic Service M Transparency Indicator C Change of Service Supp. services C C Supplementary services invoked as a result of this commection. Change of Service Supp. services C C Supplementary services invoked as a result of this commection. Change of AOC Parms. Change of Classmark M Change of Classmark C C C Supplementary services in the MS on call set-up C New AOC parameters service to the MS on call set-up C New AOC parameters service to the MS on call set-up C Redio Chan. Used C C C C C C C C C C C C C C C C C C C	Field		Description
Served MISES NO No May 1 The MISS DN of the called ME. Served MISES NO No May 1 The MISS DN of the called party. Calling Number Co The number of the calling party if available. Connected Number O Co Only relevant in case of call forwarding where the "forwarded-to" number is recorded. Recording Entity Mises No MISES No No MISES No	Record Type	M	
Served MSISDN O The MSISDN of the called party. Calling Number C Connected Number Connected Number Connected Number O Only relevant in case of call forwarding where the "forwarded-to" number is recorded. Recording Entity M The E.164 number of the visited (terminating) MSC Incoming TKGP O The MSC trunk group on which the call originated. Outgoing TKGP O The identity of the call originated. Outgoing TKGP O The identity of the call occupied by the called party when the call was set up including the location area code. Change of Location O A list of changes in Location Area Code / Cell Id. each time-stamped. Basic Service M Bearer or teleservice employed Transparency Indicator C Only provided for those teleservices which may be employed in both transparent and non-transparent mode. Change of Service O A list of changes of basic service during a connection each time-stamped. Supp. services C Supplementary services invoked as a result of this connection. ACC Parameters O The charge advice parameters sent to the MS on call set-up The charge advice parameters sent to the MS on call set-up New ACC parameters sent to the MS on call set-up The charge advice parameters sent to the MS on call set-up New ACC parameters as ent to the MS on call set-up The charge advice parameters sent to the MS on call set-up The charge advice parameters sent to the MS on call set-up New ACC parameters O Alist of changes to the classmark during the connection each time-stamped Event time stamps: C Seizure of traffic channel for unsuccessful call attempts C Radio Chan. Usad M The mobile station class mark Call duration M The chargeable duration of the connection if successful, the holding time of the call fursuccessful. Radio Chan. Usad M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Usad M The repose of traffic channel usad (full or half rate). Change of Rad. Chan O Alist of changes each time stamped Change of Rad. Chan O Alist of changes each time stamped Change of R	Served IMSI	M	IMSI of the called party.
Calling Number C The number of the calling party if available. Connected Number Only relevant in case of call forwarding where the "forwarded-to" number is recorded. Recording Entity M The E. 164 number of the visited (terminating) MSC Incoming TKGP O The trunk group on which the call originated. Outgoing TKGP O The international control of the call originated. Change of Location C The identity of the cell occupied by the called party when the call was set up including the location area code. Change of Location O A list of changes in Location Area Code / Cell Id. each time-stamped. Basic Service M Bearer or teleservice employed Change of Service O A list of changes in Location Area Code / Cell Id. each time-stamped. Basic Service M Bearer or teleservice employed Change of Service O A list of changes of basic service during a connection each time-stamped. Change of Service O C Supp.services C Supplementary services invoked as a result of this connection. ACC Parameters O The changes of basic service during a connection each time-stamped. Supp.services C Supplementary services invoked as a result of this connection. ACC Parameters O The changes of the same service to the MS on call set-up Change of ACC Parms. MS Classmark M The mobile station class mark MS Classmark M The mobile station class mark MS Classmark M The mobile station class mark Conange of Classmark M The mobile station class mark Condition M The changes to the classmark during the connection each time-stamped Event time stamps: C Seizure of traffic channel for unsuccessful calls Call duration M The changes to the classmark during the connection each time-stamped Call duration M The repasted current on the connection if successful, the holding time of the call if unsuccessful calls Radio Chan. Requested M The type of radio crained used (full or half rate). Change of Rad. Chan O A Isl of changes to the classmark during the connection. Call if terence M The type of radio crained used (full or half rate). Change of Rad. Chan O		0	
Connected Number	Served MSISDN		The MSISDN of the called party.
recorded. recorded. recorded. Recording Entity M The E.164 number of the visited (terminating) MSC Incoming TKGP O The MSC trunk group on which the call originated.		С	The number of the calling party if available.
Recording Entity M The E.164 number of the visited (terminating) MSC Incoming TKGP O The MSC trunk group on which the call originated. Outgoing TKGP O The trunk group on which the call left the MSC, usually to the BSS Location C The identity of the cell occupied by the called party when the call was set up including the location area code. Change of Location O A list of changes in Location Area Code / Cell Id. each time-stamped. Basic Service M Bearer or teleservice employed Transparency Indicator C Only provided for those teleservices which may be employed in both transparent and non-transparent mode. Change of Service O A list of changes of basic service during a connection each time-stamped. Supp. services C Supplementary services invoked as a result of this connection. ACC Parameters O The charge advice parameters sent to the MS on call set-up. Change of ACC Parms. MS Classmark M The mobile station class mark. Change of Classmark O A list of changes to the classmark during the connection each time-stamped. Event time stamps. C Seizure of traffic channel for unsuccessful call attempts Answer time for successful calls Call duration M The chargeable duration of the connection if successful, the holding time of the call if unsuccessful. Radio Chan. Requested O The type of radio channel used (full or half rate). Also of hange sof had. Chan O A list of changes so the release of the call. Data volume C The rumber of data segments transmitted, if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions at the same MS Additional Changing Data of the release of the call. MSC Address C The number of HSCSD channels allocated to the MSC thannels during a connection each time stamped to the member of HSCSD O A set of the reference in call reference. C The number of HSCSD O A set of the reference in case of a partial records. C Thannels Requested C The mobile of the call referenc	Connected Number	0	
Incoming TKGP			
Outgoing TKGP O The trunk group on which the call left the MSC, usually to the BSS Location C The identity of the cell eccupied by the called party when the call was set up including the location area code. Change of Location O A list of changes in Location Area Code / Cell Id. each time-stamped. Basic Service M Bearer or teleservice employed Transparency Indicator C Only provided for those teleservices which may be employed in both transparent and non-transparent mode. Change of Service O A list of changes of basic service during a connection each time-stamped. Supp. services C Supplementary services invoked as a result of this connection. ACC Parameters O The charge advice parameters sent to the MS on call set-up. Change of AOC Parms. O New AOC parameters sent to the MS e.g. as a result of a tariff switch-over, including the time at which the new set was applied. MS Classmark M The mobile station class mark Change of Classmark M The mobile station class mark Change of Classmark O A list of changes to the classmark during the connection each time-stamped Event time stamps: C Seizure of traffic channel for unsuccessful call attempts C Release of traffic channel Call duration M The chargeable duration of the connection if successful, the holding time of the call if unsuccessful. Radio Chan. Used M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full or half rate). Change of Rad. Chan O A list of changes each time stamped Change of Rad. Chan O A list of changes each time stamped Change of Rad. Chan O A list of changes each time stamped Change of Rad. Chan O A list of changes each time stamped Change of Rad. Chan O A list of changes each time stamped Change of Rad. Chan O A list of changes each time stamped Change of Rad. Chan O A list of changes each time stamped Change of Rad. Chan O A list of changes each time stamped Change of Rad. Chan O A list of changes of the call. Diagnostics O A more detailed reason f			
Location C The identity of the cell occupied by the called party when the call was set up including the location area code. Change of Location O A list of changes in Location Area Code / Cell Id. each time-stamped. Basic Service M Bearer or teleservice employed Transparency Indicator C Only provided for those teleservices which may be employed in both transparent and non-transparent mode. Change of Service O A list of changes of basic service during a connection each time-stamped. Supp. services C Supplementary services invoked as a result of this connection. AOC Parameters O The charge advice parameters sent to the MS on call set-up New AOC parameters sent to the MS e.g. as a result of a tariff switch-over, including the time at which the new set was applied. MS Classmark M The mobile station class mark Change of Classmark O A list of changes to the classmark during the connection each time-stamped Event time stamps: C Seizure of traffic channel for unsuccessful call attempts Answer time for successful calls Release of traffic channel Call duration M The chargeable duration of the connection if successful, the holding time of the call if unsuccessful. Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full or half rate). Change of Rad. Chan Cause for term. M The reason for the release of the connection. Diagnostics O A more detailed reason for the release of the connection. Diagnostics O A more detailed reason for the release of the connection. Diagnostics O A more detailed reason for the release of the connection. Charge for heaving wind and the stamp of the same MS Additional Chq. Info A contact the release of the connection at the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters A conditional Chg. Info O Charge/no charge indicator and additional charging parameters O Charge for therwork was the same MS Additional Chg. I			
Including the location area code.			
Change of Location	Location	С	
Basic Service M Bearer or teleservice employed Transparency Indicator C Only provided for those teleservices which may be employed in both transparent and non-transparent mode. Change of Service O A list of changes of basic service during a connection each time-stamped. Supp. services C Supplementary services invoked as a result of this connection. AOC Parameters O The charge advice parameters sent to the MS on call set-up Change of AOC Parms. O New AOC parameters sent to the MS e.g. as a result of a tariff switch-over, including the time at which the new set was applied. MIS Classmark M The mobile station class mark Change of Classmark M The mobile station class mark Change of Classmark O A list of changes to the classmark during the connection each time-stamped Event time stamps: C Seizure of traffic channel for unsuccessful call attempts A call duration M The chargeable duration of the connection if successful, the holding time of the call funsuccessful. Release of traffic channel Call duration M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Requested N The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full or half rate). Diagnostics O A more detailed reason for the release of the call. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted, if available at the MSC sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions at the same MS Additional Chg. Info Record extensions O A set of network/ manufacturer specific extensions to the record. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Number of	Change of Location	Ω	
Transparency Indicator Change of Service Ohly provided for those feleservices which may be employed in both transparent and non-transparent mode. Change of Service Ohly services Change of Service Ohly services Change of ACC Parms Ohly services Ohly servi			
and non-transparent mode. Change of Service O A list of changes of basic service during a connection each time-stamped. Supp. services C Supplementary services invoked as a result of this connection. ACC Parameters O The charge advice parameters sent to the MS on call set-up Change of ACC Parms. O New ACC parameters sent to the MS e.g. as a result of a tariff switch-over, including the time at which the new set was applied. MS Classmark M The mobile station class mark Change of Classmark O A list of changes to the classmark during the connection each time-stamped Event time stamps: C Seizure of traffic channel for unsuccessful call attempts A nawer time for successful calls C Release of traffic channel Call duration M The chargeable duration of the connection if successful, the holding time of the call if unsuccessful. Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio channel used (full or half rate). Change of Rad. Chan O A list of changes each time stamped Change of Rad. Chan O A list of changes each time stamped Change of Rad. Chan O A list of changes each time stamped Change of Rad. Chan O A more detailed reason for the release of the call. Diagnostics O A more detailed reason for the release of the call. Diagnostics O A more detailed reason for the release of the call. Alditional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. Network call reference An identifier to correlate transactions on the same call taking place in different network call reference. Number of HSCSD Channels Allocated Change of HSCSD O The number of HSCSD channels allocated to the MS at call set-up This field contains the E.164 number assigned to the MSC that generated the network call reference. O Alist of network or user initiated changes of number of HSCSD channels during a connectione each timestamped. Shall on			
Supp. services C Supplementary services invoked as a result of this connection. AOC Parameters O The charge advice parameters sent to the MS on call set-up. Change of AOC Parms. O New AOC parameters sent to the MS e.g. as a result of a tariff switch-over, including the time at which the new set was applied. MS Classmark M The mobile station class mark Change of Classmark O A list of changes to the classmark during the connection each time-stamped Event time stamps: C Seizure of traffic channel for unsuccessful call attempts Cause the stamps: C Seizure of traffic channel for unsuccessful call attempts Cause the stamps: C Seizure of traffic channel for unsuccessful call attempts Call duration M The chargeable duration of the connection if successful, the holding time of the call if unsuccessful. Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio channel used (full or half rate). Change of Rad. Chan O A list of changes each time stamped. Change of Rad. Chan O A lord type for fadio traffic channel (full / half etc.) requested by the MS.	,		
A CP Parameters O The charge advice parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up channel soding sequence to the MS on the MS on the Call if unsuccessful call New AOC parameters sent to the MS on call setup. Shall only be present for HSCSD connections. The charge advice parameters sent to the MS on call setup. Shall only be present for HSCSD connections. The maximum must be missed on the MS on call setup. Shall only be present in case of an HSCSD call, if the total Air Interface User Rate Requested Number of HSCSD Change of RSCD Air Interface User Rate Requested Change of HSCSD Change of Rate Channels Allocated Change of HSCSD Change of the Call Channels Allocated Change of HSCSD Channels Coding Cha	Change of Service	0	A list of changes of basic service during a connection each time-stamped.
Change of AOC Parms. New AOC parameters sent to the MS e.g. as a result of a tariff switch-over, including the time at which the new set was applied. MS Classmark	Supp. services	С	Supplementary services invoked as a result of this connection.
Including the time at which the new set was applied. MS Classmark	AOC Parameters	0	The charge advice parameters sent to the MS on call set-up
MS Classmark Change of Classmark Change of Classmark County of Classmark Change of Classmark County of Classmark County of Classmark Change of Classmark County of Cla	Change of AOC Parms.	0	
Change of Classmark			
Event time stamps: C Seizure of traffic channel for unsuccessful call attempts Answer time for successful calls C Release of traffic channel C Release of traffic channel The chargeable duration of the connection if successful, the holding time of the call if unsuccessful. Radio Chan. Requested C The type of radio traffic channel (full / half etc.) requested by the MS. C Radio Chan. Used M The type of radio channel used (full or half rate). C All sto of changes each time stamped C ause for term. M The reason for the release of the call. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted, if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. C Record extensions Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Number of HSCSD Channels Requested Number of HSCSD Channels Requested Number of HSCSD Channels Requested C The maximum number of HSCSD channels requested as received from the MS at call set-up The number of HSCSD parameters A list of network or user initiated changes of number of HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Requested C Histoft parameters are modified due the user or network initiated modification procedure. A list of the traffic channels codings accepted by the MS at call setup. Shall only be present for non-transparent HSCSD connections. C Harleface User Rate Requested C Histoft her traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for non-transparent HSCSD connections. C Her traffic channels codings negotiated between the MS and the network at call setup. Shall only be presen			
Call duration Release of traffic channel Call duration M The chargeable duration of the connection if successful, the holding time of the call if unsuccessful. Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio channel used (full or half rate). Change of Rad. Chan O A list of changes each time stamped Cause for term. M The reason for the release of the call. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted, if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. Network call reference A identifier to correlate transactions on the same call taking place in different network call reference. C An identifier to correlate transactions on the same call taking place in different network call reference. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Number of HSCSD Channels Requested Number of HSCSD Channels Allocated Change of HSCSD O The maximum number of HSCSD channels requested as received from the MS at call set-up A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. C The total Air Interface User Rate Requested by the MS. Shall only be present for Accepted C Hiscophysical Shall only be present for HSCSD connections. C The traffic channels codings accepted by the MS. Shall only be presen			
Call duration M The chargeable duration of the connection if successful, the holding time of the call if unsuccessful. Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Nead M The type of radio channel used (full or half rate). A list of changes each time stamped Cause for term. M The reason for the release of the call. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted, if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions at the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the £.164 number assigned to the MSC that generated the network call reference. Number of HSCSD O The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD O The number of HSCSD channels allocated to the MS at call set-up Number of HSCSD O The number of HSCSD channels allocated to the MS at call set-up Number of HSCSD O The number of HSCSD channels allocated to the MS at call set-up Number of HSCSD O The number of HSCSD connections. National Requested O May be present for HSCSD connections. A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate O May be present for HSCSD connections. A list of the traffic channels codings accepted by the MS and the network at call setup.	Event time stamps:		
Call duration M The chargeable duration of the connection if successful, the holding time of the call if unsuccessful. Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel used (full or half rate). Change of Rad. Chan O A list of changes each time stamped Cause for term. M The reason for the release of the coll. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted, if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions at the same MS Additional Chg. Info O C charge/no charge indicator and additional charging parameters Record extensions O A set of network / manufacturer specific extensions to the record. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that			
call if unsuccessful. Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio channel used (full or half rate). Change of Rad. Chan O A list of changes each time stamped Cause for term. M The reason for the release of the call. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted, if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions at the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Number of HSCSD O The maximum number of HSCSD channels requested as received from the MS at call set-up The number of HSCSD Channels allocated to the MS at call set-up The number of HSCSD Channels allocated to the MS at call set-up The number of HSCSD Channels allocated to the MS at call set-up The number of HSCSD channels allocated to the MS at call set-up The number of HSCSD connections. Fixed Network User Rate O May be present for HSCSD connections. Fixed Network User Rate C The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. Channel Coding Used C The traffic channels codings accepted by the MS and the network at call setup. Shall only be present for HSCSD connections. Speech Version Used O Speech version supported by the MS with highest priority indicated by MS	Call direction		
Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio channel used (full or half rate). Change of Rad. Chan O A list of changes each time stamped Cause for term. M The reason for the release of the call. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted, if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions at the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/manufacturer specific extensions to the record. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network of HSCSD Number of HSCSD O The maximum number of HSCSD channels requested as received from the MS at call set	Call duration	IVI	
Radio Chan. Used M The type of radio channel used (full or half rate). Change of Rad. Chan O A list of changes each time stamped Cause for term. M The reason for the release of the call. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted, if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions at the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. Network call reference C An identifier to correlate transactions on the same call taking place in different network ondes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Number of HSCSD Channels Requested Change of HSCSD Channels Allocated Change of HSCSD Channels Allocated Change of HSCSD Parameters C A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. C May be present for HSCSD connections. C The total Air Interface User Rate Requested by the MS at call set-up. Shall only be present for non-transparent HSCSD connections. C A list of the traffic channels codings accepted by the MS. Shall only be present for HSCSD connections. C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections. Speech Version Used O Speech version supported by the MS with highest priority indicated by MS	Radio Chan Requested	0	
Change of Rad. Chan O A list of changes each time stamped Cause for term. M The reason for the release of the call. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted, if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions at the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Number of HSCSD O The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD O The maximum number of HSCSD channels allocated to the MS at call set-up Channels Allocated O A list of network or user initiated changes of			
Cause for term. M The reason for the release of the call. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted, if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions at the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Number of HSCSD O The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD O The number of HSCSD channels allocated to the MS at call set-up Channels Allocated O The number of HSCSD channels allocated to the MS at call set-up Change of HSCSD O A list of network or user init			
Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted, if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions at the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Number of HSCSD O The maximum number of HSCSD channels requested as received from the MS at call set-up Channels Allocated O The number of HSCSD channels allocated to the MS at call set-up Change of HSCSD O A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network U	•	_	
Data volume C The number of data segments transmitted, if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions at the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Number of HSCSD O The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD O The number of HSCSD channels allocated to the MS at call set-up Channels Allocated O A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate C May be present for HSCSD connections. Fixed Network User Rate		0	
Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions at the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Number of HSCSD O The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD O The number of HSCSD channels allocated to the MS at call set-up Change of HSCSD O A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate O May be present for HSCSD connections. Channel Coding C A list of the traffic channels codings accepted by the MS. Shall only be present for HSCSD connections. <		С	
Call reference M A local identifier distinguishing between transactions at the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Number of HSCSD O The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD O The number of HSCSD channels allocated to the MS at call set-up Number of HSCSD O A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate O May be present for HSCSD connections. Channel Coding C May be present for HSCSD connections. Channel Coding Used C A list of the traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections. </td <td>Sequence no.</td> <td>С</td> <td></td>	Sequence no.	С	
Record extensions O A set of network/ manufacturer specific extensions to the record. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Number of HSCSD O The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD O The number of HSCSD channels allocated to the MS at call set-up Number of HSCSD O A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate O May be present for HSCSD connections. Fixed Network User Rate C The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. Channel Coding C A list of the traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections. Channel Coding Used C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections.	Call reference	M	
Network call reference C	Additional Chg. Info	0	Charge/no charge indicator and additional charging parameters
network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Number of HSCSD O The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD O The number of HSCSD channels allocated to the MS at call set-up Channels Allocated Change of HSCSD O A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate O May be present for HSCSD connections. Air Interface User Rate Requested C The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. Channel Coding C A list of the traffic channels codings accepted by the MS. Shall only be present for HSCSD connections. Channel Coding Used C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections. Speech Version Used O Speech version used for that call Speech Version Used O Speech version supported by the MS with highest priority indicated by MS	Record extensions	0	
MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Number of HSCSD Channels Requested Number of HSCSD Channels Allocated Change of HSCSD Channels Allocated Change of HSCSD Parameters O A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Requested C May be present for HSCSD connections. Air Interface User Rate Requested C The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. C A list of the traffic channels codings accepted by the MS. Shall only be present for HSCSD connections. C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections. Speech Version Used O Speech version used for that call Speech Version O Speech version supported by the MS with highest priority indicated by MS	Network call reference	С	
Number of HSCSD Channels Requested Number of HSCSD Channels Requested Number of HSCSD Channels Allocated Change of HSCSD Channels Allocated Change of HSCSD Parameters O A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Air Interface User Rate Requested Channel Coding Accepted Channel Coding Used Channel Coding			
Number of HSCSD Channels Requested Number of HSCSD Channels Requested Number of HSCSD Channels Allocated Change of HSCSD Channels Allocated Change of HSCSD Parameters O A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Air Interface User Rate Requested Channel Coding Accepted Channel Coding Used Channel Coding	MSC Address	С	
Channels Requested Number of HSCSD Channels Allocated Change of HSCSD Parameters O A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Air Interface User Rate Requested C C Channel Coding Accepted C C Channel Coding Used C C Channel Coding Used C C Speech Version C Speech Version C Speech Version C C Channel Coding C C Speech version supported by the MS with highest priority indicated by MS C C C Channel Coding Speech version supported by the MS with highest priority indicated by MS	N		
Number of HSCSD Channels Allocated Change of HSCSD Parameters O A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Air Interface User Rate Requested C C Channel Coding Accepted C C Channel Coding Used C C Channel Coding Used C C C Channel Coding Used C C C C Channel Coding Used C C C C C C C C C C C C C C C C C C C		O	
Channels Allocated Change of HSCSD Parameters A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Air Interface User Rate Requested C The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. Channel Coding Accepted C A list of the traffic channels codings accepted by the MS. Shall only be present for HSCSD connections. Channel Coding Used C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections. Speech Version Used O Speech version used for that call Speech Version O Speech version supported by the MS with highest priority indicated by MS		0	
Change of HSCSD Parameters A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Air Interface User Rate C May be present for HSCSD connections. The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. Channel Coding Accepted C A list of the traffic channels codings accepted by the MS. Shall only be present for HSCSD connections. Channel Coding Used C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections. Speech Version Used O Speech version used for that call Speech version Speech version supported by the MS with highest priority indicated by MS			The humber of 11303D chamies anocated to the W3 at can set-up
Parameters connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate O May be present for HSCSD connections. Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. Channel Coding Accepted C Alist of the traffic channels codings accepted by the MS. Shall only be present for HSCSD connections. Channel Coding Used C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections. Speech Version Used O Speech version used for that call Speech Version O Speech version supported by the MS with highest priority indicated by MS		0	A list of network or user initiated changes of number of HSCSD channels during a
the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Air Interface User Rate Requested C The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. Channel Coding Accepted C A list of the traffic channels codings accepted by the MS. Shall only be present for HSCSD connections. Channel Coding Used C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections. Speech Version Used C Speech version used for that call Speech Version C Speech version supported by the MS with highest priority indicated by MS			
Fixed Network User Rate Air Interface User Rate Requested Channel Coding Accepted Channel Coding Used Channel Coding Negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections. Channel Coding Used Channe			
Air Interface User Rate Requested C The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. Channel Coding Accepted C Channel Coding Used C Channel Coding Used C Channel Coding Used C Channel Coding Used C C C C C C C C C C C C C C C C C C C			modification procedure.
Requested present for non-transparent HSCSD connections. Channel Coding Accepted Channel Coding Used Channel Coding Negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections. Speech Version Used Channel Coding Used Channel Coding Negotiated Detween the MS and the network at call setup. Shall only be present for HSCSD connections. Speech Version Used Channel Coding Used Channel Coding Negotiated Detween the MS and the network at call setup. Shall only be present for HSCSD connections.			
Channel Coding Accepted Channel Coding Used Ch		С	
Accepted HSCSD connections. Channel Coding Used C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections. Speech Version Used O Speech version used for that call Speech Version O Speech version supported by the MS with highest priority indicated by MS		С	
Channel Coding Used C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections. Speech Version Used O Speech version used for that call Speech Version O Speech version supported by the MS with highest priority indicated by MS		-	
setup. Shall only be present for HSCSD connections. Speech Version Used O Speech version used for that call Speech Version O Speech version supported by the MS with highest priority indicated by MS		С	The traffic channels codings negotiated between the MS and the network at call
Speech Version O Speech version supported by the MS with highest priority indicated by MS			
	Speech Version Supported	0	Speech version supported by the MS with highest priority indicated by MS

GsmSCF address	С	Identifies the CAMEL server serving the subscriber.
Service Key	С	The CAMEL service logic to be applied.
Default Call handling	0	Indicates whether or not a CAMEL call encountered defeault call handling. This field shall be present only if default call handling has been applied.
Free format Data	С	Indicator if free format data from this CDR is to be appended to free format data in previous partial CDR.
Free format data append indicator	С	Indicator if free format data from this CDR is to be appended to free format data in previous partial CDR.
System Type	<u>C</u>	Indicates 3G-UMTS System; Not present for GSM.

B.2.9 Supplementary service actions

С

Μ

С

С

М

0

SS Action

SS Action time stamp

SS Parameters

Call Reference

System Type

SS Action Result

Record extensions

A supplementary service record may be produced in the NEF of the appropriate MSC or HLR for each supplementary service action (activation, deactivation, invocation etc.) performed or initiated by the subscriber.

There are two basic types of SS-actions:

- Call related i.e. as a result of a connection e.g. Invocation of CLIP / CLIR / AOC etc.
- Non-call related i.e. as a result of subscriber controlled input (SCI) e.g. Registration of call forwarding

Each supplementary service action shall be performed on one or more basic service groups. If the action applies to all tele and all bearer services (i.e. to all basic services) then the basic services field shall be omitted.

SCI actions may be recorded in individual SS-action records. Call related actions may be recorded in either the appropriate call record (MOC/MTC) or in separate SS-action records. For further details concerning the generation of supplementary service records see subclause 8.2.1.1.3.

Additional non-standard supplementary service actions may be made available within some networks in the form of Unstructured Supplementary Service Data (USSD). These actions may also be recorded in SS-action records. However, as these actions are non-standard they may not include an appropriate action type, supplementary service code or basic service code.

Field Description Record Type М Supplementary service action. Served IMSI Μ The IMSI of the MS performing the action. The IMEI of the ME performing the action. Served IMEI 0 Served MSISDN 0 The primary MSISDN of the party performing the action. MS Classmark M The mobile station classmark. Recording Entity M The E.164 number of the visited MSC / HLR. Location 0 The Location Area Code and Cell Identity from which the request originated. The supplementary service or group of supplementary services for which the С Supp. Service request was made. May not be available in case of USSD. **Basic Services** С The basic service group(s) to which the supplementary service applies. This field is not provided if the action applies to all basic services.

The time at which the action was requested.

Indicates 3G-UMTS System; Not present for GSM.

Result of the requested transaction if unsuccessful.

Activation, deactivation, interrogation etc. May not be available in case of USSD.

Service dependent parameters or unstructured suppl. service data.

A set of network/ manufacturer specific extensions to the record.

A local identifier distinguishing between transactions at the same MS.

Table B.9: SS-action record

B.2.13 Short message service, mobile originated

If enabled, an SMS-MO record shall be produced, within the originating MSC, for each short message sent by a mobile subscriber.

Table B.13: SMS-MO record

Field		Description
Record Type	М	SMS-Mobile originated.
Served IMSI	M	The IMSI of the subscriber sending the short message.
Served IMEI	0	The IMEI of the ME sending the message, if available.
Served MSISDN	0	The primary MSISDN of the subscriber sending the message.
MS Classmark	М	The mobile station classmark.
Service Centre	М	The address (E.164) of the SMS-service centre.
Recording Entity	М	The E.164 number of the visited MSC
Location	0	The Location Area Code and Cell Identity from which the message originated.
Event Time stamp	М	The time at which the message was received by the MSC from the subscriber.
Message Reference	М	A reference, provided by the MS uniquely identifying this message.
SMS Result	С	The result of the attempted delivery if unsuccessful.
Record extensions	0	A set of network/ manufacturer specific extensions to the record.
Destination number	0	The destination short message subscriber number.
CAMELSMSInformation	С	Set of CAMEL information IEs. Each of these IEs contains information related to
		CAMEL call leg related for the SMS.
System Type	<u>C</u>	Indicates 3G-UMTS System; Not present for GSM.

B.2.14 Short message service, mobile terminated

If enabled, an SMS-MT record shall be produced, within the terminating MSC, for each short message received by a mobile subscriber.

Table B.14: SMS-MT record

Field		Description
Record Type	М	SMS-Mobile Terminated.
Service Centre	М	The E.164 address of the SMS service centre.
Served IMSI	М	The IMSI of the receiving party.
Served IMEI	0	The IMEI of the receiving party, if available.
Served MSISDN	0	The MSISDN of the receiving party.
MS Classmark	М	The mobile station classmark.
Recording Entity	М	The E.164 number of the visited MSC.
Location	0	The Location Area Code and Cell Identity to which the message was delivered.
Event time stamp	М	Delivery time stamp, time at which message was sent to the MS by the MSC.
SMS Result	С	The result of the attempted delivery if unsuccessful.
Record extensions	0	A set of network/ manufacturer specific extensions to the record.
System Type	С	Indicates 3G-UMTS System; Not present for GSM.

B.2.18 Reduced partial records

In order to minimise the amount of data transferred, the contents of partial record may be reduced to those fields required to uniquely identify the connection and those fields that actually change. Table B.18 contains an example of such a record for a mobile originated call attempt. Reduced partial records may be generated for any of the relevant call records.

Table B.18: Reduced partial (MOC) record

Field		Description
Record Type	M	Mobile originated.
Served IMSI	С	IMSI of the calling party, if available
Called Number	С	If available.
Recording Entity	М	The E.164 number of the visited MSC producing the record.
Change of Location	С	A list of changes in Location Area Code / Cell Id. each time-stamped.
ChangeOfService	С	A list of changes of basic service during a connection each time-stamped.
Change of AOC Parms	С	New AOC parameters sent to the MS e.g. as a result of a tariff switch over,
		including the time at which the new set was applied.
Change of Classmark	С	A list of changes to the classmark during the connection each time-stamped
Event time stamps:	М	Answer time, start of this partial record.
Call duration	М	The chargeable duration of this partial record.
Change of Rad. Chan.	С	A list of changes each time stamped
Cause for termination	М	The reason for the release of the connection.
Diagnostics	0	Only relevant for the last record in the sequence.
Data volume	С	The number of data segments transmitted during this partial output
Sequence no.	M	Partial record sequence number, only present in case of partial records.
Call reference	M	A local identifier distinguishing between transactions on the same MS
Record extensions	0	A set of network/ manufacturer specific extensions to the record.
System Type	<u>C</u>	Indicates 3G-UMTS System; Not present for GSM.

B.3 Description of record fields

This subclause contains a brief description of each field of the call and event records described in the previous subclause.

B.3.46a System type

This field is present conditionally, indicating the use of a 3G air-interface for the provision of service recorded by this CDR.

In the case of service provided by a GSM air interface, the field is not present.

3GPP TSG-SA5 (Telecom Management) Meeting #16, Tokyo, JAPAN, 27 Nov - 1 Dec 2000

SA5#15(00)0536 Tdoc S5B000093

			CHANG	EF	REQ	UES				le at the bottom of thi o fill in this form corre	
			32.0	05	CR	003	3	Curre	nt Versi	on: V.3.2.0	
GSM (AA.BB) or 3	3G (A.	A.BBB) specific	ation number↑				Ĉ CR number a	s allocated	by MCC su	ipport team	
For submission		SA#10 ng # here ↑			oproval mation	X		no	strate n-strate	(,,,,,	
Form: CR cover s	sheet,	version 2 for 3GP	P and SMG The la	atest ver	rsion of this fo	orm is availa	able from: ftp://	ftp.3gpr	o.org/Inf	ormation/CR-F v/	orm- 2.doc
Proposed change (at least one should be r			(U)SIM [ME		UTRAN	/ Radio		Core Network	
Source:	S	A5#16							Date:	01/12/2000	
Subject:	C	orrection c	f parameter L	ocati	ion Area	a and C	ell				
Work item:	C	AM-CH									
(only one category shall be marked	A C B A C F	ddition of t	nodification o			ier rele		K Re	lease:	Phase 2 Release 96 Release 97 Release 98 Release 99 Release 00	X
Reason for change:	ir	formation i		lomai	in. Genei	ally the	location id			ent with the loos the Cell Id (re	
Clauses affected	<u>d:</u>	2., 4., 8	8, A9, B1 and	B2							
Other specs affected:	Oth MS BS		cifications			ightarrow List ightarrow List ightarrow List	of CRs: of CRs: of CRs: of CRs: of CRs:				
Other comments:											

2 References

The following documents contain provisions, which through reference in this text, constitute provisions of the present document.

[27] 3G TS 25.413: "UTRAN Iu Interface RANAP Signalling".

4 Abbreviations

SAC Service Area Code

8 TMN management functions

8.2.1.1.2 Partial record generation control

This function controls the generation of partial records. Partial records may be generated for any one of the following reasons:

- expiry of the partial record timer;
- change of basic service during a connection;
- change of location (LAC₂-or Cell Id for 2G or SAC for 3G) during a connection;
- change of MS classmark during a connection;
- change of AoC parameters during a call;
- change of radio channel (full/ half rate) during a call;
- change of HSCSD parameters during call;
- change of destination during a call (CAMEL).

This functions permits both the selection of the above options and the specification of the partial record interval timer for long hold calls. The timer may take any value within the range 0 to 24 hours, where 0 means no partial records will be generated.

The following system management functions are required:

Set/Get callRecordingFunction

A.9 Abstract syntax

```
-- COMMON DATA TYPES
-- Collid ::= OCTET STRING (SIZE(2))
-- -- Coded according to TS 24.008
-- LocationAreaAndCell ::= SEQUENCE
{
    locationAreaCode [0] LocationAreaCode,
    cellIdentifier [1] CellId
-- For 2G the content of the Cell Identifier is defined by the Cell Id
-- refer TS 24.008 and for 3G by the Service Area Code refer TS 25.413.
-- }

LocationAreaCode ::= OCTET STRING (SIZE(2))
-- See TS 24.008
```

B.1 General

B.1.2 Partial records

In order to increase the security of the recording process and to simplify post-processing, it may be desirable to generate a sequence of call records to describe a single connection or transaction.

In case of connections of extended duration, the loss of a single call record may result in an unacceptable loss of revenue. If the connection is, for example, recorded in a number of consecutive partial records generated at say hourly intervals, then the maximum loss of revenue is the equivalent of a one hour continuous connection.

Most modern billing systems employ some form of cumulative credit-limit checking based on the stream of input call records. If however, a call record is only produced at the end of the connection then a subscriber may avoid such credit checking by employing a connection for days, weeks or even months without a single call record being produced.

All of the records defined in the present document are of variable length and some at least are potentially unlimited in size (SET OF, SEQUENCE OF etc.). However, the storage capacity of the internal records within the NEF is normally subject to strict size limitations. Under such conditions a partial record may be required in order to circumvent internal resource limitations. For example, if an internal MOC record can only support the use of four supplementary service invocations then the use of a fifth may result in the generation of a partial record.

Alternatively, for those manufacturers whose systems are based on fixed length records, partial records may be employed instead of the various lists contained within the present document definitions

Finally, in case of radio link failure and subsequent call re-establishment partial records shall be generated to record the duration of the call prior to the radio link failure and the subsequent duration of the call once the call has been re-established. For further details see subclause B.1.5.

To summarise, the following events may result in the generation of a partial record:

- expiry of the partial record timer;
- change of basic service during a connection;
- change of location (LAC, or Cell Id. or SAC) during a connection;
- change of MS classmark during a connection;
- change of AoC Parameters during a call;
- change of Radio Channel Type (full/half rate) during a call;
- radio link failure and subsequent call re-establishment;
- change of HSCSD Parameters during a call;
- change of CAMEL destination (CAMEL controlled/initiated) during a call.

All partial records for the same connection shall contain the same call reference and shall be ordered via a running sequence number. The time stamps involved shall apply to the individual partial records rather than the connection as a whole i.e. the "end" time stamp (duration) of one record shall, in general, coincide with the "start" time stamp (answer time) of the next. Each time a new partial record is created the cause for termination of the previous field shall contain the value "partial record". The cause for termination of the final partial record shall contain the true cause for termination of the connection.

It should be noted that the records produced in case of call re-establishment are not contiguous and that the value of the cause for term field in the record that is closed on radio link failure contains the value "partial record call re-establishment". For further details of these records see subclause B.2.18.

The partial records generated may repeat each of the non-varying fields contained in the original record. Alternatively, a form of reduced partial record may be generated which includes only those fields required to identify the original record together with the field(s) that actually change. An example of a reduced partial record for MOCs is provided in subclause B.2.18.

B.2 Record contents

B.2.1 Mobile originated call attempt

If the generation of these records is enabled then an MOC record shall be created for each outgoing call attempt made by a mobile station. These MOC records shall be produced in the originating MSC.

Table B.1: MOC record

Record Type M Mobile originated. Served MISI M MISI of the calling party. Served MISI O The primary MISION of the calling party. Called Number M The address of the called party e.g. the number dialled by the calling sub. Translated Number O The primary MISION of the calling party. Called Number M The address of the called party e.g. the number dialled by the calling sub. Translated Number O The number of the connected party if different to the Called Number Recording Entity M The E 164 number of the visited MSC producing the record. Incoming TKGP O The Mision Station Roaming Number employed to route this connection, if applicable. Recording Entity M The E 164 number of the visited MSC producing the record. Incoming TKGP O The Trunk group on which the call originated, usually from the BSS Ottogoing TKGP O The trunk group on which the call originated including the location area code. Change of Location M The Identity of the cell or the SAC in which the call originated including the location area code. Change of Location A list of changes in Location Area Code / Cell Identifier, each time-stamped. Basic service M Bearer or teleservice employed. Transparency Indicator C Called Control of the calling the service during a connection each time-stamped. Supp. Services O Al ist of changes of basic service during a connection each time-stamped. Supp. Services O New ACC parameters O The charge advice parameters sent to the MS on call set-up. MS Classmark M The mobile station classmark employed on call set-up. Change of Classmark O New ACC parameters sent to the MS e.g. as a result of a tariff witch over, including the time at which the new set was applied. The charge advice parameters sent to the MS e.g. as a result of a tariff witch over, including the time at which the new set was applied. The tharge advice parameters sent to the MS e.g. as a result of a tariff witch over, including the time at which the new set was applied. The tharge advice parameters sent to the MS e.g. as a	Field		Description
Served MISES N O The primary MISESN of the calling party. Called Number M The address of the called party e.g. the number dialled by the calling sub. Translated Number O The called number at the called party e.g. the number dialled by the calling sub. Translated Number O The called number at the called party e.g. the number dialled by the calling sub. Translated Number O The work of the connected party if different to the Called Number O The Mobile Station Roaming Number employed to route this connection, if applicable. Recording TRIFY O The Wise Station Roaming Number employed to route this connection, if applicable. Recording TRIFY O The Funk Station Roaming Number employed to route this connection, if applicable. Recording TRIFY O The Funk group on which the call entire the MSC Undering TKGP O The trunk group on which the call entire MSC Undering TKGP O The trunk group on which the call entire MSC Undering TKGP O The Identity of the cell of the SAC in which the call originated including the location area code. Change of Location M The identity of the cell of the SAC in which the call originated including the location area code. Change of Location M The identity of the cell of the SAC in which the call originated including the location area code. Change of Location A Transparency Indicator C Only provided for those teleservices which may be employed in both transparent and continuous a	Record Type	М	Mobile originated.
Served MSISDN O The primary MSISDN of the calling party. Called Number M The address of the called party e.g. the number dialled by the calling sub. Translated Number O The called number after digit translation within the MSC (if applicable) Connected Mumber O The number of the connected party if different to the Called Number applicable. Recording Entity Recording Entity M The E.164 number of the connected party if different to the Called Number applicable. Recording Entity M The E.164 number of the visited MSC producing the record. Incoming TKGP O The MSC frunk group on which the call originated usually from the BSS outpoing TKGP O The trunk group on which the call eff the MSC. Change of Location A I set of changes in Location Area Code / Cell Identifier, each time-stamped. Basic service M Bearer or teleservices employed. Transparency Indicator C Only provided for those teleservices which may be employed in both transparent and non-transparent mode. Change OfService O A I list of changes of basic service during a connection each time-stamped. Supp. Services C Supplementary services invoked as a result of this connection. ACC Parameters O The charge advice parameters sent to the MS on call set-up Change of Classmark M The mobile station classmark employed on call set-up. Change of ACS Parms O New ACC parameters sent to the MS on call set-up. Change of Classmark O A list of changes to the classmark during the connection each time-stamped. Sevent time stamps: C Seizure of traffic channel (for unsuccessful calls, the holding time for call attempts). Call duration M The chargeable duration of the connection for successful calls, the holding time for call attempts. Call duration M The chargeable duration of the connection for successful calls, the holding time for call attempts. Call duration M The chargeable duration of the connection for successful calls, the holding time for call attempts. Call reference M The chargeable duration of the release of the connection. Diagnostics O A more detailed re	Served IMSI	М	IMSI of the calling party.
Called Number M The address of the called party e.g., the number dialled by the calling sub. Translated Number O The called number after of the purpose of the purpose of the purpose of the called number after of the connected party if different to the Called Number O The number of the connected party if different to the Called Number O The Number of the connected party if different to the Called Number O The Number of the connected party if different to the Called Number O The Number of the visited MSC producing the record. Incoming TKGP O The trunk group on which the call originated , usually from the BSS Outgoing TKGP O The trunk group on which the call originated including the location area code. Change of Location M The cidentity of the cell or the SAC in which the call originated including the location area code. Change of Location Bearer or teleservice employed. Transparency Indicator C Only provided for those teleservices which may be employed in both transparent and non-transparent mode. Change Of Services C Supp. Services C Supp. Services C Supplementary services invoked as a result of this connection. ACC Parameters O The charge advice parameters sent to the MS on call set-up. Change of ACC Parm O New ACC parameters sent to the MS on call set-up. Change of Classmark M The mobile station classmark employed on call set-up. Call duration M The charges and charges to the classmark during a connection each time-stamped. Services the control of the connection of the connection classmark employed on call set-up. Call duration M The charges and charges to the classmark during the connection each time-stamped Event time stamps: C Service the time at which the new set was applied. Answer (for successful calls) Answer (for successful calls) Answer (for successful calls) Answer (for successful calls) Answer (for or radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full / half etc.) requested by the MS. Radio		С	
Translated Number O The called number after digit translation within the MSC (if applicable) Connected Number O The number of the connected party if different to the Called Number applicable. Recording Entity			
Connected Number Onher On the Number of the connected party if different to the Called Number Applicable. Recording Entity M The E.184 number of the visited MSC producing the record. Incoming TKGP OTHER MSC trunk group on which the call originated , usually from the BSS Outgoing TKGP OTHER MSC trunk group on which the call originated , usually from the BSS Outgoing TKGP OTHER MSC trunk group on which the call originated , usually from the BSS Outgoing TKGP OTHER MSC trunk group on which the call originated including the location area code. Change of Location On A list of changes in Location Area Code / Cell Identifier; each time-stamped. Basic service M Bearer or telesservice employed. Change OfService OA list of changes in Location Area Code / Cell Identifier; each time-stamped. Change OfService OA list of changes of basic service during a connection each time-stamped. Supp. Services C Supplementary services invoked as a result of this connection. ACC Parameters OThe charge advice parameters sent to the MS on call set-up. Change of AOC Parms ONE ACC Parameters on the MS e.g. as a result of a tariff switch over, including the time at which the new set was applied. MS Classmark M The mobile station classmark employed on call set-up. Call duration M The changes to the classmark during the connection each time-stamped Event time stamps: C Seizure of incoming traffic channel (for unsuccessful call attempts) O Release of traffic channel Call duration M The changes to tradic channel M The changes to the classmark during the connection each time-stamped Call duration M The changes to the connection for successful calls, the holding time for call attempts. C Seizure of incoming traffic channel (for unsuccessful calls, the holding time for call attempts) O Release of traffic channel Call duration M The changes to the connection for successful calls, the holding time for call attempts. C Seizure of road traffic channel C Seizure of road traffic channel C Seizure of road traffic channel C Seizure of ro			
Recording Entity Mercording Ent			
Recording Entity M The E. 164 number of the visited MSC producing the record. Incoming TKGP O The MSC trunk group on which the call originated, usually from the BSS Outgoing TKGP O The trunk group on which the call originated, usually from the BSS Outgoing TKGP O The trunk group on which the call originated including the location area code. Change of Location O A list of changes in Location Area Code / Cell Identifier, each time-stamped. Basic service M Bearer or teleservice employed. Change Of Location O A list of changes in Location Area Code / Cell Identifier, each time-stamped. Basic service M Bearer or teleservice employed. ChangeOlService O A list of changes of basic service during a connection each time-stamped. ChangeOlService O A list of changes of basic service during a connection each time-stamped. Supp. Services C Supplementary services invoked as a result of this connection. ACC Parameters O The charge advice parameters sent to the MS on call set-up. Change of AOC Parms O New AOC parameters sent to the MS on call set-up. MS Classmark M The mobile station classmark employed on call set-up. Call duration M The mobile station classmark employed on call set-up. Call duration M The changes to the classmark furing the connection each time-stamped Call duration M The changes to the classmark furing the connection each time-stamped Call duration M The changes to the classmark furing the connection each time-stamped Call duration M The changes to the classmark furing the connection each time-stamped Call duration M The changes to the classmark furing the connection of successful calls, the holding time for call attempts. Call duration M The changes to the connection of the connection. Call attempts. Radio Chan, Requested Change of Rad. Chan. C The type of radio channel actually used (full or half rate). A list of changes each time stamped Change of Rad. Chan. C The proper of the call origination of the connection. Diagnostics O A more detailed reason for the release of the connectio			
Incoming TKGP O The MSC trunk group on which the call end originated, usually from the BSS Outgoing TKGP O The trunk group on which the call left the MSC Catation and the content of the coll of the MSC of the coll of the coll of the MSC of the coll of the coll or the SAC in which the call originated including the location area code. Change of Location O A list of changes in Location Area Code / Cell Identifier, each time-stamped. Basic service M Bearer or teleservice employed. ChangeOlService O All store the service or teleservices which may be employed in both transparent and non-transparent mode. ChangeOlService C Supplementary services invoked as a result of this connection. ACC Parameters C Supplementary services invoked as a result of this connection. ACC Parameters O The changes of basic service during a connection each time-stamped. Supp. Services C Supplementary services invoked as a result of this connection. ACC Parameters O The changes advice parameters sent to the MS on call set-up. Change of ACC Parms O New ACC parameters sent to the MS on call set-up. Change of Classmark M The mobile station classmark employed on call set-up. Change of Classmark O Allst of changes to the classmark during the connection each time-stamped Event time stamps: C Seizure of incoming traffic channel (for unsuccessful calls, the holding time for call attempts). Call duration M The chargeable duration of the connection for successful calls, the holding time for call attempts. Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio channel actually used (full or half rate). Change of Rad. Chan. O Allst of changes each time stamped. Change of Rad. Chan. O Allst of changes each time stamped. Change of Rad. Chan. O Allst of changes each time stamped. Change of Rad. Chan. O Allst of network manufacturer specific extensio		O	applicable.
Outgoing TKGP O The trunk group on which the call left the MSC			
Location M The identity of the cell or the SAC in which the call originated including the location area code. Change of Location O A list of changes in Location Area Code / Cell Identifier_ each time-stamped. Basic service M Bearer or teleservice employed. Transparency Indicator C Only provided for those teleservices which may be employed in both transparent and non-transparent mode. ChangeOfService O A list of changes of basic service during a connection each time-stamped. Supp. Services C Supplementary services invoked as a result of this connection. ACC Parameters O The charge advice parameters sent to the MS on call set-up Change of AOC Parms O New ACC parameters sent to the MS on call set-up Change of Classmark M The mobile station classmark employed on call set-up. MS Classmark O A list of changes to the classmark during the connection each time-stamped Event time stamps: C Seizure of incoming traffic channel (for unsuccessful calls) answer (for successful calls) Call duration M The chargeable duration of the connection for successful calls, the holding time for call attempts. Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. O A list of changes each time stamped Change of Rad. Chan. O A list of changes each time stamped Change of Rad. Chan. O A more detailed reason for the release of the connection. Diagnostics O A more detailed reason for the release of the connection. Diagnostics O A more detailed reason for the release of the connection. Call reference M A local identifier distinguishing between transactions on the same MS Additional Chq. Info O Chargerion charge indicator and additional charging parameters C Identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied.			
Dication area code.			
Basic service M Bearer or teleservice employed. Transparency Indicator C Only provided for those teleservices which may be employed in both transparent and non-transparent mode. Change OfService O A list of changes of basic service during a connection each time-stamped. Supp. Services C Supplementary services invoked as a result of this connection. ACC Parameters O The charge advice parameters sent to the MS on call set-up. Change of ACC Parms Including the time at which the new set was applied. MS Classmark M The mobile station classmark employed on call set-up. Change of Classmark O A list of changes to the classmark during the connection each time-stamped. Event time stamps: C Seizure of incoming traffic channel (for unsuccessful call attempts) Answer (for successful calls) O Release of traffic channel Call duration M The chargeable duration of the connection for successful calls, the holding time for call attempts. Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio channel actually used (full or half rate). Change of Rad. Chan. O Alist of changes each time stamped Cause for termination M The reason for the release of the connection. Diagnostics O A more detailed reason for the release of the connection. Call reference M A local identifier distinguishing between transactions on the same MS Additional Chq. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network manufacturer specific extensions to the record. Gerick by Charges of the more of the SCSD Channels additional charging parameters C An identifier to correlate transactions on the same Call taking place in different entwork nodes, shall be present only if default call handling This field contains the E.164 number assigned to the MSC that generated the network call reference. C An identifier to correlate transactions on the s		М	location area code.
Transparency Indicator Change Of Service OA list of changes of basic service during a connection each time-stamped. Supp. Services CSupplementary services invoked as a result of this connection. ACO Parameters OThe charge advice parameters sent to the MS on call set-up Change of ACC Parms New ACC parameters each to the MS e.g. as a result of a tariff switch over, including the time at which the new set was applied. MS Classmark M The mobile station classmark employed on call set-up. Change of Classmark C A list of changes to the classmark during the connection each time-stamped Event time stamps: C Seizure of incoming traffic channel (for unsuccessful call attempts) A newer (for successful calls) C Release of traffic channel Call duration M The chargeable duration of the connection for successful calls, the holding time for call attempts. Answer (for successful calls) C Release of traffic channel C Hange of Rad. Chan. C A list of changes each time stamped C Hange of Rad. Chan. C A list of changes each time stamped C Hange of Rad. Chan. C A list of changes each time stamped C Hange of Rad. Chan. C A list of changes each time stamped C A list of thanges ea			
Supp. Services C Supplementary services invoked as a result of this connection. AOC Parameters O The charge advice parameters sent to the MS on call set-up Change of AOC Parms MS Classmark M The mobile station classmark employed on call set-up. MS Classmark O A list of changes to the classmark during the connection each time-stamped Event time stamps: C Sejure of incoming traffic channel (for unsuccessful call attempts) Answer (for successful calls) Call duration M The chargeable duration of the connection for successful calls, the holding time for call attempts. Call duration M The chargeable duration of the connection for successful calls, the holding time for call attempts. Radio Chan. Requested M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio channel actually used (full or half rate). Change of Rad. Chan. O A list of changes each time stamped Change of Rad. Chan. O A more detailed reason for the release of the connection. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions on the same MS Additional Chg. Info C Chargeino charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. Service key C The CAMEL server serving the subscriber. Service key C The CAMEL server serving the subscriber. Service key C The CAMEL server serving the subscriber. Service key C The CAMEL server serving the subscriber. Service key C The CAMEL server serving the subscriber. Service key C The CAMEL server serving the subscriber. Service key C The CAMEL server serving the subscriber. Service key C The CAMEL server serving the subscriber. Service key C The CAMEL server serving the subscriber. Service key C The maximum num			Only provided for those teleservices which may be employed in both transparent
AOC Parameters O The charge advice parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up New AOC parameters sent to the MS on call set-up. MS Classmark M The mobile station classmark employed on call set-up. Change of Classmark O A list of changes to the classmark during the connection each time-stamped Event time stamps: C Seizure of incoming traffic channel (for unsuccessful call attempts) Answer (for successful calls) O Release of traffic channel Call duration M The chargeable duration of the connection for successful calls, the holding time for call attempts. Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio channel actually used (full or half rate). Cause for termination M The reason for the release of the connection. Data volume C The number of data segments transmitted if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions on the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions G A set of network/ manufacturer specific extensions to the record. Gericle key C The CAMEL service logic to be applied. MSC Address C Identifies the CAMEL service logic to be applied. MSC Address C The CAMEL service logic to be applied. MSC Address C The maximum number of HSCSD channels requested as received from the MS at call set-up The maximum number of HSCSD channels requested as received from the MS at call set-up The maximum number of HSCSD channels requested as received from the MS at call set-up The maximum number of HSCSD channels of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Ra			
Change of AOC Parms O New AOC parameters sent to the MS e.g. as a result of a tariff switch over, including the time at which the new set was applied. MS Classmark M The mobile station classmark employed on call set-up. A list of changes to the classmark during the connection each time-stamped Event time stamps: C Seizure of incoming traffic channel (for unsuccessful call attempts) Answer (for successful calls) Answer (for successful calls) Answer (for successful calls) Answer (for successful calls, the holding time for call attempts. Answer (for successful calls, the holding time for call attempts. Answer (for successful calls, the holding time for call attempts. Radio Chan. Requested A The type of radio channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio channel actually used (full or half rate). Change of Rad. Chan. Change of Rad. Chan. C A list of changes each time stamped Change of Rad. Chan. A list of changes each time stamped Change of Rad. Chan. A list of changes each time stamped Change of Rad. Chan. A list of changes each time stamped Change of Rad. Chan. A list of changes each time stamped Change of Rad. Chan. A list of changes each time stamped Change of Rad. Chan. A list of changes each time stamped Change of Rad. Chan. A list of changes each time stamped Change of Rad. Chan. A list of changes each time stamped Change of Rad. Chan. A list of changes each time stamped Change of Rad. Chan. A list of changes each time stamped Change of Rad. Chan. A list of changes each time stamped Change of Rad. Chan. A list of changes each time stamped Change of Rad. Chan. A list of changes each time stamped Change of Rad. Chan. A list of changes each time stamped Change of Rad. Chan. C Partial record sequence number, only present in case of partial records. A list of network and additional charging parameters C C A list of network or user indicator and additional charging parameters A lidentifies the CAMEL service logic to be applie			
Including the time at which the new set was applied. MS Classmark			
Change of Classmark Event time stamps: C Seizure of incoming traffic channel (for unsuccessful call attempts) Answer (for successful calls) Release of traffic channel (for unsuccessful call attempts) Radio Chan. Requested Radio Chan. Requested Radio Chan. Used M The type of radio channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio channel actually used (full or half rate). Cause for termination Diagnostics O A list of changes each time stamped Cause for termination Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. C Identifies the CAMEL severe serving the subscriber. Service key C The CAMEL server serving the subscriber. MSC Address C Identifies the CAMEL server serving the subscriber. MSC Address C The CAMEL server serving the subscriber. MSC Address C The CAMEL service logic to be applied. MSC Address C The CAMEL service logic to be applied. MSC Address C The CAMEL service logic to be applied. MSC Address C The CAMEL service logic to be applied. MSC Address C The CAMEL service logic to be applied. MSC Address C The CAMEL service logic to be applied. MSC Address C The CAMEL service logic to be applied. MSC Address C The CAMEL service logic to be applied. MSC Address C The CAMEL service logic to be applied. MSC Address C The CAMEL service logic to be applied. MSC Address C The maximum number of HSCSD channels allocated to the MSC that generated the network nodes, shall be present in CAMEL is applied. Number of HSCSD C The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD C The maximum number of HSCSD channels allocated to the MS at call set-up The number of HSCSD channels allocated to the user or network initiated modification proceed. A list of network or user initiated changes of number of HSCSD channels during a connections. T		0	
Event time stamps: C Seizure of incoming traffic channel (for unsuccessful call attempts) C Answer (for successful calls) Release of traffic channel The chargeable duration of the connection for successful calls, the holding time for call attempts. Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio channel actually used (full or half rate). Change of Rad. Chan. O A list of changes each time stamped Cause for termination M The reason for the release of the connection. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions on the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. gensmSCF address C Identifies the CAMEL server serving the subscriber. Service key C The CAMEL service logic to be applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network nodes, shall be present if CAMEL is applied. Number of HSCSD Channels Requested C The maximum number of HSCSD channels requested as received from the MS at call set-up Channels Requested C The maximum number of HSCSD channels requested as received from the MS at call set-up Channels Requested C A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD channels during a connection shall only be present for non-transparent HSCSD con			
Call duration M The chargeable duration of the connection for successful calls, the holding time for call attempts. Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio channel actually used (full or half rate). Change of Rad. Chan. O A list of changes each time stamped Cause for termination M The reason for the release of the connection. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions on the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. Identifies the CAMEL service logic to be applied. MSC Address C The CAMEL service logic to be applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Default call handling O Indicates whether or not a CAMEL call encountered default call handling. This field shall be present only if default call handling has been applied. Number of HSCSD C The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD C The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD C Alist of network or user initiated changes of number of HSCSD channels during a connection ach timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate C HSCSD connections. Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. C Alist of retwork or user initiated changes of number of HSCSD channel			
Call duration M The chargeable duration of the connection for successful calls, the holding time for call attempts. Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel (full / half etc.) requested by the MS. A list of changes acch time stamped A list of changes acch time stamped C an ore detailed or the release of the connection. Dato Channel (full / half etc.) requested by the MS. A list of changes acch time stamped C an identifier distinguishing between transactions on the same MS Additional Chy. Info A set of network manufacturer specific extensions to the record. Record extensions C as et of network manufacturer specific extensions to the record. Rescord extensions C as et of network manufacturer specific extensions to the record. Rescord extensions C as et of network manufacturer specific extensions to the record. Rescord extensions C as et of network manufacturer specific extensions to the record. Rescord extensions C as et of network manufacturer specific extensions to the record. Rescord extensions C as et of network manufacturer specific extensions to the record. Rescord extensions C an identifier distinguishing between transactions on the same cal	Event time stamps:		
Radio Chan. Requested O The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio traffic channel actually used (full or half rate). Change of Rad. Chan. O A list of changes each time stamped Cause for termination M The reason for the release of the connection. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions on the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/manufacturer specific extensions to the record. Service key C Interest C Identifies the CAMEL server serving the subscriber. Service key C The CAMEL service logic to be applied. MSC Address C Indicates transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Default call handling O Indicates whether or not a CAMEL call encountered default call handling. This field shall be present only if default call handling has been applied. Number of HSCSD C The maximum number of HSCSD channels requested as received from the MS at call set-up The number of HSCSD C A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate C May be present for HSCSD connections. A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network ini			
Radio Chan. Requested M The type of radio traffic channel (full / half etc.) requested by the MS. Radio Chan. Used M The type of radio channel actually used (full or half rate). Change of Rad. Chan. O A list of changes each time stamped Cause for termination M The reason for the release of the connection. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions on the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. gsmSCF address C Identifies the CAMEL server serving the subscriber. Service key C The CAMEL service logic to be applied. MSC Address C The CAMEL service logic to be applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Default call handling O Indicates whether or not a CAMEL call encountered default call handling. This field shall be present only if default call handling has been applied. The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD C The number of HSCSD channels allocated to the MS at call set-up Number of HSCSD C A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD SD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate C May be present for HSCSD connections. The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCS	Call duration	М	
Change of Rad. Chan. O A list of changes each time stamped Cause for termination M The reason for the release of the connection. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identified distinguishing between transactions on the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. gemSCF address C Identifies the CAMEL server serving the subscriber. Service key C The CAMEL service logic to be applied. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Default call handling O Indicates whether or not a CAMEL call encountered default call handling has been applied. <td>Radio Chan. Requested</td> <td>0</td> <td></td>	Radio Chan. Requested	0	
Cause for termination M The reason for the release of the connection. Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions on the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. gsmSCF address C Identifies the CAMEL server serving the subscriber. Service key C The CAMEL service logic to be applied. Network call reference C The CAMEL service logic to be applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Default call handling O Indicates whether or not a CAMEL call encountered default call handling. This field shall be present only if default call handling has been applied. Number of HSCSD C The maximum number of HSCSD channels requested as received from the MS at call set-up	Radio Chan. Used	M	The type of radio channel actually used (full or half rate).
Diagnostics O A more detailed reason for the release of the connection. Data volume C The number of data segments transmitted if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions on the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. gsmSCF address C Identifies the CAMEL server serving the subscriber. Service key C The CAMEL service logic to be applied. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Default call handling O Indicates whether or not a CAMEL call encountered default call handling. This field shall be present only if default call handling has been applied. Number of HSCSD C The maximum number of HSCSD channels requested as received from the MS at call set-up Change of HSC			
Data volume C The number of data segments transmitted if available at the MSC Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions on the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. gsmSCF address C Identifies the CAMEL server serving the subscriber. Service key C The CAMEL service logic to be applied. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Default call handling O Indicates whether or not a CAMEL call encountered default call handling. This field shall be present only if default call handling has been applied. Number of HSCSD C The maximum number of HSCSD channels requested as received from the MS at call set-up Channels Requested Change of HSCSD C The number of HSCSD channels allocated to the MS at call set-up Channels Allocated Change of HSCSD C A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate C The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. Channel Coding C A list of the traffic channels codings accepted by the MS. Shall only be present for Accepted C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections.			
Sequence no. C Partial record sequence number, only present in case of partial records. Call reference M A local identifier distinguishing between transactions on the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. gsmSCF address C Identifies the CAMEL server serving the subscriber. Service key C The CAMEL service logic to be applied. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Default call handling O Indicates whether or not a CAMEL call encountered default call handling. This field shall be present only if default call handling has been applied. Number of HSCSD C The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD C The number of HSCSD channels allocated to the MS at call set-up Channel SAllocated C A list of network or user initiated changes of number of HSCSD channels during a connection each			
Call reference M A local identifier distinguishing between transactions on the same MS Additional Chg. Info O Charge/no charge indicator and additional charging parameters Record extensions O A set of network/ manufacturer specific extensions to the record. gsmSCF address C Identifies the CAMEL server serving the subscriber. Service key C The CAMEL service logic to be applied. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Default call handling O Indicates whether or not a CAMEL call encountered default call handling. This field shall be present only if default call handling has been applied. Number of HSCSD C The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD C The number of HSCSD channels allocated to the MS at call set-up Channels Allocated C The number of HSCSD channels allocated to the MS at call set-up Channel SCSD C A list of network or user initiated changes of number of HSCSD channels during a connection each timestam			
Additional Chg. Info Record extensions O A set of network/ manufacturer specific extensions to the record. gsmSCF address C Identifies the CAMEL server serving the subscriber. Service key Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Default call handling O Indicates whether or not a CAMEL call encountered default call handling. This field shall be present only if default call handling has been applied. Number of HSCSD Channels Requested Number of HSCSD Channels Allocated Change of HSCSD Channels Allocated Change of HSCSD Channels Allocated Change of HSCSD C A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Requested C The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for NSCSD connections. C A list of the traffic channels codings accepted by the MS. Shall only be present for Accepted C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections.			
Record extensions O A set of network/ manufacturer specific extensions to the record. gsmSCF address C Identifies the CAMEL server serving the subscriber. Service key C The CAMEL service logic to be applied. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Default call handling O Indicates whether or not a CAMEL call encountered default call handling. This field shall be present only if default call handling has been applied. Number of HSCSD C The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD C The number of HSCSD channels allocated to the MS at call set-up Channels Allocated C A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate C May be present for HSCSD connections. Air Interface User Rate Requested C The total Air Interface User Rate Requested by the MS at call setup			
Service key			
Service key C The CAMEL service logic to be applied. Network call reference C An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied. MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Default call handling O Indicates whether or not a CAMEL call encountered default call handling. This field shall be present only if default call handling has been applied. Number of HSCSD C The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD C The number of HSCSD channels allocated to the MS at call set-up Channels Allocated C A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Air Interface User Rate C May be present for HSCSD connections. The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. Channel Coding C A list of the traffic channels codings accepted by the MS. Shall only be present for HSCSD connections. C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections.			
Network call reference			
MSC Address C This field contains the E.164 number assigned to the MSC that generated the network call reference. Default call handling O Indicates whether or not a CAMEL call encountered default call handling. This field shall be present only if default call handling has been applied. Number of HSCSD C The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD C The number of HSCSD channels allocated to the MS at call set-up Channels Allocated C A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate C May be present for HSCSD connections. Air Interface User Rate Requested C The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. Channel Coding C A list of the traffic channels codings accepted by the MS. Shall only be present for HSCSD connections. Channel Coding Used C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections.			An identifier to correlate transactions on the same call taking place in different
Default call handling O Indicates whether or not a CAMEL call encountered default call handling. This field shall be present only if default call handling has been applied. Number of HSCSD C The maximum number of HSCSD channels requested as received from the MS at call set-up Number of HSCSD Channels Allocated C The number of HSCSD channels allocated to the MS at call set-up C A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Air Interface User Rate Requested C The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. Channel Coding Accepted C The traffic channels codings accepted by the MS. Shall only be present for HSCSD connections. C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections.	MSC Address	С	This field contains the E.164 number assigned to the MSC that generated the
Number of HSCSD Channels Requested Number of HSCSD Channels Requested Number of HSCSD Channels Allocated Change of HSCSD Channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Air Interface User Rate Requested Channel Coding Channel Coding Accepted Channel Coding Used Channel Coding Used Channel Coding Used Channels Coding Setup. Shall only be present for HSCSD connections. Channels Coding Setup. Shall only be present for HSCSD connections. Channels Coding Used Channels Coding Setup. Shall only be present for HSCSD connections. Channels Coding Used Channels Coding Setup. Shall only be present for HSCSD connections.	Default call handling	0	Indicates whether or not a CAMEL call encountered default call handling. This
Number of HSCSD Channels Allocated Change of HSCSD Parameters C A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Air Interface User Rate Requested C The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. Channel Coding Accepted C The traffic channels codings accepted by the MS. Shall only be present for HSCSD connections. C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections.		С	The maximum number of HSCSD channels requested as received from the MS at
Channels Allocated Change of HSCSD Parameters Change of HSCSD Parameters are modified connection to each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate Prixed Network User Rate Ohange Change Chan		<u> </u>	
Parameters connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure. Fixed Network User Rate O May be present for HSCSD connections. Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. Channel Coding C Accepted C The traffic channels codings accepted by the MS. Shall only be present for HSCSD connections. Channel Coding Used C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections.	Channels Allocated	С	·
Fixed Network User Rate Air Interface User Rate Requested C Channel Coding Accepted C Channel Coding Used C C Channel Coding Used C C Channel Coding Used C C C Channel Coding Used C C C C C C C C C C C C C C C C C C C		С	connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated
Air Interface User Rate Requested C The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections. Channel Coding Accepted C Channel Coding Used C C Channel Coding Used C C C Channel Coding Used C C C C C C C C C C C C C C C C C C C	Fixed Network User Rate	0	
Channel Coding Accepted C A list of the traffic channels codings accepted by the MS. Shall only be present for HSCSD connections. Channel Coding Used C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections.	Air Interface User Rate		The total Air Interface User Rate Requested by the MS at call setup. Shall only be
Channel Coding Used C The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections.	Channel Coding	С	A list of the traffic channels codings accepted by the MS. Shall only be present for
		С	The traffic channels codings negotiated between the MS and the network at call
	Speech Version Used	0	Speech version used for that call

On a sale Manaian		On a share start of the MO with high act or in the tart of the MO					
Speech Version	0	Speech version supported by the MS with highest priority indicated by MS					
Supported							
Number of DP	0	Number that counts how often armed detection points (TDP and EDP) were					
encountered		encountered.					
Level of CAMEL service	0	ndicator for the complexity of the CAMEL feature used.					
Free format Data	С	This field contains data sent by the gsmSCF in the FCI message(s). The data can					
		be sent either in one FCI message or several FCI messages with append					
		indicator.					
CAMEL call leg	С	Set of CAMEL information IEs. Each of these IEs contains information related to					
information		one outgoing CAMEL call leg.					
Free format data append	С	Indicator if free format data from this CDR is to be appended to free format data in					
indicator		previous partial CDR.					
Free format Data	С	This field contains data sent by the gsmSCF in the FCI messages. The data can					
Troo romat Data		be sent either in one FCI message or several FCI messages with append					
		indicator.					
CAMEL call leg	С	Set of CAMEL information IEs. Each of these IEs contains information related to					
information		one outgoing CAMEL call leg.					
Free format data append	С	Indicator if free format data from this CDR is to be appended to free format data in					
indicator		previous partial CDR.					
Default call handling 2	0	Indicates whether or not a CAMEL call encountered default call handling for 2 nd					
		service such as dialled service. This field shall be present only if default call					
		handling has been applied.					
GsmSCF address 2	С	Identifies the CAMEL server serving the subscriber for 2 nd service such as dialled					
		service.					
Service key 2	С	The CAMEL service logic to be applied for 2 nd service such as dialled service.					
Free format Data 2	C	This field contains data sent by the gsmSCF in the FCI message(s) for 2 nd service					
	-	such as dialled service. The data can be sent either in one FCI message or					
		several FCI messages with append indicator.					
Free format data append	С	Indicator if free format data for 2 nd service from this CDR is to be appended to free					
indicator 2		format data in previous partial CDR.					
maioator Z	1	Torrida data in providuo partiai ODIT.					

B.2.2 Mobile originated emergency call attempt

If the generation of MOC records is enabled then an MOC emergency record shall be created for each outgoing emergency call attempt made by a mobile station. These records shall be produced in the originating MSC.

Table B.2: MOC emergency record

Field		Description
Record Type	М	Mobile originated.
Served IMSI	С	IMSI of the calling party in case of an emergency call with a SIM card.
Served IMEI	С	IMEI of the calling mobile equipment if available.
Served MSISDN	0	The primary MSISDN of the calling party.
Translated Number	0	The called number after digit translation within the MSC (if applicable)
Recording Entity	М	The E.164 number of the visited MSC producing the record.
Incoming TKGP	0	The MSC trunk group on which the call originated, usually from the BSS
Outgoing TKGP	0	The trunk group on which the call left the MSC
Location	М	The identity of the cell or the SAC in which the call originated including the location area code.
Change of Location	0	A list of changes in Location Area Code / Cell Identifier—each time-stamped.
Basic service	М	Teleservice 'emergency call'.
AOC Parameters	0	The charge advice parameters sent to the MS on call set-up
Change of AOC Parms	0	New AOC parameters sent to the MS e.g. as a result of a tariff switch over,
		including the time at which the new set was applied.
MS Classmark	М	The mobile station classmark employed on call set-up.
Change of classmark	0	A list of changes to the classmark during the connection each time-stamped
Event time stamps:	С	Seizure of incoming traffic channel (for unsuccessful call attempts)
	С	Answer (for successful calls)
	0	Release of traffic channel
Call duration	М	The chargeable duration of the connection for successful calls, the holding time for call attempts.
Radio Chan. Requested	0	The type of radio traffic channel (full / half etc.) requested by the MS.
Radio Chan. Used	М	The type of radio channel used (full or half rate).
Change of Rad. Chan.	0	A list of changes each time stamped
Cause for termination	М	The reason for the release of the connection.
Diagnostics	0	A more detailed reason for the release of the connection.
Sequence no.	С	Partial record sequence number, only present in case of partial records.
Call reference	М	A local identifier distinguishing between transactions on the same MS
Record extensions	0	A set of network/ manufacturer specific extensions to the record.

B.2.4 Mobile terminated call attempt

If the generation of these records is enabled, then an MTC record shall be created for each incoming call attempt made for a mobile station. The MTC records shall be produced in the terminating MSC.

Table B.4: MTC record

Field		Description					
Record Type	М	Mobile Terminated.					
Served IMSI	М	IMSI of the called party.					
Served IMEI	0	IMEI of the called ME.					
Served MSISDN	0	The MSISDN of the called party.					
Calling Number	С	The number of the calling party if available.					
Connected Number	0	Only relevant in case of call forwarding where the "forwarded-to" number is recorded.					
Recording Entity	М	The E.164 number of the visited (terminating) MSC					
Incoming TKGP	0	The MSC trunk group on which the call originated.					
Outgoing TKGP	0	The trunk group on which the call left the MSC, usually to the BSS					
Location	С	The identity of the cell <u>or the SAC occupied</u> by the called party when the call was set up including the location area code.					
Change of Location	0	A list of changes in Location Area Code / Cell Identifier. each time-stamped.					
Basic Service	М	Bearer or teleservice employed					
Transparency Indicator	С	Only provided for those teleservices which may be employed in both transparent and non-transparent mode.					
Change of Service	0	A list of changes of basic service during a connection each time-stamped.					
Supp. services	С	Supplementary services invoked as a result of this connection.					
AOC Parameters	0	The charge advice parameters sent to the MS on call set-up					
Change of AOC Parms.	0	New AOC parameters sent to the MS e.g. as a result of a tariff switch-over, including the time at which the new set was applied.					
MS Classmark	М	The mobile station class mark					
Change of Classmark	0	A list of changes to the classmark during the connection each time-stamped					
Event time stamps:	С	Seizure of traffic channel for unsuccessful call attempts					
	С	Answer time for successful calls					
	0	Release of traffic channel					
Call duration	М	The chargeable duration of the connection if successful, the holding time of the call if unsuccessful.					
Radio Chan. Requested	0	The type of radio traffic channel (full / half etc.) requested by the MS.					
Radio Chan. Used	М	The type of radio channel used (full or half rate).					
Change of Rad. Chan	0	A list of changes each time stamped					
Cause for term.	М	The reason for the release of the call.					
Diagnostics	0	A more detailed reason for the release of the connection.					
Data volume	С	The number of data segments transmitted, if available at the MSC					
Sequence no.	С	Partial record sequence number, only present in case of partial records.					
Call reference	М	A local identifier distinguishing between transactions at the same MS					
Additional Chg. Info	0	Charge/no charge indicator and additional charging parameters					
Record extensions	0	A set of network/ manufacturer specific extensions to the record.					
Network call reference	С	An identifier to correlate transactions on the same call taking place in different network nodes, shall be present if CAMEL is applied.					
MSC Address	С	This field contains the E.164 number assigned to the MSC that generated the network call reference.					
Number of HSCSD Channels Requested	0	The maximum number of HSCSD channels requested as received from the MS at call set-up					
Number of HSCSD Channels Allocated	0	The number of HSCSD channels allocated to the MS at call set-up					
Change of HSCSD Parameters	0	A list of network or user initiated changes of number of HSCSD channels during a connection each timestamped. Shall only be present in case of an HSCSD call, if the basic HSCSD parameters are modified due the user or network initiated modification procedure.					
Fixed Network User Rate	0	May be present for HSCSD connections.					
Air Interface User Rate Requested	С	The total Air Interface User Rate Requested by the MS at call setup. Shall only be present for non-transparent HSCSD connections.					
Channel Coding Accepted	С	A list of the traffic channels codings accepted by the MS. Shall only be present for HSCSD connections.					
Channel Coding Used	С	The traffic channels codings negotiated between the MS and the network at call setup. Shall only be present for HSCSD connections.					
Speech Version Used	0	Speech version used for that call					
Speech Version	0	Speech version supported by the MS with highest priority indicated by MS					
Opecci version		יין אווי אווי אווי אווי אווי אווי אווי א					

GsmSCF address	С	Identifies the CAMEL server serving the subscriber.						
Service Key	С	The CAMEL service logic to be applied.						
Default Call handling	0	Indicates whether or not a CAMEL call encountered defeault call handling. This field shall be present only if default call handling has been applied.						
Free format Data	С	Indicator if free format data from this CDR is to be appended to free format data in previous partial CDR.						
Free format data append indicator	С	Indicator if free format data from this CDR is to be appended to free format data in previous partial CDR.						

B.2.9 Supplementary service actions

A supplementary service record may be produced in the NEF of the appropriate MSC or HLR for each supplementary service action (activation, deactivation, invocation etc.) performed or initiated by the subscriber.

There are two basic types of SS-actions:

Record extensions

 \cap

- Call related i.e. as a result of a connection e.g. Invocation of CLIP / CLIR / AOC etc.
- Non-call related i.e. as a result of subscriber controlled input (SCI) e.g. Registration of call forwarding

Each supplementary service action shall be performed on one or more basic service groups. If the action applies to all tele and all bearer services (i.e. to all basic services) then the basic services field shall be omitted.

SCI actions may be recorded in individual SS-action records. Call related actions may be recorded in either the appropriate call record (MOC/MTC) or in separate SS-action records. For further details concerning the generation of supplementary service records see subclause 8.2.1.1.3.

Additional non-standard supplementary service actions may be made available within some networks in the form of Unstructured Supplementary Service Data (USSD). These actions may also be recorded in SS-action records. However, as these actions are non-standard they may not include an appropriate action type, supplementary service code or basic service code.

Field Description Record Type М Supplementary service action. Served IMSI Μ The IMSI of the MS performing the action. The IMEI of the ME performing the action. Served IMEI 0 Served MSISDN 0 The primary MSISDN of the party performing the action. MS Classmark Μ The mobile station classmark. Recording Entity Μ The E.164 number of the visited MSC / HLR. Location 0 The Location Area Code and Cell Identifierty_from which the request originated. С Supp. Service The supplementary service or group of supplementary services for which the request was made. May not be available in case of USSD. **Basic Services** С The basic service group(s) to which the supplementary service applies. This field is not provided if the action applies to all basic services. SS Action C Activation, deactivation, interrogation etc. May not be available in case of USSD. М SS Action time stamp The time at which the action was requested. С Service dependent parameters or unstructured suppl. service data. SS Parameters С SS Action Result Result of the requested transaction if unsuccessful. М Call Reference A local identifier distinguishing between transactions at the same MS.

A set of network/ manufacturer specific extensions to the record.

Table B.9: SS-action record

B.2.11 Location update (VLR)

If enabled, a VLR location update record shall be produced in the (new) VLR for each location registration or location update received by the VLR for a mobile subscriber.

Table B.11: Loc.-upd. (VLR) record

Field		Description
Record Type	М	Location update.
Served IMSI	М	IMSI of the served MS.
Served MSISDN	0	The primary MSISDN of the party performing the location update
Recording Entity	М	The E.164 number of the entity (VLR or MSC/VLR) generating the record.
Old location		Not present for registration:
	С	VMSC Number
	С	Location Area Code
New location	M	VMSC Number
	M	Location Area Code
	0	Cell Identification or SAC
MS Classmark	М	The mobile station classmark
Update time stamp	М	Time at which the update was invoked.
Update Result	С	The result of the location update if unsuccessful.
Record extensions	0	A set of network/ manufacturer specific extensions to the record.

B.2.13 Short message service, mobile originated

If enabled, an SMS-MO record shall be produced, within the originating MSC, for each short message sent by a mobile subscriber.

Table B.13: SMS-MO record

Field		Description				
Record Type	M	SMS-Mobile originated.				
Served IMSI	М	The IMSI of the subscriber sending the short message.				
Served IMEI	0	The IMEI of the ME sending the message, if available.				
Served MSISDN	0	The primary MSISDN of the subscriber sending the message.				
MS Classmark	M	The mobile station classmark.				
Service Centre	М	The address (E.164) of the SMS-service centre.				
Recording Entity	М	The E.164 number of the visited MSC				
Location	0	The Location Area Code and Cell Identifierty from which the message originated.				
Event Time stamp	М	The time at which the message was received by the MSC from the subscriber.				
Message Reference	М	A reference, provided by the MS uniquely identifying this message.				
SMS Result	С	The result of the attempted delivery if unsuccessful.				
Record extensions	0	A set of network/ manufacturer specific extensions to the record.				
Destination number	0	The destination short message subscriber number.				
CAMELSMSInformation	С	Set of CAMEL information IEs. Each of these IEs contains information related to				
		CAMEL call leg related for the SMS.				

B.2.14 Short message service, mobile terminated

If enabled, an SMS-MT record shall be produced, within the terminating MSC, for each short message received by a mobile subscriber.

Table B.14: SMS-MT record

Field		Description
Record Type	М	SMS-Mobile Terminated.
Service Centre	М	The E.164 address of the SMS service centre.
Served IMSI	М	The IMSI of the receiving party.
Served IMEI	0	The IMEI of the receiving party, if available.
Served MSISDN	0	The MSISDN of the receiving party.
MS Classmark	М	The mobile station classmark.
Recording Entity	М	The E.164 number of the visited MSC.
Location	0	The Location Area Code and Cell Identifierty to which the message was delivered.
Event time stamp	М	Delivery time stamp, time at which message was sent to the MS by the MSC.
SMS Result	С	The result of the attempted delivery if unsuccessful.
Record extensions	0	A set of network/ manufacturer specific extensions to the record.

B.2.18 Reduced partial records

In order to minimise the amount of data transferred, the contents of partial record may be reduced to those fields required to uniquely identify the connection and those fields that actually change. Table B.18 contains an example of such a record for a mobile originated call attempt. Reduced partial records may be generated for any of the relevant call records.

Table B.18: Reduced partial (MOC) record

Field		Description
Record Type	M	Mobile originated.
Served IMSI	С	IMSI of the calling party, if available
Called Number	С	If available.
Recording Entity	M	The E.164 number of the visited MSC producing the record.
Change of Location	С	A list of changes in Location Area Code / Cell Identifier—each time-stamped.
ChangeOfService	С	A list of changes of basic service during a connection each time-stamped.
Change of AOC Parms	С	New AOC parameters sent to the MS e.g. as a result of a tariff switch over,
		including the time at which the new set was applied.
Change of Classmark	С	A list of changes to the classmark during the connection each time-stamped
Event time stamps:	M	Answer time, start of this partial record.
Call duration	M	The chargeable duration of this partial record.
Change of Rad. Chan.	С	A list of changes each time stamped
Cause for termination	M	The reason for the release of the connection.
Diagnostics	0	Only relevant for the last record in the sequence.
Data volume	С	The number of data segments transmitted during this partial output
Sequence no.	M	Partial record sequence number, only present in case of partial records.
Call reference	М	A local identifier distinguishing between transactions on the same MS
Record extensions	0	A set of network/ manufacturer specific extensions to the record.

3GPP TSG-SA5 (Telecom Management) Meeting #15, Girdwood, Alaska, USA, 16 - 20 October 2000

SA5#15(00)0537 Tdoc S5B000053

		CHANGE	REQI	JEST		,	le at the bottom of this to fill in this form corre	
		32.005	CR	004	Cui	rent Versi	on: V.3.2.0	
GSM (AA.BB) or 3	3G (AA.BBB) specific	ation number ↑		↑ CI	R number as alloca	ated by MCC st	upport team	
For submission list expected approval		for info		X s form is availa		strate non-strate gpp.org/Infor	- ,	nly)
Proposed chan (at least one should be		(U)SIM	ME		UTRAN / Ra	dio	Core Network	X
Source:	SA5#15					Date:	20/10/2000	
Subject:	Correction o	f parameter CallE	ventRec	ord				
Work item:	OAM-CH							
(only one category shall be marked	B Addition of f	nodification of feat		ier releas		Release:	Phase 2 Release 96 Release 97 Release 98 Release 99 Release 00	X
Reason for change:	global tag of For a comm	decoder is not able CallEventRecord on handling of bot e of CallEventRec	th record	types in	the same pro			
Clauses affecte	ed: A.9							
Other specs affected:		ifications	-	→ List of	CRs: CRs: CRs:			
Other comments:								

A.9 Abstract syntax

```
CallEventRecord ::= CHOICE
    moCallRecord
                          [0] MOCallRecord,
                          [1] MTCallRecord,
    mtCallRecord
    roamingRecord
                          [2] RoamingRecord,
    incGatewayRecord
                          [3] IncGatewayRecord,
                         [4] OutGatewayRecord,
[5] TransitCallRecord,
    outGatewayRecord
    transitRecord
                          [6] MOSMSRecord,
[7] MTSMSRecord,
    {\tt moSMSRecord}
    mtSMSRecord
    moSMSIWRecord
                          [8] MOSMSIWRecord,
                          [9] MTSMSGWRecord,
    mtSMSGWRecord
                          [10] SSActionRecord,
[11] HLRIntRecord,
    ssActionRecord
    hlrIntRecord
    locUpdateHLRRecord [12] LocUpdateHLRRecord,
    locUpdateVLRRecord
                          [13] LocUpdateVLRRecord,
    commonEquipRecord
                          [14] CommonEquipRecord,
    recTypeExtensions
                          [15] ManagementExtensions,
    termCAMELIntRecord [16] TermCAMELIntRecord
   Record values 20..24 are 3G packed switch specific
    sgsnPDPRecord
                           [20] SGSNPDPRecord,
                           [21] GGSNPDPRecord,
[22] SGSNMMRecord,
    ggsnPDPRecord
    sgsnMMRecord
                           [23] SGSNSMORecord,
    sgsnSMORecord
    sgsnSMTRecord
                           [24] SGSNSMTRecord
```