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**Source:** SA5 (Telecom Management)  
**Title:** 2 Rel-4/5 CRs 32.205 (CS Charging): "CDR correction for data services over lu-interface - alignment with SA1's 22.002"  
**Document for:** Approval  
**Agenda Item:** 7.5.3

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Doc-1st-Level	Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Doc-2nd-Level	Workitem
SP-030054	32.205	013	-	Rel-4	<b>CDR correction for data services over lu-interface - alignment with SA1's 22.002</b>	F	4.3.0	S5-034032	OAM-CH
SP-030054	32.205	014	-	Rel-5	<b>CDR correction for data services over lu-interface - alignment with SA1's 22.002</b>	A	5.2.0	S5-034034	OAM-CH

## CHANGE REQUEST

⌘ **32.205 CR 013** ⌘ rev **-** ⌘ Current version: **4.3.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

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

<b>Title:</b>	⌘ CDR correction for data services over lu-interface - alignment with SA1's 22.002		
<b>Source:</b>	⌘ S5		
<b>Work item code:</b>	⌘ OAM-CH	<b>Date:</b>	⌘ 28/02/2003
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)	2	(GSM Phase 2)
	<b>A</b> (corresponds to a correction in an earlier release)	R96	(Release 1996)
	<b>B</b> (addition of feature),	R97	(Release 1997)
	<b>C</b> (functional modification of feature)	R98	(Release 1998)
	<b>D</b> (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

<b>Reason for change:</b>	⌘ Users expect the UMTS system to provide the CS data services, but in the existing CDRs only parameters for description of the GSM data services are defined. For variable and flexible charging of the data services over lu-Interface in the UMTS network, the parameters Maximum Bit Rate (MBR) and Guaranteed Bit Rate (GBR) as specified in TS 22.002, for non-transparent and transparent data services (BS20 and BS30), based on the acces bearer parameter FNUR and WAIUR (refer TS 27.001) must be used.
<b>Summary of change:</b>	⌘ For the description of the UMTS CS data service these two parameters MBR and GBR have to be added into the MOC and MTC CDRs
<b>Consequences if not approved:</b>	⌘ Variable and flexible charging based on the bit rate parameter for the CS data services in the UMTS system is not possible.

<b>Clauses affected:</b>	⌘ 2., 4.1, 4.2, 4.4, 5.29, 5.43, 6.1						
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
	Y	N					
	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
<input checked="" type="checkbox"/>	Test specifications	⌘					
<input checked="" type="checkbox"/>	O&M Specifications	⌘					
<b>Other comments:</b>	⌘						

## Change in Clause 2

[33] [TS 27.001: " General on Terminal Adaptation Functions \(TAF\) for Mobile Stations \(MS\)".](#)

## End of Change in Clause 2

## Change in Clause 4.1

### 4.1 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 1: MOC record**

Field	2G	3G	Description
Record Type	M	M	Mobile originated.
Served IMSI	M	M	IMSI of the calling party.
Served IMEI	C	C	IMEI of the calling ME, if available.
Served MSISDN	O <sub>M</sub>	O <sub>M</sub>	The primary MSISDN of the calling party.
Called Number	M	M	The address of the called party i.e. the number dialled by the calling subscriber.
Translated Number	O <sub>C</sub>	O <sub>C</sub>	The called number after digit translation within the MSC (if applicable)
Connected Number	O <sub>C</sub>	O <sub>C</sub>	The number of the connected party if different to the Called Number
Roaming Number	O <sub>C</sub>	O <sub>C</sub>	The Mobile Station Roaming Number employed to route this connection, if applicable.
Recording Entity	M	M	The E.164 number of the visited MSC producing the record.
Incoming TKGP	O <sub>M</sub>	O <sub>C</sub>	The MSC trunk group on which the call originated , usually from the BSS. If available in 3G, this parameter shall be supplied.
Outgoing TKGP	O <sub>M</sub>	O <sub>C</sub>	The trunk group on which the call left the MSC. If available in 3G, this parameter shall be supplied.
Location	M	M	The identity of the cell or the SAC at the time of CDR creation, including the location area code.
Change of Location	O <sub>C</sub>	O <sub>C</sub>	A list of changes in Location Area Code / Service Area Code / Cell Id. Each time-stamped.
Basic service	M	M	Bearer or teleservice employed.
Rate Indication	O <sub>C</sub>	O <sub>C</sub>	Present if "rate adaption" parameters for the basic service were signalled between the MS/UE and the network, see TS 24.008.
Transparency Indicator	C	C	Indicates whether the basic service was used in transparent or non-transparent mode. This parameter is provided only for those basic services which may be employed in both transparent and non-transparent mode.
Change Of Service	O <sub>C</sub>	O <sub>C</sub>	A list of changes of basic service during a connection each time-stamped.
Supp. Services	C	C	Supplementary services invoked as a result of this connection. This field shall be present when one or more supplementary services have been invoked.
AOC Parameters	O <sub>C</sub>	O <sub>C</sub>	The charge advice parameters sent to the MS on call set-up. This field shall be supplied only when AoC parameters have been sent.
Change of AOC Parameters	O <sub>C</sub>	O <sub>C</sub>	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. This field shall be supplied only when AoC parameters have been sent.
MS Classmark	M	M	The mobile station classmark employed on call setup.
Change of Classmark	O <sub>C</sub>	O <sub>C</sub>	A list of changes to the classmark during the connection each time-stamped
Event time stamps:	C	C	Seizure time: time of incoming traffic channel seizure (for unsuccessful call attempts)
	C	C	Answer: time of answer (for successful calls)
	O <sub>M</sub>	O <sub>M</sub>	Release time: time of traffic channel release
Call duration	M	M	The chargeable duration of the connection for successful calls, the holding time for call attempts.

Field	2G	3G	Description
Data volume	C	-	The number of data segments transmitted if available at the MSC
Radio Chan. Requested	O <sub>M</sub>	-	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 <sub>C</sub>	-	A list of changes each time stamped
Cause for termination	M	M	The reason for the release of the connection.
Diagnostics	O <sub>M</sub>	O <sub>M</sub>	A more detailed reason for the release of the connection.
Call reference	M	M	A local identifier distinguishing between transactions on the same MS
Sequence no.	C	C	Partial record sequence number, only present in case of partial records.
Additional Chg. Info	O <sub>C</sub>	O <sub>C</sub>	Charge/no charge indicator and additional charging parameters, when available.
Record extensions	O <sub>C</sub>	O <sub>C</sub>	A set of network / manufacturer specific extensions to the record, when available.
GsmSCF address	C	C	Identifies the CAMEL server serving the subscriber. Shall be present only if CAMEL is applied.
Service key	C	C	The CAMEL service logic to be applied. Shall be present only if CAMEL is applied.
Network call reference	C	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	C	This field contains the E.164 number assigned to the MSC that generated the network call reference. Shall be present only if CAMEL is applied.
Default call handling	O <sub>C</sub>	O <sub>C</sub>	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	C	-	The maximum number of HSCSD channels requested as received from the MS at call set-up. Shall only be present for HSCSD connections.
Number of HSCSD Channels Allocated	C	-	The number of HSCSD channels allocated to the MS at call set-up. Shall only be present for HSCSD connections.
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	O <sub>C</sub>	O <sub>C</sub>	Indicates the user data rate applied for the connection in the fixed network. Shall only be present for 2G HSCSD connections and for UMTS data 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 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.
<a href="#">Guaranteed bit rate</a>	-	O <sub>C</sub>	<a href="#">Describes the bitrate the UMTS bearer service shall guarantee to the user or application. Guaranteed Bit Rate may be used to facilitate admission control based on available resources, and for resource allocation within UMTS. Shall only be present for UMTS data connections.</a>
<a href="#">Maximum bit rate</a>	-	O <sub>C</sub>	<a href="#">Maximum Bit Rate can be used to make code reservations in the downlink of the radio interface. Its purpose is: 1) to limit the delivered bitrate to applications or external networks with such limitations, 2) to allow maximum wanted user bitrate to be defined for applications able to operate with different rates (e.g. applications with adapting codecs). Shall only be present for UMTS data connections.</a>
Speech Version Supported	O <sub>M</sub>	-	Speech version supported by the MS with highest priority indicated by MS
Speech Version Used	O <sub>M</sub>	-	Speech version used for that call
Number of DP encountered	O <sub>C</sub>	O <sub>C</sub>	Number that counts how often armed detection points (TDP and EDP) were encountered. Shall be present only if CAMEL is applied.
Level of CAMEL service	O <sub>C</sub>	O <sub>C</sub>	Indicator for the complexity of the CAMEL feature used. Shall be present only if CAMEL is applied.
Free format Data	C	C	This field contains data sent by the gsmSCF in the Furnish Charging Information (FCI) message(s). The data can be sent either in one FCI message or several FCI messages with append indicator. Shall be present only if CAMEL is applied.
CAMEL call leg information	C	C	Set of CAMEL information IEs. Each of these IEs contains information related to one outgoing CAMEL call leg. Shall be present only if CAMEL is applied.

Field	2G	3G	Description
Free format data append indicator	C	C	Indicator if free format data from this CDR is to be appended to free format data in previous partial CDR. Shall be present only if CAMEL is applied.
Default call handling 2	O <sub>C</sub>	O <sub>C</sub>	Indicates whether or not a CAMEL call encountered default call handling for 2 <sup>nd</sup> service such as dialled service. This field shall be present only if default call handling has been applied.
GsmSCF address 2	C	C	Identifies the CAMEL server serving the subscriber for 2 <sup>nd</sup> service such as dialled service. Shall be present only if CAMEL is applied for 2 <sup>nd</sup> service.
Service key 2	C	C	The CAMEL service logic to be applied for 2 <sup>nd</sup> service such as dialled service. Shall be present only if CAMEL is applied for 2 <sup>nd</sup> service.
Free format Data 2	C	C	This field contains data sent by the gsmSCF in the FCI message(s) for 2 <sup>nd</sup> service such as dialled service. The data can be sent either in one FCI message or several FCI messages with append indicator. Shall be present only if CAMEL is applied for 2 <sup>nd</sup> service.
Free format data append indicator 2	C	C	Indicator if free format data for 2 <sup>nd</sup> service from this CDR is to be appended to free format data in previous partial CDR. Shall be present only if CAMEL is applied for 2 <sup>nd</sup> service.
System Type	-	M	This field indicates the use of GERAN, UTRAN (or a value of unknown). This field is present when either the UTRAN or GERAN air-interface is used on call setup. For an open CDR in a 2G NE (responsible for the CDR), the field is not present (even if the call is handed off to a 3G air interface). For a CDR in a 3G NE (responsible for the CDR), the value unknown shall be used after handover.

### End of Change in Clause 4.1

### Change in Clause 4.4

## 4.4 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 4: MTC record**

Field	2G	3G	Description
Record Type	M	M	Mobile Terminated.
Served IMSI	M	M	IMSI of the called party.
Served IMEI	C	C	IMEI of the called ME, if available.
Served MSISDN	O <sub>M</sub>	O <sub>M</sub>	The MSISDN of the called party.
Calling Number	C	C	The number of the calling party if available.
Connected Number	O <sub>C</sub>	O <sub>C</sub>	Only relevant in case of call forwarding where the "forwarded-to" number is recorded.
Recording Entity	M	M	The E.164 number of the visited (terminating) MSC
Incoming TKGP	O <sub>M</sub>	O <sub>M</sub>	The MSC trunk group on which the call originated.
Outgoing TKGP	O <sub>M</sub>	O <sub>C</sub>	The trunk group on which the call left the MSC, usually to the BSS. If available in 3G, this parameter shall be supplied.
Location	C	C	The identity of the cell or the SAC occupied by the called party when the call was set up, including the location area code.
Change of Location	O <sub>C</sub>	O <sub>C</sub>	A list of changes in Location Area Code / Service Area Code / Cell Id. Each time-stamped.
Basic Service	M	M	Bearer or teleservice employed
Rate Adaptation	O <sub>C</sub>	O <sub>C</sub>	Present if "rate adaption" parameters for the basic service were signalled between the MS/UE and the network, see TS 24.008.
Transparency Indicator	C	C	Indicates whether the basic service was used in transparent or non-transparent mode. This parameter is provided only for those basic services which may be employed in both transparent and non-transparent mode.
Change of Service	O <sub>C</sub>	O <sub>C</sub>	A list of changes of basic service during a connection each time-stamped.
Supplementary services	C	C	Supplementary services invoked as a result of this connection. This field shall be present when one or more supplementary services have been invoked.
AOC Parameters	O <sub>C</sub>	O <sub>C</sub>	The charge advice parameters sent to the MS on call set-up. This field shall be supplied only when AoC parameters have been sent.

Field	2G	3G	Description
Change of AOC Parameters.	O <sub>C</sub>	O <sub>C</sub>	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. This field shall be supplied only when AoC parameters have been sent.
MS Classmark	M	M	The mobile station class mark.
Change of Classmark	O <sub>C</sub>	O <sub>C</sub>	A list of changes to the classmark during the connection each time-stamped
Event time stamps:	C C O <sub>M</sub>	C C O <sub>M</sub>	Seizure time: time of traffic channel seizure for unsuccessful call attempts Answer time: time of answer for successful calls Release time: time of traffic channel release
Call duration	M	M	The chargeable duration of the connection if successful, the holding time of the call if unsuccessful.
Data volume	C	-	The number of data segments transmitted, if available at the MSC
Radio Chan. Requested	O <sub>M</sub>	-	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 <sub>C</sub>	-	A list of changes each time stamped
Cause for termination	M	M	The reason for the release of the call.
Diagnostics	O <sub>M</sub>	O <sub>M</sub>	A more detailed reason for the release of the connection.
Call reference	M	M	A local identifier distinguishing between transactions at the same MS
Sequence no.	C	C	Partial record sequence number, only present in case of partial records.
Additional Chg. Info	O <sub>C</sub>	O <sub>C</sub>	Charge/no charge indicator and additional charging parameters, when available.
Record extensions	O <sub>C</sub>	O <sub>C</sub>	A set of network/ manufacturer specific extensions to the record, when available.
Network call reference	C	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	C	This field contains the E.164 number assigned to the MSC that generated the network call reference. Shall be present only if CAMEL is applied.
Number of HSCSD Channels Requested	O <sub>C</sub>	-	The maximum number of HSCSD channels requested as received from the MS at call set-up. Shall only be present for HSCSD connections.
Number of HSCSD Channels Allocated	O <sub>C</sub>	-	The number of HSCSD channels allocated to the MS at call set-up. Shall only be present for HSCSD connections.
Change of HSCSD Parameters	O <sub>C</sub>	-	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 <sub>C</sub>	-	Indicates the user data rate applied for the connection in the fixed network. Shall only be present for 2G HSCSD connections and for UMTS data connections.
Air Interface User Rate Requested	C	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.
<a href="#">Guaranteed bit rate</a>	-	O <sub>C</sub>	<a href="#">Describes the bitrate the UMTS bearer service shall guarantee to the user or application. Guaranteed Bit Rate may be used to facilitate admission control based on available resources, and for resource allocation within UMTS. Shall only be present for UMTS data connections.</a>
<a href="#">Maximum bit rate</a>	-	O <sub>C</sub>	<a href="#">Maximum Bit Rate can be used to make code reservations in the downlink of the radio interface. Its purpose is: 1) to limit the delivered bitrate to applications or external networks with such limitations, 2) to allow maximum wanted user bitrate to be defined for applications able to operate with different rates (e.g. applications with adapting codecs). Shall only be present for UMTS data connections.</a>
Speech Version Used	O <sub>M</sub>	-	Speech version used for that call
Speech Version Supported	O <sub>M</sub>	-	Speech version supported by the MS with highest priority indicated by MS
System Type	-	M	This field indicates the use of GERAN, UTRAN (or a value of unknown). This field is present when either the UTRAN or GERAN air-interface is used on call setup. For an open CDR in a 2G NE (responsible for the CDR), the field is not present (even if the call is handed off to a 3G air interface). For a CDR in a 3G NE (responsible for the CDR), the value unknown shall be used after handover.

**End of Change in Clause 4.4**

## Change in Clause 5.29

### 5.28 GsmSCF address

This field identifies the CAMEL server serving the subscriber. Address is defined in HLR as part of CAMEL subscription information.

### 5.29 Guaranteed Bit Rate

This field contains the Guaranteed Bit Rate based on the FNUR for transparent and Wanted AIUR for non-transparent CS data services based on the described mapping in TS 27.001 [33]. The Guaranteed Bit Rate may be used to facilitate admission control based on available resources, and for resource allocation within UMTS. The bitrate of the UMTS bearer service shall guarantee to the user or applications refer TS 22.002[21].

Operator may choose any of the possible values less or equal to wanted air interface user rate (WAIUR). (If WAIUR is less or equal to 14.4 kbit/s then Guaranteed Bit Rate and Maximum Bit Rate shall be set to 14.4 kbit/s).

### 5.30~~29~~ HSCSD parameters / Change of HSCSD parameters

The basic HSCSD parameters are negotiated between the MS and the network at call setup time. They comprise of the following parameters:

- the FNUR (Fixed Network User Rate) (optionally);
- the total AIUR (Air Interface User Rate) requested by the MS (for non-transparent HSCSD connections only);
- a list of the channel codings accepted by the MS;
- the maximum number of traffic channels accepted by the MS (this is noted in the channels requested field);
- the channel coding and the number of traffic channels actually used for the call.

In case the network or user initiated modification procedure takes place during the call, the AIUR requested, the channel coding used and the number of traffic channel requested/used might be recorded in the Change of HSCSD parameters field including the time at which the change occurred and which entity requested the change.

It should be noted that the Change of HSCSD Parameters field is optional and not required if partial records are generated when a Change of HSCSD Parameters takes place.

## End of Change in Clause 5.29

## Change in Clause 5.43

### 5.42 Location Type

This field contains the type of the location as defined in TS 29.002 [5]

### 5.43 Maximum Bit Rate

This field contains the Maximum Bit Rate based on the FNUR (Fixed Network User Rate) for transparent and WAIUR( Wanted Air Interface User Rate) for non-transparent CS data services based on the described mapping in TS 27.001 [33]. The parameter can be used to make code reservations in the downlink of the radio interface for the UMTS bearer service (BS20 and BS30) refer TS 22.002 [21]. Its purpose is

- to limit the delivered bitrate to applications or external networks with such limitations.

- [to allow maximum wanted user bitrate to be defined for applications able to operate with different rates \(e.g. applications with adapting codecs\).\]](#)

[Maximum bit rate is set to the highest value  \$\leq\$  WAIUR \(If WAIUR is less or equal to 14.4 kbit/s then Guaranteed Bit Rate and Maximum Bit Rate shall be set to 14.4 kbit/s\)](#)

## 5.4344 Measure Duration

This field contains the duration for the section of the location measurement corresponding to the location request and the location report messages.

### End of Change in Clause 5.43

### Change in Clause 6.1

```

MOCallRecord ::= SET
{
    recordType                [0] CallEventRecordType,
    servedIMSI                [1] IMSI OPTIONAL,
    servedIMEI                [2] IMEI OPTIONAL,
    servedMSISDN              [3] MSISDN OPTIONAL,
    callingNumber              [4] CallingNumber OPTIONAL,
    calledNumber               [5] CalledNumber OPTIONAL,
    translatedNumber           [6] TranslatedNumber OPTIONAL,
    connectedNumber            [7] ConnectedNumber OPTIONAL,
    roamingNumber              [8] RoamingNumber OPTIONAL,
    recordingEntity            [9] RecordingEntity,
    mscIncomingTKGP           [10] TrunkGroup OPTIONAL,
    mscOutgoingTKGP           [11] TrunkGroup OPTIONAL,
    location                   [12] LocationAreaAndCell OPTIONAL,
    changeOfLocation           [13] SEQUENCE OF LocationChange OPTIONAL,
    basicService               [14] BasicServiceCode OPTIONAL,
    transparencyIndicator      [15] TransparencyInd OPTIONAL,
    changeOfService            [16] SEQUENCE OF ChangeOfService OPTIONAL,
    supplServicesUsed          [17] SEQUENCE OF SuppServiceUsed OPTIONAL,
    aocParameters              [18] AOCParameters OPTIONAL,
    changeOfAOCParms           [19] SEQUENCE OF AOCParmChange OPTIONAL,
    msClassmark                [20] Classmark OPTIONAL,
    changeOfClassmark          [21] ChangeOfClassmark OPTIONAL,
    seizureTime                [22] TimeStamp OPTIONAL,
    answerTime                  [23] TimeStamp OPTIONAL,
    releaseTime                 [24] TimeStamp OPTIONAL,
    callDuration                [25] CallDuration,
    dataVolume                  [26] DataVolume OPTIONAL,
    radioChanRequested          [27] RadioChanRequested OPTIONAL,
    radioChanUsed               [28] TrafficChannel OPTIONAL,
    changeOfRadioChan          [29] ChangeOfRadioChannel OPTIONAL,
    causeForTerm                [30] CauseForTerm,
    diagnostics                 [31] Diagnostics OPTIONAL,
    callReference               [32] CallReference,
    sequenceNumber              [33] INTEGER OPTIONAL,
    additionalChgInfo           [34] AdditionalChgInfo OPTIONAL,
    recordExtensions            [35] ManagementExtensions OPTIONAL,
    gsm-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,
    fnur                        [45] Fnur OPTIONAL,
    aiurRequested               [46] AiurRequested OPTIONAL,
    chanCodingsAcceptable       [47] SEQUENCE OF ChannelCoding OPTIONAL,
    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,
freeFormatDataAppend	[55] BOOLEAN OPTIONAL,
defaultCallHandling-2	[56] DefaultCallHandling OPTIONAL,
gsm-SCFAddress-2	[57] Gsm-SCFAddress OPTIONAL,
serviceKey-2	[58] ServiceKey OPTIONAL,
freeFormatData-2	[59] FreeFormatData OPTIONAL,
freeFormatDataAppend-2	[60] BOOLEAN OPTIONAL,
systemType	[61] SystemType OPTIONAL,
rateIndication	[62] RateIndication OPTIONAL,
<u>guaranteedBitRate</u>	<u>[69] GuaranteedBitRate OPTIONAL,</u>
<u>maximumBitRate</u>	<u>[70] MaximumBitRate OPTIONAL</u>

MTCallRecord ::= SET

```

{
  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,
  mscOutgoingTKGP     [8] TrunkGroup OPTIONAL,
  location             [9] LocationAreaAndCell OPTIONAL,
  changeOfLocation    [10] SEQUENCE OF LocationChange OPTIONAL,
  basicService         [11] BasicServiceCode OPTIONAL,
  transparencyIndicator [12] TransparencyInd OPTIONAL,
  changeOfService      [13] SEQUENCE OF ChangeOfService OPTIONAL,
  supplServicesUsed    [14] SEQUENCE OF SuppServiceUsed OPTIONAL,
  aocParameters        [15] AOCParameters OPTIONAL,
  changeOfAOCParms    [16] SEQUENCE OF AOCParmChange OPTIONAL,
  msClassmark          [17] Classmark OPTIONAL,
  changeOfClassmark    [18] ChangeOfClassmark OPTIONAL,
  seizureTime          [19] TimeStamp OPTIONAL,
  answerTime           [20] TimeStamp OPTIONAL,
  releaseTime          [21] TimeStamp OPTIONAL,
  callDuration         [22] CallDuration,
  dataVolume           [23] DataVolume OPTIONAL,
  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,
  fnur                 [38] Fnur OPTIONAL,
  aiurRequested        [39] AiurRequested OPTIONAL,
  chanCodingsAcceptable [40] SEQUENCE OF ChannelCoding OPTIONAL,
  chanCodingUsed       [41] ChannelCoding OPTIONAL,
  speechVersionUsed    [42] SpeechVersionIdentifier OPTIONAL,
  speechVersionUsed    [43] SpeechVersionIdentifier OPTIONAL,
  gsm-SCFAddress       [44] Gsm-SCFAddress OPTIONAL,
  serviceKey           [45] ServiceKey OPTIONAL,
  systemType           [61] SystemType OPTIONAL,
  rateIndication       [53] RateIndication OPTIONAL,
  guaranteedBitRate   [54] GuaranteedBitRate OPTIONAL,
  maximumBitRate     [55] MaximumBitRate OPTIONAL
}

```

...

GuaranteedBitRate ::= ENUMERATED

```
{
  GBR14400BitsPerSecond (1),      -- BS20 non-transparent
  GBR28800BitsPerSecond (2),      -- BS20 non-transparent and transparent,
  GBR32000BitsPerSecond (3),      -- BS30 transparent and multimedia
  GBR32000BitsPerSecond (3),      -- BS30 multimedia
  GBR33600BitsPerSecond (4),      -- BS30 multimedia
  GBR56000BitsPerSecond (5),      -- BS30 transparent and multimedia
  GBR57600BitsPerSecond (6),      -- BS20 non-transparent
  GBR64000BitsPerSecond (7),      -- BS30 transparent and multimedia
}

MaximumBitRate ::= ENUMERATED
{
  MBR14400BitsPerSecond (1),      -- BS20 non-transparent
  MBR28800BitsPerSecond (2),      -- BS20 non-transparent and transparent,
  MBR32000BitsPerSecond (3),      -- BS30 transparent and multimedia
  MBR32000BitsPerSecond (3),      -- BS30 multimedia
  MBR33600BitsPerSecond (4),      -- BS30 multimedia
  MBR56000BitsPerSecond (5),      -- BS30 transparent and multimedia
  MBR57600BitsPerSecond (6),      -- BS20 non-transparent
  MBR64000BitsPerSecond (7),      -- BS30 transparent and multimedia
}
```

**End of Change in Clause 6.1**  
**End of Document**

## CHANGE REQUEST

⌘ **32.205 CR 014** ⌘ rev **-** ⌘ Current version: **5.2.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

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

<b>Title:</b>	⌘ CDR correction for data services over lu-interface - alignment with SA1's 22.002		
<b>Source:</b>	⌘ S5		
<b>Work item code:</b>	⌘ OAM-CH	<b>Date:</b>	⌘ 28/02/2003
<b>Category:</b>	⌘ <b>A</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)	2	(GSM Phase 2)
	<b>A</b> (corresponds to a correction in an earlier release)	R96	(Release 1996)
	<b>B</b> (addition of feature),	R97	(Release 1997)
	<b>C</b> (functional modification of feature)	R98	(Release 1998)
	<b>D</b> (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .	Rel-4	(Release 4)
		Rel-5	(Release 5)
		Rel-6	(Release 6)

<b>Reason for change:</b>	⌘ Users expect the UMTS system to provide the CS data services, but in the existing CDRs only parameters for description of the GSM data services are defined. For variable and flexible charging of the data services over lu-Interface in the UMTS network, the parameters Maximum Bit Rate (MBR) and Guaranteed Bit Rate (GBR) as specified in TS 22.002, for non-transparent and transparent data services (BS20 and BS30), based on the acces bearer parameter FNUR and WAIUR (refer TS 27.001) must be used.
<b>Summary of change:</b>	⌘ For the description of the UMTS CS data service these two parameters MBR and GBR have to be added into the MOC and MTC CDRs
<b>Consequences if not approved:</b>	⌘ Variable and flexible charging based on the bit rate parameter for the CS data services in the UMTS system is not possible.

<b>Clauses affected:</b>	⌘ 2., 4.1, 4.2, 4.4, 5.29, 5.49, 6.1						
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/></td> <td style="padding: 2px;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	⌘
	Y	N					
	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Test specifications	⌘				
<input type="checkbox"/>	<input checked="" type="checkbox"/>	O&M Specifications	⌘				
<b>Other comments:</b>	⌘						

## Change in Clause 2

[33] [TS 27.001: " General on Terminal Adaptation Functions \(TAF\) for Mobile Stations \(MS\)".](#)

## End of Change in Clause 2

## Change in Clause 4.1

### 4.1 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 1: MOC record**

Field	2G	3G	Description
Record Type	M	M	Mobile originated.
Served IMSI	M	M	IMSI of the calling party.
Served IMEI	C	C	IMEI of the calling ME, if available.
Served MSISDN	O <sub>M</sub>	O <sub>M</sub>	The primary MSISDN of the calling party.
Called Number	M	M	The address of the called party i.e. the number dialled by the calling subscriber.
Translated Number	O <sub>C</sub>	O <sub>C</sub>	The called number after digit translation within the MSC (if applicable)
Connected Number	O <sub>C</sub>	O <sub>C</sub>	The number of the connected party if different to the Called Number
Roaming Number	O <sub>C</sub>	O <sub>C</sub>	The Mobile Station Roaming Number employed to route this connection, if applicable.
Recording Entity	M	M	The E.164 number of the visited MSC producing the record.
Incoming TKGP	O <sub>M</sub>	O <sub>C</sub>	The MSC trunk group on which the call originated , usually from the BSS. If available in 3G, this parameter shall be supplied.
Outgoing TKGP	O <sub>M</sub>	O <sub>C</sub>	The trunk group on which the call left the MSC. If available in 3G, this parameter shall be supplied.
Location	M	M	The identity of the cell or the SAC at the time of CDR creation, including the location area code.
Change of Location	O <sub>C</sub>	O <sub>C</sub>	A list of changes in Location Area Code / Service Area Code / Cell Id. Each time-stamped.
Basic service	M	M	Bearer or teleservice employed.
Rate Indication	O <sub>C</sub>	O <sub>C</sub>	Present if "rate adaption" parameters for the basic service were signalled between the MS/UE and the network, see TS 24.008.
Transparency Indicator	C	C	Indicates whether the basic service was used in transparent or non-transparent mode. This parameter is provided only for those basic services which may be employed in both transparent and non-transparent mode.
Change Of Service	O <sub>C</sub>	O <sub>C</sub>	A list of changes of basic service during a connection each time-stamped.
Supp. Services	C	C	Supplementary services invoked as a result of this connection. This field shall be present when one or more supplementary services have been invoked.
AOC Parameters	O <sub>C</sub>	O <sub>C</sub>	The charge advice parameters sent to the MS on call set-up. This field shall be supplied only when AoC parameters have been sent.
Change of AOC Parameters	O <sub>C</sub>	O <sub>C</sub>	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. This field shall be supplied only when AoC parameters have been sent.
MS Classmark	M	M	The mobile station classmark employed on call setup.
Change of Classmark	O <sub>C</sub>	O <sub>C</sub>	A list of changes to the classmark during the connection each time-stamped
Event time stamps:	C	C	Seizure time: time of incoming traffic channel seizure (for unsuccessful call attempts)
	C	C	Answer: time of answer (for successful calls)
	O <sub>M</sub>	O <sub>M</sub>	Release time: time of traffic channel release
Call duration	M	M	The chargeable duration of the connection for successful calls, the holding

Field	2G	3G	Description
			time for call attempts.
Data volume	C	-	The number of data segments transmitted if available at the MSC
Radio Chan. Requested	O <sub>M</sub>	-	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.	OC	-	A list of changes each time stamped
Cause for termination	M	M	The reason for the release of the connection.
Diagnostics	O <sub>M</sub>	O <sub>M</sub>	A more detailed reason for the release of the connection.
Call reference	M	M	A local identifier distinguishing between transactions on the same MS
Sequence no.	C	C	Partial record sequence number, only present in case of partial records.
Additional Chg. Info	O <sub>C</sub>	O <sub>C</sub>	Charge/no charge indicator and additional charging parameters, when available.
Record extensions	O <sub>C</sub>	O <sub>C</sub>	A set of network / manufacturer specific extensions to the record, when available.
GsmSCF address	C	C	Identifies the CAMEL server serving the subscriber. Shall be present only if CAMEL is applied.
Service key	C	C	The CAMEL service logic to be applied. Shall be present only if CAMEL is applied.
Network call reference	C	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	C	This field contains the E.164 number assigned to the MSC that generated the network call reference. Shall be present only if CAMEL is applied.
Default call handling	O <sub>C</sub>	O <sub>C</sub>	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	C	-	The maximum number of HSCSD channels requested as received from the MS at call set-up. Shall only be present for HSCSD connections.
Number of HSCSD Channels Allocated	C	-	The number of HSCSD channels allocated to the MS at call set-up. Shall only be present for HSCSD connections.
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	O <sub>C</sub>	O <sub>C</sub>	Indicates the user data rate applied for the connection in the fixed network. Shall only be present for 2G HSCSD connections and for UMTS data 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 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.
<a href="#">Guaranteed bit rate</a>	-	O <sub>C</sub>	<a href="#">Describes the bitrate the UMTS bearer service shall guarantee to the user or application. Guaranteed Bit Rate may be used to facilitate admission control based on available resources, and for resource allocation within UMTS. Shall only be present for UMTS data connections.</a>
<a href="#">Maximum bit rate</a>	-	O <sub>C</sub>	<a href="#">Maximum Bit Rate can be used to make code reservations in the downlink of the radio interface. Its purpose is: 1) to limit the delivered bitrate to applications or external networks with such limitations, 2) to allow maximum wanted user bitrate to be defined for applications able to operate with different rates (e.g. applications with adapting codecs). Shall only be present for UMTS data connections.</a>
Speech Version Supported	O <sub>M</sub>	-	Speech version supported by the MS with highest priority indicated by MS
Speech Version Used	O <sub>M</sub>	-	Speech version used for that call
Number of DP encountered	O <sub>C</sub>	O <sub>C</sub>	Number that counts how often armed detection points (TDP and EDP) were encountered. Shall be present only if CAMEL is applied.
Level of CAMEL service	O <sub>C</sub>	O <sub>C</sub>	Indicator for the complexity of the CAMEL feature used. Shall be present only if CAMEL is applied.
Free format Data	C	C	This field contains data sent by the gsmSCF in the Furnish Charging Information (FCI) message(s). The data can be sent either in one FCI message or several FCI messages with append indicator. Shall be present only if CAMEL is applied.
CAMEL call leg information	C	C	Set of CAMEL information IEs. Each of these IEs contains information related to one outgoing CAMEL call leg. Shall be present only if CAMEL is applied.
Free format data append	C	C	Indicator if free format data from this CDR is to be appended to free format

Field	2G	3G	Description
indicator			data in previous partial CDR. Shall be present only if CAMEL is applied.
Default call handling 2	O <sub>c</sub>	O <sub>c</sub>	Indicates whether or not a CAMEL call encountered default call handling for 2 <sup>nd</sup> service such as dialled service. This field shall be present only if default call handling has been applied.
GsmSCF address 2	C	C	Identifies the CAMEL server serving the subscriber for 2 <sup>nd</sup> service such as dialled service. Shall be present only if CAMEL is applied for 2 <sup>nd</sup> service.
Service key 2	C	C	The CAMEL service logic to be applied for 2 <sup>nd</sup> service such as dialled service. Shall be present only if CAMEL is applied for 2 <sup>nd</sup> service.
Free format Data 2	C	C	This field contains data sent by the gsmSCF in the FCI message(s) for 2 <sup>nd</sup> service such as dialled service. The data can be sent either in one FCI message or several FCI messages with append indicator. Shall be present only if CAMEL is applied for 2 <sup>nd</sup> service.
Free format data append indicator 2	C	C	Indicator if free format data for 2 <sup>nd</sup> service from this CDR is to be appended to free format data in previous partial CDR. Shall be present only if CAMEL is applied for 2 <sup>nd</sup> service.
System Type	-	M	This field indicates the use of GERAN, UTRAN (or a value of unknown). This field is present when either the UTRAN or GERAN air-interface is used on call setup. For an open CDR in a 2G NE (responsible for the CDR), the field is not present (even if the call is handed off to a 3G air interface). For a CDR in a 3G NE (responsible for the CDR), the value unknown shall be used after handover.
Location Routing Number (LRN)	-	O <sub>c</sub>	Location Routing Number for Number Portability feature
LRN Source Indicator	-	O <sub>c</sub>	LRN Source Indicator tells the source of the LRN
LRN Query Status Indicator	-	O <sub>c</sub>	Status of Number Portability query.
JIP Parameter	-	O <sub>c</sub>	Jurisdiction Information Parameter
JIP Source Indicator	-	O <sub>c</sub>	JIP Source Indicator tells the source of the JIP
JIP Query Status Indicator	-	O <sub>c</sub>	Status of Number Portability query.

**End of Change in Clause 4.1**

**Change in Clause 4.4**

## 4.4 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 4: MTC record**

Field	2G	3G	Description
Record Type	M	M	Mobile Terminated.
Served IMSI	M	M	IMSI of the called party.
Served IMEI	C	C	IMEI of the called ME, if available.
Served MSISDN	O <sub>M</sub>	O <sub>M</sub>	The MSISDN of the called party.
Calling Number	C	C	The number of the calling party if available.
Connected Number	O <sub>C</sub>	O <sub>C</sub>	Only relevant in case of call forwarding where the "forwarded-to" number is recorded.
Recording Entity	M	M	The E.164 number of the visited (terminating) MSC
Incoming TKGP	O <sub>M</sub>	O <sub>M</sub>	The MSC trunk group on which the call originated.
Outgoing TKGP	O <sub>M</sub>	O <sub>C</sub>	The trunk group on which the call left the MSC, usually to the BSS. If available in 3G, this parameter shall be supplied.
Location	C	C	The identity of the cell or the SAC occupied by the called party when the call was set up, including the location area code.
Change of Location	O <sub>C</sub>	O <sub>C</sub>	A list of changes in Location Area Code / Service Area Code / Cell Id. Each time-stamped.
Basic Service	M	M	Bearer or teleservice employed
Rate Adaptation	O <sub>C</sub>	O <sub>C</sub>	Present if "rate adaption" parameters for the basic service were signalled between the MS/UE and the network, see TS 24.008.
Transparency Indicator	C	C	Indicates whether the basic service was used in transparent or non-transparent mode. This parameter is provided only for those basic services which may be employed in both transparent and non-transparent mode.
Change of Service	O <sub>C</sub>	O <sub>C</sub>	A list of changes of basic service during a connection each time-stamped.
Supplementary services	C	C	Supplementary services invoked as a result of this connection. This field shall be present when one or more supplementary services have been invoked.
AOC Parameters	O <sub>C</sub>	O <sub>C</sub>	The charge advice parameters sent to the MS on call set-up. This field shall be supplied only when AoC parameters have been sent.
Change of AOC Parameters.	O <sub>C</sub>	O <sub>C</sub>	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. This field shall be supplied only when AoC parameters have been sent.
MS Classmark	M	M	The mobile station class mark.
Change of Classmark	O <sub>C</sub>	O <sub>C</sub>	A list of changes to the classmark during the connection each time-stamped
Event time stamps:	C	C	Seizure time: time of traffic channel seizure for unsuccessful call attempts
	C	C	Answer time: time of answer for successful calls
	O <sub>M</sub>	O <sub>M</sub>	Release time: time of traffic channel release
Call duration	M	M	The chargeable duration of the connection if successful, the holding time of the call if unsuccessful.
Data volume	C	-	The number of data segments transmitted, if available at the MSC
Radio Chan. Requested	O <sub>M</sub>	-	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 <sub>C</sub>	-	A list of changes each time stamped
Cause for termination	M	M	The reason for the release of the call.
Diagnostics	O <sub>M</sub>	O <sub>M</sub>	A more detailed reason for the release of the connection.
Call reference	M	M	A local identifier distinguishing between transactions at the same MS
Sequence no.	C	C	Partial record sequence number, only present in case of partial records.
Additional Chg. Info	O <sub>C</sub>	O <sub>C</sub>	Charge/no charge indicator and additional charging parameters, when available.
Record extensions	O <sub>C</sub>	O <sub>C</sub>	A set of network/ manufacturer specific extensions to the record, when available.
Network call reference	C	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	C	This field contains the E.164 number assigned to the MSC that generated the network call reference. Shall be present only if CAMEL is applied.
Number of HSCSD Channels Requested	O <sub>C</sub>	-	The maximum number of HSCSD channels requested as received from the MS at call set-up. Shall only be present for HSCSD connections.
Number of HSCSD Channels Allocated	O <sub>C</sub>	-	The number of HSCSD channels allocated to the MS at call set-up. Shall only be present for HSCSD connections.

Field	2G	3G	Description
Change of HSCSD Parameters	O <sub>C</sub>	-	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 <sub>C</sub>	-	Indicates the user data rate applied for the connection in the fixed network. Shall only be present for 2G HSCSD connections and for UMTS data connections.
Air Interface User Rate Requested	C	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.
<a href="#">Guaranteed bit rate</a>	-	O <sub>C</sub>	<a href="#">Describes the bitrate the UMTS bearer service shall guarantee to the user or application. Guaranteed Bit Rate may be used to facilitate admission control based on available resources, and for resource allocation within UMTS. Shall only be present for UMTS data connections.</a>
<a href="#">Maximum bit rate</a>	-	O <sub>C</sub>	<a href="#">Maximum Bit Rate can be used to make code reservations in the downlink of the radio interface. Its purpose is: 1) to limit the delivered bitrate to applications or external networks with such limitations, 2) to allow maximum wanted user bitrate to be defined for applications able to operate with different rates (e.g. applications with adapting codecs). Shall only be present for UMTS data connections.</a>
Speech Version Used	O <sub>M</sub>	-	Speech version used for that call
Speech Version Supported	O <sub>M</sub>	-	Speech version supported by the MS with highest priority indicated by MS
System Type	-	M	This field indicates the use of GERAN, UTRAN (or a value of unknown). This field is present when either the UTRAN or GERAN air-interface is used on call setup. For an open CDR in a 2G NE (responsible for the CDR), the field is not present (even if the call is handed off to a 3G air interface). For a CDR in a 3G NE (responsible for the CDR), the value unknown shall be used after handover.
Location Routing Number (LRN)	-	O <sub>C</sub>	Location Routing Number for Number Portability feature
LRN Source Indicator	-	O <sub>C</sub>	LRN Source Indicator tells the source of the LRN
LRN Query Status Indicator	-	O <sub>C</sub>	Status of Number Portability query.
JIP Parameter	-	O <sub>C</sub>	Jurisdiction Information Parameter
JIP Source Indicator	-	O <sub>C</sub>	JIP Source Indicator tells the source of the JIP
JIP Query Status Indicator	-	O <sub>C</sub>	Status of Number Portability query.

### End of Change in Clause 4.4

### Change in Clause 5.29

## 5.28 GsmSCF address

This field identifies the CAMEL server serving the subscriber. Address is defined in HLR as part of CAMEL subscription information.

## [5.29 Guaranteed Bit Rate](#)

[This field contains the Guaranteed Bit Rate based on the FNUR for transparent and Wanted AIUR for non-transparent CS data services based on the described mapping in TS 27.001 \[33\]. The Guaranteed Bit Rate may be used to facilitate admission control based on available resources, and for resource allocation within UMTS. The bitrate of the UMTS bearer service shall guarantee to the user or applications refer TS 22.002\[21\].](#)



[Operator may choose any of the possible values less or equal to wanted AIUR \(Air Interface User Rate\). \(If WAIUR is less or equal to 14.4 kbit/s then Guaranteed Bit Rate and Maximum Bit Rate shall be set to 14.4 kbit/s\).](#)

## 5.3029 HSCSD parameters / Change of HSCSD parameters

The basic HSCSD parameters are negotiated between the MS and the network at call setup time. They comprise of the following parameters:

- the FNUR (Fixed Network User Rate) (optionally);
- the total AIUR (Air Interface User Rate) requested by the MS (for non-transparent HSCSD connections only);
- a list of the channel codings accepted by the MS;
- the maximum number of traffic channels accepted by the MS (this is noted in the channels requested field);
- the channel coding and the number of traffic channels actually used for the call.

In case the network or user initiated modification procedure takes place during the call, the AIUR requested, the channel coding used and the number of traffic channel requested/used might be recorded in the Change of HSCSD parameters field including the time at which the change occurred and which entity requested the change.

It should be noted that the Change of HSCSD Parameters field is optional and not required if partial records are generated when a Change of HSCSD Parameters takes place.

### End of Change in Clause 5.29

### Change in Clause 5.49

## 5.48 LRN Source Indicator

This field indicates whether the Location Routing Number is obtained from LRN NP database or it came in incoming signaling or switching system data.

It is populated if routing information for a ported subscriber is received from one of the methods listed below. It shall be equal to one of the following enumerated values:

1. LRN NP Database.
2. SwitchingSystemData.
3. Incomingsignaling.
9. Unknown.

## 5.49 Maximum Bit Rate

[This field contains the Maximum Bit Rate based on the FNUR \(Fixed Network User Rate\) for transparent and WAIUR\( Wanted Air Interface User Rate\) for non-transparent CS data services based on the described mapping in TS 27.001 \[33\]. The parameter can be used to make code reservations in the downlink of the radio interface for the UMTS bearer service \(BS20 and BS30\) refer TS 22.002 \[21\]. Its purpose is](#)

- [to limit the delivered bitrate to applications or external networks with such limitations,](#)
- [to allow maximum wanted user bitrate to be defined for applications able to operate with different rates \(e.g. applications with adapting codecs\).\]](#)

[Maximum bit rate is set to the highest value  \$\leq\$  WAIUR \(If WAIUR is less or equal to 14.4 kbit/s then Guaranteed Bit Rate and Maximum Bit Rate shall be set to 14.4 kbit/s\)](#)

## 5.4950 Measure Duration

This field contains the duration for the section of the location measurement corresponding to the location request and the location report messages.

### End of Change in Clause 5.49

### Change in Clause 6.1

```

MOCallRecord ::= SET
{
    recordType                [0] CallEventRecordType,
    servedIMSI                [1] IMSI OPTIONAL,
    servedIMEI                [2] IMEI OPTIONAL,
    servedMSISDN              [3] MSISDN OPTIONAL,
    callingNumber              [4] CallingNumber OPTIONAL,
    calledNumber               [5] CalledNumber OPTIONAL,
    translatedNumber           [6] TranslatedNumber OPTIONAL,
    connectedNumber            [7] ConnectedNumber OPTIONAL,
    roamingNumber              [8] RoamingNumber OPTIONAL,
    recordingEntity            [9] RecordingEntity,
    mscIncomingTKGP           [10] TrunkGroup OPTIONAL,
    mscOutgoingTKGP           [11] TrunkGroup OPTIONAL,
    location                   [12] LocationAreaAndCell OPTIONAL,
    changeOfLocation           [13] SEQUENCE OF LocationChange OPTIONAL,
    basicService               [14] BasicServiceCode OPTIONAL,
    transparencyIndicator      [15] TransparencyInd OPTIONAL,
    changeOfService            [16] SEQUENCE OF ChangeOfService OPTIONAL,
    supplServicesUsed          [17] SEQUENCE OF SuppServiceUsed OPTIONAL,
    aocParameters              [18] AOCParameters OPTIONAL,
    changeOfAOCParams          [19] SEQUENCE OF AOCParamChange OPTIONAL,
    msClassmark                [20] Classmark OPTIONAL,
    changeOfClassmark          [21] ChangeOfClassmark OPTIONAL,
    seizureTime                [22] TimeStamp OPTIONAL,
    answerTime                 [23] TimeStamp OPTIONAL,
    releaseTime                [24] TimeStamp OPTIONAL,
    callDuration               [25] CallDuration,
    dataVolume                 [26] DataVolume OPTIONAL,
    radioChanRequested         [27] RadioChanRequested OPTIONAL,
    radioChanUsed              [28] TrafficChannel OPTIONAL,
    changeOfRadioChan          [29] ChangeOfRadioChannel OPTIONAL,
    causeForTerm               [30] CauseForTerm,
    diagnostics                [31] Diagnostics OPTIONAL,
    callReference              [32] CallReference,
    sequenceNumber             [33] INTEGER OPTIONAL,
    additionalChgInfo          [34] AdditionalChgInfo OPTIONAL,
    recordExtensions           [35] ManagementExtensions OPTIONAL,
    gsm-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,
    changeOfHSCSDParams        [44] SEQUENCE OF HSCSDParamsChange OPTIONAL,
    fnur                       [45] Fnur OPTIONAL,
    aiurRequested              [46] AiurRequested OPTIONAL,
    chanCodingsAcceptable      [47] SEQUENCE OF ChannelCoding OPTIONAL,
    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,
freeFormatDataAppend    [55] BOOLEAN OPTIONAL,
defaultCallHandling-2   [56] DefaultCallHandling OPTIONAL,
gsm-SCFAddress-2        [57] Gsm-SCFAddress OPTIONAL,
serviceKey-2            [58] ServiceKey OPTIONAL,
freeFormatData-2        [59] FreeFormatData OPTIONAL,
freeFormatDataAppend-2  [60] BOOLEAN OPTIONAL,
systemType              [61] SystemType OPTIONAL,
rateIndication          [62] RateIndication OPTIONAL,
locationRoutNum         [63] LocationRoutingNumber OPTIONAL,
lrnSoInd                [64] LocationRoutingNumberSourceIndicator OPTIONAL,
lrnQueryStatus          [65] LocationRoutingNumberQueryStatus OPTIONAL,
JIPPara                [66] JurisdictionInformationParameter OPTIONAL,
JIPSoInd               [67] JurisdictionInformationParameterSourceIndicator OPTIONAL,
JIPQueryStatus         [68] JurisdictionInformationParameterQueryStatus OPTIONAL,
guaranteedBitRate     [69] GuaranteedBitRate OPTIONAL,
maximumBitRate       [70] MaximumBitRate OPTIONAL
}

```

```

MTCallRecord ::= SET
{
  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,
  mscOutgoingTKGP    [8] TrunkGroup OPTIONAL,
  location           [9] LocationAreaAndCell OPTIONAL,
  changeOfLocation   [10] SEQUENCE OF LocationChange OPTIONAL,
  basicService       [11] BasicServiceCode OPTIONAL,
  transparencyIndicator [12] TransparencyInd OPTIONAL,
  changeOfService    [13] SEQUENCE OF ChangeOfService OPTIONAL,
  supplServicesUsed  [14] SEQUENCE OF SuppServiceUsed OPTIONAL,
  aocParameters      [15] AOCParameters OPTIONAL,
  changeOfAOCParms   [16] SEQUENCE OF AOCParmChange OPTIONAL,
  msClassmark        [17] Classmark OPTIONAL,
  changeOfClassmark  [18] ChangeOfClassmark OPTIONAL,
  seizureTime        [19] TimeStamp OPTIONAL,
  answerTime         [20] TimeStamp OPTIONAL,
  releaseTime        [21] TimeStamp OPTIONAL,
  callDuration       [22] CallDuration,
  dataVolume         [23] DataVolume OPTIONAL,
  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,
  fnur              [38] Fnur OPTIONAL,
  aiurRequested      [39] AiurRequested OPTIONAL,
  chanCodingsAcceptable [40] SEQUENCE OF ChannelCoding OPTIONAL,
  chanCodingUsed     [41] ChannelCoding OPTIONAL,
  speechVersionSupported [42] SpeechVersionIdentifier OPTIONAL,
  speechVersionUsed  [43] SpeechVersionIdentifier OPTIONAL,
  gsm-SCFAddress     [44] Gsm-SCFAddress OPTIONAL,
  serviceKey         [45] ServiceKey OPTIONAL,
  systemType         [46] SystemType OPTIONAL,
  rateIndication     [47] RateIndication OPTIONAL,
  locationRoutNum    [48] LocationRoutingNumber OPTIONAL,
  lrnSoInd           [49] LocationRoutingNumberSourceIndicator OPTIONAL,
  lrnQueryStatus     [50] LocationRoutingNumberQueryStatus OPTIONAL,
  JIPPara            [51] JurisdictionInformationParameter OPTIONAL,
  JIPSoInd           [52] JurisdictionInformationParameterSourceIndicator OPTIONAL,
  JIPQueryStatus     [53] JurisdictionInformationParameterQueryStatus OPTIONAL,
  guaranteedBitRate [54] GuaranteedBitRate OPTIONAL,

```

```
maximumBitRate [55] MaximumBitRate OPTIONAL
}

...

GuaranteedBitRate ::= ENUMERATED
{
    GBR14400BitsPerSecond (1), -- BS20 non-transparent
    GBR28800BitsPerSecond (2), -- BS20 non-transparent and transparent,
    GBR32000BitsPerSecond (3), -- BS30 transparent and multimedia
    GBR33600BitsPerSecond (4), -- BS30 multimedia
    GBR56000BitsPerSecond (5), -- BS30 transparent and multimedia
    GBR57600BitsPerSecond (6), -- BS20 non-transparent
    GBR64000BitsPerSecond (7) -- BS30 transparent and multimedia
}

MaximumBitRate ::= ENUMERATED
{
    MBR14400BitsPerSecond (1), -- BS20 non-transparent
    MBR28800BitsPerSecond (2), -- BS20 non-transparent and transparent,
    MBR32000BitsPerSecond (3), -- BS30 transparent and multimedia
    MBR33600BitsPerSecond (4), -- BS30 multimedia
    MBR56000BitsPerSecond (5), -- BS30 transparent and multimedia
    MBR57600BitsPerSecond (6), -- BS20 non-transparent
}
```

**End of Change in Clause 6.1**  
**End of Document**