Source:	SA5 (Telecom Management)
Title:	3 Rel-5 CR 32.205 (Charging data description for the Circuit Switched (CS) domain)
Document for:	Approval
Agenda Item:	7.5.3

Doc-1st-	Spec	CR	R	Ph	Subject	Cat	Ver	Doc-2nd-	Workite
SP-030269	32.205	016	-	Rel-5	Correction of record contents regarding Partial Record Type	F	5.3.0	S5-034250	OAM-CH
SP-030269	32.205	017	-	Rel-5	Correction on MMS records ASN.1 definition	F	5.3.0	S5-034258	OAM-CH
SP-030269	32.205	018	-	Rel-5	Correction on IMS record definitions	F	5.3.0	S5-034266	OAM-CH

S5-034250

ж	32.205 CR 016 # rev - ^{# Current version:} 5.3.0 [#]										
For <u>HELP</u> on u	sing 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 X											
Title: #	Correction of record contents regarding Partial Record Type										
Source: #	Alcatel										
Work item code: 郑	OAM-CH Date: # 08/04/2003										
Category: ₩	FRelease: %Rel-5Use one of the following categories:Use one of the following releases:F (correction)2A (corresponds to a correction in an earlier release)R96B (addition of feature),R97C (functional modification of feature)R98D (editorial modification)R99D (editorial modification)R99D tetailed explanations of the above categories canRel-4be found in 3GPP TR 21.900.Rel-5Rel-6(Release 6)										
Reason for change	however missing in the definition of the types of Call Event Records. Partial CDRs without field Partial Record Type do not reflect all reasons for partial record generation.										
Summary of chang	e: # Add field Partial Record Type into the Call Event Record definition of of those Record Types where applicable.										
Consequences if not approved:	* The field Partial Record Type could not be used, because the ASN.1 compiler would not allow undefined data.										
Clauses affected: Other specs affected:	# 4, 5, 6.1 # X Other core specifications # Test specifications # X O&M Specifications										
Other comments:	※										

Change in Clause 4

4 Record types and contents

The following tables describe the contents of each of the call and event records generated in the CS domain, e.g. by the MSCs (see the example scenarios in TS 32.200 [22]). For each CDR type the field definition includes the field name, description and category.

Equipment vendors shall be able to provide all of the fields listed in the CDR content table in order to claim compliance with the present document. However, since CDR processing and transport consume network resources, operators may opt to eliminate some of the fields that are not essential for their operation. This operator provisionable reduction is specified by the field category.

A field category can have one of two primary values:

- **M** This field is **M**andatory and shall always be present in the CDR.
- **C** This field shall be present in the CDR only when certain Conditions are met.. These Conditions are specified as part of the field definition.

All other fields are designated as Operator (**O**) provisionable which replaced the "Optional" category specified in an earlier release. Using TMN management functions or specific tools provided by an equipment vendor, operators may choose if they wish to include or omit the field from the CDR. Once omitted, this field is not generated in a CDR. To avoid any potential ambiguity, a CDR generating element MUST be able to provide all these fields. Only an operator can choose whether or not these fields should be generated in their system.

Those fields that the operator wishes to be present are further divided into a mandatory and conditional categories:

- O_M This is a field that, if provisioned by the operator to be present, shall always be included in the CDRs. In other words, an O_M parameter that is provisioned to be present is a mandatory parameter.
- O_C This is a field that, if provisioned by the operator to be present, shall be included in the CDRs when the required conditions are met. In other words, an O_C parameter that is configured to be present is a conditional parameter.

The content of the CDRs shall be specified on the interface from the core network to the billing system that are used for CDR transport. The rules governing the CDR specifications on these interfaces are summarised in the following clause.

During a long user session several *Partial CDRs* may be generated for the same session. In this case, some information can be eliminated rather than repeated in all the partial CDRs for that session. Only changes from one CDR to the next, in addition to mandatory information, can be reported. All the missing information can be reconstructed from fields in previous partial CDRs for the session. For instance, if the subscriber did not change location, the Reduced Partial CDR would not include any location information.

Two formats are considered for Partial CDRs:

- a Full Qualified Partial CDR that contains the Complete CDR Fields; and
- a *Reduced Partial CDR* that contains all the Mandatory fields (**M**) and ONLY the changes that occurred in any other field relative to the previous Partial CDR.

The first CDR generated when a session is opened shall be a Full Qualified Partial CDR. Subsequent partial CDRs may be *Reduced Partial CDRs*.

Thus, the convention is that when any non-mandatory field is missing from a Reduced Partial CDR, it should be interpreted that the same field as in the previous partial CDR could be used. Only Mandatory (\mathbf{M}) fields MUST always be included.

The anchor MSC is the creator of the CDRs. The column "2G" indicates a qualifier for the presence of the parameter in a 2G anchor MSC. The column "3G" indicates a qualifier for the presence of the parameter in a 3G anchor MSC.

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	М	IMSI of the calling party.
Served IMEI	С	C	IMEI of the calling ME, if available.
Served MSISDN	O _M	OM	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	Oc	Oc	The called number after digit translation within the MSC (if applicable)
Connected Number	Oc	Oc	The number of the connected party if different to the Called Number
Roaming Number	O _C	Oc	The Mobile Station Roaming Number employed to route this connection, if
3	Ũ	Ũ	applicable.
Recording Entity	М	М	The E.164 number of the visited MSC producing the record.
Incoming TKGP	OM	Oc	The MSC trunk group on which the call originated , usually from the BSS. If
0			available in 3G, this parameter shall be supplied.
Outgoing TKGP	OM	Oc	The trunk group on which the call left the MSC. If available in 3G, this
0 0		-	parameter shall be supplied.
Location	М	М	The identity of the cell or the SAC at the time of CDR creation, including
			the location area code.
Change of Location	Oc	Oc	A list of changes in Location Area Code / Service Area Code / Cell Id. Each
			time-stamped.
Basic service	М	М	Bearer or teleservice employed.
Rate Indication	Oc	Oc	Present if "rate adaption" parameters for the basic service were signalled
			between the MS/UE and the network, see TS 24.008.
Transparency Indicator	С	С	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	Oc	Oc	A list of changes of basic service during a connection each time-stamped.
Supp. Services	С	С	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	Oc	Oc	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	Oc	Oc	New AOC parameters sent to the MS e.g. as a result of a tariff switch over,
Parameters			including the time at which the new set was applied. This field shall be
MS Classmark	М	N.4	supplied only when AoC parameters have been sent.
MS Classmark Change of Classmark	_	M	The mobile station classmark employed on call setup. A list of changes to the classmark during the connection each time-
Change of Classifiark	Oc	Oc	stamped
Event time stamps:	С	С	Seizure time: time of incoming traffic channel seizure (for unsuccessful call
Event time stamps.	U	C	attempts)
	С	С	Answer: time of answer (for successful calls)
	О _М	О _М	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.
Data volume	С	-	The number of data segments transmitted if available at the MSC
Radio Chan. Requested	OM	-	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	М	М	The reason for the release of the connection.
Diagnostics	O _M	O _M	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.	С	C	Partial record sequence number, only present in case of partial records.
Additional Chg. Info	Oc	Oc	Charge/no charge indicator and additional charging parameters, when
		20	available.
Record extensions	Oc	Oc	A set of network / manufacturer specific extensions to the record, when
	-0	- 0	available.
GsmSCF address	С	С	Identifies the CAMEL server serving the subscriber. Shall be present only if
GSHISCE address	U	U	Identities the CAMEL server serving the subscriber. Shall be present only if

Field	2G	3G	Description
Service key	С	С	The CAMEL service logic to be applied. Shall be present only if CAMEL is applied.
Network call reference	С	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	С	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	Oc	Oc	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. Shall only be present for HSCSD connections.
Number of HSCSD Channels Allocated	С	-	The number of HSCSD channels allocated to the MS at call set-up. Shall only be present for HSCSD connections.
Change of HSCSD Parameters	С	-	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 _C	O _C	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	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 Supported	Ом	-	Speech version supported by the MS with highest priority indicated by MS
Speech Version Used	OM	-	Speech version used for that call
Number of DP	O _C	Oc	Number that counts how often armed detection points (TDP and EDP)
encountered	-	-	were encountered. Shall be present only if CAMEL is applied.
Level of CAMEL service	Oc	Oc	Indicator for the complexity of the CAMEL feature used. Shall be present only if CAMEL is applied.
Free format Data	С	С	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	С	С	Set of CAMEL information IEs. Each of these les contains information related to one outgoing CAMEL call leg. Shall be present only if CAMEL is applied.
Free format data append indicator	С	С	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	Oc	Oc	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	С	Identifies the CAMEL server serving the subscriber for 2 nd service such as dialled service. Shall be present only if CAMEL is applied for 2 nd service.
Service key 2	С	С	The CAMEL service logic to be applied for 2 nd service such as dialled service. Shall be present only if CAMEL is applied for 2 nd service.
Free format Data 2	С	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. Shall be present only if CAMEL is applied for 2 nd service.
Free format data append indicator 2	С	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. Shall be present only if CAMEL is applied for 2 nd service.
System Type	-	Μ	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)	-	Oc	Location Routing Number for Number Portability feature
LRN Source Indicator	-	Oc	LRN Source Indicator tells the source of the LRN

Field	2G	3G	Description
LRN Query Status Indicator	-	Oc	Status of Number Portability query.
JIP Parameter	-	Oc	Jurisdiction Information Parameter
JIP Source Indicator	-	Oc	JIP Source Indicator tells the source of the JIP
JIP Query Status Indicator	-	Oc	Status of Number Portability query.
Partial Record Type	=	<u>O</u> <u>c</u>	Indicates the event (time limit etc.) that caused the generation of a partial record.

4.2 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.

Field	2G	3G	Description
Record Type	М	М	Mobile originated.
Served IMSI	С	С	IMSI of the calling party in case of an emergency call with a SIM card.
Served IMEI	С	С	IMEI of the calling mobile equipment if available.
Served MSISDN	Oc	Oc	The primary MSISDN of the calling party, if supplied by the UE.
Translated Number	O _C	0 _c	The called number after digit translation within the MSC (if applicable)
Recording Entity	M	M	The E.164 number of the visited MSC producing the record.
Incoming TKGP	OM	Oc	The MSC trunk group on which the call originated, usually from the BSS. If
			available in 3G, this parameter shall be supplied.
Outgoing TKGP	Ом	Oc	The trunk group on which the call left the MSC. If available in 3G, this parameter shall be supplied.
Location	М	М	The identity of the cell or the SAC in which the call originated including the location area code.
Change of Location	Oc	Oc	A list of changes in Location Area Code / Service Area Code / Cell Id. Each time-stamped.
Basic service	М	М	Teleservice 'emergency call'.
AOC Parameters	Oc	Oc	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	Oc	Oc	New AOC parameters sent to the MS e.g. as a result of a tariff switch over,
Parameters			including the time at which the new set was applied. This field shall be
			supplied only when AoC parameters have been sent.
MS Classmark	М	М	The mobile station classmark employed on call set-up.
Change of classmark	Oc	Oc	A list of changes to the classmark during the connection each time-stamped
Event time stamps:	С	С	Seizure time: time of incoming traffic channel seizure (for unsuccessful call attempts)
	С	С	Answer time: time of answer (for successful calls)
	OM	OM	Release time: time of traffic channel release
Call duration	М	М	The chargeable duration of the connection for successful calls, the holding time for call attempts.
Radio Chan. Requested	OM	-	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.	Oc	-	A list of changes each time stamped
Cause for termination	М	М	The reason for the release of the connection.
Diagnostics	OM	OM	A more detailed reason for the release of the connection.
Call reference	Μ	Μ	A local identifier distinguishing between transactions on the same MS
Sequence no.	С	С	Partial record sequence number, only present in case of partial records.
Record extensions	Oc	Oc	A set of network/ manufacturer specific extensions to the record, when available.
System Type	-	М	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.
Partial Record Type	-	<u>O</u> c	Indicates the event (time limit etc.) that caused the generation of a partial record.

4.3 Mobile originated call forwarding attempt

If the generation of MOC records is enabled in the forwarding MSC then the forwarding MSC shall produce an MOC record for the forwarded-leg of the call.

Field	2G	3G	Description
Record Type	М	М	Mobile originated.
Served IMSI	М	М	IMSI of the calling party.
Served MSISDN	OM	OM	The MSISDN of the forwarding party.
Calling Number	OM	OM	The address of the calling party.
Called Number	M	M	The address of the "forwarded-to" party.
Translated Number	Oc	Oc	The called number after digit translation within the MSC (if applicable)
Connected Number	Oc	Oc	The number of the connected party if different to the Called Number
Roaming Number	Oc	Oc	The Mobile Station Roaming Number employed to route this connection,
5	Ũ	Ū	if applicable.
Recording Entity	Μ	М	The E.164 number of the forwarding MSC
Incoming TKGP	OM	OM	The MSC trunk group on which the call originated at the forwarding MSC.
Outgoing TKGP	OM	OM	The trunk group on which the call left the forwarding MSC
Basic service	С	С	Bearer or teleservice employed, not always available e.g. in case of call
			forwarding unconditional.
Rate Adaptation	Oc	Oc	Present if "rate adaption" parameters for the basic service were signalled
-			between the MS/UE and the network, see TS 24.008. May not always be
			available in this CDR type.
Transparency Indicator	С	С	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.
Fixed Network User Rate	Oc	Oc	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.
ChangeOfService	Oc	Oc	A list of changes of basic service during a connection each time-stamped.
Supplementary Services	С	С	Supplementary services invoked as a result of this connection, if this
			information is available to the forwarding node. This field shall be present
	<u> </u>	<u> </u>	when one or more supplementary services have been invoked.
Event time stamps:	C C	сс	Seizure time: time of incoming traffic channel seizure (for unsuccessful call
	O _M		attempts) Answer time: time of answer (for successful calls)
	Ом	Ом	Release time: time of traffic channel release
Call duration	М	М	The chargeable duration of the connection for successful calls, the holding
	101	IVI	time of call attempts.
Data volume	С	-	The number of data segments transmitted if available at the MSC
Cause for termination	M	М	The reason for the release of the connection.
Diagnostics	O _M	O _M	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 _C	0	Charge/no charge indicator and additional charging parameters, when
, laaliterial erig. me	00	Ŭ	available.
Record extensions	Oc	Oc	A set of network/ manufacturer specific extensions to the record, when
	-0	-0	available.
GsmSCF address	С	С	Identifies the CAMEL server serving the subscriber. Shall be present only if
		-	CAMEL is applied.
Service key	С	С	The CAMEL service logic to be applied. Shall be present only if CAMEL is
5			applied.
Network call reference	С	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	С	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.
CAMEL initiated CF	С	С	Indicates that the CAMEL server initiated call forwarding. Shall be present
indicator			only if CAMEL is applied.
Default call handling	Oc	Oc	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 DP	Oc	Oc	Number that counts how often armed detection points (TDP and EDP) were
encountered			encountered. Shall be present only if CAMEL is applied.

Table 3: MOC, call forwarding record

Field	2G	3G	Description
Level of CAMEL service	O _C	O _C	Indicator of the complexity of the CAMEL feature used. Shall be present only if CAMEL is applied.
Free format Data	С	С	This field contains data sent by the gsmSCF in the Furnish Charging Information (FCI) messages. 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	С	С	Set of CAMEL information IEs. Each of these les contains information related to one outgoing CAMEL call leg. Shall be present only if CAMEL is applied.
Free format data append indicator	С	С	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 _C	Oc	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	С	Identifies the CAMEL server serving the subscriber for 2 nd service such as dialled service. Shall be present only if CAMEL is applied for 2 nd service.
Service key 2	С	С	The CAMEL service logic to be applied for 2 nd service such as dialled service. Shall be present only if CAMEL is applied for 2 nd service.
Free format Data 2	С	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. Shall be present only if CAMEL is applied for 2 nd service.
Free format data append indicator 2	С	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. Shall be present only if CAMEL is applied for 2 nd service.
Location Routing Number (LRN)	-	Oc	Location Routing Number for Number Portability feature
LRN Source Indicator	-	Oc	LRN Source Indicator tells the source of the LRN
LRN Query Status Indicator	-	Oc	Status of Number Portability query.
JIP Parameter	-	Oc	Jurisdiction Information Parameter
JIP Source Indicator	-	Oc	JIP Source Indicator tells the source of the JIP
JIP Query Status Indicator	-	Oc	Status of Number Portability query.
Partial Record Type	2	<u>O</u> <u>c</u>	Indicates the event (time limit etc.) that caused the generation of a partial record.

Channels Allocated

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.

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			
	OM	OM	The MSISDN of the called party.
Calling Number	C	C	The number of the calling party if available.
Connected Number	Oc	Oc	Only relevant in case of call forwarding where the "forwarded-to" number is recorded.
Recording Entity	М	М	The E.164 number of the visited (terminating) MSC
Incoming TKGP	OM	OM	The MSC trunk group on which the call originated.
Outgoing TKGP	O _M	Oc	The trunk group on which the call left the MSC, usually to the BSS. If available in 3G, this parameter shall be supplied.
Location	С	С	The identity of the cell or the SAC occupied by the called party when the cal
Change of Location	Oc	Oc	was set up, including the location area code. A list of changes in Location Area Code / Service Area Code / Cell Id. Each
			time-stamped.
Basic Service	М	М	Bearer or teleservice employed
Rate Adaptation	Oc	Oc	Present if "rate adaption" parameters for the basic service were signalled between the MS/UE and the network, see TS 24.008.
Transparency Indicator	С	С	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	Oc	Oc	A list of changes of basic service during a connection each time-stamped.
Supplementary services	С	С	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	Oc	Oc	The charge advice parameters sent to the MS on call set-up. This field shall
	-0	-0	be supplied only when AoC parameters have been sent.
Change of AOC Parameters.	Oc	Oc	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	Μ	The mobile station class mark.
Change of Classmark	Oc	Oc	A list of changes to the classmark during the connection each time-stamped
Event time stamps:	С	С	Seizure time: time of traffic channel seizure for unsuccessful call attempts
	С	С	Answer time: time of answer for successful calls
	OM	OM	Release time: time of traffic channel release
Call duration	М	М	The chargeable duration of the connection if successful, the holding time of the call if unsuccessful.
Data volume	С	-	The number of data segments transmitted, if available at the MSC
Radio Chan. Requested	O _M	-	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 _C	-	A list of changes each time stamped
Cause for termination	M	М	The reason for the release of the call.
Diagnostics	O _M	O _M	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 _C	O _C	Charge/no charge indicator and additional charging parameters, when
•			available.
Record extensions	O _C	O _C	A set of network/ manufacturer specific extensions to the record, when available.
Network call reference	С	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	С	This field contains the E.164 number assigned to the MSC that generated
Number of LICCOD	-		the network call reference. Shall be present only if CAMEL is applied.
Number of HSCSD	Oc	-	The maximum number of HSCSD channels requested as received from the
Channels Requested			MS at call set-up. Shall only be present for HSCSD connections.
Number of HSCSD	Oc	-	The number of HSCSD channels allocated to the MS at call set-up. Shall

Table 4: MTC record

only be present for HSCSD connections.

Field	2G	3G	Description
Change of HSCSD	Oc	-	A list of network or user initiated changes of number of HSCSD channels
Parameters			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	Oc	-	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	С	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	OM	-	Speech version used for that call
Speech Version Supported	O _M	-	Speech version supported by the MS with highest priority indicated by MS
System Type	-	м	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)	-	Oc	Location Routing Number for Number Portability feature
LRN Source Indicator	-	Oc	LRN Source Indicator tells the source of the LRN
LRN Query Status Indicator	-	Oc	Status of Number Portability query.
JIP Parameter	-	Oc	Jurisdiction Information Parameter
JIP Source Indicator	-	Oc	JIP Source Indicator tells the source of the JIP
JIP Query Status Indicator	-	Oc	Status of Number Portability query.
Partial Record Type	2	<u>O</u> <u>c</u>	Indicates the event (time limit etc.) that caused the generation of a partial record.

4.5 Roaming call attempt

If the generation of these records is enabled then, a roaming record shall be created for each call redirected to a mobile subscriber roaming outside the HPLMN. These roaming records shall be produced in the GMSC of the roaming subscriber's HPLMN.

Record Type M M Reaming record. Served MSISDN Ou Ou The MSISDN of the called (roaming) party. Calling Number C C The address of the called (roaming) party. Reaming Number M M The Molie Station Roaming Number employed to route this connection. Recording Entity M M The CMSC Trunk group on which the call originated. Outgoing TKGP Ou Ou The trunk group on which the call originated. Outgoing TKGP Ou Ou The trunk group on which the call originated. Outgoing TKGP Ou Ou The trunk group on which the call originated. ChangeOlService C C C Indicates whether the basic service was used in transparent mode. Supplementary Services C C A list of changes of basic service was used in transparent mode. Supplementary Services C 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. Event time stamps C C C C C G	Field	2G	3G	Description
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(LRN) - O _C LRN Source Indicator tells the source of the LRN LRN Query Status - O _C Status of Number Portability query. Indicator - O _C Jurisdiction Information Parameter JIP Parameter - O _C Jurisdiction Information Parameter JIP Source Indicator - O _C JIP Source Indicator tells the source of the JIP JIP Query Status - O _C Status of Number Portability query. Indicator - O _C Indicates the event (time limit etc.) that caused the generation of a partial	Location Routing Number	_	0.	
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Indicator Indicates the event (time limit etc.) that caused the generation of a partial Partial Record Type - Oc Indicates the event (time limit etc.) that caused the generation of a partial	JIP Query Status	-	Oc.	Status of Number Portability query.
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		-	Oc	Indicates the event (time limit etc.) that caused the generation of a partial
		-	<u> </u>	

Table 5: Roaming record

4.6 Incoming gateway call attempt

If generation of these records is enabled, an incoming gateway record shall be created for each incoming call attempt received by a gateway MSC from another network. These records, produced in the gateway MSC, may be used to settle accounts with other networks. The generation of gateway records shall not be influenced by the production of MTC records i.e. even if the GMSC and terminating MSC are co-located a gateway record shall still be produced.

Table 6: Incoming	gateway record
-------------------	----------------

Field	2G	3G	Description	
Record Type	М	М	Incoming gateway record	
Calling Number	С	С	The number of the calling party if available at this node.	
Called Number	М	М	The address of the called party as seen by the GMSC. This is the number employed by the GMSC for routing.	
Recording Entity	М	М	The E.164 number of the GMSC	
Incoming TKGP	М	М	The incoming GMSC trunk group on which the call originated.	
Outgoing TKGP	Ом	Oc	The trunk group on which the call left the GMSC. If available in 3G, this parameter shall be supplied.	
Event time stamps:	М	М	Seizure time: time of incoming trunk seizure	
	С	С	Answer time: time of answer (successful calls only)	
	OM	OM	Release time: time of incoming trunk release	
Call duration	М	М	The accountable duration (answer -> release of incoming trunk) of the	
			connection if successful, the call holding time of the incoming trunk for call attempts.	
Data Volume	С	-	If applicable and known at the GMSC	
Cause for termination	М	М	The reason for the release of the connection.	
Diagnostics	OM	OM	A more detailed reason for the release of the connection.	
Call Reference	М	М	A local identifier distinguishing between transactions.	
Sequence no.	С	С	Partial record sequence number, if applicable.	
Record extensions	Oc	Oc	A set of network/ manufacturer specific extensions to the record, when available.	
Location Routing Number (LRN)	-	Oc	Location Routing Number for Number Portability feature	
LRN Source Indicator	-	Oc	LRN Source Indicator tells the source of the LRN	
LRN Query Status Indicator	-	O _C	Status of Number Portability query.	
JIP Parameter	-	Oc	Jurisdiction Information Parameter	
JIP Source Indicator	-	Oc	JIP Source Indicator tells the source of the JIP	
JIP Query Status Indicator	-	O _C	Status of Number Portability query.	
Partial Record Type	2	<u>O</u> <u>C</u>	Indicates the event (time limit etc.) that caused the generation of a partial record.	

If generation of these records is enabled, an outgoing gateway record shall be created for each outgoing call attempt from a gateway MSC to another network. These records, produced in the gateway MSC, may be used to settle accounts with other networks. The generation of gateway records shall not be influenced by the production of MOC records i.e. even if the GMSC and originating MSC are co-located a gateway record shall still be produced.

Field	2G	3G	Description	
Record Type	М	М	Outgoing gateway record	
Calling Number	С	С	The number of the calling party if available at this node.	
Called Number	М	М	The address of the called party as seen by the GMSC. This is the number	
			employed by the GMSC for routing.	
Recording Entity	М	М	The E.164 number of the GMSC	
Incoming TKGP	OM	Oc	The incoming GMSC trunk group on which the call originated. If available in	
			3G, this parameter shall be supplied.	
Outgoing TKGP	М	М	The trunk group on which the call left the GMSC.	
Event time stamps:	М	М	Seizure time: time of outgoing trunk seizure	
	С	С	Answer time: time of answer (successful calls only)	
	OM	OM	Release time: time of outgoing trunk release	
Call duration	М	М	The accountable duration (answer -> release of outgoing trunk) of the	
			connection if successful, the call holding time of the outgoing trunk for call	
			attempts.	
Data Volume	С	-	If applicable and known at the GMSC	
Cause for termination	М	М	The reason for the release of the connection.	
Diagnostics	OM	OM	A more detailed reason for the release of the connection.	
Call Reference	М	М	A local identifier distinguishing between transactions.	
Sequence no.	С	С	Partial record sequence number, if applicable.	
Record extensions	Oc	Oc	A set of network/ manufacturer specific extensions to the record, when	
			available.	
Location Routing Number	-	Oc	Location Routing Number for Number Portability feature	
(LRN)				
LRN Source Indicator	-	Oc	LRN Source Indicator tells the source of the LRN	
LRN Query Status	-	Oc	Status of Number Portability query.	
Indicator				
JIP Parameter	-	Oc	Jurisdiction Information Parameter	
JIP Source Indicator	-	Oc	JIP Source Indicator tells the source of the JIP	
JIP Query Status	-	O _C	Status of Number Portability query.	
Indicator				
Partial Record Type		<u>O</u> C	Indicates the event (time limit etc.) that caused the generation of a partial	
			record.	

Table 7: Outgoing gateway record

4.8 Transit call attempt

If generation of these records is enabled then a transit record may be generated for each incoming call attempt received by a Transit MSC i.e. neither originating nor terminating. For the avoidance of doubt, a transit record shall only be produced if no MOC or MTC record is produced for this call attempt by this MSC. The transit records, produced in the TMSC, may be used to record traffic from particular origins or to particular destinations.

Field	2G	3G	Description
Record Type	М	М	Transit.
Recording Entity	М	М	The E.164 number of the transit MSC
Incoming TKGP	М	М	The TMSC trunk group on which the call originated.
Outgoing TKGP	М	М	The trunk group on which the call left the TMSC.
Calling Number	С	С	The number of the calling party if available at this node.
Called Number	М	М	The address of the called party as seen by the TMSC.
ISDN Basic Service	OM	OM	The ISDN basic service employed

Table 8: Transit record

Field	2G	3G	Description
Event time stamps:	С	С	Seizure time: time of incoming trunk seizure for unsuccessful call attempts
	С	С	Answer time: time of answer (successful calls only)
	OM	OM	Release time: time of traffic channel release
Call duration	М	М	The chargeable duration of the connection if successful, the call holding
			time for call attempts.
Data Volume	С	-	If applicable and known at the transit MSC
Cause for term.	М	М	The reason for the release of the connection.
Diagnostics	OM	OM	A more detailed reason for the release of the connection.
Call Reference	М	М	A local identifier distinguishing between transactions.
Sequence no.	С	С	Partial record sequence number, if applicable.
Record extensions	Oc	Oc	A set of network/ manufacturer specific extensions to the record, when
			available.
Location Routing Number	-	Oc	Location Routing Number for Number Portability feature
(LRN)			
LRN Source Indicator	-	Oc	LRN Source Indicator tells the source of the LRN
LRN Query Status	-	Oc	Status of Number Portability query.
Indicator			
JIP Parameter	-	Oc	Jurisdiction Information Parameter
JIP Source Indicator	-	Oc	JIP Source Indicator tells the source of the JIP
JIP Query Status	-	Oc	Status of Number Portability query.
Indicator			
Partial Record Type	-	<u>O</u> <u>C</u>	Indicates the event (time limit etc.) that caused the generation of a partial
			record.

4.17 Common equipment usage record

If enabled, a common equipment usage record shall be created in the VMSC to record the usage (duration) of common equipment, e.g. conference circuits, employed by a mobile subscriber.

Table 17: Comm	non equipment	usage record
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Field	2G	3G	Description
Record Type	М	М	Common equipment usage record.
Equipment type	М	М	e.g. Conference circuit.
Equipment Id.	С	С	The local id. Of the equipment employed.
Served IMSI	М	Μ	The IMSI of the party responsible for the seizure of the equipment
Served MSISDN	Ом	OM	The primary MSISDN of the served party
Recording Entity	М	М	The E.164 number of the MSC in which the equipment is located.
Basic service	С	С	Bearer or teleservice employed, if appropriate.
Rate Adaptation	Oc	Oc	Present if "rate adaption" parameters for the basic service were signalled between the MS/UE and the network, see TS 24.008.
Fixed Network User Rate	Oc	Oc	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.
ChangeOfService	Oc	Oc	A list of changes of basic service during a connection each time-stamped.
Supp. Services	С	С	Supplementary services invoked in connection with this equipment.
Event Time Stamp	М	М	Seizure time: the time at which the equipment was seized.
	OM	OM	Release time: the time at which the equipment was released.
Call Duration	М	Μ	The total duration of the usage of the equipment.
Call Reference	М	Μ	A local identifier distinguishing between transactions.
Sequence no.	С	С	Partial record sequence number if applicable.
Record extensions	Oc	Oc	A set of network/ manufacturer specific extensions to the record, when available.
System Type	-	М	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.
Partial Record Type	-	<u>O</u> c	Indicates the event (time limit etc.) that caused the generation of a partial record.

4.18 Terminating CAMEL call attempt

If the generation of these records is enabled, a terminating CAMEL call attempt record shall be generated for each call toward a subscriber with a T-CSI or VT-CSI and if the terminating trigger criteria are met. The record is generated in the GMSC/gsmSSF carrying out the terminating CAMEL call handling and in the MSC server/gsmSSF carrying out the visited terminating CAMEL call attempt.

Field	2G	3G	Description
Record Type	M	M	Terminating CAMEL interrogation.
Served IMSI	M	M	IMSI of the called party
Served MSISDN	O _M	O _M	The MSISDN of the called party.
Recording Entity	M	M	The E.164 number of the GMSC.
Interrogation time stamp	M	M	Time at which the interrogation was invoked.
CAMEL Destination	M	M	The number available for routing after the CAMEL server enquiry.
Number			
GsmSCF Address	М	М	The CAMEL server serving the subscriber.
Service key	М	М	The CAMEL service logic to be applied.
Network call reference	М	М	An identifier to correlate transactions on the same call taking place in
			different network nodes.
MSC Address	М	М	This field contains the E.164 number assigned to the MSC that generated
			the network call reference.
Default call handling	Oc	Oc	Indicates whether or not a CAMEL call encountered default call handling.
-			This field shall be present only if default call handling has been applied.
Record extensions	Oc	Oc	A set of network/ manufacturer specific extensions to the record, when
			available.
Called Number	М	Μ	The address of the called party as received by the GMSC/gsmSSF.
Calling Number	С	С	The address of the calling party, if available.
Incoming TKGP	Ом	Oc	The GMSC trunk group on which the call originated. If available in 3G, this
-			parameter shall be supplied.
Outgoing TKGP	OM	Oc	The trunk group on which the call left the GMSC. If available in 3G, this
			parameter shall be supplied.
Event time stamps:	С	С	Seizure time: time of incoming traffic channel seizure (for unsuccessful call
	С	С	attempts)
	OM	OM	Answer time: time of answer (for successful calls)
			Release time: time of traffic channel release
Call duration	М	М	The chargeable duration of the connection for successful calls, the holding
			time of call attempts.
Data volume	C	-	The number of data segments transmitted if available at the GMSC
Cause for termination	M	M	The reason for the release of the connection.
Diagnostics	OM	OM	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.
Number of DP	Oc	Oc	Number that counts how often armed detection points (TDP and EDP) were
		0	encountered.
Level of CAMEL service	Oc	Oc	Indicator of the complexity of the CAMEL feature used.
Free format Data	С	С	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.
CAMEL call leg	С	С	Set of CAMEL information IEs. Each of these les contains information
information	U	C	related to one outgoing CAMEL call leg.
Free format data append	С	С	Indicator if free format data from this CDR is to be appended to free format
indicator	Ŭ	U	data in previous partial CDR.
MSC server indication	С	С	Indication if the CAMEL call handling is active in the MSC server.
Default call handling 2	O _C	O _C	Indicates whether or not a CAMEL call encountered default call handling for
		U U	2^{nd} service such as dialled service. This field shall be present only if default
			call handling has been applied.
GsmSCF address 2	С	С	Identifies the CAMEL server serving the subscriber for 2 nd service such as
		-	dialled service. Shall be present only if CAMEL is applied for 2 nd service.
Service key 2	С	С	The CAMEL service logic to be applied for 2 nd service such as dialled
			service. Shall be present only if CAMEL is applied for 2 nd service.

Table 18: Terminating CAMEL record

Field	2G	3G	Description
Free format Data 2	С	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. Shall be present only if CAMEL is applied for 2 nd service.
Free format data append indicator 2	С	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. Shall be present only if CAMEL is applied for 2 nd service.
Location Routing Number (LRN)	-	Oc	Location Routing Number for Number Portability feature
LRN Source Indicator	-	Oc	LRN Source Indicator tells the source of the LRN
LRN Query Status Indicator	-	O _C	Status of Number Portability query.
JIP Parameter	-	Oc	Jurisdiction Information Parameter
JIP Source Indicator	-	Oc	JIP Source Indicator tells the source of the JIP
JIP Query Status Indicator	-	Oc	Status of Number Portability query.
Partial Record Type	2	<u>O</u> <u>C</u>	Indicates the event (time limit etc.) that caused the generation of a partial record.

End of Change in Clause 4

Change in Clause 5

5 Description of Record Fields

This clause contains a brief description of each field of the CDRs described in the previous clause.

5.60 Old /new location

These fields contain the location of a mobile subscriber before and after a location update. In case of VLR location update the location information consists of a VMSC number and location area code. In case of HLR location update the field contains the VMSC number and the VLR number.

5.61 Partial Record Type

This field indicates the event that caused the generation of a partial record.

5.6162 Positioning Data

This information element is providing positioning data associated with a successful or unsuccessful location attempt for a target MS according TS 49.031 [31].

etc.

End of Change in Clause 5

Change in Clause 6.1

MOCallRecord {	::=	SET
recordType		
servedIMSI		
servedIMEI		
servedMSISD	И	

[0] CallEventRecordType, [1] IMSI OPTIONAL, [2] IMEI OPTIONAL, [3] MSISDN OPTIONAL,

callingNumber calledNumber translatedNumber connectedNumber roamingNumber recordingEntity mscIncomingTKGP mscOutgoingTKGP location changeOfLocation basicService supplServicesUsed aocParameters changeOfAOCParms msClassmark changeOfClassmark seizureTime answerTime releaseTime callDuration dataVolume radioChanRequested radioChanUsed changeOfRadioChan causeForTerm diagnostics callReference sequenceNumber additionalChgInfo recordExtensions gsm-SCFAddress serviceKev networkCallReference mSCAddress cAMELInitCFIndicator defaultCallHandling hSCSDChanRequested hSCSDChanAllocated changeOfHSCSDParms fnur aiurRequested chanCodingsAcceptable chanCodingUsed ChamberGoung Step[40]ChamberGoung StepspeechVersionSupported[49]SpeechVersionIdenspeechVersionUsed[50]SpeechVersionIdennumberOfDPEncountered[51]INTEGER OPTIONAL,levelOfCAMELService[52]LevelOfCAMELServi freeFormatData gsm-SCFAddress-2 serviceKey-2 freeFormatData-2 freeFormatData-2 freeFormatDataAppend-2 systemType systemType rateIndication locationRoutNum lrnSoInd lrnQuryStatus JIPPara JIPSoInd JIPQuryStatus

[4] CallingNumber OPTIONAL, [5] CalledNumber OPTIONAL, [6] TranslatedNumber OPTIONAL, [7] ConnectedNumber OPTIONAL, [8] RoamingNumber OPTIONAL, [9] RecordingEntity, [10] TrunkGroup OPTIONAL, [11] TrunkGroup OPTIONAL, [12] LocationAreaAndCell OPTIONAL, [13] SEQUENCE OF LocationChange OPTIONAL, basicService [14] basicService control optionAL, transparencyIndicator [15] TransparencyInd OPTIONAL, changeOfService [16] SEQUENCE OF ChangeOfService OPTIONAL, [14] BasicServiceCode OPTIONAL, [16] SEQUENCE OF CHARGEOLOGI, [17] SEQUENCE OF SuppServiceUsed OPTIONAL, [18] AOCParameters OPTIONAL, [19] SEQUENCE OF AOCParmChange OPTIONAL, [20] Classmark OPTIONAL, [21] ChangeOfClassmark OPTIONAL, [22] TimeStamp OPTIONAL, [23] TimeStamp OPTIONAL, [24] TimeStamp OPTIONAL, [25] CallDuration, [26] DataVolume OPTIONAL, [27] RadioChanRequested OPTIONAL, [28] TrafficChannel OPTIONAL, [29] ChangeOfRadioChannel OPTIONAL, [30] CauseForTerm, [31] Diagnostics OPTIONAL, [32] CallReference, [33] INTEGER OPTIONAL, [34] AdditionalChgInfo OPTIONAL, [35] ManagementExtensions OPTIONAL, [36] Gsm-SCFAddress OPTIONAL, [37] ServiceKey OPTIONAL, [38] NetworkCallReference OPTIONAL, [39] MSCAddress OPTIONAL, [40] CAMELInitCFIndicator OPTIONAL, [40] CAMELINITCHINGTORICS OF FIGURE [41] DefaultCallHandling OPTIONAL, [42] NumOfHSCSDChanRequested OPTIONAL, [43] NumOfHSCSDChanAllocated OPTIONAL, [44] SEQUENCE OF HSCSDParmsChange OPTIONAL,
[45] Fnur OPTIONAL,
[46] AiurRequested OPTIONAL,
[47] SEQUENCE OF ChannelCoding OPTIONAL,
[48] ChannelCoding OPTIONAL, [49] SpeechVersionIdentifier OPTIONAL, [50] SpeechVersionIdentifier OPTIONAL, [52] LevelOfCAMELService OPTIONAL, [53] FreeFormatData OPTIONAL, CAMELCallLegInformation[55] FICE OF MALEUR OF CAMELINFORMER,freeFormatDataAppend[55] BOOLEAN OPTIONAL,defaultCallHandling-2[56] DefaultCallHandling OPTIONAL,gsm-SCFAddress-2[57] Gsm-SCFAddress OPTIONAL, [57] Gsm-SCFAddress OPTIONAL, [58] ServiceKey OPTIONAL, [59] FreeFormatData OPTIONAL, [60] BOOLEAN OPTIONAL, [61] SystemType OPTIONAL, [62] RateIndication OPTIONAL,

[63] LocationRoutingNumber OPTIONAL, [64] LocationRoutingNumberSourceIndicator OPTIONAL, [65] LocationRoutingNumberQueryStatus OPTIONAL, [66] JurisdictionInformationParameter OPTIONAL, [67] JurisdictionInformationParameterSourceIndicator OPTIONAL, [68] JurisdictionInformationParameterQueryStatus OPTIONAL, partialRecordType [69] PartialRecordType OPTIONAL

MTCallRecord

recordType

servedIMSI

servedIMEI servedMSISDN

callingNumber

connectedNumber

recordingEntity

{

::= SET

- [0] CallEventRecordType,
- [1] IMSI,
 - [2] IMEI OPTIONAL,
 - [3] CalledNumber OPTIONAL,
 - [4] CallingNumber OPTIONAL
 - [5] ConnectedNumber OPTIONAL,
 - [6] RecordingEntity,

mscoutgoingTKGP[s] TrunkGroup OPTIONAL, locationlocation[9] LocationAresandCell OPTIONAL, chargeOLocationlocation[11] BasicServiceCode OPTIONAL, transparencyIndicatorlill BasicService[13] SEQUENCE OF ChargeOService OPTIONAL, chargeOServicesUsedchargeOServicesUsed[14] SEQUENCE OF ChargeOService OPTIONAL, acoParameters[15] ACCParameters OPTIONAL chargeOfClassmark[16] SEQUENCE OF ACCParmCharge OPTIONAL, chargeOfClassmark(17] Classmark OPTIONAL, chargeOfClassmark[19] TimeStamp OPTIONAL, chargeOfClassmarkcalasmark[20] TimeStamp OPTIONAL, calaswartImecallDuration[21] TimeStamp OPTIONAL, calaswartImecallDuration[22] CallDuration, dataVolumecalatVolume[23] DataVolume OPTIONAL, calaswartImecallDuration[22] CallDuration, dataVolumecalaswartics[26] TrafficChannel OPTIONAL, calaswarticscallReference[29] CallReference, sequenceNumber[30] INTEGER OPTIONAL, sequenceNumber[31] NadditionalChgInfo OPTIONAL, sequenceNumber[33] NetWorkCallReference OPTIONAL, networkCallReference[33] NetWorkCallReference OPTIONAL, sequenceNumber[34] Aduitequested OPTIONAL, sequenceNumber[35] NumOfHSCSDChanAllocated OPTIONAL, chargeOFINAL, sequenceNumber[35] NumOfHSCSDChanAllocated OPTIONAL, chargeOfHSCSDParms[36] NumOfHSCSDChanAllocated OPTIONAL, chargeOfTNAfrug[36] AiurRequested OPTIONAL, sepectVersionSupported[37] Sequestor OPTIONAL, secuestor OPTIONAL, chargeOfHSCSDParmsgameSCRAdress[44] SpeectVersi	mscIncomingTKGP	7] TrunkGroup OPTIONAL,
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rateIndication[47] RateIndication OPTIONAL,locationRoutNum[48] LocationRoutingNumber OPTIONAL,lrnSoInd[49] LocationRoutingNumberSourceIndicator OPTIONAL,lrnQuryStatus[50] LocationRoutingNumberQueryStatus OPTIONAL,JIPPara[51] JurisdictionInformationParameter OPTIONAL,JIPSoInd[52] JurisdictionInformationParameterSourceIndicator OPTIONAL,JIPQuryStatus[53] JurisdictionInformationParameterQueryStatus OPTIONAL,	serviceKey	45] ServiceKey OPTIONAL,
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JIPQuryStatus [53] JurisdictionInformationParameterQueryStatus OPTIONAL,	JIPSoInd	- ,

}

RoamingRecord {	= SET	
recordType	[0] CallEvent	RecordType,
servedIMSI	[1] IMSI,	
servedMSISDN	[2] MSISDN OP	TIONAL,
callingNumber	[3] CallingNu	mber OPTIONAL,
roamingNumber	[4] RoamingNu	mber OPTIONAL,
recordingEntity	[5] Recording	Entity,
mscIncomingTKGP	[6] TrunkGrou	p OPTIONAL,
mscOutgoingTKGP	[7] TrunkGrou	p OPTIONAL,
basicService	[8] BasicServ	iceCode OPTIONAL,
transparencyIndicat	[9] Transpare	ncyInd OPTIONAL,
changeOfService	[10] SEQUENCE	OF ChangeOfService OPTIONAL,
supplServicesUsed	[11] SEQUENCE	OF SuppServiceUsed OPTIONAL,
seizureTime	[12] TimeStam	- <i>i</i>
answerTime	[13] TimeStam	p OPTIONAL,
releaseTime	[14] TimeStam	-
callDuration	[15] CallDura	
dataVolume	[16] DataVolu	me OPTIONAL,
causeForTerm	[17] CauseFor	Term,
diagnostics	[18] Diagnost	
callReference	[19] CallRefe	rence,
sequenceNumber	[20] INTEGER	OPTIONAL,
recordExtensions	[21] Manageme	ntExtensions OPTIONAL,
networkCallReferenc		allReference OPTIONAL,
mSCAddress	[23] MSCAddre	ss OPTIONAL,
locationRoutNum		RoutingNumber OPTIONAL,
lrnSoInd	[25] Location	RoutingNumberSourceIndicator OPTIONAL,

{

[26] LocationRoutingNumberQueryStatus OPTIONAL, lrnQuryStatus JIPPara [27] JurisdictionInformationParameter OPTIONAL, JIPSoInd [28] JurisdictionInformationParameterSourceIndicator OPTIONAL, JIPQuryStatus [29] JurisdictionInformationParameterQueryStatus OPTIONAL, [30] PartialRecordType OPTIONAL partialRecordType TermCAMELRecord ::= SET recordtype [0] CallEventRecordType, servedIMSI [1] IMSI, [2] MSISDN OPTIONAL, servedMSISDN recordingEntity [3] RecordingEntity, interrogationTime [4] TimeStamp, destinationRoutingAddress [5] DestinationRoutingAddress, [6] Gsm-SCFAddress, gsm-SCFAddress serviceKev [7] ServiceKey, networkCallReference [8] NetworkCallReference OPTIONAL, mSCAddress [9] MSCAddress OPTIONAL, defaultCallHandling [10] DefaultCallHandling OPTIONAL, [11] ManagementExtensions OPTIONAL, recordExtensions calledNumber [12] CalledNumber, [13] CallingNumber OPTIONAL, callingNumber mscIncomingTKGP [14] TrunkGroup OPTIONAL, [15] TrunkGroup OPTIONAL, mscOutgoingTKGP seizureTime [16] TimeStamp OPTIONAL, [17] TimeStamp OPTIONAL, answerTime releaseTime [18] TimeStamp OPTIONAL, [19] CallDuration, callDuration [20] DataVolume OPTIONAL, dataVolume causeForTerm [21] CauseForTerm, [22] Diagnostics OPTIONAL, diagnostics [23] CallReference, callReference [24] INTEGER OPTIONAL, sequenceNumber numberOfDPEncountered [25] INTEGER OPTIONAL, levelOfCAMELService [26] LevelOfCAMELServi levelOfCAMELService [26] LevelOfCAMELService OPTIONAL, freeFormatData [27] FreeFormatData OPTIONAL, CAMELCallLegInformation [28] SEQUENCE OF CAMELInformation OPTIONAL, freeFormatDataAppend [29] BOOLEAN OPTIONAL, freeFormatData-2 [34] FreeFormatData OPTIONAL, freeFormatDataAppend-2 [35] BOOLEAN OPTIONAL, locationRoutNum [36] LocationRoutingNumber OPTIONAL, [37] LocationRoutingNumberSourceIndicator OPTIONAL, lrnSoInd lrnQuryStatus [38] LocationRoutingNumberQueryStatus OPTIONAL, [39] JurisdictionInformationParameter OPTIONAL JIPPara JIPSoInd [40] JurisdictionInformationParameterSourceIndicator OPTIONAL, JIPQuryStatus [41] JurisdictionInformationParameterQueryStatus OPTIONAL, partialRecordType [42] PartialRecordType OPTIONAL

IncGatewayRecord

{

::= SET

recordType [0] CallEventRecordType, [1] CallingNumber OPTIONAL, callingNumber calledNumber [2] CalledNumber, [3] RecordingEntity, [4] TrunkGroup OPTIONAL, [5] TrunkGroup OPTIONAL, recordingEntity mscIncomingTKGP mscOutgoingTKGP [5] TrunkGroup OPTIONAL, [6] TimeStamp OPTIONAL, seizureTime [7] TimeStamp OPTIONAL, [8] TimeStamp OPTIONAL, answerTime releaseTime callDuration [9] CallDuration, [10] DataVolume OPTIONAL, dataVolume [11] CauseForTerm, causeForTerm [12] Diagnostics OPTIONAL, diagnostics callReference [13] CallReference, [14] INTEGER OPTIONAL, sequenceNumber recordExtensions [15] ManagementExtensions OPTIONAL, locationRoutNum [16] LocationRoutingNumber OPTIONAL, lrnSoInd [17] LocationRoutingNumberSourceIndicator OPTIONAL, [18] LocationRoutingNumberQueryStatus OPTIONAL, lrnQuryStatus JIPPara [19] JurisdictionInformationParameter OPTIONAL, [20] JurisdictionInformationParameterSourceIndicator OPTIONAL, JIPSoInd JIPOuryStatus [21] JurisdictionInformationParameterQueryStatus OPTIONAL,

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partialRecordType [22] PartialRecordType OPTIONAL

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}		
Out	GatewayRecord	::= SET
{		
· ·	recordType	[0] CallEventRecordType,
	callingNumber	[1] CallingNumber OPTIONAL,
	calledNumber	[2] CalledNumber,
	recordingEntity	[3] RecordingEntity,
	mscIncomingTKGP	[4] TrunkGroup OPTIONAL,
	mscOutgoingTKGP	[5] TrunkGroup OPTIONAL,
	seizureTime	[6] TimeStamp OPTIONAL,
	answerTime	[7] TimeStamp OPTIONAL,
	releaseTime	[8] TimeStamp OPTIONAL,
	callDuration	[9] CallDuration,
	dataVolume	[10] DataVolume OPTIONAL,
	causeForTerm	[11] CauseForTerm,
	diagnostics	[12] Diagnostics OPTIONAL,
	callReference	[13] CallReference,
	sequenceNumber	[14] INTEGER OPTIONAL,
	recordExtensions	[15] ManagementExtensions OPTIONAL,
	locationRoutNum	[16] LocationRoutingNumber OPTIONAL,
	lrnSoInd	[17] LocationRoutingNumberSourceIndicator OPTIONAL,
	lrnQuryStatus	[18] LocationRoutingNumberQueryStatus OPTIONAL,
	JIPPara	[19] JurisdictionInformationParameter OPTIONAL,
	JIPSoInd	[20] JurisdictionInformationParameterSourceIndicator OPTIONAL,
	JIPQuryStatus	[21] JurisdictionInformationParameterQueryStatus OPTIONAL,
	partialRecordType	[22] PartialRecordType OPTIONAL
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Tra {	nsitCallRecord	::= SET
	recordType	<pre>[0] CallEventRecordType,</pre>
	recordingEntity	<pre>[1] RecordingEntity,</pre>
	mscIncomingTKGP	[2] TrunkGroup OPTIONAL,
	mscOutgoingTKGP	[3] TrunkGroup OPTIONAL,
	callingNumber	[4] CallingNumber OPTIONAL,
	calledNumber	[5] CalledNumber,
	isdnBasicService	[6] BasicService OPTIONAL,
	seizureTimestamp	[7] TimeStamp OPTIONAL,
	answerTimestamp	[8] TimeStamp OPTIONAL,
	releaseTimestamp	[9] TimeStamp OPTIONAL,
	callDuration	[10] CallDuration,
	dataVolume	[11] DataVolume OPTIONAL,
	causeForTerm	[12] CauseForTerm,
	diagnostics	[13] Diagnostics OPTIONAL,
	callReference	[14] CallReference,
	sequenceNumber	[15] INTEGER OPTIONAL,
	recordExtensions	[16] ManagementExtensions OPTIONAL,
	locationRoutNum	[17] LocationRoutingNumber OPTIONAL,
	lrnSoInd	[18] LocationRoutingNumberSourceIndicator OPTIONAL,
	lrnQuryStatus	[19] LocationRoutingNumberQueryStatus OPTIONAL,
	JIPPara	[20] JurisdictionInformationParameter OPTIONAL,
	JIPSoInd	[21] JurisdictionInformationParameterSourceIndicator OPTIONAL,
	JIPQuryStatus	[22] JurisdictionInformationParameterQueryStatus OPTIONAL,
	partialRecordType	[23] PartialRecordType OPTIONAL

MOSMSRecord

{

}

::= SET

	recordType	<pre>[0] CallEventRecordType,</pre>
	servedIMSI	[1] IMSI,
	servedIMEI	[2] IMEI OPTIONAL,
	servedMSISDN	[3] MSISDN OPTIONAL,
	msClassmark	[4] Classmark,
	serviceCentre	[5] AddressString,
	recordingEntity	[6] RecordingEntity,
	location	<pre>[7] LocationAreaAndCell OPTIONAL,</pre>
	messageReference	[8] MessageReference,
	originationTime	[9] TimeStamp,
	smsResult	[10] SMSResult OPTIONAL,
	recordExtensions	[11] ManagementExtensions OPTIONAL,
	destinationNumber	[12] SmsTpDestinationNumber OPTIONAL,
	cAMELSMSInformation	[13] CAMELSMSInformation OPTIONAL,
	systemType	[14] SystemType OPTIONAL
TS	MSRecord	::= SET

MTSMSRecord

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

oldLocation newLocation updateTime updateResult recordExtensions }	 [3] Visited-Location-info OPTIONAL, [4] Visited-Location-info, [5] TimeStamp, [6] LocUpdResult OPTIONAL, [7] ManagementExtensions OPTIONAL
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<pre>{ recordType servedIMSI servedMSISDN recordingEntity oldLocation newLocation msClassmark updateTime updateResult recordExtensions }</pre>	 [0] CallEventRecordType, [1] IMSI, [2] MSISDN OPTIONAL, [3] RecordingEntity, [4] Location-info OPTIONAL, [5] Location-info, [6] Classmark, [7] TimeStamp, [8] LocUpdResult OPTIONAL, [9] ManagementExtensions OPTIONAL
CommonEquipRecord	::= SET
<pre>recordType equipmentType equipmentId servedIMSI servedMSISDN recordingEntity basicService changeOfService supplServicesUsed seizureTime releaseTime callDuration callReference sequenceNumber recordExtensions systemType rateIndication fnur partialRecordType</pre>	<pre>[0] CallEventRecordType, [1] EquipmentType, [2] EquipmentId, [3] IMSI, [4] MSISDN OPTIONAL, [5] RecordingEntity, [6] BasicServiceCode OPTIONAL, [7] SEQUENCE OF ChangeOfService OPTIONAL, [8] SEQUENCE OF SuppServiceUsed OPTIONAL, [9] TimeStamp, [10] TimeStamp OPTIONAL, [11] CallDuration, [12] CallReference, [13] INTEGER OPTIONAL, [14] ManagementExtensions OPTIONAL, [15] SystemType OPTIONAL, [16] RateIndication OPTIONAL, [17] Fnur OPTIONAL, [18] PartialRecordType OPTIONAL</pre>

J

Unchanged part of Clause 6.1

PartialRecordType ::= ENUMERATED { timeLimit (0), serviceChange (1), locationChange (2), classmarkChange (3), aocParmChange (4), radioChannelChange (5), hSCSDParmChange changeOfCAMELDestination (6), (7) }

PartialRecordTypes ::= SET OF PartialRecordType

End of Change in Clause 6.1

End of Document

3GPP TSG-SA5 (Telecom Management) Meeting #33bis, Berlin, GERMANY, 07-11 April 2003

S5-034266

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CHANGE REQUEST									CR-Form-v7			
ж	32.	<mark>205</mark>	CR	018	ж	rev	-	ж	Current ver	sion:	5.3.0) [#]
For HELP on using this form, see bottom of this page or look at the pop-up text over the \Re symbols.												
Proposed change a	affect	s: L	JICC a	pps#]	ME	Rad	dio Ad	ccess Netwo	ork	Core N	letwork X
Title: #	Cor	rectior	<mark>is on l</mark>	MS record	d definit	ions						
Source: #	S5											
Work item code: ¥	OA	M-CH							Date: a	g <mark>11/</mark>	04/2003	
Category: ₩	Use <u>c</u> l l Detail	F (corr A (corr B (add C (fund D (edit led exp	ection) respond ition of ctional orial m lanatio	owing categ ds to a corr feature), modificatio odification) ns of the a <u>FR 21.900</u> .	rection ir n of feat	ure)		elease	Release: 3 Use <u>one</u> c 2 e) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6	f the fo (GSN (Rele (Rele (Rele (Rele (Rele	-	!)))))
Reason for change	: X	The /	ASN.1	definition	for IMS		s is n	nissin	g.			
Summary of chang	1e: #			definition CDR types			s add	led in	parameter	'CallE ^v	ventReco	ordType'
Consequences if not approved:	ж	Offlin	e Cha	rging for I	MS is r	ot pos	sible	•				
Clauses affected:	ж	6										
Other specs affected:	ж	Y N X X X	Test s	⁻ core spe specificati Specifica	ons	ins	ж					
Other comments:	ж											

How to create CRs using this form:

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- 1) Fill out the above form. The symbols above marked **#** contain pop-up help information about the field that they are closest to.
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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

Change in Clause 6

6 Charging Data Record Structure

6.1 ASN.1 definitions for CDR information

Within the current 3GPP TS 32-series of specifications the ASN.1 definitions are based on ITU-T Recommendation X.208 [8] which has been superseded by ITU-T Recommendation X.680. This newer version not only includes new features but also removes some that were present in ITU-T Recommendation X.208. It was agreed that where possible, the GPRS work would be based on those ASN.1 features that were common to both. However, where necessary, the new features in ITU-T Recommendation X.680 [7] be used in some places. ITU-T Recommendation X.208 [8] feature that are no longer in ITU-T Recommendation X.680 [7] will not be used.

TS32205-DataTypes {itu-t (0) identified-organization (4) etsi(0) mobileDomain (0) umts-Operation-Maintenance (3) ts-32-205 (205) informationModel (0) asnlModule (2) version1 (1)}

DEFINITIONS IMPLICIT TAGS ::= BEGIN -- EXPORTS everything IMPORTS NumberOfForwarding, CallReferenceNumber FROM MAP-CH-DataTypes { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-CH-DataTypes (13) version6 (6) } AddressString, ISDN-AddressString, BasicServiceCode, IMSI, IMEI, LCSClientExternalID, LCSClientInternalID FROM MAP-CommonDataTypes { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-CommonDataTypes (18) version6 (6) } 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, NotificationToMSUser FROM MAP-MS-DataTypes { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-MS-DataTypes (11) version6 (6) } MOLR-Type FROM SS-DataTypes { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3) ss-DataTypes (2) version7 (7)} BearerServiceCode FROM MAP-BS-Code { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-BS-Code (20) version6 (6) } TeleserviceCode FROM MAP-TS-Code { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-TS-Code (19) version2 (2) } SS-Code FROM MAP-SS-Code { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-SS-Code (15) version6 (6) } Ext-GeographicalInformation, LCSClientType, LCS-Priority, LocationType FROM MAP-LCS-DataTypes { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-LCS-DataTypes (25) version7 (7)}

PositionMethodFailure-Diagnostic

```
FROM MAP-ER-DataTypes { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1)
modules (3) map-ER-DataTypes (17) version7 (7)}
BasicService
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)}
ManagementExtension
FROM Attribute-ASN1Module {joint-iso-ccitt ms (9) smi (3) part2 (2) asn1Module (2) 1}
SystemType
FROM TS32215-DataTypes {itu-t (0) identified-organization (4) etsi (0) mobileDomain (0) umts-
Operation-Maintenance (3) ts-32-215 (215) informationModel (0) asnlModule (2) version1 (1)}
SGSNPDPRecord, GGSNPDPRecord, SGSNMMRecord, SGSNSMORecord, SGSNSMTRecord, SGSNMTLCSRecord,
SGSNMOLCSRecord, SGSNNILCSRecord
FROM TS32215-DataTypes {itu-t (0) identified-organization (4) etsi (0) mobileDomain (0) umts-
Operation-Maintenance (3) ts-32-215 (215) informationModel (0) asn1Module (2) version1 (1)}
S-CSCFRRecord, P-CSCFRRecord, I-CSCFRRecord, MRFCRecord, MGCFRecord, BGCFRecord, ASRecord
FROM TS32225-DataTypes {itu-t (0) identified-organization (4) etsi (0) mobileDomain (0) umts-
Operation-Maintenance (3) ts-32-225 (225) informationModel (0) asn1Module (2) version1 (1)}
MMO1SRecord, MMO4FRqRecord, MMO4FRsRecord, MMO4DRecord, MMO1DRecord, MMO4RRecord, MMO1Rrecord,
MMOMDRecord, MMR4FRecord, MMR1NRqRecord, MMR1NRsRecord, MMR1RtRecord, MMR1ARecord, MMR4DRqRecord,
MMR4DRsRecord, MMR1RRRecord, MMR4RRqRecord, MMR4RRsRecord, MMRMDRecord, MMFRecord, MMBx1SRecord,
MMBx1VRecord, MMBx1URecord, MMBx1Drecord
FROM TS32235-DataTypes {itu-t (0) identified-organization (4) etsi (0) mobileDomain (0) umts-
Operation-Maintenance (3) ts-32-235 (235) informationModel (0) asn1Module (2) version1 (1)}
AE-title
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
-- CCITT Rec. X.227 / ISO 8650 corrigendum and not "ANY"
____
                                                       _ _
-- CALL AND EVENT RECORDS
_____
CallEventRecord ::= CHOICE
-- Record values 0..19 are 3G c\underline{i}\underline{u}rcuit switch specific
_ _
               20..27 are 3G packet switch specific
_ _
               30..54 are application specific
               70..76 are IMS specific
{
   moCallRecord
                           [0] MOCallRecord,
   mtCallRecord
                           [1] MTCallRecord,
   roamingRecord
                           [2] RoamingRecord,
   incGatewayRecord
                           [3] IncGatewayRecord,
   outGatewayRecord
transitPorcer
                         [4] OutGatewayRecord,
   transitRecord
                           [5] TransitCallRecord,
   moSMSRecord
                           [6] MOSMSRecord,
   mtSMSRecord
                           [7] MTSMSRecord,
                           [8] MOSMSIWRecord,
   moSMSIWRecord
   mtSMSGWRecord
                           [9] MTSMSGWRecord,
   ssActionRecord
                           [10] SSActionRecord,
                           [11] HLRIntRecord,
   hlrIntRecord
   locUpdateHLRRecord
                           [12] LocUpdateHLRRecord,
   locUpdateVLRRecord
                           [13] LocUpdateVLRRecord,
                         [14] CommonEquipRecord,
   commonEquipRecord
   recTypeExtensions
                           [15] ManagementExtensions,
                           [16] TermCAMELRecord,
   termCAMELRecord
   mtLCSRecord
                           [17] MTLCSRecord,
                           [18] MOLCSRecord,
   moLCSRecord
   niLCSRecord
                           [19] NILCSRecord,
                           [20] SGSNPDPRecord,
   sqsnPDPRecord
```

ggsnPDPRecord	<pre>[21] GGSNPDPRecord,</pre>
sgsnMMRecord	[22] SGSNMMRecord,
sgsnSMORecord	[23] SGSNSMORecord,
sgsnSMTRecord	[24] SGSNSMTRecord,
sgsnLCTRecord	[25] SGSNLCTRecord,
sgsnLCORecord	[26] SGSNLCORecord,
sgsnLCNRecord	[27] SGSNLCNRecord,
mmO1SRecord mmO4FRqRecord mmO4PRsRecord mmO1DRecord mmO1DRecord mmO1RRecord mmOMDRecord mmR1NRqRecord mmR1NRqRecord mmR1NRqRecord	<pre>[30] MMO1SRecord, [31] MMO4FRqRecord, [32] MMO4FRsRecord, [33] MMO4DRecord, [34] MMO1DRecord, [35] MMO4RRecord, [36] MMO1Rrecord, [37] MMOMDRecord, [38] MMR4FRecord, [39] MMR1NRqRecord, [40] MMR1NRsRecord,</pre>
mmR1AFRecord mmR1AFRecord mmR4DRqRecord	<pre>[41] MMR1RtRecord, [43] MMR1ARecord, [44] MMR4DRqRecord, [45] MMR4DRqRecord,</pre>
mmR4DRsRecord	<pre>[45] MMR4DRsRecord,</pre>
mmR1RRRecord	[46] MMR1RRRecord,
mmR4RRqRecord	[47] MMR4RRqRecord,
mmR4RRsRecord	[48] MMR4RrsRecord,
mmRMDRecord	[49] MMRMDRecord,
mmFRecord	<pre>[50] MMFRecord,</pre>
mmBx1SRecord	[51] MMBx1SRecord,
mmBx1VRecord	[52] MMBx1VRecord,
mmBx1URecord	[53] MMBx1URecord,
mmBx1DRecord	[54] MMBx1DRecord,
s-CSCFRecord	<pre>[70] S-SCSFRecord,</pre>
p-CSCFRecord	[71] P-SCSFRecord,
i-CSCFRecord	[72] I-SCSFRecord,
mRFCRecord	[73] MRFCRecord,
mGCFRecord	[74] MGCFRecord,
bGCFRecord aSRecord }	[75] BGCFRecord, [76] ASRecord

•••

<unmodified text>

•••

```
_____
_ _
-- COMMON DATA TYPES
___
_____
AdditionalChgInfo
                    ::= SEQUENCE
{
   chargeIndicator [0] ChargeIndicator OPTIONAL,
chargeParameters [1] OCTET STRING OPTIONAL
}
              ::= ENUMERATED
AiurRequested
{
   -- See Bearer Capability TS 24.008
-- (note that value "4" is intentionally missing
-- because it is not used in TS 24.008)
                            (1),
   aiur09600BitsPerSecond
   aiur14400BitsPerSecond
                            (2),
   aiur19200BitsPerSecond
                            (3),
   aiur28800BitsPerSecond
                            (5),
   aiur38400BitsPerSecond
                             (6),
```

```
CR page 5
```

```
aiur43200BitsPerSecond
                               (7),
   aiur57600BitsPerSecond
                                (8),
   aiur38400BitsPerSecond1
                                (9),
   aiur38400BitsPerSecond2
                               (10),
   aiur38400BitsPerSecond3
                                (11),
   aiur38400BitsPerSecond4
                                (12)
}
                      ::= SEQUENCE
AOCParameters
{
   -- See TS 22.024.
   _ _
   e1
                       [1] EParameter OPTIONAL,
   e2
                       [2] EParameter OPTIONAL,
   e3
                       [3] EParameter OPTIONAL,
   e4
                       [4] EParameter OPTIONAL,
   e5
                        [5] EParameter OPTIONAL,
                       [6] EParameter OPTIONAL,
   e6
                       [7] EParameter OPTIONAL
   e7
}
AOCParmChange
                       ::= SEQUENCE
ł
                       [0] TimeStamp,
   changeTime
                       [1] AOCParameters
   newParameters
}
                       ::= SET OF BasicServiceCode
BasicServices
BCDDirectoryNumber
                       ::= OCTET STRING
   -- This type contains the binary coded decimal representation of
    -- a directory number e.g. calling/called/connected/translated number.
   -- The encoding of the octet string is in accordance with the
   -- the elements "Calling party BCD number", "Called party BCD number"
   -- and "Connected number" defined in TS 24.008.
   -- This encoding includes type of number and number plan information
   -- together with a BCD encoded digit string.
   -- It may also contain both a presentation and screening indicator
   -- (octet 3a).
    -- For the avoidance of doubt, this field does not include
   -- octets 1 and 2, the element name and length, as this would be
   -- redundant.
CallDuration
                      ::= INTEGER
    -- The call duration in seconds.
   -- For successful calls this is the chargeable duration.
   -- For call attempts this is the call holding time.
                      ::= INTEGER
CallEventRecordType
   moCallRecord
                       (0),
   mtCallRecord
                       (1),
   roamingRecord
                       (2),
   incGatewayRecord
                       (3),
   outGatewayRecord
                       (4),
   transitCallRecord
                       (5),
   moSMSRecord
                       (6),
   mtSMSRecord
                       (7),
   moSMSIWRecord
                        (8),
   mtSMSGWRecord
                       (9),
   ssActionRecord
                       (10),
   hlrIntRecord
                        (11).
   locUpdateHLRRecord (12),
   locUpdateVLRRecord (13),
   commonEquipRecord (14),
   moTraceRecord
                        (15),
                        (16),
   mtTraceRecord
   termCAMELRecord
                       (17),
-- Record values 18..22 are GPRS specific.
-- The contents are defined in TS 32.015
   sgsnPDPRecord
                       (18),
   ggsnPDPRecord
                       (19).
   sqsnMMRecord
                        (20),
```

```
sgsnSMORecord
                         (21),
    sgsnSMTRecord
                         (22),
_ _
-- Record values 23..25 are CS-LCS specific.
_ _
    The contents are defined in the present document
    mtLCSRecord
                          (23),
    moLCSRecord
                          (24),
    niLCSRecord
                          (25),
_ _
   Record values 26..28 are PS-LCS specific.
--
    The contents are defined in TS 32.215
_ _
_ _
    sgsnMtLCSRecord
                          (26),
    sgsnMoLCSRecord
                          (27),
    sgsnNiLCSRecord
                         (28),
- -
___
    Record values 29..53 are MMS specific.
___
    The contents are defined in TS 32.235
_ _
    mm01SRecord
                         (29),
    mmO4FRqRecord
                         (30),
    mmO4FRsRecord
                          (31),
    mmO4DRecord
                         (32),
    mm01DRecord
                          (33),
    mmO4RRecord
                         (34),
    mm01RRecord
                         (35),
    mmOMDRecord
                          (36),
    mmR4FRecord
                         (37).
    mmR1NRqRecord
                          (38),
    mmR1NRsRecord
                          (39),
    mmR1RtRecord
                         (40),
    mmR1AFRecord
                         (42),
    mmR4DRqRecord
                         (43),
    mmR4DRsRecord
                          (44),
    mmR1RRRecord
                          (45),
    mmR4RRqRecord
                         (46),
    mmR4RRsRecord
                         (47),
    mmRMDRecord
                          (48),
    mmFRecord
                          (49),
    mmBx1SRecord
                          (50),
    mmBx1VRecord
                          (51),
    mmBx1URecord
                          (52),
    mmBx1DRecord
                         (53)<u>,</u>
    Record values 63..69 are IMS specific.
The contents are defined in TS 32.225
_ _ _
    S-CSCFRecord
                          (63),
                          (64),
    P-CSCFRecord
    I-CSCFRecord
                          (65),
                          (66),
    MRFCRecord
                          (67),
    MGCFRecord
                          (68),
    BGCFRecord
    ASRecord
                          (69)
}
```

...

<unmodified text>

• • •

End of Change in Clause 6 End of Document

3GPP TSG-SA5 (Telecom Management) Meeting #33bis, Berlin, GERMANY, 07-11 April 2

S5-034258

Meeting #33bis	s, Ber	'lin, G	ERM/	ANY, 07	′ -11 A pı	ril 200	03					
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ж	32	.205	CR	017	жľ	ev	- ³	₭ Cu	rrent vers	^{ion:} 5.3	8.0	ж
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								twork X				
Title:	# <mark>Co</mark>	rrection	<mark>is on N</mark>	MS recor	rds ASN.	1 defin	ition					
Source:	≭ <mark>S5</mark>											
Work item code:	¥ OA	M-CH							Date: ೫	08/04/20	003	
Category:	Deta	F (corre A (corre B (add) C (func D (edite ailed exp	ection) respond lition of ctional m orial mo lanation	wing categ Is to a corre feature), nodification odification) ns of the at <u>R 21.900</u> .	ection in a n of featur	e)		L	R96 R97 R98 R99 Rel-4 Rel-5	Rel-5 the followin (GSM Pha (Release 1 (Release 1 (Release 1 (Release 4 (Release 5 (Release 6	se 2) (996) (997) (998) (999) (999) () () ()	ases:
Reason for chan	уе: Ж	Mism	atch b	etween th	e definiti	<mark>on of t</mark> l	ne MI	MS CD	Rs and th	eir encod	ing.	
Summary of chai	nge:			on the AS ASP CDR		nition o	of the	e "CallE	ventReco	ordType" a	ind ac	ldition of
Consequences if not approved:	¥	Witho possi		se correct	tions, pro	per en	codin	ng of th	e MMS C	DR would	not b	e
Clauses affected Other specs affected: Other comments	ж	Y N X X X	Test s	core spec specification Specificat	ons	S 5	¥					
Other comments	: Ж											

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Change in Clause 6

6 Charging Data Record Structure

6.1 ASN.1 definitions for CDR information

Within the current 3GPP TS 32-series of specifications the ASN.1 definitions are based on ITU-T Recommendation X.208 [8] which has been superseded by ITU-T Recommendation X.680. This newer version not only includes new features but also removes some that were present in ITU-T Recommendation X.208. It was agreed that where possible, the GPRS work would be based on those ASN.1 features that were common to both. However, where necessary, the new features in ITU-T Recommendation X.680 [7] be used in some places. ITU-T Recommendation X.208 [8] feature that are no longer in ITU-T Recommendation X.680 [7] will not be used.

TS32205-DataTypes {itu-t (0) identified-organization (4) etsi(0) mobileDomain (0) umts-Operation-Maintenance (3) ts-32-205 (205) informationModel (0) asnlModule (2) version1 (1)}

DEFINITIONS IMPLICIT TAGS ::= BEGIN -- EXPORTS everything IMPORTS NumberOfForwarding, CallReferenceNumber FROM MAP-CH-DataTypes { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-CH-DataTypes (13) version6 (6) } AddressString, ISDN-AddressString, BasicServiceCode, IMSI, IMEI, LCSClientExternalID, LCSClientInternalID FROM MAP-CommonDataTypes { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-CommonDataTypes (18) version6 (6) } 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, NotificationToMSUser FROM MAP-MS-DataTypes { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-MS-DataTypes (11) version6 (6) } MOLR-Type FROM SS-DataTypes { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Access (2) modules (3) ss-DataTypes (2) version7 (7)} BearerServiceCode FROM MAP-BS-Code { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-BS-Code (20) version6 (6) } TeleserviceCode FROM MAP-TS-Code { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-TS-Code (19) version2 (2) } SS-Code FROM MAP-SS-Code { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-SS-Code (15) version6 (6) } Ext-GeographicalInformation, LCSClientType, LCS-Priority, LocationType FROM MAP-LCS-DataTypes { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1) modules (3) map-LCS-DataTypes (25) version7 (7)}

PositionMethodFailure-Diagnostic

3GPP TS 32.005 v5.3.0 (2003-03)

```
FROM MAP-ER-DataTypes { ccitt identified-organization (4) etsi (0) mobileDomain (0) gsm-Network (1)
modules (3) map-ER-DataTypes (17) version7 (7)}
BasicService
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)}
ManagementExtension
FROM Attribute-ASN1Module {joint-iso-ccitt ms (9) smi (3) part2 (2) asn1Module (2) 1}
SystemType
FROM TS32215-DataTypes {itu-t (0) identified-organization (4) etsi (0) mobileDomain (0) umts-
Operation-Maintenance (3) ts-32-215 (215) informationModel (0) asnlModule (2) version1 (1)}
SGSNPDPRecord, GGSNPDPRecord, SGSNMMRecord, SGSNSMORecord, SGSNSMTRecord, SGSNMTLCSRecord,
SGSNMOLCSRecord, SGSNNILCSRecord
FROM TS32215-DataTypes {itu-t (0) identified-organization (4) etsi (0) mobileDomain (0) umts-
Operation-Maintenance (3) ts-32-215 (215) informationModel (0) asn1Module (2) version1 (1)}
MMO1SRecord, MMO4FRqRecord, MMO4FRsRecord, MMO4DRecord, MMO1DRecord, MMO1Rrecord, M
MMOMDRecord, MMR1RRecord, MMR1NRqRecord, MMR1NRsRecord, MMR1RtRecord, MMR1ARecord, MMR4DRqRecord,
MMR4DRsRecord, MMR1RRRecord, MMR4RRqRecord, MMR4RRsRecord, MMRMDRecord, MMFRecord, MMBx1SRecord,
MMBx1VRecord, MMBx1URecord, MMBx1Drecord, MM7SRecord, MM7DRqRecord, MM7DRsRecord, MM7CRecord,
MM7RRecord, MM7DRRqRecord, MM7DRRsRecord, MM7RRqRecord, MM7RRsRecord
FROM TS32235-DataTypes {itu-t (0) identified-organization (4) etsi (0) mobileDomain (0) umts-
Operation-Maintenance (3) ts-32-235 (235) informationModel (0) asn1Module (2) version1 (1)}
AE-title
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
-- CCITT Rec. X.227 / ISO 8650 corrigendum and not "ANY"
_ _
-- CALL AND EVENT RECORDS
_ _
_____
CallEventRecord ::= CHOICE
-- Record values 0..19 are 3G curcuit switch specific
                           20..27 are 3G packet switch specific
                           30..\underline{6354} are application specific
--
_ _
{
      moCallRecord
                                               [0] MOCallRecord,
                                               [1] MTCallRecord,
      mtCallRecord
      roamingRecord
                                               [2] RoamingRecord,
      incGatewayRecord [3] IncGatewayRecord,
outGatewayRecord [4] OutGatewayRecord,
      transitRecord
                                               [5] TransitCallRecord,
      moSMSRecord
                                               [6] MOSMSRecord.
      mtSMSRecord
                                              [7] MTSMSRecord,
      moSMSIWRecord
                                               [8] MOSMSIWRecord,
      mtSMSGWRecord
                                              [9] MTSMSGWRecord,
                                              [10] SSActionRecord,
[11] HLRIntRecord,
      ssActionRecord
      hlrIntRecord
      locUpdateHLRRecord[12]LocUpdateHLRRecord,locUpdateVLRRecord[13]LocUpdateVLRRecord,commonEquipRecord[14]CommonEquipRecord,
      recTypeExtensions
                                            [15] ManagementExtensions,
      termCAMELRecord
                                               [16] TermCAMELRecord,
                                              [17] MTLCSRecord,
      mtLCSRecord
      moLCSRecord
                                               [18] MOLCSRecord,
                                               [19] NILCSRecord,
      niLCSRecord
      sgsnPDPRecord
                                               [20] SGSNPDPRecord,
      ggsnPDPRecord
                                               [21] GGSNPDPRecord,
                                               [22] SGSNMMRecord,
      sasnMMRecord
                                               [23] SGSNSMORecord,
      sqsnSMORecord
```

sgsnSMTRecord	[24]	SGSNSMTRecord,
sgsnLCTRecord	[25]	SGSNLCTRecord,
sgsnLCORecord	[26]	
sgsnLCNRecord	[27]	SGSNLCNRecord,
mm01SRecord	[20]	MMO1 (De read
mmO4FRqRecord	[30]	MMO1SRecord, MMO4FRqRecord,
mmO4FRsRecord	[31]	- ,
mmO4DRecord	[33]	,
mmO1DRecord	[34]	
mmO4RRecord	[35]	
mmOlRRecord		,
	[36]	
mmOMDRecord	[37]	
mmR4FRecord		MMR4FRecord,
mmR1NRqRecord	[39]	1 ,
mmR1NRsRecord	[40]	
mmRlRtRecord	[41]	MMR1RtRecord,
	[43]	MMR1ARecord,
mmR4DRqRecord mmR4DRsRecord	[44]	
	[45]	,
mmR1RRRecord	[46]	
mmR4RRqRecord	[47]	- ,
mmR4RRsRecord	[48]	
mmRMDRecord	[49]	
mmFRecord	[50]	
mmBx1SRecord	[51]	,
mmBx1VRecord	[52]	,
mmBx1URecord	[53]	
mmBx1DRecord	[54]	,
 mm7SRecord	[55]	<u> </u>
 mm7DRqRecord	[56]	1
 mm7DRsRecord	[57]	
 mm7CRecord	[58]	MM7CRecord,
 mm7RRecord	[59]	MM7RRecord,
 mm7DRRqRecord	[60]	
 mm7DRRsRecord	[61]	MM7DRRsRecord,
 mm7RRqRecord	[62]	MM7RRqRecord,
 mm7RRsRecord	[63]	MM7RRsRecord

}

1

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```
•••
```

<unmodified text>

```
...
_____
_ _
-- COMMON DATA TYPES
_ _
_____
AdditionalChgInfo
                      ::= SEQUENCE
{
   chargeIndicator [0] ChargeIndicator OPTIONAL,
chargeParameters [1] OCTET STRING OPTIONAL
}
AiurRequested
                     ::= ENUMERATED
{
   -- See Bearer Capability TS 24.008
-- (note that value "4" is intentionally missing
-- because it is not used in TS 24.008)
    ___
    aiur09600BitsPerSecond
                              (1),
                              (2),
    aiur14400BitsPerSecond
    aiur19200BitsPerSecond
                             (3),
                             (5),
    aiur28800BitsPerSecond
    aiur38400BitsPerSecond
                             (6),
    aiur43200BitsPerSecond
                              (7),
```

aiur57600BitsPerSecond

aiur38400BitsPerSecond1

```
aiur38400BitsPerSecond2
                               (10),
    aiur38400BitsPerSecond3
                                (11)
    aiur38400BitsPerSecond4
                                (12)
}
                ::= SEQUENCE
AOCParameters
{
    -- See TS 22.024.
    _ _
    е1
                       [1] EParameter OPTIONAL,
    e2
                       [2] EParameter OPTIONAL,
    e3
                        [3] EParameter OPTIONAL,
                        [4] EParameter OPTIONAL,
    e4
    e5
                        [5] EParameter OPTIONAL,
                        [6] EParameter OPTIONAL,
    eб
                        [7] EParameter OPTIONAL
    e7
}
AOCParmChange
                       ::= SEQUENCE
{
    changeTime
                      [0] TimeStamp,
                       [1] AOCParameters
    newParameters
}
BasicServices
                       ::= SET OF BasicServiceCode
                       ::= OCTET STRING
BCDDirectoryNumber
    -- This type contains the binary coded decimal representation of
    -- a directory number e.g. calling/called/connected/translated number.
    -- The encoding of the octet string is in accordance with the
    -- the elements "Calling party BCD number", "Called party BCD number"
    -- and "Connected number" defined in TS 24.008.
    -- This encoding includes type of number and number plan information
    -- together with a BCD encoded digit string.
    -- It may also contain both a presentation and screening indicator
    -- (octet 3a).
    -- For the avoidance of doubt, this field does not include
    -- octets 1 and 2, the element name and length, as this would be
    -- redundant.
CallDuration
                        ::= INTEGER
    -- The call duration in seconds.
    -- For successful calls this is the chargeable duration.
    -- For call attempts this is the call holding time.
CallEventRecordType
                      ::= INTEGER
    moCallRecord
                        (0),
    mtCallRecord
                        (1),
    roamingRecord
                       (2),
    incGatewayRecord
                      (3),
    outGatewayRecord
                        (4),
    transitCallRecord (5),
    moSMSRecord
                        (6),
   mtSMSRecord
                        (7),
    moSMSIWRecord
                       (8),
    mtSMSGWRecord
                        (9),
    ssActionRecord
                       (10),
    hlrIntRecord
                        (11),
    locUpdateHLRRecord (12),
    locUpdateVLRRecord (13),
    commonEquipRecord (14),
    moTraceRecord
                       (15),
    mtTraceRecord
                       (16),
    termCAMELRecord
                       (17),
-- Record values 18..22 are GPRS specific.
   The contents are defined in TS 32.015
_ _
___
    sgsnPDPRecord
                        (18),
    ggsnPDPRecord
                       (19),
    sgsnMMRecord
                        (20),
    sqsnSMORecord
                        (21),
```

(8),

(9),

```
sgsnSMTRecord
                           (22),
  _ _
  -- Record values 23..25 are CS-LCS specific.
  -- The contents are defined in the present document
  _ _
      mtLCSRecord
                           (23),
      moLCSRecord
                           (24),
      niLCSRecord
                           (25),
  ___
  -- Record values 26..28 are PS-LCS specific.
     The contents are defined in TS 32.215
  _ _
  _ _
      sgsnMtLCSRecord
                           (26),
      sgsnMoLCSRecord
                           (27),
      sgsnNiLCSRecord
                           (28),
 -- Record values 29..5362 are MMS specific.
_ _
      The contents are defined in TS 32.235
  ___
      mm01SRecord
                           (29),
      mmO4FRgRecord
                           (30),
      mmO4FRsRecord
                           (31),
      mmO4DRecord
                           (32),
      mm01DRecord
                           (33),
      mmO4RRecord
                           (34),
      mm01RRecord
                           (35),
      mmOMDRecord
                           (36),
      mmR4FRecord
                           (37),
      mmR1NRqRecord
                           (38),
      mmR1NRsRecord
                           (39),
      mmR1RtRecord
                           (40),
      mmR1AFRecord
                           (42),
      mmR4DRqRecord
                           (43),
                           (44),
      mmR4DRsRecord
      mmR1RRRecord
                           (45),
      mmR4RRqRecord
                           (46),
      mmR4RRsRecord
                           (47),
      mmRMDRecord
                           (48),
      mmFRecord
                           (49),
      mmBx1SRecord
                           (50),
      mmBx1VRecord
                           (51),
      mmBx1URecord
                           (52),
                           (53),
      mmBx1DRecord
      MM7SRecord
                           (54),
                           (55),
      MM7DRqRecord
      MM7DRsRecord
                           (56),
                           (57),
      MM7CRecord
                           (58),
      MM7RRecord
                           (59),
      MM7DRRqRecord
                           (60),
      MM7DRRsRecord
      MM7RRqRecord
                           (61),
      MM7RRsRecord
                           (62)
```

}

. . .

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End of Change in Clause 6 End of Document