Source: **SA5 (Telecom Management)**

Title: **2 Rel-4/5 CR 32.205 (Charging data description for the Circuit Switched (CS) domain) : Add inter-network accounting in the GMSC (only if CN#22 approved CN3 CR 29.007)**

Document for: **Decision**

Agenda Item: **7.5.3**

Doc-1st-Level	Spec	CR	Ph	Subject	Cat	Ver-Cur	Doc-2nd-Level	WI
SP-030619	32.205	021	Rel-4	Add inter-network accounting in the GMSC (only if CN#22 approved CN3 CR 29.007)	B	4.5.0	S5-034759	OAM-CH
SP-030619	32.205	022	Rel-5	Add inter-network accounting in the GMSC (only if CN#22 approved CN3 CR 29.007)	A	5.4.0	S5-034760	OAM-CH

3GPP TSG-SA5 (Telecom Management) **S5-034759**
Meeting #36, Shanghai, CHINA, 17 - 21 Nov 2003

CR-Form-v7

CHANGE REQUEST

⌘ **32.205** **CR** **021** ⌘ **rev** **-** ⌘ Current version: **4.5.0** ⌘

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

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

Title:	⌘	Add inter-network accounting in the GMSC (only if CN#22 approved CN3 CR 29.007)
Source:	⌘	SA5 (gerald.goermer@siemens.com)
Work item code:	⌘	OAM-CH
Date:	⌘	21/11/2003
Category:	⌘	**B**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Information on used services for MTCs is visible at the VMSC after negotiation with the UE, but not necessarily at the GMSC. In order to perform service related functions at GMSC (e.g. accounting) this information has to be transferred from the VMSC to the GMSC and possibly moreover to the connected networks.
Summary of change:	⌘	The ISDN BC, LLC and HLC are added to the incoming Gateway CDR.
Consequences if not approved:	⌘	Inter-operator charging is not possible for multimedia services in the CS domain.

Clauses affected:	⌘	2, 4.6 and 6			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	⌘ Rel-4 29.007 (This CR is based on N3-030821)
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR can be approved only if CN#22 has approved the CN3 CR on 29.007.			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

Change in clause 2

2 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.003: "Numbering, addressing and identification".

[3] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS)".

[4] 3GPP TS 24.008: "Mobile radio interface layer 3 specification; Core Network Protocols; Stage 3".

[5] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".

[6] ITU-T Recommendation X.121: "International numbering plan for public data networks".

[7] ISO 8824-1 (1994)/ITU-T Recommendation X.680 (1994): "Information technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation".

[8] ITU-T Recommendation X.208: "Specification of Abstract Syntax Notation One (ASN.1)"

[9] ITU-T Recommendation X.209: "Specification of basic encoding rules for Abstract Syntax Notation One (ASN.1)"

[10] 3GPP TS 22.024: "Description of Charge Advice Information (CAI)".

[11] 3GPP TS 22.086: "Advice of Charge (AoC) supplementary services - Stage 1".

[12] ITU-T Recommendation E.164: "The international public telecommunication numbering plan".

[13] 3GPP TS 29.078: "Customised Applications for Mobile network Enhanced Logic (CAMEL) Phase 3; CAMEL Application Part (CAP) specification".

[14] ITU-T Recommendation Q.767: "Application of the ISDN user part of CCITT signalling System No.7 for international ISDN interconnections".

[15] Void.

[16] Void.

[17] 3GPP TS 23.002: "Network Architecture".

[18] 3GPP TS 22.115: "Service aspects; Charging and billing".

[19] 3GPP TS 22.004: "General on Supplementary Services".

[20] 3GPP TS 22.003: "Circuit Teleservices Supported by a Public Land Mobile Network (PLMN)".

[21] 3GPP TS 22.002: "Circuit Bearer Services (BS) supported by a Public Land Mobile Network (PLMN)".

[22] 3GPP TS 32.200: "Telecommunication management; Charging management; Charging

principles".

[23] 3GPP TS 32.215: "Telecommunication management; Charging management; Charging data description for the Packet Switched (PS) domain".

[24] 3GPP TS 32.235: "Telecommunication management; Charging management; Charging data description for application services".

[25] Void.

[26] IETF RFC 959 (1985): "File Transfer Protocol"; J. Postel, J. Reynolds, ISI.

[27] IETF RFC 783 (1981): "TFTP Protocol (revision 2)"; K.R. Sollins MIT.[28] GSM 05.01: "Physical layer on the radio path; General description".

[29] Void.

[30] ITU-T Recommendation X.25: "Interface between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) for terminals operating in the packet mode and connected to public data networks by dedicated circuit".

[31] 3GPP TS 49.031: "Location Services (LCS); Base Station System Application Part LCS Extension (BSSAP-LE)".

[32] 3GPP TS 24.080: "Mobile radio Layer 3 supplementary service specification; Formats and coding".

[33] 3GPP TS 27.001: "General on Terminal Adaptation Functions (TAF) for Mobile Stations (MS)".

[34] 3GPP TS 29.007: “General requirements on interworking between the Public Land Mobile Network (PLMN) and the Integrated Services Digital Network (ISDN) or Public Switched Telephone Network (PSTN)”

[35] ITU-T Recommendation Q.931: "DSS 1 - ISDN user network interface layer 3 specification for basic call control". (this must be the same version as the one referenced by TS 29.007 [34])

End of Change

Change in clause 4.6

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	M	M	Incoming gateway record
Calling Number	C	C	The number of the calling party if available at this node.
Called Number	M	M	The address of the called party as seen by the GMSC. This is the number employed by the GMSC for routing.
Recording Entity	M	M	The E.164 number of the GMSC
Incoming TKGP	M	M	The incoming GMSC trunk group on which the call originated.
Outgoing TKGP	O_M	O_C	The trunk group on which the call left the GMSC. If available in 3G, this parameter shall be supplied.
Event time stamps:	M C O_M	M C O_M	Seizure time: time of incoming trunk seizure Answer time: time of answer (successful calls only) Release time: time of incoming trunk release
Call duration	M	M	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	C	-	If applicable and known at the GMSC
ISDN Bearer Capability	O_C	O_C	Present if this parameter is signalled back from the VMSC to the GMSC in the access transport parameter of the Answer message (ANM), see TS 29.007 [34].
Low Layer Compatibility	O_C	O_C	Present if this parameter is signalled back from the VMSC to the GMSC in the access transport parameter of the Answer message (ANM), see TS 29.007 [34].
High Layer Compatibility	O_C	O_C	Present if this parameter is signalled back from the VMSC to the GMSC in the access transport parameter of the Answer message (ANM), see TS 29.007 [34].
Cause for termination	M	M	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.
Sequence no.	C	C	Partial record sequence number, if applicable.
Record extensions	O_C	O_C	A set of network/ manufacturer specific extensions to the record, when available.
Location Routing Number (LRN)	-	O_C	Location Routing Number for Number Portability feature
LRN Source Indicator	-	O_C	LRN Source Indicator tells the source of the LRN
LRN Query Status Indicator	-	O_C	Status of Number Portability query.
JIP Parameter	-	O_C	Jurisdiction Information Parameter
JIP Source Indicator	-	O_C	JIP Source Indicator tells the source of the JIP
JIP Query Status Indicator	-	O_C	Status of Number Portability query.
Partial Record Type	-	O_C	Indicates the event (time limit etc.) that caused the generation of a partial record.

End of Change

Change in clause 6

…

```
IncGatewayRecord        ::= 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,
    iSDN-BC             [23] ISDN-BC OPTIONAL,
    lLC                 [24] LLC OPTIONAL,
    hLC                 [25] HLC OPTIONAL
}


……


GenericNumber           ::= BCDDirectoryNumber

GenericNumbers          ::= SET OF GenericNumber

Gsm-SCFAddress          ::= ISDN-AddressString
    --
    -- See TS 29.002
    --

HLC                     ::= OCTET STRING

-- this parameter is a 1:1 copy of the contents (i.e. starting with octet 3) of the “high layer
compatibility” parameter of ITU-T Q.931 [35].


HLRIntResult            ::= Diagnostics

HSCSDParmsChange        ::= SEQUENCE
{
    changeTime              [0] TimeStamp,
    hSCSDChanAllocated      [1] NumOfHSCSDChanAllocated,
    initiatingParty         [2] InitiatingParty OPTIONAL,
    aiurRequested           [3] AiurRequested OPTIONAL,
    chanCodingUsed          [4] ChannelCoding,
    hSCSDChanRequested      [5] NumOfHSCSDChanRequested OPTIONAL
}

IMEICheckEvent          ::= INTEGER
{
    mobileOriginatedCall    (0),
    mobileTerminatedCall    (1),
    smsMobileOriginating    (2),
    smsMobileTerminating    (3),
    ssAction                (4),
    locationUpdate          (5)
}

IMEIStatus              ::= ENUMERATED
{
    greyListedMobileEquipment       (0),
    blackListedMobileEquipment      (1),
    nonWhiteListedMobileEquipment   (2)
}

IMSIorIMEI              ::= CHOICE
{
    imsi                [0] IMSI,
    imei                [1] IMEI
}

InitiatingParty         ::= ENUMERATED
{
    network             (0),
    subscriber          (1)
}

ISDN-BC                 ::= OCTET STRING

-- this parameter is a 1:1 copy of the contents (i.e. starting with octet 3) of the “bearer
capability” parameter of ITU-T Q.931 [35].

LCSCause                ::= OCTET STRING (SIZE(1))
    --
    -- See LCS Cause Value, 3GPP TS 49.031
    --
```

```
LCSClientIdentity       ::= SEQUENCE
{
    lcsClientExternalID [0] LCSClientExternalID OPTIONAL,
    lcsClientDialedByMS [1] AddressString OPTIONAL,
    lcsClientInternalID [2] LCSClientInternalID OPTIONAL
}

LCSQoSInfo              ::= OCTET STRING (SIZE(4))
    --
    -- See LCS QoS IE, 3GPP TS 49.031
    --

LevelOfCAMELService     ::= BIT STRING
{
    basic                       (0),
    callDurationSupervision     (1),
    onlineCharging              (2)
}

LLC                     ::= OCTET STRING

-- this parameter is a 1:1 copy of the contents (i.e. starting with octet 3) of the “low layer
compatibility” parameter of ITU-T Q.931 [35].


LocationAreaAndCell     ::= SEQUENCE
{
    locationAreaCode    [0] LocationAreaCode,
    cellId              [1] CellId
}

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

……

End of Change

End of document

Annex B (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Mar 2001	S_11	SP-010025	--	--	Replaces Release 99 of 3GPP 32.005, which will be discontinued from Release 4 onwards.	-	1.0.0
Jun 2001	S_12	SP-010236	--	--	Re-submitted to SA#12 for Information	1.1.0	1.1.1
Sep 2001	S_13	SP-010464	--	--	Submitted to TSG SA #13 for Approval	2.0.0	4.0.0
Mar 2002	S_15	SP-020022	001	--	Addition of CAMEL phase 3 extensions in SMS-MO CDR	4.0.0	4.1.0
Mar 2002	--	--	--	--	Cosmetics (title, styles, formatting, etc.)	4.1.0	4.1.1
Jun 2002	S_16	SP-020285	004	--	Corrections of parameter CallEventRecord	4.1.1	4.2.0
Dec 2002	S_18	SP-020734	006	--	Corrections on parameter Destination Number	4.2.0	4.3.0
Dec 2002	S_18	SP-020736	008	--	Alignment of LCS charging	4.2.0	4.3.0
Dec 2002	S_18	SP-020808	011	--	Corrections on MMS records ASN.1 definition	4.2.0	4.3.0
Mar 2003	S_19	SP-030054	013	--	CDR correction for data services over Iu-interface - alignment with SA1's 22.002	4.3.0	4.4.0
Sep 2003	S_21	SP-030407	019	--	Correction to positioning data in ASN.1.	4.4.0	4.5.0
Sep 2003	S_21	SP-030407	020	--	Correction of ASN.1 code errors in LCS definitions	4.4.0	4.5.0

3GPP TSG-SA5 (Telecom Management) **S5-034760**
Meeting #36, Shanghai, CHINA, 17 - 21 Nov 2003

CR-Form-v7

CHANGE REQUEST

⌘ **32.205** **CR** **022** ⌘ **rev** **-** ⌘ Current version: **5.4.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Add inter-network accounting in the GMSC (only if CN#22 approved CN3 CR 29.007)
Source:	⌘	SA5 (gerald.goermer@siemens.com)
Work item code:	⌘	OAM-CH
Date:	⌘	21/11/2003
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Information on used services for MTCs is visible at the VMSC after negotiation with the UE, but not necessarily at the GMSC. In order to perform service related functions at GMSC (e.g. accounting) this information has to be transferred from the VMSC to the GMSC and possibly moreover to the connected networks.
Summary of change:	⌘	The ISDN BC, LLC and HLC are added to the incoming Gateway CDR.
Consequences if not approved:	⌘	Inter-operator charging is not possible for multimedia services in the CS domain.

Clauses affected:	⌘	2, 4.6 and 6			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	⌘ Rel-5 29.007 (This CR is based on N3-030821)
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This CR can be approved only if CN#22 has approved the CN3 CR on 29.007.			

How to create CRs using this form:
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Below is a brief summary:

Change in clause 2

2 References

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

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[2] 3GPP TS 23.003: "Numbering, addressing and identification".

[3] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS)".

[4] 3GPP TS 24.008: "Mobile radio interface layer 3 specification; Core Network Protocols; Stage 3".

[5] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".

[6] ITU-T Recommendation X.121: "International numbering plan for public data networks".

[7] ISO 8824-1 (1994)/ITU-T Recommendation X.680 (1994): "Information technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation".

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[9] ITU-T Recommendation X.209: "Specification of basic encoding rules for Abstract Syntax Notation One (ASN.1)"

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[12] ITU-T Recommendation E.164: "The international public telecommunication numbering plan".

[13] 3GPP TS 29.078: "Customised Applications for Mobile network Enhanced Logic (CAMEL) Phase 3; CAMEL Application Part (CAP) specification".

[14] ITU-T Recommendation Q.767: "Application of the ISDN user part of CCITT signalling System No.7 for international ISDN interconnections".

[15] Void.

[16] Void.

[17] 3GPP TS 23.002: "Network Architecture".

[18] 3GPP TS 22.115: "Service aspects; Charging and billing".

[19] 3GPP TS 22.004: "General on Supplementary Services".

[20] 3GPP TS 22.003: "Circuit Teleservices Supported by a Public Land Mobile Network (PLMN)".

[21] 3GPP TS 22.002: "Circuit Bearer Services (BS) supported by a Public Land Mobile Network (PLMN)".

[22] 3GPP TS 32.200: "Telecommunication management; Charging management; Charging

principles".

[23] 3GPP TS 32.215: "Telecommunication management; Charging management; Charging data description for the Packet Switched (PS) domain".

[24] 3GPP TS 32.235: "Telecommunication management; Charging management; Charging data description for application services".

[25] GSM 12.01: "Network Management (NM); Part 2: Common aspects of GSM/DCS 1800 network management". - This reference does NOT exist in Rel-5, hence needs to be replaced or removed.

[26] IETF RFC 959 (1985): "File Transfer Protocol"; J. Postel, J. Reynolds, ISI.

[27] IETF RFC 783 (1981): "TFTP Protocol (revision 2)"; K.R. Sollins MIT.[28] GSM 05.01: "Physical layer on the radio path; General description".

[29] GSM 08.08: "Mobile-services Switching Centre - Base Station System (MSC - BSS) interface; Layer 3 specification". - This reference does NOT exist in Rel-5, hence needs to be replaced e.g. by 48.008 or removed.

[30] ITU-T Recommendation X.25: "Interface between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) for terminals operating in the packet mode and connected to public data networks by dedicated circuit".

[31] 3GPP TS 49.031: "Location Services (LCS); Base Station System Application Part LCS Extension (BSSAP-LE)".

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[35] ITU-T Recommendation Q.931: "DSS 1 - ISDN user network interface layer 3 specification for basic call control". (this must be the same version as the one referenced by TS 29.007 [34])

End of Change

Change in clause 4.6

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	M	M	Incoming gateway record
Calling Number	C	C	The number of the calling party if available at this node.
Called Number	M	M	The address of the called party as seen by the GMSC. This is the number employed by the GMSC for routing.
Recording Entity	M	M	The E.164 number of the GMSC
Incoming TKGP	M	M	The incoming GMSC trunk group on which the call originated.
Outgoing TKGP	O_M	O_C	The trunk group on which the call left the GMSC. If available in 3G, this parameter shall be supplied.
Event time stamps:	M C O_M	M C O_M	Seizure time: time of incoming trunk seizure Answer time: time of answer (successful calls only) Release time: time of incoming trunk release
Call duration	M	M	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	C	-	If applicable and known at the GMSC
ISDN Bearer Capability	O_C	O_C	Present if this parameter is signalled back from the VMSC to the GMSC in the access transport parameter of the Answer message (ANM), see TS 29.007 [34].
Low Layer Compatibility	O_C	O_C	Present if this parameter is signalled back from the VMSC to the GMSC in the access transport parameter of the Answer message (ANM), see TS 29.007 [34].
High Layer Compatibility	O_C	O_C	Present if this parameter is signalled back from the VMSC to the GMSC in the access transport parameter of the Answer message (ANM), see TS 29.007 [34].
Cause for termination	M	M	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.
Sequence no.	C	C	Partial record sequence number, if applicable.
Record extensions	O_C	O_C	A set of network/ manufacturer specific extensions to the record, when available.
Location Routing Number (LRN)	-	O_C	Location Routing Number for Number Portability feature
LRN Source Indicator	-	O_C	LRN Source Indicator tells the source of the LRN
LRN Query Status Indicator	-	O_C	Status of Number Portability query.
JIP Parameter	-	O_C	Jurisdiction Information Parameter
JIP Source Indicator	-	O_C	JIP Source Indicator tells the source of the JIP
JIP Query Status Indicator	-	O_C	Status of Number Portability query.
Partial Record Type	-	O_C	Indicates the event (time limit etc.) that caused the generation of a partial record.

End of Change

Change in clause 6

…

```
IncGatewayRecord        ::= 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,
    jIPQueryStatus      [21] JurisdictionInformationParameterQueryStatus OPTIONAL,
    partialRecordType   [22] PartialRecordType OPTIONAL,
    iSDN-BC             [23] ISDN-BC OPTIONAL,
    lLC                 [24] LLC OPTIONAL,
    hLC                 [25] HLC OPTIONAL
}


……


GenericNumber           ::= BCDDirectoryNumber

GenericNumbers          ::= SET OF GenericNumber

Gsm-SCFAddress          ::= ISDN-AddressString
    --
    -- See TS 29.002
    --

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

HLC                     ::= OCTET STRING

-- this parameter is a 1:1 copy of the contents (i.e. starting with octet 3) of the “high layer
compatibility” parameter of ITU-T Q.931 [35].


HLRIntResult            ::= Diagnostics

HSCSDParmsChange        ::= SEQUENCE
{
    changeTime              [0] TimeStamp,
    hSCSDChanAllocated      [1] NumOfHSCSDChanAllocated,
    initiatingParty         [2] InitiatingParty OPTIONAL,
    aiurRequested           [3] AiurRequested OPTIONAL,
    chanCodingUsed          [4] ChannelCoding,
    hSCSDChanRequested      [5] NumOfHSCSDChanRequested OPTIONAL
}

IMEICheckEvent          ::= INTEGER
{
    mobileOriginatedCall    (0),
    mobileTerminatedCall    (1),
    smsMobileOriginating    (2),
    smsMobileTerminating    (3),
    ssAction                (4),
    locationUpdate          (5)
}

IMEIStatus              ::= ENUMERATED
{
    greyListedMobileEquipment       (0),
    blackListedMobileEquipment      (1),
    nonWhiteListedMobileEquipment   (2)
}

IMSIorIMEI              ::= CHOICE
{
    imsi                [0] IMSI,
    imei                [1] IMEI
}

InitiatingParty         ::= ENUMERATED
{
    network             (0),
```

```
    subscriber          (1)
}

ISDN-BC                 ::= OCTET STRING

-- this parameter is a 1:1 copy of the contents (i.e. starting with octet 3) of the “bearer
capability” parameter of ITU-T Q.931 [35].

LCSCause                ::= OCTET STRING (SIZE(1))
    --
    -- See LCS Cause Value, 3GPP TS 49.031
    --

LCSClientIdentity       ::= SEQUENCE
{
    lcsClientExternalID [0] LCSClientExternalID OPTIONAL,
    lcsClientDialedByMS [1] AddressString OPTIONAL,
    lcsClientInternalID [2] LCSClientInternalID OPTIONAL
}

LCSQoSInfo              ::= OCTET STRING (SIZE(4))
    --
    -- See LCS QoS IE, 3GPP TS 49.031
    --

LevelOfCAMELService     ::= BIT STRING
{
    basic                       (0),
    callDurationSupervision     (1),
    onlineCharging              (2)
}

LLC                     ::= OCTET STRING

-- this parameter is a 1:1 copy of the contents (i.e. starting with octet 3) of the “low layer
compatibility” parameter of ITU-T Q.931 [35].


LocationAreaAndCell     ::= SEQUENCE
{
    locationAreaCode    [0] LocationAreaCode,
    cellId              [1] CellId
}

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

……
```

End of Change

End of document

Annex B (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
Mar 2001	S_11	SP-010025	--	--	Replaces Release 99 of 3GPP 32.005, which will be discontinued from Release 4 onwards.	-	1.0.0
Jun 2001	S_12	SP-010236	--	--	Re-submitted to SA#12 for Information	1.1.0	1.1.1
Sep 2001	S_13	SP-010464	--	--	Submitted to TSG SA #13 for Approval	2.0.0	4.0.0
Mar 2002	S_15	SP-020022	001	--	Addition of CAMEL phase 3 extensions in SMS-MO CDR	4.0.0	4.1.0
Mar 2002	--	--	--	--	Cosmetics (title, styles, formatting, etc.)	4.1.0	4.1.1
Jun 2002	S_16	SP-020285	004	--	Corrections of parameter CallEventRecord	4.1.1	4.2.0
Dec 2002	S_18	SP-020734	006	--	Corrections on parameter Destination Number	4.2.0	4.3.0
Dec 2002	S_18	SP-020736	008	--	Alignment of LCS charging	4.2.0	4.3.0
Dec 2002	S_18	SP-020808	011	--	Corrections on MMS records ASN.1 definition	4.2.0	4.3.0
Mar 2003	S_19	SP-030054	013	--	CDR correction for data services over Iu-interface - alignment with SA1's 22.002	4.3.0	4.4.0
Sep 2003	S_21	SP-030407	019	--	Correction to positioning data in ASN.1.	4.4.0	4.5.0
Sep 2003	S_21	SP-030407	020	--	Correction of ASN.1 code errors in LCS definitions	4.4.0	4.5.0