Source: TSG-SA WG5

Title: CR to GSM 12.15 v7.3.0 (R98)

Document for: Approval

Agenda Item: 5.5.3

3GPP TSG-SA5 Meeting #8
Bonn, Germany, 07-10 Dec 1999

Document **S5-99276**

e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

12.15	CR	**A017**	Current Version:	7.3.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to: **TSG-SA #06**
list approval meeting # here ↑

for approval	**X**		strategic		*(for SMG*
for information			non-strategic		*use only)*

Form: CR cover sheet, version 1.1 for 3GPP and SMG   *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CRF-11.rtf*

Proposed change affects: (U)SIM ☐   ME ☐   UTRAN ☐   Core Network **X**
(at least one should be marked with an X)

Source:	T-Mobil	**Date:**	16.11.99

Subject: Addition of Operator Identifier part of the APN to the S-CDR

Work item:

Category: *(only one category shall be marked with an X)*

				Release:	
F	Correction	**X**		Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	**X**
D	Editorial modification			Release 99	

(releases phase2, 96, 97 and 98 apply only to GSM specifications)

Reason for change: Currently the APN field in the GPRS S-CDR contains only the APN Network Identifier. This can result in problems in the billing system, particularly in the case of roaming. Therefore the S-GSN shall also record the APN Operator Identifier in the S-CDR. This allows the billing system to easily determine from the S-CDR whether the APN used belonged to its own network or the visitor's home network.

Clauses affected: 6.1.1, 6.1.2, 6.1.6.1, 8.1

Other specs affected:

Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:

6.1.1 GPRS charging data in SGSN (S-CDR)

If the collection of SGSN data is enabled then the following GPRS SGSN data shall be available for each PDP context.

Table 5: GPRS SGSN PDP context data

Field		Description
Record Type	M	GPRS SGSN PDP context record.
Network Initiated PDP Context	C	Present if this is a network initiated PDP context.
Anonymous Access Indicator	C	Set to true to indicate anonymous access (and that the Served IMSI is not supplied)
Served IMSI	M	IMSI of the served party (if Anonymous Access Indicator is FALSE or not supplied).
Served IMEI	C	The IMEI of the ME, if available.
SGSN Address	M	The IP address of the current SGSN.
MS Network Capability	O	The mobile station Network Capability.
Routing Area	O	Routing Area at the time of the record creation.
Local Area Code	O	Location area code at the time of the record creation.
Cell Identity	O	Cell id at the time of the record creation.
Charging ID	M	PDP context identifier used to identify this PDP context in different records created by GSNs
GGSN Address Used	M	The IP address of the GGSN currently used. The GGSN address is always the same for an activated PDP.
Access Point Name Network Identifier	M	The logical name of the connected access point to the external packet data network (network identifier part of APN).
PDP Type	M	PDP type, e.g. X.25, IP, PPP, IHOSS:OSP
Served PDP Address	M	PDP address of the served IMSI, e.g. an IPv4, IPv6 or X.121.
List of Traffic Data Volumes	M	A list of changes in charging conditions for this PDP context, each time stamped. Charging conditions are used to categorise traffic volumes, such as per QoS/tariff period. Initial and subsequently changed QoS and corresponding data values are listed. Data volumes are in Octets above the SNDCP layer and are separated for uplink and downlink traffic.
Record Opening Time	M	Time stamp when PDP context activation is created in this SGSN or record opening time on following partial records
Duration	M	Duration of this record in the SGSN.
SGSN Change	C	Present if this is first record after SGSN change.
Cause for Record Closing	M	The reason for the release of record from this SGSN.
Diagnostics	O	A more detailed reason for the release of the connection.
Record Sequence Number	C	Partial record sequence number in this SGSN. Only present in case of partial records.
Node ID	O	Name of the recording entity
Record Extensions	O	A set of network/ manufacturer specific extensions to the record.
Local Record Sequence Number	O	Consecutive record number created by this node. The number is allocated sequentially including all CDR types.
Access Point Name Operator Identifier	M	The Operator Identifier part of the APN.

6.1.2   GPRS charging data in GGSN (G-CDR)

If the collection of GGSN data is enabled then the following GPRS GGSN data shall be available for each PDP context.

Table 6: GPRS GGSN PDP context data

Field		Description
Record Type	M	GPRS GGSN PDP context record.
Network initiated PDP context	C	Present if this is a network initiated PDP context.
Anonymous Access Indicator	C	Set to true to indicate anonymous access (and that the Served IMSI is not supplied).
Served IMSI	M	IMSI of the served party (if Anonymous Access Indicator is FALSE or not supplied).
GGSN Address	M	The IP address of the GGSN used.
Charging ID	M	PDP context identifier used to identify this PDP context in different records created by GSNs
SGSN Address	M	List of SGSN addresses used during this record.
Access Point Name Network Identifier	M	The logical name of the connected access point to the external packet data network (network identifier part of APN).
PDP Type	M	PDP type, e.g. X.25, IP, PPP, or IHOSS:OSP
Served PDP Address	M	PDP address, e.g. an IPv4, IPv6 or X.121.
Remote PDP Address	O	List of PDP addresses of the remote host or DTE e.g. an IPv4, IPv6, or X.121 (Included if the PDP type is X.25)
Dynamic Address Flag	C	Indicates whether served PDP address is dynamic, that is allocated during PDP context activation.
List of Traffic Data Volumes	M	A list of changes in charging conditions for this PDP context, each time stamped. Charging conditions are used to categorise traffic volumes, such as per tariff period. Initial and subsequently changed QoS and corresponding data values are listed. Data volumes are in octets above the GTP layer and are separated for uplink and downlink traffic.
Record Opening Time	M	Time stamp when this record was opened.
Duration	M	Duration of this record in the GGSN .
Cause for Record Closing	M	The reason for the release of record from this GGSN .
Diagnostics	O	A more detailed reason for the release of the connection.
Record Sequence Number	C	Partial record sequence number, only present in case of partial records.
Node ID	O	Name of the recording entity.
Record Extensions	O	A set of network/ manufacturer specific extensions to the record.
Local Record Sequence Number	O	Consecutive record number created by this node. The number is allocated sequentially including all CDR types.

6.1.6.1   Access Point Name

This field contains the logical Access Point Name used to determine the actual connected access point. APN comprises of ~~mandatory~~ network identifier and ~~optional~~ operator identifier. APN can also be a wildcard, in which case SGSN selects the access point address. See GSM ~~09.60~~03.03 [~~22~~4] and GSM 03.60 [8] for more information about APN format and access point decision rules.

8.1   ASN.1 definitions for CDR information

```
........................

GGSNPDPRecord    ::= SET
{
     recordType                 [0] CallEventRecordType,
     networkInitiation          [1] NetworkInitiatedPDPContext OPTIONAL,
     anonymousAccessIndicator   [2] BOOLEAN OPTIONAL,
     servedIMSI                 [3] IMSI,
     ggsnAddress                [4] GSNAddress,
     chargingID                 [5] ChargingID,
     sgsnAddress                [6] SEQUENCE OF GSNAddress,
     accessPointNameNI          [7] AccessPointNameNI,
     pdpType                    [8] PDPType,
     servedPDPAddress           [9] PDPAddress,
     remotePDPAddress           [10] SEQUENCE OF PDPAddress OPTIONAL,
     dynamicAddressFlag         [11] DynamicAddressFlag OPTIONAL,
     listOfTrafficVolumes       [12] SEQUENCE OF ChangeOfCharCondition,
     recordOpeningTime          [13] TimeStamp,
     duration                   [14] CallDuration,
     causeForRecClosing         [15] CauseForRecClosing,
     diagnostics                [16] Diagnostics OPTIONAL,
     recordSequenceNumber       [17] INTEGER OPTIONAL,
     nodeID                     [18] NodeID OPTIONAL,
     recordExtensions           [19] ManagementExtensions OPTIONAL,
     localSequenceNumber        [20] LocalSequenceNumber OPTIONAL
}

SGSNPDPRecord    ::= SET
{
     recordType                 [0] CallEventRecordType,
     networkInitiation          [1] NetworkInitiatedPDPContext OPTIONAL,
     anonymousAccessIndicator   [2] BOOLEAN OPTIONAL,
     servedIMSI                 [3] IMSI ,
     servedIMEI                 [4] IMEI OPTIONAL,
     sgsnAddress                [5] GSNAddress,
     msNetworkCapability        [6] MSNetworkCapability OPTIONAL,
     routingArea                [7] RoutingAreaCode OPTIONAL,
     locationAreaCode           [8] LocationAreaCode OPTIONAL,
     cellIdentity               [9] CellId OPTIONAL,
     chargingID                 [10] ChargingID,
     ggsnAddressUsed            [11] GSNAddress,
     accessPointNameNI          [12] AccessPointNameNI,
     pdpType                    [13] PDPType,
     servedPDPAddress           [14] PDPAddress,
     listOfTrafficVolumes       [15] SEQUENCE OF ChangeOfCharCondition,
     recordOpeningTime          [16] TimeStamp,
     duration                   [17] CallDuration,
     sgsnChange                 [18] SGSNChange OPTIONAL,
     causeForRecClosing         [19] CauseForRecClosing,
     diagnostics                [20] Diagnostics OPTIONAL,
     recordSequenceNumber       [21] INTEGER OPTIONAL,
     nodeID                     [22] NodeID OPTIONAL,
     recordExtensions           [23] ManagementExtensions OPTIONAL,
     localSequenceNumber        [24] LocalSequenceNumber OPTIONAL
     accessPointNameOI          [25] AccessPointNameOI
}..........

AccessPointNameNI    ::= IA5String (SIZE(1..63))
     --
     -- Network Identifier part of APN logical (domain) name in "dot" representation
     -- see GSM 09.60 03.03
     --

AccessPointNameOI     ::= IA5String (SIZE(1..37))
     --
     -- Operator Identifier part of APN in dot representation
     -- see GSM 03.03
     --

CauseForRecClosing   ::= INTEGER
..........
```