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**Source:** SA5 (Telecom Management)  
**Title:** 2 Rel-5 CRs 32.200/32.215 (PS/Bearer Charging) : "Addition of SGSN's Mobile Country Code (MCC) and Mobile Network Code (MNC) on G-CDR - alignment with CN4's 29.060"  
**Document for:** Approval  
**Agenda Item:** 7.5.3

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Doc-1st-Level	Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Doc-2nd-Level	Workitem
SP-030055	32.200	021	-	Rel-5	<b>Addition of 'Inter-PLMN SGSN change' as partial output record trigger for G-CDR - alignment with CN4's 29.060</b>	F	5.2.0	S5-034011	OAM-CH
SP-030055	32.215	025	-	Rel-5	<b>Addition of SGSN's Mobile Country Code (MCC) and Mobile Network Code (MNC) on G-CDR - alignment with CN4's 29.060</b>	F	5.2.0	S5-034012	OAM-CH

## CHANGE REQUEST

⌘ **32.200 CR 021** ⌘ rev **-** ⌘ Current version: **5.2.0** ⌘

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

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

<b>Title:</b>	⌘	Addition of 'Inter-PLMN SGSN change' as partial output record trigger for G-CDR - alignment with CN4's 29.060	
<b>Source:</b>	⌘	S5	
<b>Work item code:</b>	⌘	OAM-CH	<b>Date:</b> ⌘ 28/02/2003
<b>Category:</b>	⌘	<b>F</b>	<b>Release:</b> ⌘ Rel-5
		Use <u>one</u> of the following categories:	Use <u>one</u> of the following releases:
		<b>F</b> (correction)	2 (GSM Phase 2)
		<b>A</b> (corresponds to a correction in an earlier release)	R96 (Release 1996)
		<b>B</b> (addition of feature),	R97 (Release 1997)
		<b>C</b> (functional modification of feature)	R98 (Release 1998)
		<b>D</b> (editorial modification)	R99 (Release 1999)
		Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .	Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

<b>Reason for change:</b>	⌘	The MNC and MCC of the serving SGSN have been added to the G-CDR therefore G-CDR must be closed when the UE performs an inter-PLMN SGSN change.
<b>Summary of change:</b>	⌘	'Inter-PLMN SGSN change' added as partial output trigger for G-CDR.
<b>Consequences if not approved:</b>	⌘	It is not possible to correlate data volumes with the applicable SGSN based on information in the G-CDR.

<b>Clauses affected:</b>	⌘	6.2.1.3								
<b>Other specs affected:</b>	⌘	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"> </td> </tr> </table> Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘ 32.215	Y	N		X		X	X	
Y	N									
	X									
	X									
X										
<b>Other comments:</b>	⌘	Corresponding CR to TS 32.215 provided in S5-034012.								

### 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:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

- 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 6.2.1.3****6.2.1.3 Triggers for G-CDR Charging Information Collection**

A G-CDR is used to collect charging information related to the packet data information for a mobile in the GGSN.

If, according to the Charging Characteristics profile data, CDR generation is activated a G-CDR shall be opened at PDP context activation. The record includes details such as Record Type, Served IMSI, Sequence Number etc. Not all of the charging information to be collected is static, and other charging information is directly dependent on dynamic Packet-Switched service usage.

The "List of Traffic Data Volumes" attribute of the G-CDR consists of a set of containers, which are added following specific trigger conditions, and identify the volume count on encountering that trigger condition. The trigger conditions are as for the S-CDR (see subclause 6.2.2.1 on "Triggers for S-CDR Charging Information Collection") with [the following](#) exceptions:

- ~~that~~ an SGSN change will not close the G-CDR
- [an inter-PLMN SGSN change shall causes the closure of a partial record](#).

Subsequent partial records may be opened if the G-CDR is closed and the PDP context is still active.

The Partial Record generation trigger thresholds are those associated with to the determined Charging Characteristics profile data. The Charging Characteristics profile data is determined as defined in 3GPP TS32.215 [6].

The Partial Record generation trigger thresholds are GSN configuration parameters defined per charging characteristics profile by the operator through O&M means (refer to 3GPP TS32.215 [6]).

In the event that the G-CDR is closed and the PDP context remains active, a further G-CDR is opened with an incremented Sequence Number in the GGSN.

**End of Change in Clause 6.2.1.3  
End of Document**

CR-Form-v7

## CHANGE REQUEST

⌘ **32.215 CR 025** ⌘ rev **-** ⌘ Current version: **5.2.0** ⌘

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

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

<b>Title:</b>	⌘	Addition of SGSN's Mobile Country Code (MCC) and Mobile Network Code (MNC) on G-CDR - alignment with CN4's 29.060	
<b>Source:</b>	⌘	S5	
<b>Work item code:</b>	⌘	OAM-CH	<b>Date:</b> ⌘ 28/02/2003
<b>Category:</b>	⌘	<b>F</b>	<b>Release:</b> ⌘ Rel-5
		Use <u>one</u> of the following categories:	Use <u>one</u> of the following releases:
		<b>F</b> (correction)	2 (GSM Phase 2)
		<b>A</b> (corresponds to a correction in an earlier release)	R96 (Release 1996)
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		<b>C</b> (functional modification of feature)	R98 (Release 1998)
		<b>D</b> (editorial modification)	R99 (Release 1999)
		Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .	Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

<b>Reason for change:</b>	⌘	The MCC and MNC of the serving SGSN are missing from the G-CDR. The changes are done as a result of requirements received from SA2 and CN4, as specified in S2-022619 and S5-020627.	
<b>Summary of change:</b>	⌘	SGSN PLMN identifier (MCC and MNC) is added to the G-CDR	
<b>Consequences if not approved:</b>	⌘	Identification of the serving SGSN's location (PLMN) is not possible in a standardized way.	

<b>Clauses affected:</b>	⌘	4.3, 5.52, 6							
<b>Other specs affected:</b>	⌘	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X	X	X	X	⌘ 32.200
Y	N								
X	X								
X	X								
<b>Other comments:</b>	⌘	Corresponding Rel-5 32.200 CR: S5-034011.							

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### Change in Clause 4.3

## 4.3 Charging data in GGSN (G-CDR)

If the collection of CDR data is enabled then the GGSN data specified in Table 2 shall be available for each PDP context. The table provides a brief description of each field. A more elaborate definition of the fields, sorted by the field name in alphabetical order, is provided in Clause 5.

**Table 2: GGSN PDP context data (G-CDR)**

Field	Category	Description
Record Type	M	GGSN PDP context record.
Network initiated PDP context	O <sub>C</sub>	A flag that is present if this is a network initiated PDP context.
Served IMSI	M	IMSI of the served party
GGSN Address used	M	The control plane 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	O <sub>M</sub>	The logical name of the connected access point to the external packet data network (network identifier part of APN).
PDP Type	O <sub>M</sub>	PDP type, i.e. IP, PPP, or IHOSS:OSP
Served PDP Address	O <sub>C</sub>	PDP address, i.e. IPv4 or IPv6. This parameter shall be present except when both the PDP type is PPP and dynamic PDP address assignment is used.
Dynamic Address Flag	O <sub>C</sub>	Indicates whether served PDP address is dynamic, which is allocated during PDP context activation. This field is missing if address is static.
List of Traffic Data Volumes	O <sub>M</sub>	A list of changes in charging conditions for this PDP context, each change is 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.
Record Opening Time	M	Time stamp when PDP context is activated in this GGSN or record opening time on subsequent partial records.
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 <sub>M</sub>	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 <sub>M</sub>	Name of the recording entity.
Record Extensions	O <sub>C</sub>	A set of network operator/manufacturer specific extensions to the record. Conditioned upon the existence of an extension.
Local Record Sequence Number	O <sub>M</sub>	Consecutive record number created by this node. The number is allocated sequentially including all CDR types.
APN Selection Mode	O <sub>M</sub>	An index indicating how the APN was selected.
Served MSISDN	O <sub>M</sub>	The primary MSISDN of the subscriber.
Charging Characteristics	M	The Charging Characteristics applied to the PDP context.
Charging Characteristics Selection Mode	O <sub>M</sub>	Holds information about how Charging Characteristics were selected.
IMS Signalling Context	O <sub>C</sub>	Included if the PDP context is used for IMS signalling
External Charging Identifier	O <sub>C</sub>	A Charging Identifier received from a none-GPRS, external network entity
SGSN PLMN Identifier	O <sub>M</sub>	<a href="#">SGSN PLMN Identifier (MCC and MNC) used during this record.</a>

### End of Change in Clause 4.3

### Change in Clause 5.52

## 5.51 SGSN Change

This field is present only in the S-CDR to indicate that this is the first record after an inter-SGSN routing area update.

## 5.52 SGSN PLMN Identifier

This field contains a SGSN PLMN Identifier (Mobile Country Code and Mobile Network Code), for the SGSNs which have been connected during the record. This implies that when the MS moves to another PLMN, the G-CDR has to be closed.

The MCC and MNC are coded as described for 'Routing Area Identity' in [8].

**End of Change in Clause 5.52**

**Change in Clause 6**

# 6 Charging Data Record Structure

## 6.1 ASN.1 definitions for CDR information

...

<unmodified text>

....

-----  
 --  
 -- CALL AND EVENT RECORDS  
 --  
 -----

```

GGSNPDPPRecord ::= SET
{
    recordType                [0] CallEventRecordType,
    networkInitiation         [1] NetworkInitiatedPDPCContext OPTIONAL,
    servedIMSI                [3] IMSI,
    ggsnAddress                [4] GSNAddress,
    chargingID                 [5] ChargingID,
    sgsnAddress                [6] SEQUENCE OF GSNAddress,
    accessPointNameNI         [7] AccessPointNameNI OPTIONAL,
    pdpType                    [8] PDPTType OPTIONAL,
    servedPDPAddress           [9] PDPAddress OPTIONAL,
    dynamicAddressFlag         [11] DynamicAddressFlag OPTIONAL,
    listOfTrafficVolumes       [12] SEQUENCE OF ChangeOfCharCondition OPTIONAL,
    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,
    apnSelectionMode           [21] APNSelectionMode OPTIONAL,
}
    
```

```
servedMSISDN          [22] MSISDN OPTIONAL,  
chargingCharacteristics [23] ChargingCharacteristics,  
chChSelectionMode     [24] ChChSelectionMode OPTIONAL,  
iMSSignalingContext   [25] NULL OPTIONAL,  
externalChargingID    [26] OCTET STRING OPTIONAL,  
sgsnPLMNIdentifier    [27] PLMN-Id  
}
```

...

<unmodified text>

....

```
PDPTType ::= OCTET STRING (SIZE(2))  
--  
-- OCTET 1: PDP Type Organization  
-- OCTET 2: PDP Type Number  
-- See TS 29.060  
--
```

```
PLMN-Id ::= OCTET STRING (SIZE (3))  
-- This is a 1:1 copy from the Routing Area Identity (RAI) IE specified in TS 29.060  
-- as follows:  
-- OCTET 1 of PLMN-Id = OCTET 2 of RAI  
-- OCTET 2 of PLMN-Id = OCTET 3 of RAI  
-- OCTET 3 of PLMN-Id = OCTET 4 of RAI
```

<b>End of Change in Clause 6 End of Document</b>
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