

Technical Specification Group Services and System Aspects  
Meeting #11, Palm Springs, CA, USA, 19-22 March 2001

**TSGS#11(01)0137**

**Source:** SA WG3  
**Title:** 1 Corrective CR to 33.107 version 3.1.0  
**Document for:** Approval  
**Agenda Item:** 7.3.3

The following CR was agreed at SA WG3 meeting #17 and is presented to TSG SA #11 for approval.

Spec	CR	Rev	Phase	Subject	Cat	Ver	WG	Meeting	S3 doc
33.107	002		R99	Correction of Location information parameters in interception event records	F	3.1.0	S3	S3-17	S3-010062

## CHANGE REQUEST

⌘ **33.107 CR 002** ⌘ rev **-** ⌘ Current version: **3.1.0** ⌘

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

**Proposed change affects:** ⌘ (U)SIM  ME/UE  Radio Access Network  Core Network

<b>Title:</b>	⌘ Correction of Location information parameters in interception event records		
<b>Source:</b>	⌘ SA WG3		
<b>Work item code:</b>	⌘ Security	<b>Date:</b>	⌘ 25.01.2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ R99
	<i>Use <u>one</u> of the following categories:</i> <b>F</b> (essential correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (Addition of feature), <b>C</b> (Functional modification of feature) <b>D</b> (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use <u>one</u> of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)

<b>Reason for change:</b>	⌘ To correct the location information required in interception for the information available at the 3G MSC, rather than the GSM MSC.
<b>Summary of change:</b>	⌘ Replacement of Cell ID and location area code by Location information present at the 3G MSC. Deletion of Cell Global Identity parameter.
<b>Consequences if not approved:</b>	⌘ No delivery of location information to the interception agency

<b>Clauses affected:</b>	⌘ 6.3.2, 6.3.3, 6.3.4, 7.3.2, 7.4	
<b>Other specs affected:</b>	⌘ <input type="checkbox"/> Other core specifications	⌘
	<input type="checkbox"/> Test specifications	
	<input type="checkbox"/> O&M Specifications	
<b>Other comments:</b>	⌘	

## 6.3.2 Structure of the events

The information sent to DF2 is triggered by up to eight different call related and non-call related events. Details are described in following subclause. The events for interception are configurable (if they are sent to DF2) in the 3G MSC and can be suppressed in the DF2. The events are listed as follows:

Call Related Events:

- Call Establishment
- Answer
- Supplementary Service
- Handover
- Release

Non Call Related Events:

- SMS
- Location Update
- Subscriber Controlled Input

Table 1 below shows the set of information that is used to generate the events. The events transmit the information from the 3G MSC to DF2. This set of information can be extended in the 3G MSC, if this is necessary in a specific country. DF2 can extend this information if this is necessary in a specific country e.g. a unique number for each surveillance warrant.

**Table 1: Information Elements for Circuit Event records**

Observed MSISDN Target Identifier with the MSISDN of the target subscriber (monitored subscriber).
Observed IMSI Target Identifier with the IMSI of the target subscriber (monitored subscriber).
Observed IMEI Target Identifier with the IMEI of the target subscriber (monitored subscriber), It shall be checked for each call over the radio interface
event type Description which type of event is delivered: Establishment, Answer, Supplementary service, Handover, Release, SMS, Location update, Subscriber controlled input
event date Date of the event generation in the 3G MSC
event time Time of the event generation in the 3G MSC
dialled number Dialled phone number before digit modification, IN-modification etc.
Connected number Number of the answering party
other party address Directory number of the other party for MOC Calling party for MTC
call direction Information if the monitored subscriber is calling or called e.g. MOC/MTC or originating/ terminating In or/out
Correlation number Unique number for each call sent to the DF, to help the LEA, to have a correlation between each Call and the IRI
cell id Cell number of the target; for the location information
Location Information area code Location-area-code of the target defines the Location Area in a PLMN <u>Location information is the service area identity and/or location area identity that is present at the 3G MSC at the time of event record production.</u>
basic service Information about Tele service or bearer service.
Supplementary service Supplementary services used by the target e.g. CF, CW, ECT
Forwarded to number Forwarded to number at CF
call release reason Call release reason of the target call
SMS Message The SMS content with header which is sent with the SMS-service
Redirecting number The number which invokes the call forwarding towards the target. This is provided if available.
SCI Non call related Subscriber Controlled Input (SCI) which the 3G MSC receives from the ME

### 6.3.3 Call Related events

#### 6.3.3.1 Call establishment

For call establishment a call establishment-event is generated. This event is generated at the beginning of a call when the 3G MSC attempts to reach the subscriber. This information will be delivered to the DF2 if available:

Observed MSISDN
Observed IMSI
Observed IMEI
event type
event date
event time
dialled number
other party address
call direction
Correlation number
Redirecting number
cell id
Location area code information
basic service
Supplementary service

#### 6.3.3.2 Answer

If the called party answers, an answer- event is generated. This information will be delivered to the DF2 if available:

Observed MSISDN
Observed IMSI
Observed IMEI
event type
event date
event time
dialled number
other party address
Connected party
call direction
Correlation number
Redirecting number
cell id
Location area code information
basic service
Supplementary service

### 6.3.3.3 Supplementary Services

For supplementary services events are generated with the information which supplementary service is used e.g. Call Forwarding (CF), Call Waiting (CW), Explicit Call Transfer (ECT), Multi Party (MPTY), Call Hold and information correlated to the service like the forwarded to number. This information will be delivered to the DF2 if available:

Observed MSISDN
Observed IMSI
Observed IMEI
event type
event date
event time
dialled number
other party address
call direction
Correlation number
cell id
Location area code information
basic service
Supplementary service
Forwarded to number

### 6.3.3.4 Handover

For each handover that is realised at the 3G MSC due to a target Cell ID change in target location information, a handover-event with the information about the new location information cell ID is generated. This information will be delivered to the DF2 if available:

Observed MSISDN
Observed IMSI
Observed IMEI
event type
event date
event time
Correlation number
cell id
Location area code information

### 6.3.3.5 Release

For the release or failed attempt of a target call, a release event with the following information is generated. This information will be delivered to the DF2 if available:

Observed MSISDN
Observed IMSI
Observed IMEI
event type
event date
event time
dialled number
other party address
call direction
Correlation number
cell id
Location area code information
basic service
call release reason

### 6.3.4 Non Call Related events

#### 6.3.4.1 SMS

For MO-SMS the event is generated in the 3G MSC, when the SMSC successfully receives the SMS; for MT-SMS the event is generated in the 3G MSC when the target receives the message. This information will be delivered to the DF2 if available:

Observed MSISDN
Observed IMSI
event type
event date
event time
cell id
<del>Location area code</del> information
SMS Message

#### 6.3.4.2 Location update

For location updates a Location update-event is generated, with the new location (~~Location area~~)-information. This information will be delivered to the DF2 if available:

Observed MSISDN
observed IMSI
event type
event date
event time
cell id
<del>location area code</del> information

#### 6.3.4.3 Subscriber Controlled Input (SCI)

SCI includes subscriber initiated changes in service activation and deactivation. SCI does not include any information available in the CC. For subscriber controlled inputs - a SCI-event is generated with information about the SCI. This information will be delivered to the DF2 if available:

observed MSISDN
observed IMSI
event type
event date
event time
cell id
<del>location area code</del> location information
SCI

\*\* NEXT CHANGED SECTION \*\*

### 7.3.2 Structure of the events

There are seven different events in which the information is sent to the DF2P if this is required. Details are described in the following section. The events for interception are configurable (if they are sent to DF2P) in the 3G GSN and can be suppressed in the DF2P.

**The following events are applicable to 3G SGSN:**

- Mobile Station Attach;
- Mobile Station Detach;

- PDP context activation;
- Start of intercept with PDP context active;
- PDP context deactivation;
- Cell and/or RA update;
- SMS.

NOTE: 3G GGSN interception is a national option. Location information may not be available in this case.

The following events are applicable to the 3G GGSN:

- PDP context activation ;
- PDP context deactivation ;
- Start of interception with PDP context active.

A set of fields as shown below is used to generate the events. The events transmit the information from 3G GSN to DF2P. This set of fields as shown below can be extended in the 3G GSN, if this is necessary as a national option. DF2P can extend this information if this is necessary as a national option e.g. a unique number for each surveillance warrant.

**Table 2: Information Events for Packet Data Event Records**

Observed MSISDN MSISDN of the target subscriber (monitored subscriber)
Observed IMSI IMSI of the target subscriber (monitored subscriber)
Observed IMEI IMEI of the target subscriber (monitored subscriber),it shall be checked for each activation over the radio interface.
Event type Description which type of event is delivered: PDP attach, PDP detach, PDP context activation, Start of intercept with PDP context active, PDP context deactivation, SMS, Cell and/or RA update,
Event date Date of the event generation in the 3G GSN
Event time Time of the event generation in the 3G GSN
PDP address The PDP address of the target subscriber. Note that this address might be dynamic.
Access Point Name The APN of the access point. (Typically the GGSN of the other party)
Routing Area Code The routing area code of the target defines the RA in a PLMN.
PDP Type The used PDP type.
Correlation Number The correlation number is used to correlate CC and IRI.
SMS The SMS content with header which is sent with the SMS-service. The header also includes the SMS-Centre address.
CGI Cell Global Identity
Failed attach reason Reason for failed attach of the target subscriber.
Failed context activation reason Reason for failed context activation of the target subscriber.
IAs The observed Interception Areas



## 7.4 Packet Data related events

### 7.4.1 Mobile Station Attach

For attach an attach-event is generated. When an attach activation is generated from the mobile to servicing 3G G SN this event is generated. These fields will be delivered to the DF2P if available:

Observed MSISDN
Observed IMSI
Observed IMEI
Event Type
Event Time
Event Date
CGI
Routing area code
Failed attach reason
IAs (if applicable)

### 7.4.2 Mobile Station Detach

For detach a detach-event is generated, this is for the common (end) detach. These fields will be delivered to the DF2P if available:

Observed MSISDN
Observed IMSI
Observed IMEI
Event Type
Event Time
Event Date
CGI
Routing Area code
IAs (if applicable)

### 7.4.3 Packet Data PDP context activation

For PDP context activation a PDP context activation-event is generated. When a PDP context activation is generated from the mobile to 3G GSN this event is generated. These fields will be delivered to the DF2P if available:

Observed MSISDN
Observed IMSI
Observed IMEI
PDP address of observed party
Event Type
Event Time
Event Date
Correlation number
Access Point Name
PDP Type
CGI
Routing area code
Failed context activation reason
IAs (if applicable)

#### 7.4.4 Start of interception with PDP context active

This event will be generated if interception for a target is started and if the target has at least one PDP context active. If more than one PDP context are open for each of them an event record is generated. These fields will be delivered to the DF2P if available:

Observed MSISDN
Observed IMSI
Observed IMEI
PDP address of observed party
Event Type
Event Time
Event Date
Correlation number
Access Point Name
PDP Type
CGI
Routing area code
IAs (if applicable)

#### 7.4.5 Packet Data PDP context deactivation

At PDP context deactivation a PDP context deactivation-event is generated. These fields will be delivered to the DF2P if available:

Observed MSISDN
Observed IMSI
Observed IMEI
PDP address of observed party
Event Type
Event Time
Event Date
Correlation number
Access point name
CGI
Routing area code
IAs (if applicable)

#### 7.4.6 Cell and/or RA update

For each cell and/or RA update an update-event with the fields about the new location is generated. These fields will be delivered to the DF2P if available:

Observed MSISDN
Observed IMSI
Observed IMEI
Event Type
Event Time
Event Date
CGI
Routing area code
IAs (if applicable)

#### 7.4.7 SMS

For MO-SMS the event is generated in the 3G SGSN, when the SMS-Centre successfully receives the SMS; for MT-SMS the event is generated in the 3G SGSN when the target receives the message. These fields will be delivered to the DF2P if available:

Observed MSISDN
Observed IMSI
Observed IMEI
Event Type
Event Time
Event Date
<del>CGI</del>
Routing area code
SMS
IAs (if applicable)