Technical Specification Group Services and System Aspects
Meeting #16, Marco Island, Florida, 10-13 June 2002

TSGS#16(02)0345

Source: **SA WG3**

Title: **3 CRs to 33.107: "Changes to 33.107 to support interception at a GGSN", "Addition of SMS type information" and "Inclusion of Serving System IRI in TS 33.107" (Rel-5)**

Document for: **Approval**

Agenda Item: **7.3.3**

SA doc#	Spec	CR	R	Phase	Subject	Cat	Current Version	WI	SA WG3 doc#
SP-020345	33.107	023		Rel-5	Changes to 33.107 to support interception at a GGSN	C	5.2.1	SEC1-LI	S3-020257
SP-020345	33.107	024		Rel-5	Addition of SMS type information	B	5.2.1	SEC1-LI	S3-020263
SP-020345	33.107	025		Rel-5	Inclusion of Serving System IRI in TS 33.107	C	5.2.1	SEC1-LI	S3-020310

3GPP TSG SA WG3 Security — S3#23 **S3-020257**

14 - 17 May 2002

Victoria, Canada

3GPP TSG-SA WG3 LI ***Tdoc S3LI02_082***

Orlando, Florida 09 – 11 April 2002

CR-Form-v4

CHANGE REQUEST

⌘ **33.107** **CR** **023** ⌘ rev **-** ⌘ Current version: **5.2.1** ⌘

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

Title:	⌘	Changes to 33.107 to support interception at a GGSN.
Source:	⌘	SA WG3
Work item code:	⌘	SEC1-LI
Date:	⌘	09 April 2002
Category:	⌘	**C**
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)

Reason for change:	⌘	Clarify continued interception at GGSN due to subject movement.
Summary of change:	⌘	Add paragraph to TS 33.107.
Consequences if not approved:	⌘	Unclear requirements.

Clauses affected:	⌘	7.2.1		
Other specs affected:	⌘	**X** Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	33.108
Other comments:	⌘	This CR has been agreed to by T1P1.SAH		

7.2.1 X3-interface

In addition to the intercepted content of communications, the following information needs to be transferred from the 3G GSN to the DF3 in order to allow the DF3 to perform its functionality:

- target identity;
- correlation number;
- the target location (if available) or the IAs in case of location dependent interception.

Additional information may be provided as a national option.

As a national option, in the case where the 3G GGSN is performing interception of the content of communications, the intercept subject is handed off to another SGSN and the same 3G GGSN continues to handle the content of communications subject to roaming agreements, the 3G GGSN shall continue to perform the interception of the content of communication.

3GPP TSG SA WG3 Security — S3#22 **S3-020310**

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CHANGE REQUEST

⌘ **33.107** **CR** **025** ⌘ rev **-** ⌘ Current version: **5.2.1** ⌘

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

Title:	⌘	Inclusion of Serving System IRI in TS 33.107.
Source:	⌘	SA WG3
Work item code:	⌘	SEC1-LI
Date:	⌘	09 April 2002
Category:	⌘	**C**
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)

Reason for change:	⌘	Add the ability to report when an intercept subject is roaming.
Summary of change:	⌘	Add clause 7.4.9 (serving system) and related changes to other clauses in TS 33.107.
Consequences if not approved:	⌘	Does not meet US requirements.

Clauses affected:	⌘	7.3; 7.3.1; 7.3.2; (new) 7.4.9		
Other specs affected:	⌘	☒ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	33.108
Other comments:	⌘	This CR has been agreed to by T1P1.SAH		

7.3 Provision of Intercept Related Information

Intercept Related Information (Events) are necessary at the Mobile Station Attach, Mobile Station Detach, PDP Context Activation, Start of intercept with PDP context active, PDP Context Deactivation, RA update, Serving System and SMS events.

Figure 21 shows the transfer of intercept related information to the DF2. If an event for / from a mobile subscriber occurs, the 3G GSN or the Home Location Register (HLR) sends the relevant data to the DF2.

See section 7A for multi-media Intercept Related Information produced at the CSCF.

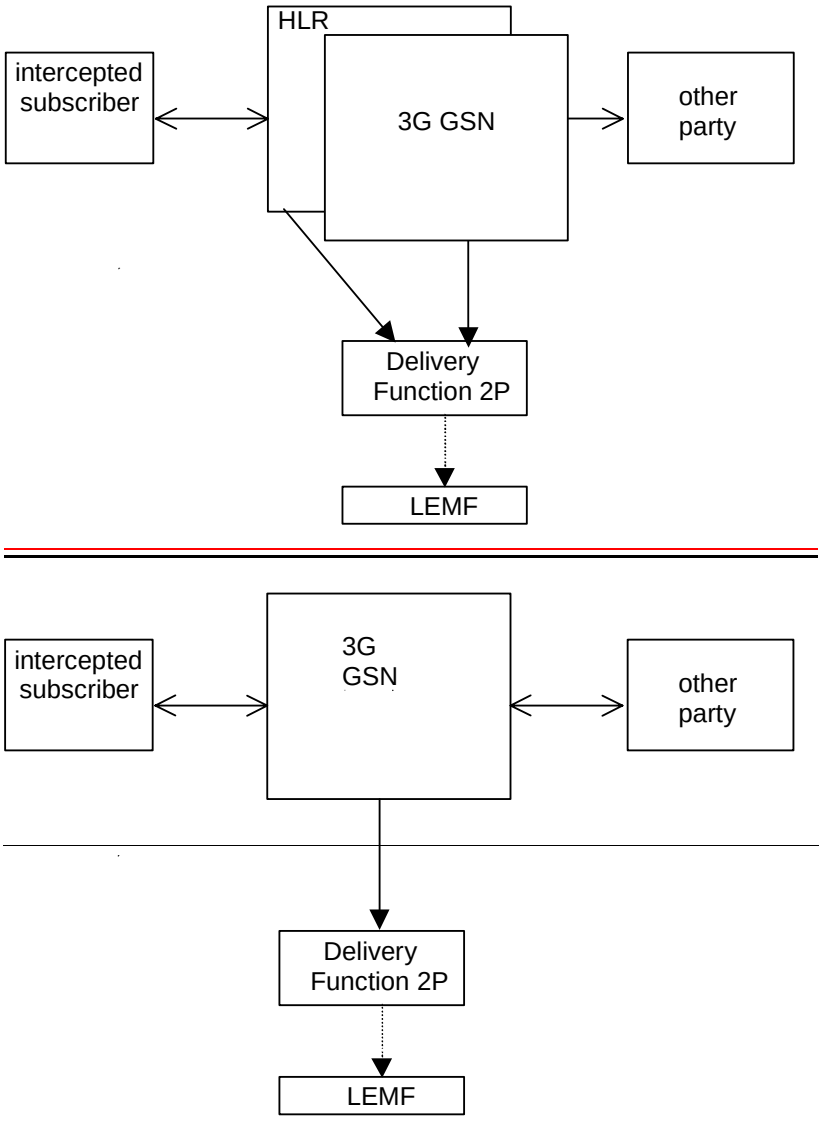

Figure 21: Provision of Intercept Related Information

7.3.1 X2-interface

The following information needs to be transferred from the 3G GSN or the HLR to the DF2 in order to allow a DF2 to perform its functionality:

- target identity (MSISDN, IMSI, IMEI);
- events and associated parameters as defined in section 7.3.2 and 7.4 may be provided;
- the target location (if available) or the IAs in case of location dependent interception.
- Correlation number

The IRI should be sent to DF2 with a reliable transport mechanism.

7.3.2 Structure of the events

There are ~~seven~~ eight different events in which the information is sent to the DF2 if this is required. Details are described in the following section. The events for interception are configurable (if they are sent to DF2) in the 3G GSN or the HLR and can be suppressed in the DF2.

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;
- 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.

The following events are applicable to the HLR:

- Roaming.

A set of fields as shown below is used to generate the events. The events transmit the information from 3G GSN or HLR to DF2. This set of fields as shown below can be extended in the 3G GSN or HLR, if this is necessary as a national option. DF2 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: MS attach, MS detach, PDP context activation, Start of intercept with PDP context active, PDP context deactivation, SMS, Serving System, Cell and/or RA update,
Event date Date of the event generation in the 3G GSN or the HLR.
Event time Time of the event generation in the 3G GSN or the HLR.
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)
Location Information Location Information is the service area identity, RAI and/or location area identity that is present at the GSN at the time of event record production.
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.
Network Element IdentifierUnique identifier for the element reporting the ICE.
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
Session Initiator The initiator of the PDP context activation, deactivation or modification request either the network or the 3G MS
Initiator SMS indicator whether the SMS is MO or MT
Deactivation / termination cause The termination cause of the PDP context
QoS This field indicates the Quality of Service associated with the PDP Context procedure
Serving System Address Information about the serving system (e.g., serving SGSN number ~~and~~ **or** serving SGSN address)

7.4.9 Serving System

The Serving System report event is generated at the HLR, when the HLR has detected that the intercept subject has roamed. The fields will be delivered to the DF2 if available:

Observed MSISDN
Observed IMSI
Observed IMEI
Event Type
Event Time
Event Date
Network Element Identifier
Serving System Address

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CHANGE REQUEST

⌘ **33.107** **CR** **024** ⌘ rev **-** ⌘ Current version: **5.2.1** ⌘

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

Title:	⌘	Addition of SMS type information
Source:	⌘	SA WG3
Work item code:	⌘	SEC1-LI
Date:	⌘	2002-04-04
Category:	⌘	**B**
Release:	⌘	REL-5

Use one of the following categories:
- ***F*** *(essential 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)*

Reason for change:	⌘	The SMS initiator is not reported in SMS event for the CS-part. The SMS initiator is added in the SMS event to avoid that the DF2 needs to analyse the SMS content in order to provide the SMS-initiator parameter over HI2
Summary of change:	⌘	Add SMS initiator in SMS event for CS-part.
Consequences if not approved:	⌘	Inconsistency between 33.108 and 33.107 regarding SMS-initiator parameter

Clauses affected:	⌘	6.3.2, 6.3.4.1, 7.4.7		
Other specs Affected:	⌘	☒ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

*** *First Modification* ***

6.3.2 Structure of the events

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 Server
event time Time of the event generation in the 3G MSC Server
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
Network Element Identifier Unique identifier for the element reporting the ICE.
Location Information Location information is the service area identity and/or location area identity that is present at the 3G MSC Server at the time of event record production
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 initiator SMS indicator whether the SMS is MO, MT, or undefined
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 Server receives from the ME

*** *Next Modification* ***

6.3.4 Non Call Related events

6.3.4.1 SMS

For MO-SMS the event is generated in the 3G MSC Server, when the SMSC successfully receives the SMS; for MT-SMS the event is generated in the 3G MSC Server 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
Network Element Identifier
Location Information
SMS initiator
SMS Message

*** *Next Modification* ***

7.4.7 SMS

For MO-SMS the event is generated in the 3G SGSN. Dependent on national requirements, event generation shall occur either when the 3G SGSN receives the SMS from the target MS or when the 3G SGSN receives notification that the SMS-Centre successfully receives the SMS; for MT-SMS the event is generated in the 3G SGSN. Dependent on national requirements, event generation shall occur either when the 3G SGSN receives the SMS from the SMS-Centre or when the 3G SGSN receives notification that the target MS successfully received the message. This fields will be delivered to the DF2 if available:

Observed MSISDN
Observed IMSI
Observed IMEI
Event Type
Event Time
Event Date
Network Element Identifier
Location Information
SMS
Initiator ~~(optional)~~
IAs (if applicable)