
Interception regarding SMS-MT for TS 33.107

Spec: 3GPP TS 33.107v5.3.0

Release: Rel-5

Source: Telcordia Technologies and Federal Bureau of
Investigations

Document for: Discussion & Action.

Summary

This contribution proposes changes to TS 33.107, version 5.3.0, to address SMS-MT interception at a SMS Redirecting System. In this contribution an SMS Redirecting System is a node that handles SMS packets and redirects them to the intercept subject. A companion contribution is provided proposing compatible changes to TS 33.108.

CR-Form-v7

CHANGE REQUEST

33.107 CR CRNum # rev - # Current version: 5.3.0

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:	#	Interception of SMS Redirected Packets
Source:	#	Telcordia Technologies and Federal Bureau of Investigation
Work item code:	#	Security
		Date: # 24/09/2002
Category:	#	F
		<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> </div> <div style="width: 45%;"> <p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p> </div> </div>

Reason for change:	#	The intention of this CR is to address the shortcomings in the capability of reporting SMS packets in the case of SMS-MT in particular regarding the interception of SMS packets that are redirected from the home network to the interception subject.
Summary of change:	#	Inclusion of SMS Redirecting System requirements.
Consequences if not approved:	#	TS 33.107 will be deficient in the area identified and will not meet all the needs of law enforcement agencies.

Clauses affected:	#	Clause 3.1, 7.1, 7.3, 7.3.1, 7.3.2, and 7.4.7								
Other specs affected:	#	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </table> Other core specifications # TS 33.108 Test specifications O&M Specifications	Y	N	X					
Y	N									
X										
Other comments:	#									

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.

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3.1 Definitions

For the purposes of the present document, the following terms and definitions apply.

Network Based Interception: Interception that is invoked at a network access point regardless of Target Identity.

Subject Based Interception: Interception that is invoked using a specific Target Identity

Target Identity: A technical identity that uniquely identifies a target of interception. One target may have one or several identities.

Interception Area: is a subset of the network service area comprised of a set of cells which defines a geographical zone.

Location Dependent Interception: is interception of a target mobile within a network service area that is restricted to one or several Interception Areas (IA).

SMS Redirecting System: the NWO/AP/SvP system where SMS packets directed toward an interception subject are processed for redirection instruction (e.g., SMS-GMSC).

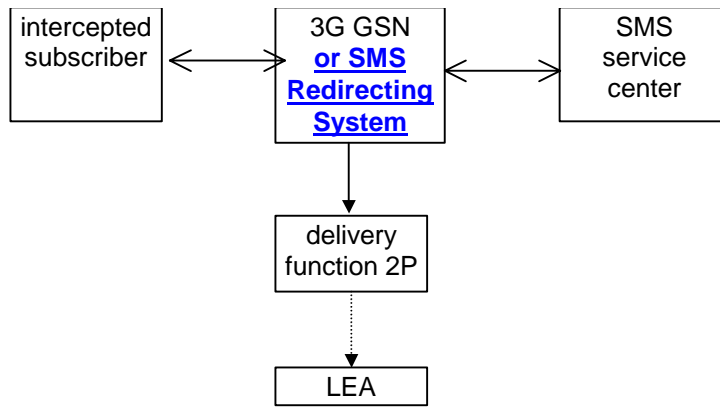
7.1 Provision of Intercept Product - Short Message Service

Figure 19 shows an SMS transfer from the 3G SGSN node to the LEA. Quasi-parallel to the delivery from / to the mobile subscriber a message, which contains the content and header of the SMS, is generated and sent via the Delivery Function 2 to the LEA in the same way as the Intercept Related Information.

The IRI will be delivered to the LEA:

- for a SMS-MO. Dependent on national requirements, delivery 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 received the SMS;
- for a SMS-MT. Dependent on national requirements, delivery 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 SMS.
- unless otherwise prohibited by national requirements, interception of SMS-MT communications shall occur when an SMS Redirecting System receives SMS data packets that are subsequently redirected toward an intercept subject.

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Figure 19: Provision of Intercept Product - Short Message Service

*** *Third Modification* ***

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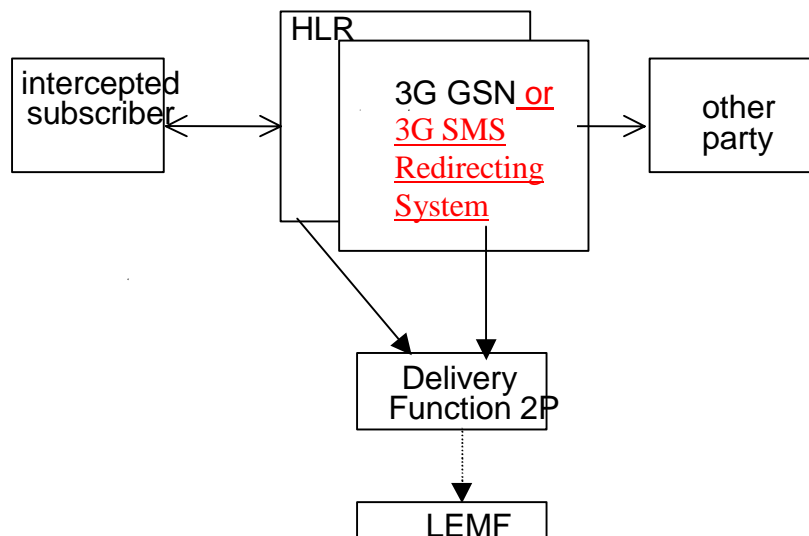
7.3 Provision of Intercept Related Information

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

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

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

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1 **Figure 21: Provision of Intercept Related Information**

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4 ***** *Fourth Modification* *****

5 **7.3.1 X2-interface**

6 The following information needs to be transferred from the 3G GSN, [SMS Redirecting System](#), or the HLR to the DF2
7 in order to allow a DF2 to perform its functionality:

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

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

14 ***** *Fifth Modification* *****

15 **7.3.2 Structure of the events**

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

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

- 20 - Mobile Station Attach;
21 - Mobile Station Detach;
22 - PDP context activation;
23 - Start of intercept with PDP context active;
24 - PDP context modification;
25 - PDP context deactivation;
26 - RA update;
27 - SMS.

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

29 **The following events are applicable to the 3G GGSN:**

- 30 - PDP context activation;
31 - PDP context modification;
32 - PDP context deactivation;
33 - Start of interception with PDP context active.

1 **The following events are applicable to the HLR:**

- 2 - Roaming.

3 **The following events are applicable to the SMS Redirecting System:**

- 4 - SMS-MT.

5 A set of fields as shown below is used to generate the events. The events transmit the information from 3G GSN, SMS
6 Redirecting System, or HLR to DF2. This set of fields as shown below can be extended in the 3G GSN, SMS
7 Redirecting System, or HLR, if this is necessary as a national option. DF2 can extend this information if this is
8 necessary as a national option e.g. a unique number for each surveillance warrant.

9 **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 (SAI), 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 Identifier Unique 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 or serving SGSN address).

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*** *Sixth Modification* ***

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1 **7.4.7 SMS**

2 For MO-SMS the event is generated in the 3G SGSN. Dependent on national requirements, event generation shall occur
3 either when the 3G SGSN receives the SMS from the target MS or when the 3G SGSN receives notification that the
4 SMS-Centre successfully receives the SMS; for MT-SMS the event is generated in the 3G SGSN or the SMS
5 Redirecting System. Dependent on national requirements, event generation at the 3G SGSN shall occur either when the
6 3G SGSN receives the SMS from the SMS-Centre or when the 3G SGSN receives notification that the target MS
7 successfully received the message. Unless otherwise prohibited by national requirements, event generation at the SMS
8 Redirecting System shall occur when an SMS Redirecting System intercepts SMS data packets that are redirected
9 toward an intercept subject. 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
IAs (if applicable)

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[H1] [Document numbers](#) are allocated by the Working Group Secretary.

Page: 2

[H2] Enter the specification number in this box. For example, 04.08 or 31.102. Do not prefix the number with anything . i.e. do not use "TS", "GSM" or "3GPP" etc.

Page: 2

[H3] Enter the CR number here. This number is allocated by the 3GPP support team. It consists of at least three digits, padded with leading zeros if necessary.

Page: 2

[H4] Enter the revision number of the CR here. If it is the first version, use a "-".

Page: 2

[H5] Enter the version of the specification here. This number is the version of the specification to which the CR will be applied if it is approved. Make sure that the latest version of the specification (of the relevant release) is used when creating the CR. If unsure what the latest version is, go to <http://www.3gpp.org/specs/specs.htm>.

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[H6] For help on how to fill out a field, place the mouse pointer over the special symbol closest to the field in question.

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[H7] Mark one or more of the boxes with an X.

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[H8] SIM / USIM / ISIM applications.

Page: 2

[H9] Enter a concise description of the subject matter of the CR. It should be no longer than one line. Do not use redundant information such as "Change Request number xxx to 3GPP TS xx.xxx".

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[H10] Enter the source of the CR. This is either (a) one or several companies or, (b) if a (sub)working group has already reviewed and agreed the CR, then list the group as the source.

Page: 2

[H11] Enter the acronym for the work item which is applicable to the change. This field is mandatory for category F, B & C CRs for release 4 and later. A list of work item acronyms can be found in the 3GPP work plan. See http://www.3gpp.org/ftp/information/work_plan/ . The list is also included in a MS Excel file included in the zip file containing the CR cover sheet template.

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[H12] Enter the date on which the CR was last revised. Format to be interpretable by English version of MS Windows ® applications, e.g. 19/02/2002.

Page: 2

[H13] Enter a single letter corresponding to the most appropriate category listed below. For more detailed help on interpreting these categories, see the Technical Report [21.900](#) "TSG working methods".

Page: 2

[H14] Enter a single release code from the list below.

Page: 2

[H15] Enter text which explains why the change is necessary.

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[H16] Enter text which describes the most important components of the change. i.e. How the change is made.

Page: 2

[H17] Enter here the consequences if this CR was to be rejected. It is necessary to complete this section only if the CR is of category "F" (i.e. correction).

Page: 2

[H18] Enter the number of each clause which contains changes.

Page: 2

[H19] Tick "yes" box if any other specifications are affected by this change. Else tick "no". You MUST fill in one or the other.

Page: 2

[H20] List here the specifications which are affected or the CRs which are linked.

Page: 2

[H21] Enter any other information which may be needed by the group being requested to approve the CR. This could include special conditions for it's approval which are not listed anywhere else above.

Page: 2

[H22] This is an example of pop-up text.