

November 23-26, 2004

Shenzhen, China

Source: SA WG3 LI Group**Title:** SA WG3 LI Group CRs which were agreed at the previous SA WG3 LI meeting**Document for:** Approval**Agenda Item:** 4.3

The following CRs were agreed by the SA WG3 LI Group. SA WG3 are asked for approval:

SA WG3 Doc number	Spec	CR	Rev	Phase	Subject	Cat	Version-Current	LI Group Doc number	V
S3-030913	33.107	048	-	Rel-6	Lawful Interception for WLAN Interworking	B	6.3.0	S3LI04_162r2	SE
S3-030913	33.107	049	-	Rel-6	33.107 Cleanup	F	6.3.0	S3LI04_181r4	SE
S3-030913	33.107	050	-	Rel-6	Clarification on MMS interception	B	6.3.0	S3LI04_182	SE
S3-030913	33.108	060	-	Rel-5	Correction to ULIC header	F	5.8.0	S3LI04_157r1	SE
S3-030913	33.108	061	-	Rel-6	Correction to ULIC header	A	6.7.0	S3LI04_158r1	SE
S3-030913	33.108	062	-	Rel-6	Correction on parameter GprsOperationErrorCode	F	6.7.0	S3LI04_156r2	SE
S3-030913	33.108	063	-	Rel-6	Correction to the IMPORTS statements	F	6.7.0	S3LI04_161r2	SE
S3-030913	33.108	064	-	Rel-6	Syntax Error in Annex B.3	F	6.7.0	S3LI04_172r1	SE
S3-030913	33.108	065	-	Rel-6	Deleting CC from SIP message	B	6.7.0	S3LI04_173r3	SE
S3-030913	33.108	066	-	Rel-6	Adding domain ID to HI3 CS domain module	B	6.7.0	S3LI04_174r3	SE
S3-030913	33.108	067	-	Rel-6	Syntax Error in Annex B.3a	F	6.7.0	S3LI04_176r1	SE
S3-030913	33.108	068	-	Rel-6	HI2 SIP Content clarification	C	6.7.0	S3LI04_179r1	SE

CHANGE REQUEST

33.107 CR 048 rev - Current version: 6.3.0

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:	Lawful Interception for WLAN Interworking		
Source:	SA3-LI		
Work item code:	SEC1-LI	Date:	13/10/2004
Category:	B	Release:	Rel-6
	Use <u>one</u> 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 <u>one</u> of the following releases: Ph2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) Rel-7 (Release 7)

Reason for change:	Add feature for LI of WLAN Interworking		
Summary of change:	For Interception of WLAN Interworking, add changes to interception architecture, activation/deactivation/interrogation of LI and a new Clause describing the interception events for WLAN Interworking.		
Consequences if not approved:	Incomplete WLAN implementations.		

Clauses affected:	2, 3, 4, 5, 5.1.1, 5.2.1, 5.2.2, 5.2.3, 5.3.1, 5.3.2, New Clause 9										
Other specs affected:	<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></td> </tr> <tr> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td style="text-align: center;">X</td> <td></td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X		X		X			
Y	N										
X											
X											
X											
Other comments:											

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2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] ETSI TS 101 331: "Telecommunications security; Lawful Interception (LI); Requirements of Law Enforcement Agencies".
- [2] ETSI ES 201 158: "Lawful Interception; Requirements for network functions".
- [3] ETSI ES 201 671: "Handover Interface for the lawful interception of telecommunications traffic".
- [4] GSM 01.33: "Lawful Interception requirements for GSM".
- [5] GSM 02.33: "Lawful Interception - stage 1".
- [6] GSM 03.33: "Lawful Interception - stage 2".
- [7] 3GPP TS 33.106: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; 3G Security; Lawful Interception Requirements".
- [8] ANSI J-STD-025-A: "Lawfully Authorised Electronic Surveillance".
- [9] IETF RFC 2806: "URLs for Telephone Calls".
- [10] 3GPP TS 23.060: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; General Packet Radio Service (GPRS); Service description".
- [11] 3GPP TS 33.108: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; 3G Security; Handover interface for Lawful Interception".
- [12] IETF RFC 3261: "SIP: Session Initiation Protocol".
- [13] [3GPP TS 21.905: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Vocabulary for 3GPP Specifications"](#).
- [14] [3GPP TS 23.234: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; 3GPP system to Wireless Local Area Network \(WLAN\) Interworking; System Description"](#).

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3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the [terms and definitions given in 3GPP TR 21.905 \[13\]](#) and 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.

Interworking WLAN: [WLAN that interworks with a 3GPP system.](#)

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

3.2 Abbreviations

For the purposes of the present document, the ~~following~~ abbreviations [given in 3GPP TR 21.905 \[13\]](#) and the following apply:

3GPP MS	3rd Generation Mobile Communication System
3G GGSN	3rd Generation Gateway GPRS Support Node
3G GSN	3rd Generation GPRS Support Node (GGSN/SGSN)
3G MSC	3rd Generation Mobile Switching Center
3G SGSN	3rd Generation Serving GPRS Support Node
3G UMSC	3rd Generation Unified Mobile Switching Centre
AAA	Authentication, Authorization, and Accounting
ADMF	Administration Function
CC	Content of Communication
DF	Delivery Function
ECT	Explicit Call Transfer
GPRS	General Packet Radio Service
HI	Handover Interface
IA	Interception Area
ICEs	Intercepting Control Elements (3G MSC Server, 3G GMSC Server, P-CSCF, S-CSCF, SGSN, GGSN, HLR, AAA Server, PDG)
IMS	IP Multimedia Core Network Subsystem
INEs	Intercepting Network Elements (3G MSC Server, 3G GMSC Server, P-CSCF, S-CSCF, SGSN, GGSN, MGW, HLR, AAA Server, PDG)
IP	Internet Protocol
IRI	Intercept Related Information
I-WLAN	Interworking WLAN
LDI	Location Dependent Interception
LEA	Law Enforcement Agency
LEMF	Law Enforcement Monitoring Facility
PDG	Packet Data Gateway
RA	Routing Area
RAI	Routing Area Identity
SAI	Service Area Identity
TEL URL	"tel" URL, as defined in [9]
URI	Universal Resource Identifier
URL	Universal Resource Locator

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4 Functional architecture

The following figures contain the reference configuration for the lawful interception. The circuit-switched configuration is shown in figure 1a. The packet-switched configuration is shown in figure 1b. Intercept configurations for HLR and IMS are shown in figures 1c and 1d. [The WLAN interworking configuration is shown in figure 1e.](#) The various entities and interfaces are described in more detail in the succeeding subclauses.

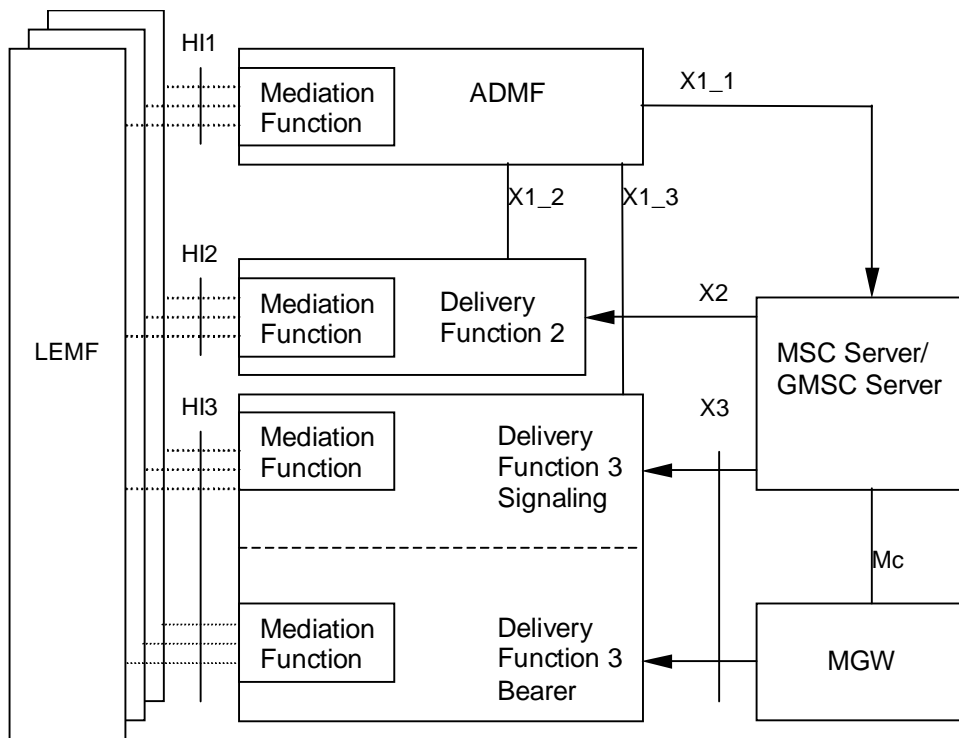


Figure 1a: Circuit switched intercept configuration

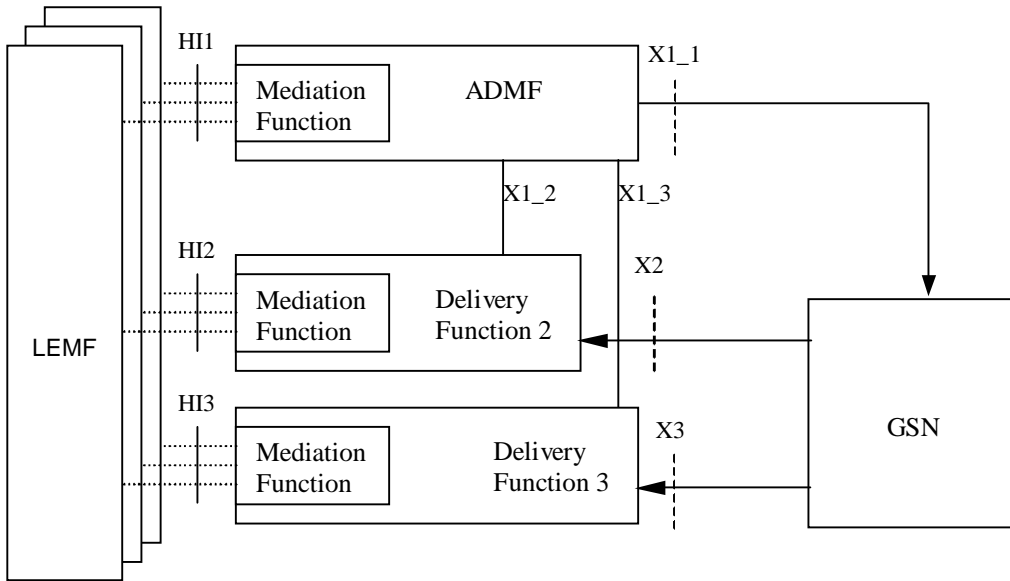


Figure 1b: Packet Switched Intercept configuration

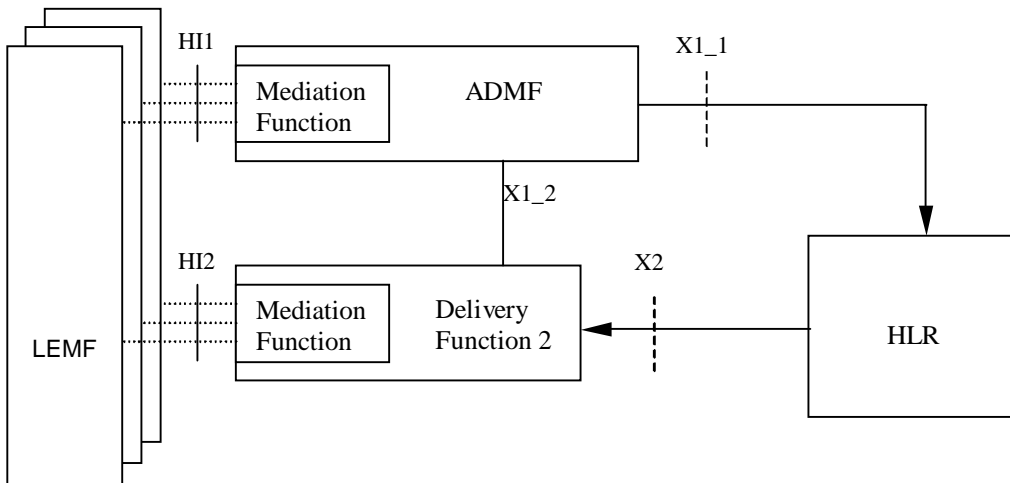


Figure 1c: HLR Intercept configuration

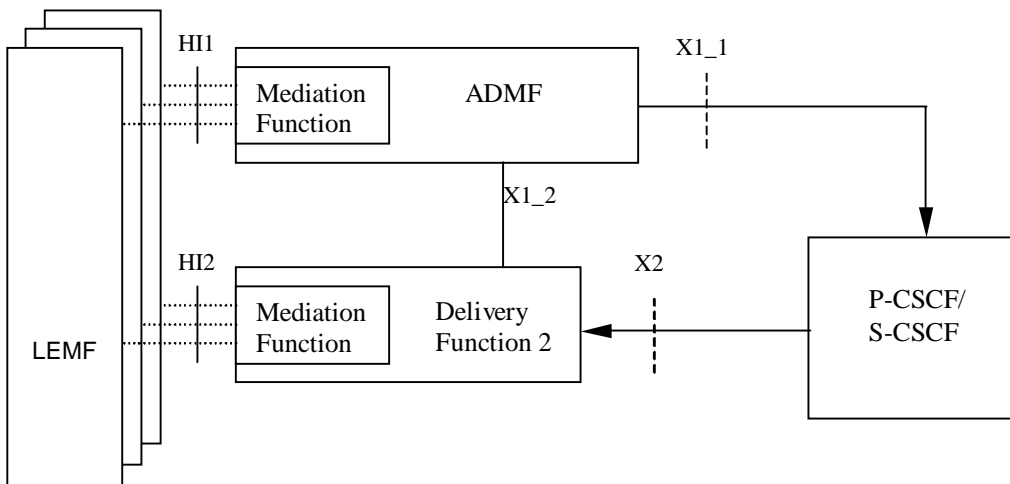


Figure 1d: IMS-CSCF Intercept configuration

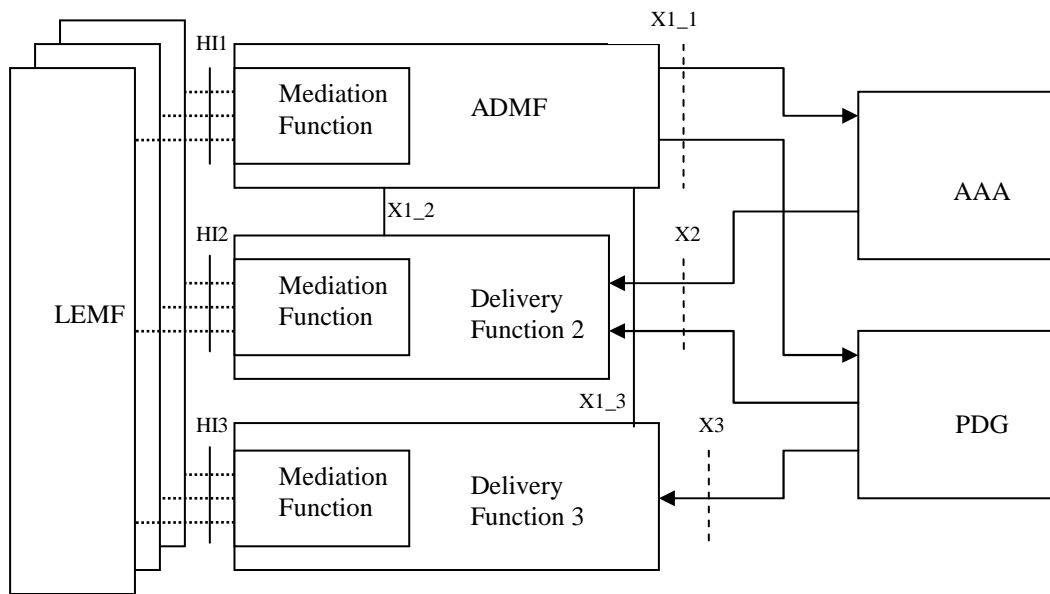


Figure 1e: WLAN Interworking Intercept configuration

The reference configuration is only a logical representation of the entities involved in lawful interception and does not mandate separate physical entities. This allows for higher levels of integration.

Regional Mediation Functions, which may be transparent or part of the administration and delivery functions, are used to convert information on the HI1, HI2 and HI3 interfaces in the format described in various national or regional specifications. For example, if ES 201 671 or J-STD-25 is used, then the adaptation to HI1, HI2 and HI3 will be as defined in those specifications.

There is one Administration Function (ADMF) in the network. Together with the delivery functions it is used to hide from the 3G ICEs that there might be multiple activations by different Law Enforcement Agencies (LEAs) on the same target. The administration function may be partitioned to ensure separation of the provisioning data from different agencies.

See the remaining sections of this document for definitions of the X1_1, X1_2, X1_3, X2 and X3 interfaces.

Interception at the Gateways is a national option.

~~For In~~ figure 1a, DF3 is responsible ~~for~~ two primary functions:

- Call Control (Signalling) for the Content of Communication (CC); and
- Bearer Transport for the CC.

HI3 is the interface towards the LEMF. It must be able to handle the signalling and the bearer transport for CC. ~~LEMf can be located within the 3G network or can be in any other network.~~

~~For In~~ figures 1a, ~~and~~ 1b, ~~and~~ 1e, the HI2 and HI3-interfaces represent the interfaces between the LEA and two delivery functions. The delivery functions are used:

- to distribute the Intercept Related Information (IRI) to the relevant LEA(s) via HI2 (based on IAs, if defined);
- to distribute the Content of Communication (CC) to the relevant LEA(s) via HI3 (based on IAs, if defined).

~~For In~~ figures 1c and 1d the HI2 interface represents the interface between the LEA and the delivery function. The delivery function is used to distribute the Intercept Related Information (IRI) to the relevant LEA(s) via HI2.

NOTE 1: With reference to figure 1c, CC interception does not apply to HLR.

NOTE 2: For IMS, figure 1d relates to the provision of IRI for SIP messages handled by the CSCF. Interception of CC for this case can be done at the GSN under a separate activation and invocation, according to the architecture in Figure 1b (see also section 7.A.1).

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5 Activation, deactivation and interrogation

Figure 2 is an extraction from the reference intercept configuration shown in figures [1a through 1e](#) which is relevant for activation, deactivation and interrogation of the lawful interception.

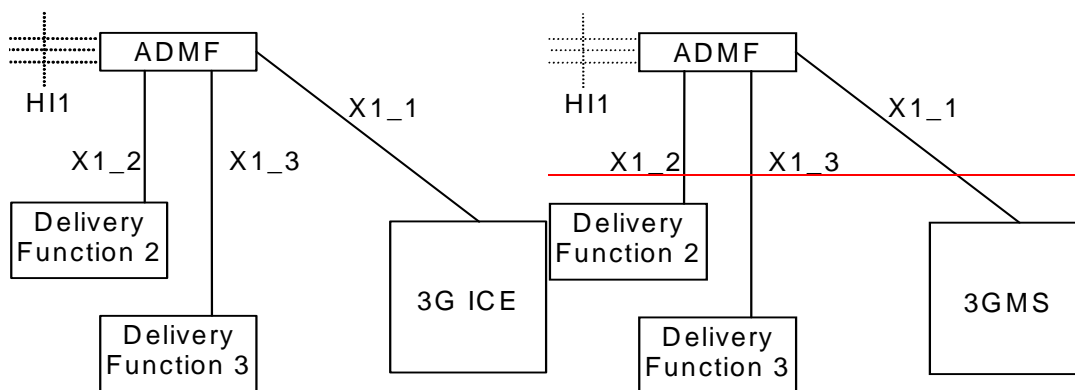


Figure 2: Functional model for Lawful Interception activation, deactivation and interrogation

In addition to the typical 3G ICEs functional entities, a new functional entity is introduced - the ADMF - the Lawful Interception administration function. The ADMF:

- interfaces with all the LEAs that may require interception in the intercepting network;
- keeps the intercept activities of individual LEAs separate;
- interfaces to the intercepting network.

Every physical 3G ICE is linked by its own X1_1-interface to the ADMF. Consequently, every single 3G ICE performs interception (activation, deactivation, interrogation as well as invocation) independently from other 3G ICEs. The HI1-interface represents the interface between the requester of the lawful interception and the Lawful administration function; it is included for completeness, but is beyond the scope of standardisation in this document.

The target identities for 3GPP MS CS and PS interception at the SGSN, GGSN, 3G MSC Server and 3G GMSC Server can be at least one of the following: IMSI, MSISDN or IMEI.

NOTE 1: Some communication content during a mobility procedure may not be intercepted when interception is based on MSISDN (only PS interception) or IMEI. The use of the IMSI does not have this limitation. For the availability of the target identities IMSI, MSISDN and IMEI (PS interception), refer to [10].

The target identities for multi-media at the CSCF can be one or more of the following: SIP URI or TEL URL. Other identities are for further study.

[The target identities for 3GPP WLAN Interworking interception can be IMSI or NAI.](#)

[NOTE 2: The NAI may be a temporary ID, therefore the use of IMSI is recommended.](#)

[NOTE 3: The MSISDN may be used, however, in many cases it will not be available.](#)

In [the](#) case of location dependent interception the following network/national options exist:

- target location versus Interception Areas (IAs) check in the 3G ICEs and Delivery Functions (DFs);
- target location versus IAs check in the DFs (physical collocation of the DFs to the 3G ICEs may be required by national law).

NOTE [24](#): The IA is previously defined by a set of cells. From the location of the target this set of cells permits to find the relevant IA.

NOTE [35](#): It is not required that the 3G GMSC or the 3G GGSN are used for interception when Location Dependent Interception is invoked and the location of the target is not available.

Editors' note: Location dependent intercept at the CSCF is for further study.

Editors' note: Location dependent intercept for the 3G MSC Server and SSGN is for further study.

The ADMF shall be able to provision P-CSCFs independently from S-CSCFs. If both P-CSCFs and S-CSCFs are administered within the network for intercept, redundant multi-media IRI may be presented to the agency as a result.

5.1 Activation

Figures [3](#), [4](#) and [5](#) show the information flow for the activation of Lawful Interception.

5.1.1 X1_1-interface

The messages sent from the ADMF to the 3G ICEs (X1_1-interface) contain the:

- target identities (MSISDN, IMSI, IMEI, SIP URI or TEL URL, [NAI](#)) (see notes [4](#), ~~[and](#)~~ [5](#), [6](#), and [7](#));
- information whether the Content of Communication (CC) shall be provided (see note 1);
- address of Delivery Function 2 (DF2) for the intercept related information (see note 2);
- address of Delivery Function 3 (DF3) for the intercepted content of communications (see note 3);
- IA in [the](#) case of location dependent interception.

NOTE 1: As an option, the filtering whether intercept product and/or intercept related information has to be provided can be part of the delivery functions. (Note that intercept product options do not apply at the CSCF, [HLR](#), and [AAA server](#)). If the option is used, the corresponding information can be omitted on the X1_1-interface, while "information not present" means "intercept product and related information has to be provided" for the ICE. Furthermore the delivery function which is not requested has to be "pseudo-activated", in order to prevent error cases at invocation.

NOTE 2: As an option, only a single DF2 is used by and known to every 3G ICE. In this case the address of DF2 can be omitted.

NOTE 3: As an option, only a single DF3 is used by and known to every 3G ICE (except at the CSCFs, [HLR](#), and [AAA server](#)). In this case the address of DF3 can be omitted.

NOTE 4: Since the IMEI is not available, interception based on IMEI is not applicable at the 3G Gateway. Moreover, in case the IMEI is not available, interception based on IMEI is not applicable at 3G ICEs.

NOTE 5: Interception at the CSCFs is based upon either SIP URI or TEL URL. SIP URI and TEL URL as target identities are not supported by the other ICEs.

[NOTE 6: Interception based on NAI is only applicable at AAA server and PDG.](#)

[NOTE 7: In case MSISDN is not available, interception based on the MSISDN is not applicable at the AAA server and the PDG.](#)

If after activation subsequently Content of Communications (CC) or Intercept Related Information (IRI) has to be activated (or deactivated) an "activation change request" with the same identity of the target is to be sent.

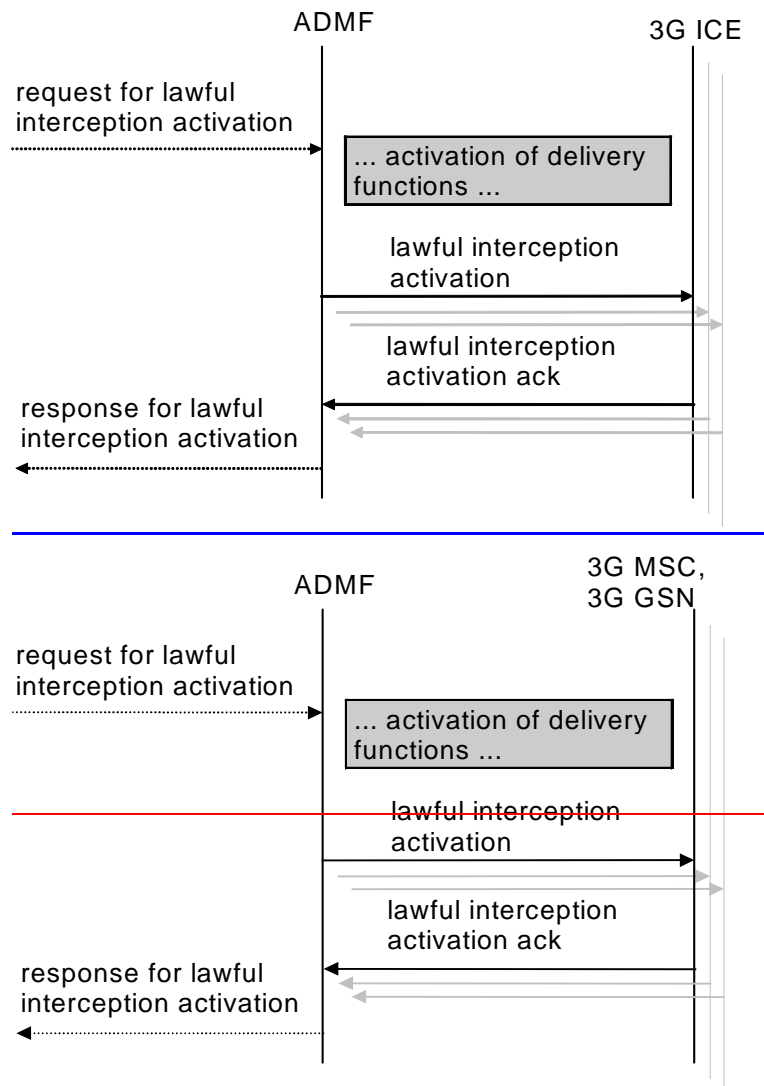


Figure 3: Information flow on X1_1-interface for Lawful Interception activation

Interception of a target can be activated on request from different LEAs and each LEA may request interception via a different identity. In this case, each target identity on which to intercept will need to be sent via separate activation messages from ADMF to the 3G ICEs on the X1_1-interface. Each activation can be for IRI only, or both CC and IRI.

When several LEAs request activation on the same identity then the ADMF determines that there are existing activations on the identity. In this case, the ADMF may (as an implementation option) send an additional activation message to the 3G ICEs. When the activation needs to change from IRI only to CC and IRI an activation change message will be sent to the 3G ICEs.

In [the](#) case of a secondary interception activation only the relevant LEAs will get the relevant IRIs.

5.1.2 X1_2-interface (IRI)

For the activation of IRI the message sent from the ADMF to the DF contains:

- the target identity;
- the address for delivery of IRI (= LEMF address);
- which subset of information shall be delivered;

- a DF2 activation identity, which uniquely identifies the activation for DF2 and is used for further interrogation or deactivation, respectively;
- the IA in case of location dependent interception;
- the warrant reference number if required by national option.

If a target is intercepted for several LEAs and/or several identities simultaneously, a single activation of delivery is necessary for each combination of LEA and identity.

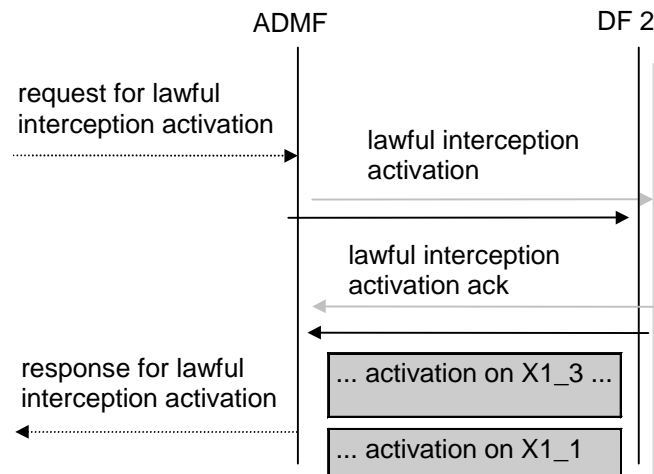


Figure 4: Information flow on X1_2-interface for Lawful Interception activation

5.1.3 X1_3-interface (CC)

For the activation of intercepted Content of Communications the message sent from the ADMF to the Delivery Function contains:

- the target identity;
- the address of delivery for CC (= LEMF address);
- a DF3 activation identity, which uniquely identifies the activation for DF3 and is used for further interrogation or deactivation, respectively;
- the IA in case of location dependent interception;
- the warrant reference number if required by national option.

If a target is intercepted by several LEAs and/or several identities simultaneously, a single activation of delivery is necessary for each combination of LEA and identity.

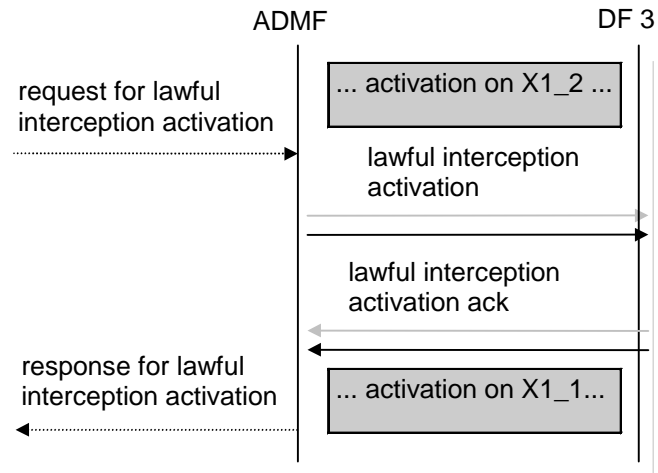


Figure 5: Information flow on X1_3-interface for Lawful Interception activation

5.2 Deactivation

Figures 6, 7, and 8 show the information flow for the deactivation of the Lawful interception.

5.2.1 X1_1-interface

The messages sent from the ADMF to the 3G ICEs for deactivation contain:

- the target identity;
- the possible relevant IAs in case of location dependent interception.

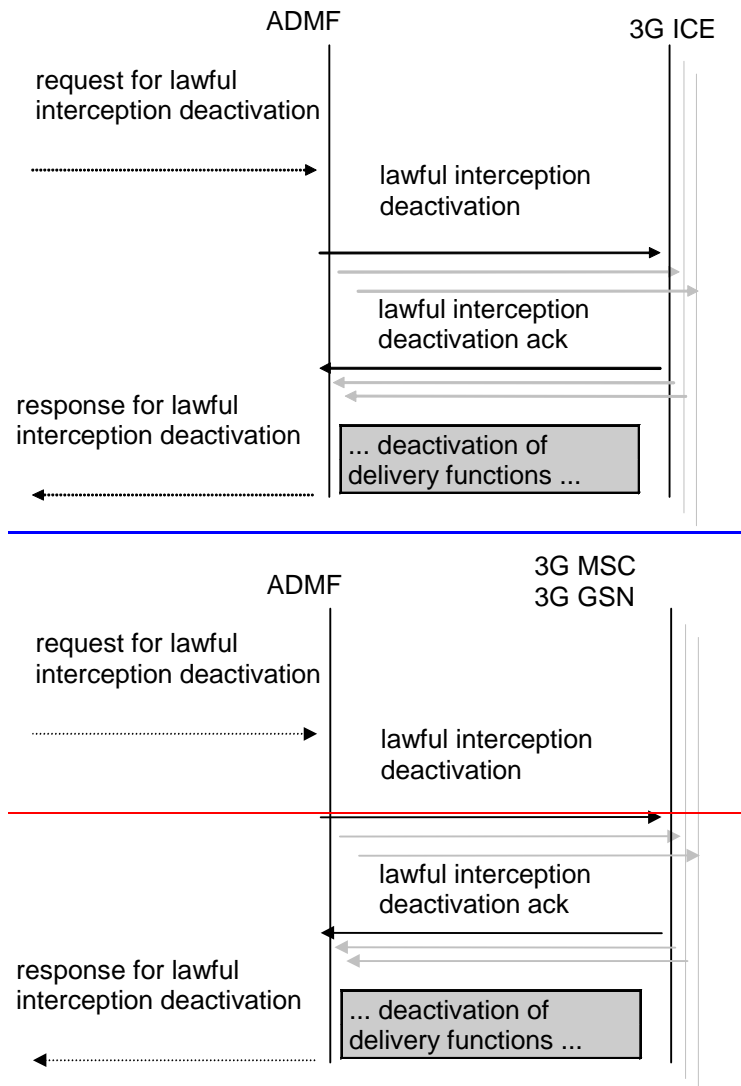


Figure 6: Information flow on X1_1-interface for Lawful Interception deactivation

If interception of a target has been activated via different identities then a separate deactivation message will need to be sent from the ADMF to the 3G ICEs for each identity.

When several LEAs requested activation on the same identity and subsequently request deactivation then the ADMF determines that there are remaining activations on the identity. In this case, the ADMF will not send a deactivation message to the 3G ICEs except when the activation needs to change from CC and IRI to IRI only. In that case an activation change message will be sent to the 3G ICEs.

5.2.2 X1_2-interface (IRI)

The messages sent from the ADMF to Delivery Function 2 for the deactivation of the Intercept Related Information contain:

- a DF2 activation [idID](#), which uniquely identifies the activation to be deactivated for DF2.

If a target is intercepted by several LEAs and/or several identities simultaneously, a single deactivation is necessary for each combination of LEA and identity.

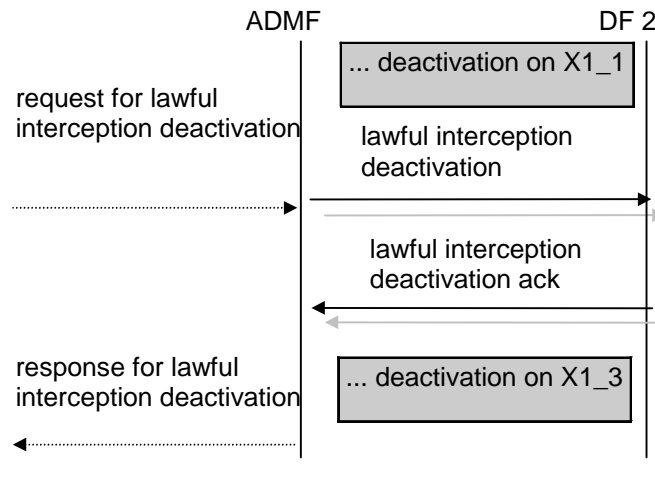


Figure 7: Information flow on X1_2-interface for Lawful Interception deactivation

5.2.3 X1_3-interface (CC)

For the deactivating the delivery of the CC the messages from the ADMF to DF3 contain:

- a DF3 activation [idID](#), which uniquely identifies the activation to be deactivated for DF3.

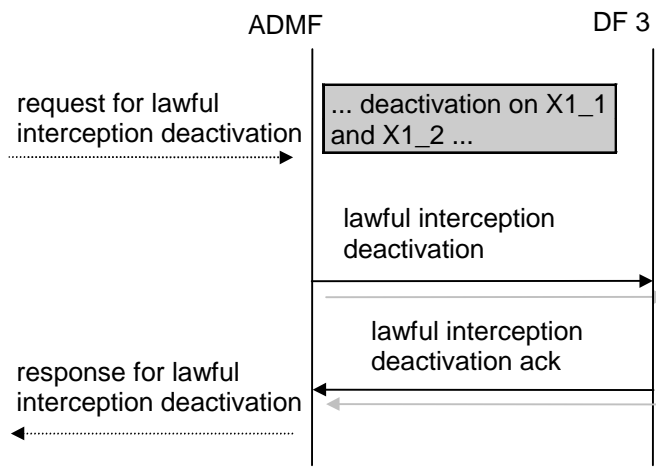


Figure 8: Information flow on X1_3-interface for Lawful Interception deactivation

5.3 Interrogation

Interrogation provides the current status of the interception activation in the system. Interrogation of all activations for a given LEA is an ADMF function.

5.3.1 Interrogation of the 3G ICEs

Figure 9 shows the information flow for the interrogation of the Lawful Interception. It shall be possible to interrogate:

- a specific activation at each relevant 3G ICEs;
- all activations at each relevant 3G ICEs.

As a result of the interrogation the activation status and data are returned.

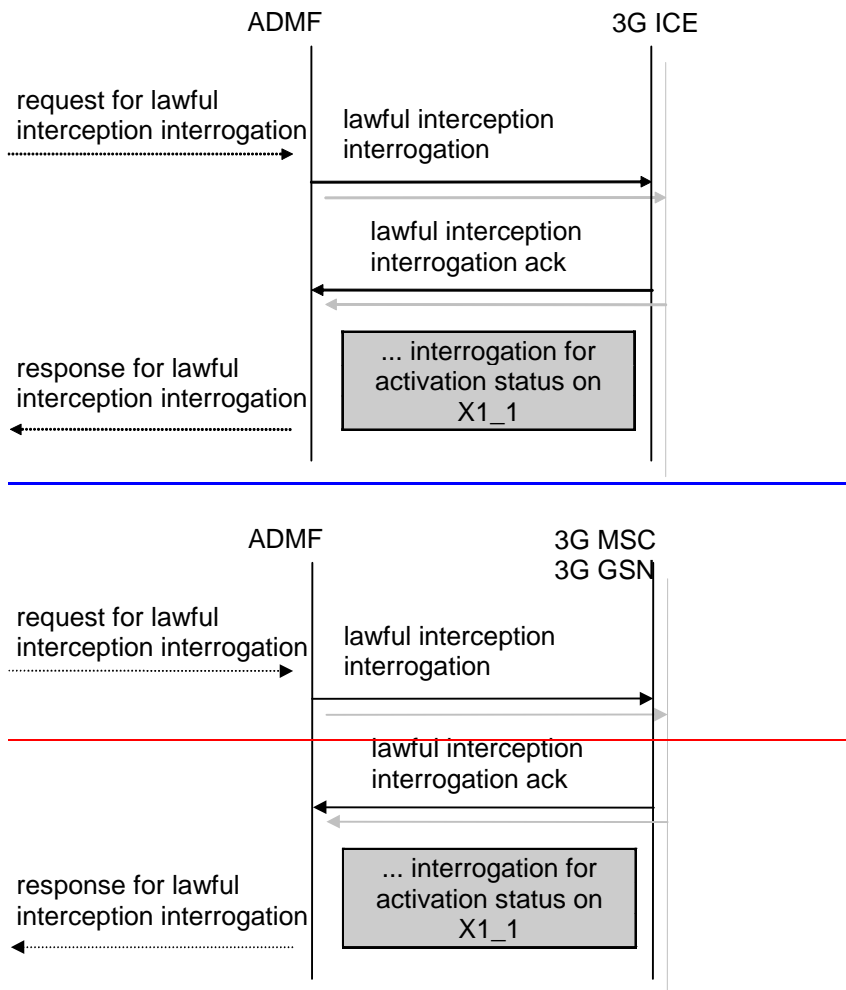


Figure 9: Interrogation of the Lawful Interception (3G ICEs)

5.3.2 Interrogation of Delivery Functions

Figure 10 shows the information flow for the interrogation of the Lawful Interception. It shall be possible to interrogate:

- a specific activation at a DF;
- all activations at a DF for a given target identity;
- all activations at a DF.

As a result of the interrogation the activation status and data are returned.

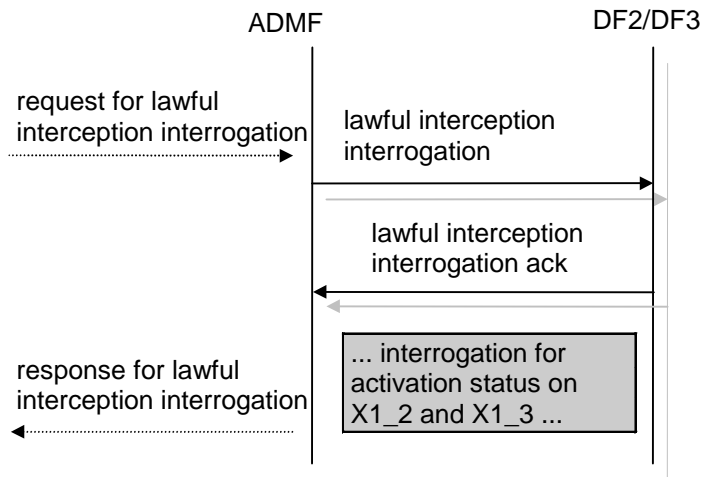


Figure 10: Interrogation of the Lawful Interception (Delivery Functions)

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9 Invocation of Lawful Interception for 3GPP WLAN Interworking Services

Figure 23 shows the extract from the reference configuration which is relevant for the invocation of the Lawful Interception of the packet data 3GPP WLAN Interworking network.

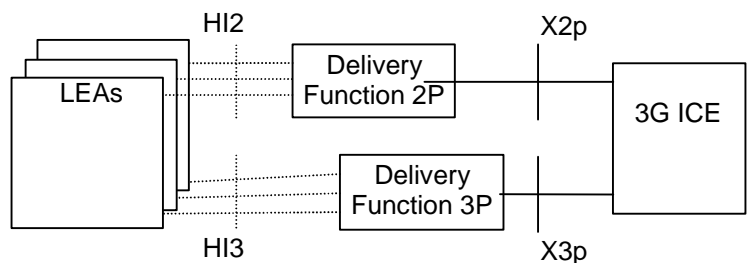


Figure 23: Functional model for invocation of Lawful Interception for 3GPP WLAN Interworking Services

The HI2 and HI3 interfaces represent the interfaces between the LEA and two delivery functions. Both interfaces are subject to national requirements. They are included for completeness, but are beyond the scope of this specification.

The delivery functions are used:

- to convert the information on the X2-interface to the corresponding information on the H12 interface;
- to distribute the intercept related information to the relevant LEA(s);
- to distribute the intercept product to the relevant LEA(s).

9.1 Provision of Intercept Product - Short Message Service

LI for SMS in the 3GPP-WLAN Interworking case is not defined in this release. However, SMS may be available at the PDG as part of the CC.

9.2 Provision of Intercepted Content of Communications – 3GPP WLAN Interworking services

The access method for the delivering of 3GPP WLAN Interworking Intercept Product is based on duplication of packets without modification at the PDG. The duplicated packets with additional information in the header, as described in the following sections, are sent to DF3 for further delivery.

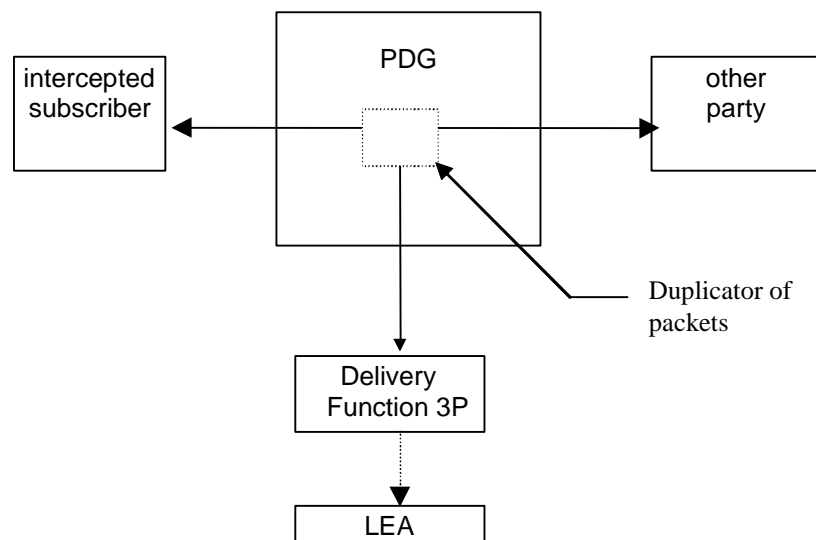


Figure 24: Configuration for interception of 3GPP WLAN Interworking product data

9.2.1 X3-interface

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

- target identity;
- correlation number;
- time stamp - optional;
- direction (indicates whether T-PDU is MO or MT) - optional;
- the target location (if available in the intercepting node).

9.3 Provision of Intercept Related Information

Figure 25 shows the transfer of intercept related information to the DF2. If an event for / from a mobile subscriber occurs, the PDG, or the AAA Server sends the relevant data to the DF2.

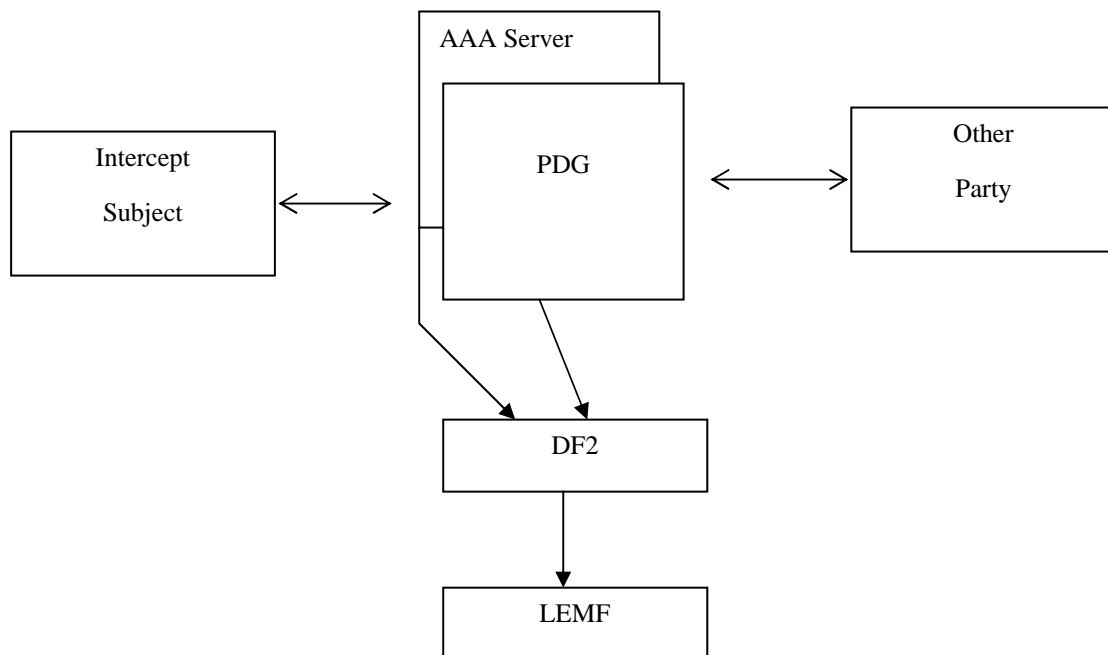


Figure 25: Provision of Intercept Related Information

9.3.1 X2-interface

The following information needs to be transferred from the PDG or the AAA server to the DF2 in order to allow a DF2 to perform its functionality:

- target identity (IMSI, NAI, or MSISDN, if available);
- events and associated parameters as defined in section 9.3.2 may be provided;
- the target location (if available);
- Correlation number; (for PDG only)
- Quality of Service (QoS) identifier (if available).

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

9.3.2 3GPP WLAN Interworking LI Events and Event Information

The following events are applicable to AAA Server:

- I-WLAN Access Initiation;
- I-WLAN Access Termination;
- I-WLAN Tunnel Establishment;

- I-WLAN Tunnel Disconnect;
- Start of Intercept with I-WLAN Communication Active;

The following events are applicable to the PDG:

- I-WLAN Tunnel Establishment;
- I-WLAN Tunnel Disconnect;
- Start of Intercept with I-WLAN Communication Active.

CHANGE REQUEST

33.107 CR 049 rev - Current version: **6.3.0**

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:	33.107 Cleanup		
Source:	SA3 LI		
Work item code:	SEC1-LI	Date:	12/10/2004
Category:	F	Release:	Rel-6
Use <u>one</u> 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 <u>one</u> of the following releases: Ph2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) Rel-7 (Release 7)	

Reason for change:	Ambiguous statements were clarified		
Summary of change:	It was clarified that the IEs in Table 1 and Table 2 may be conditional.		
Consequences if not approved:	Possible wrong implementations		

Clauses affected:	5; 6; 6.3.2; 6.4.2; 7; 7.3; 7A.3; C.4; C.5; C.6.										
Other specs affected:	<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;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications Test specifications O&M Specifications	
Y	N										
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Other comments:											

5 Activation, deactivation and interrogation

Figure 2 is an extraction from the reference intercept configuration shown in figure 1 which is relevant for activation, deactivation and interrogation of the lawful interception.

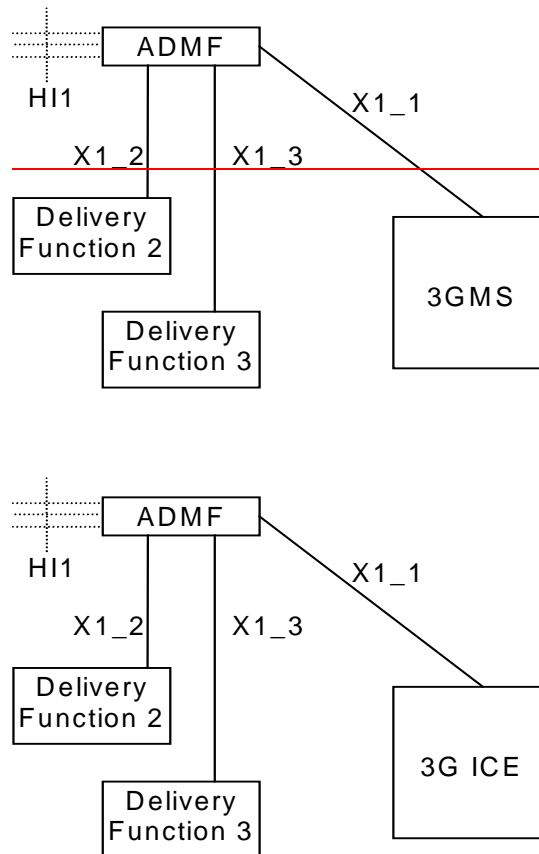


Figure 2: Functional model for Lawful Interception activation, deactivation and interrogation

In addition to the typical 3G ICEs functional entities, a new functional entity is introduced - the ADMF - the Lawful Interception administration function. The ADMF:

- interfaces with all the LEAs that may require interception in the intercepting network;
- keeps the intercept activities of individual LEAs separate;
- interfaces to the intercepting network.

Every physical 3G ICE is linked by its own X1_1-interface to the ADMF. Consequently, every single 3G ICE performs interception (activation, deactivation, interrogation as well as invocation) independently from other 3G ICEs. The HI1-interface represents the interface between the requester of the lawful interception and the Lawful administration function; it is included for completeness, but is beyond the scope of standardisation in this document.

The target identities for 3GPP MS CS and PS interception at the SGSN, GGSN, 3G MSC Server and 3G GMSC Server can be at least one of the following: IMSI, MSISDN or IMEI.

NOTE 1: Some communication content during a mobility procedure may not be intercepted when interception is based on MSISDN (only PS interception) or IMEI. The use of the IMSI does not have this limitation. For the availability of the target identities IMSI, MSISDN and IMEI (PS interception), refer to [10].

The target identities for multi-media at the CSCF can be one or more of the following: SIP URI or TEL URL. Other identities are ~~for further study~~ not defined in this release.

In case of location dependent interception the following network/national options exist:

- target location versus Interception Areas (IAs) check in the 3G ICEs and Delivery Functions (DFs);
- ~~target location versus IAs check in the DFs (physical collocation of the DFs to the 3G ICEs may be required by national law);~~
- [location dependent interception is not applicable to CSCF.](#)

NOTE 2: The IA is previously defined by a set of cells. From the location of the target this set of cells permits to find the relevant IA.

NOTE 3: It is not required that the 3G GMSC or the 3G GGSN are used for interception when Location Dependent Interception is invoked and the location of the target is not available.

~~Editors' note: Location dependent intercept at the CSCF is for further study.~~

Editors' note: Location dependent intercept for the 3G MSC Server and SSGN is ~~for further study~~ [not defined for this release.](#)

The ADMF shall be able to provision P-CSCFs independently from S-CSCFs. If both P-CSCFs and S-CSCFs are administered within the network for intercept, redundant multi-media IRI may be presented to the agency as a result.

***** Next Modification *****

6 Invocation of Lawful Interception for Circuit Switched Services

Figure 11 shows an extraction from the reference configuration in figure 1 which is relevant for the invocation of the lawful interception.

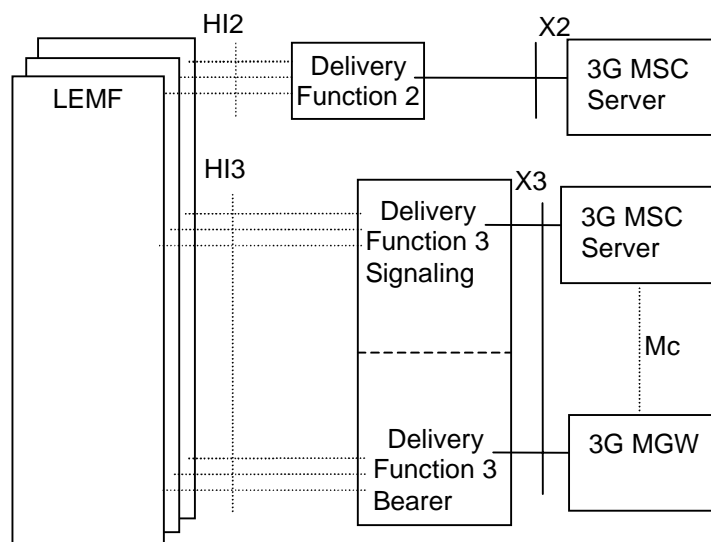


Figure 11: Functional model for Lawful Interception invocation

The HI2 and HI3 interfaces represent the interfaces between the LEMF and two delivery functions. Both interfaces are subject to national requirements. They are included for completeness, but are beyond the scope of standardization in this document. The delivery functions are used:

- to convert the information on the X2-interface to the corresponding information on the HI2-interface;
- to convert the information on the X3-interface to the corresponding information on the HI3-interface;
- to distribute the intercept related information to the relevant LEA(s) (based on IAs, if defined);

- to distribute the intercept product to the relevant LEA(s) (based on IAs, if defined).

~~In case a call is selected based on several identities (MSISDN, IMSI, IMEI) of the same target, the 3G MSC will deliver CC and IRI only once to the DF2 and DF3. DF2 and DF3 will then distribute the information to the relevant LEA that requested interception on a particular target identity.~~

For the delivery of the CC and IRI, the 3G MSC Server provides a correlation number and target identity to the DF2 and DF3 which is used there in order to select the different LEAs to which the product shall be delivered.

NOTE: If interception has been activated for both parties of the call both CC and IRI will be delivered for each party as separate intercept activity.

The Mc interface between the 3G MSC Server and MGW is used to establish intercept and deliver the bearer to DF3.

For Location Dependent Interception, the location dependency check occurs at the establishment of each call. Subsequent dependency checks for simultaneous calls are not required, but can be a national option.

If a target is marked using an IA in the 3G MSC Server, the 3G MSC Server shall perform a location dependency check at call set-up. Only if the target's location matches the IA then the call is intercepted.

If a target is marked using an IA in the DF2, the DF2 shall perform a location dependency check at reception of the first IRI for the call. Only if the target's location matches the IA for certain LEAs is IRI the relayed to these LEAs. All subsequent IRIs for the call are sent to the same LEAs.

If a target is marked using an IA in the DF3, the DF3 signalling function shall perform a location dependency check at reception of the CC. Only if the target's location matches the IA for certain LEAs is the CC relayed to these LEAs.

*** Next Modification ***

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 clause. The events for interception are configurable (if they are sent to DF2) in the 3G MSC Server 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 can be associated with~~ ~~used to generate~~ the events. The events trigger the transmission of the information from the 3G MSC Server to DF2. Available IEs from ~~T~~ this set of information can be extended in the 3G MSC Server, if this is necessary in a specific country. DF2 can extend ~~this available~~ 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 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 ***

6.4.2 Interception for Call Forwarding / Call Deflection / ECT

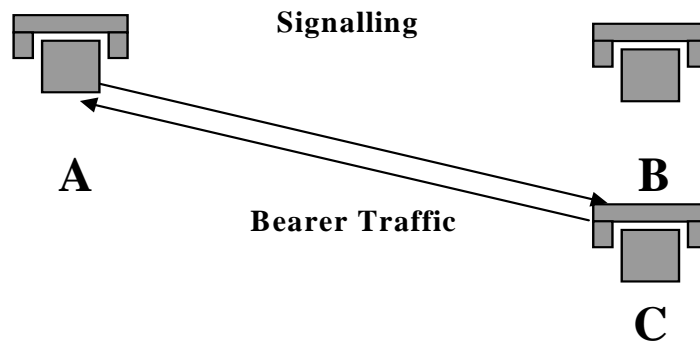


Figure 17: Interception for Call Forwarding / Deflection / ECT

The interception of party B once the supplementary service is invoked is a national option.

For Intercept Related Information it depends who is monitored:

- If subscriber A is monitored the number of A and B are mandatory in the event information and the number of C if available.
- If subscriber B is monitored the number of B and C are mandatory in the event information and the number of A if available.
- If subscriber C is monitored the number of C is mandatory in the event information and the number of A and B if available.

Intercept requirements for CS multi-media is ~~for further study~~ [not defined in this release](#).

*** Next Modification ***

7 Invocation of Lawful Interception for GSN Packet Data services

Figure 18 shows the extract from the reference configuration which is relevant for the invocation of the Lawful Interception of the packet data GSN network.

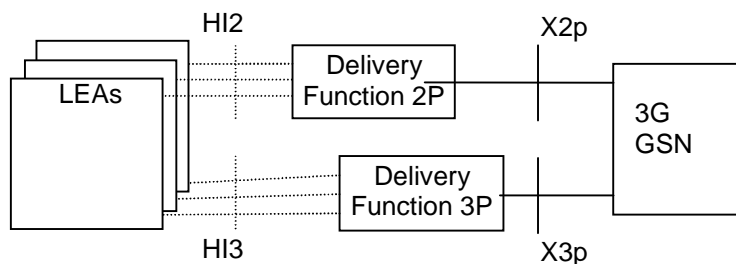


Figure 18: Functional model for Packet Data GSN Network Lawful Interception invocation

The HI2 and HI3 interfaces represent the interfaces between the LEA and two delivery functions. Both interfaces are subject to national requirements. They are included for completeness, but are beyond the scope of this specification. The delivery functions are used:

- to convert the information on the X2-interface to the corresponding information on the HI2 interface;
- to distribute the intercept related information to the relevant LEA(s);
- to distribute the intercept product to the relevant LEA(s).

~~In case a Packet Data communication is selected based on several identities (MSISDN, IMSI, IMEI, ...) of the same target, the 3G SGSN and/or, per national option 3G GGSN will deliver CC and IRI only once to the DF2 and DF3. DF2 and DF3 will then distribute the information to the relevant LEAs.~~

For the delivery of the CC and IRI the 3G SGSN and/or, per national option 3G GGSN provides correlation number and target identity to the DF2 and DF3 which is used there in order to select the different LEAs where the product shall be delivered.

The correlation number is unique in the whole PLMN and is used to correlate CC with IRI and the different IRI's of one PDP context.

The correlation number shall be generated by using existing parameters related to the PDP context.

NOTE: If interception has been activated for both parties of the Packet Data communication both CC and IRI will be delivered for each party as separate intercept activity.

In case of location dependent interception:

- for each target, the location dependency check occurs at each Packet Data session establishment or release and at each Routing Area (RA) update to determine permanently the relevant IAs (and deduce, the possible LEAs within these IAs);
- concerning the IRI:
 - when an IA is left, a Mobile Station Detach event is sent when changing servicing 3 G GSNs or a RA update event is sent when changing IAs inside the same servicing 3G SGSN to DF2;
 - when a new IA is entered a RA update event is sent to DF2 and, optionally, a "Start of interception with PDP context active" event for each PDP context;
- concerning the CC, when crossing IAs, the CC is not sent anymore to the DF3 of the old IA but sent to the DF3 of the new IA.

Both in case of location dependent and location independent interception:

"Start of interception with PDP context active" event is sent by the new SGSN if an Inter-SGSN RA update procedure, which involves different PLMNs, takes place for a target, which has at least one active PDP context.

NOTE: An SGSN can differentiate "Inter PLMN" type of Inter-SGSN RA update procedure from "Intra PLMN" type of Inter-SGSN RA update procedure by inspecting the old RAI parameter, which is being received by the SGSN as part of the procedure (see 3GPP TS 23.060 [10], clause 6.9.1.2.2 and 3GPP TS 23.003, clause 4.2).

Optionally, it is possible to send "Start of interception with PDP context active" for all cases of inter- SGSN RA update when at least one PDP context is active.

***** Next Modification *****

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.

Serving System event reporting is a national option.

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

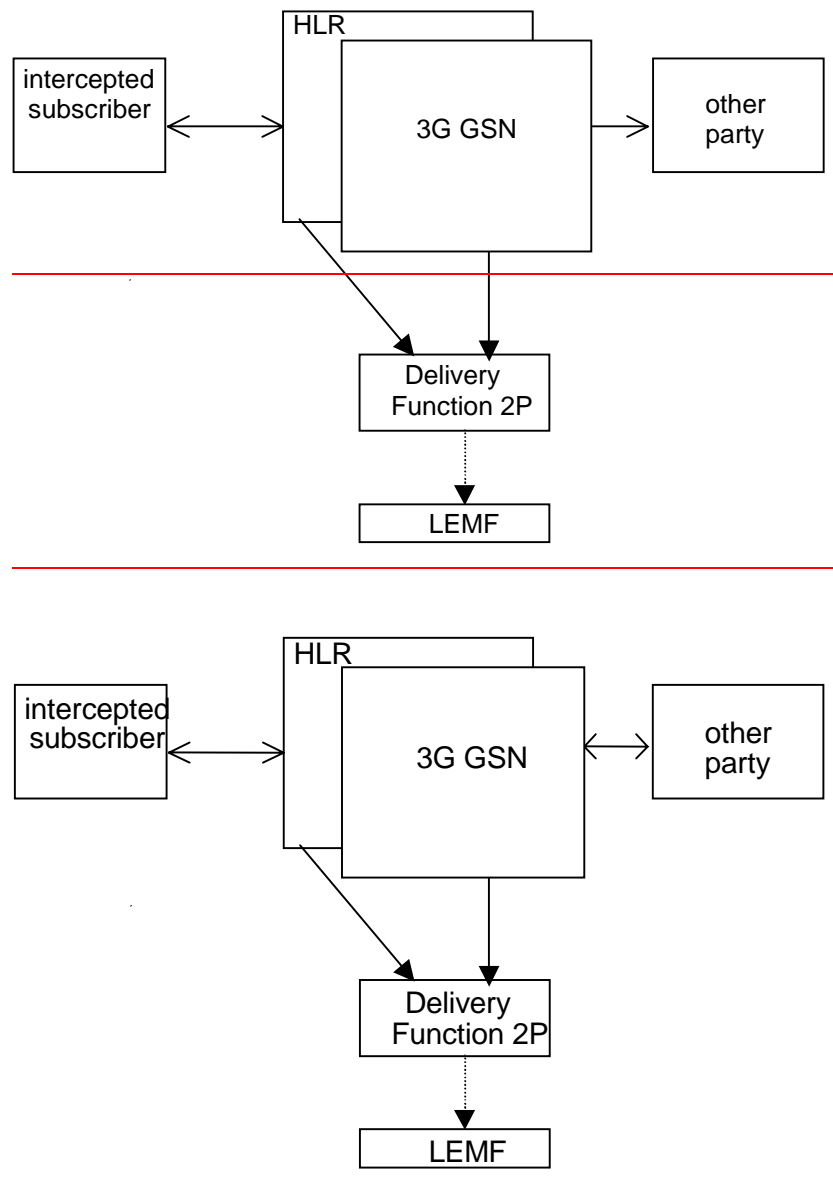


Figure 21: Provision of Intercept Related Information

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 clauses 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;
- Quality of Service (QoS) identifier;

- Encryption parameters (keys and associated parameters for decrypting CC), if available and necessary.

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

7.3.2 Structure of the events

There are eight different events in which the information is sent to the DF2 if this is required. Details are described in the following clause. 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 modification;
- 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 modification;
- PDP context deactivation;
- Start of interception with PDP context active.

The following events are applicable to the HLR:

- Serving System.

A set of fields as shown below ~~can be associated with is used to generate~~ the events. The events trigger the transmission of the information from 3G GSN or HLR to DF2. Available IEs from t 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 available 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. Timestamp shall be generated relative to GSN or HLR internal clock.
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.
Old Location Information Location Information of the subscriber before Routing Area Update
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.
Initiator The initiator of the PDP context activation, deactivation or modification request either the network or the 3G MS.
SMS 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).

*** Next Modification ***

7A.3 Multi-media events

- All SIP messages to or from a targeted subscriber, and all SIP messages executed on behalf of a targeted subscriber for multi-media session control are intercepted by the P CSCF and S CSCF and sent to DF2. The target identifier used to trigger the intercept will also be sent with the SIP message. P CSCF event reports may be redundant with S CSCF event reports when the P CSCF and S CSCF reside in the same network, however, this standard does not require nor prohibit redundant information from being reported to DF2.
- The IRI should be sent to DF2 with a reliable transport mechanism.
- ~~The reporting of location information for the sake of location dependent intercept is for further study.~~

- The use of a correlation ID for SIP to bearer correlation is ~~a topic for further study~~[not defined in this release](#).
- An intercepted SIP event sent to DF2 is shown below:
 - Observed SIP URI
 - Observed TEL URL
 - Event Time and Date
 - Network element identifier
 - SIP Message Header
 - SIP Message Payload

***** Next Modification *****

C.4 Multimedia with Supplementary Service – Call Forwarding

~~For further study~~[Not defined in this release](#).

C.5 Multimedia with Supplementary Service – Explicit Call Transfer

~~For further study~~[Not defined in this release](#).

C.6 Multimedia with Supplementary Service – Subscriber Controlled input

~~For further study~~[Not defined in this release](#).

CHANGE REQUEST

33.107 CR 050 rev - Current version: **6.3.0**

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:	Clarification on MMS interception		
Source:	SA3-LI		
Work item code:	SEC1-LI	Date:	12/10/04
Category:	B	Release:	Rel-6
	Use <u>one</u> 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 <u>one</u> 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) Rel-6 (Release 6) Rel-7 (Release 7)

Reason for change:	33.107 does not specifically address the interception of the Multimedia Messaging Service (MMS).
Summary of change:	33.107 provides detailed requirements on SMS interception but does not specifically mention MMS. This CR adds a new sub-section 7.6, in order to clarify how MMS interception is performed.
Consequences if not approved:	It may be unclear to LEAs how MMS interception is performed within 3GPP networks and in what form MMS will be delivered.

Clauses affected:	7										
Other specs Affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">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> <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	X	X		
Y	N										
X	X										
X	X										
X	X										
Other comments:											

***** FIRST Change *******7.6 Interception of the Multimedia Messaging Service (MMS)**

The Multimedia Messaging Service (MMS) is a service running over the 3GPP PS-domain. Both mobile originating and mobile terminating MMS messages must pass through PS domain GSN nodes en route to or from Multimedia Message Service Centres (MMSCs). Therefore, interception of MMS messages shall be performed at the GSN in exactly the same way as for other PS-domain bearer services.

The GSN is not responsible for recovering individual MMS messages from the user PDP context IP stream.

No MMS specific HI2 records are defined to be delivered to the LEMF over the DF2 other than those listed in section 7.4 of this specification. CC records shall be sent to the LEMF over the DF3 as specified in section 7.3.

Interception of a user PDP context IP stream will occur as described in section 7.2. Such a stream may or may not contain MMS messages.

*******END OF CHANGES*******

3GPP TSG-SA3-LI Meeting #15
 San Antonio, USA, 11-13 October 2004

Tdoc **S3LI04_157r1**

CR-Form-v7.1
CHANGE REQUEST
⌘ 33.108 CR 060 ⌘ rev - ⌘ Current version: 5.8.0 ⌘

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:	⌘ Correction to ULIC header		
Source:	⌘ SA3-LI		
Work item code:	⌘ SEC1-LI	Date:	⌘ 12/10/2004
Category:	⌘ F	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> of the following releases: Ph2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) Rel-7 (Release 7)

Reason for change:	⌘ In case a centralized DF3/MF is serving both GGSN and SGSN, packets intercepted in both SGSN and GGSN are sent through the same DF3/MF to LEMF over HI3 interface. In the information sent over HI3 interface there is no indication allowing LEMF to distinguish whether the received packet was intercepted in the GGSN or in the SGSN.
Summary of change:	⌘ The ULIC header is modified to carry information about the type of node (GGSN or SGSN) in which the packet was intercepted.
Consequences if not approved:	⌘ Wrong information sent to LEMF; in the mentioned cases, LEMF would receive duplicated/mixed copies of packets and it would be not possible for LEMF to distinguish which packet was intercepted in the GGSN and which was intercepted in the SGSN.

Clauses affected:	⌘ B.4, C.1.2, C.1.3										
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><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	
Y	N										
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<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
Other comments:	⌘										

*** FIRST MODIFICATION ***

B.4 HI3 CC definition

```
Umts-HI3-PS {itu-t(0) identified-organization(4) etsi(0) securityDomain(2) lawfulIntercept(2)
threeGPP(4) hi3(2) r5(5) version-12(±2)}
```

```
DEFINITIONS IMPLICIT TAGS ::=
```

```
BEGIN
```

```
IMPORTS
```

```
GPRSCorrelationNumber
```

```
FROM UmtsHI2Operations
```

```
{itu-t(0) identified-organization(4) etsi(0) securityDomain(2) lawfulIntercept(2) threeGPP(4)
hi2(1) version-1(1)} -- from 3GPP UmtsHI2Operations
```

```
LawfulInterceptionIdentifier,
```

```
TimeStamp
```

```
FROM HI2Operations
```

```
{itu-t(0) identified-organization(4) etsi(0) securityDomain(2) lawfulIntercept(2) hi2(1)
version3(3)}; -- from ETSI HI2Operations TS 101 671 Edition 3
```

```
-- Object Identifier Definitions
```

```
-- Security DomainId
```

```
lawfulInterceptDomainId OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0)
securityDomain(2) lawfulIntercept(2)}
```

```
-- Security Subdomains
```

```
threeGPPSUBDomainId OBJECT IDENTIFIER ::= {lawfulInterceptDomainId threeGPP(4)}
```

```
hi3DomainId OBJECT IDENTIFIER ::= {threeGPPSUBDomainId hi3-(2) r5(5) version-12(±2)}
```

```
CC-PDU ::= SEQUENCE
```

```
{
  uLIC-header      [1] ULIC-header,
  payload          [2] OCTET STRING
}
```

```
ULIC-header ::= SEQUENCE
```

```
{
  hi3DomainId      [0] OBJECT IDENTIFIER, -- 3GPP HI3 Domain
  version          [1] Version,
  lIID             [2] LawfulInterceptionIdentifier OPTIONAL,
  correlation-Number [3] GPRSCorrelationNumber,
  timeStamp        [4] TimeStamp OPTIONAL,
  sequence-number  [5] INTEGER (0..65535),
  t-PDU-direction [6] TPDU-direction,
  ...
  ice-type         [8] ICE-type OPTIONAL
  -- The ICE-type indicates the applicable Intercepting Control Element (see ref [19])
  -- in which the TPDU is intercepted.
}
```

```
Version ::= ENUMERATED
```

```
{
  version1(1),
  ...
  version2(2)
}
```

```
TPDU-direction ::= ENUMERATED
```

```
{
  from-target      (1),
  to-target        (2),
  unknown          (3)
}
```

```
ICE-type ::= ENUMERATED
```

```
{
  sgsn            (1),
}
```

```

_____ ggsn (2),
_____ ...
}
    
```

END-- OF Umts-HI3-PS

***** NEXT MODIFICATION *****

C.1.2 Definition of ULIC header version 0

ULIC header contains the following attributes:

- Correlation Number.
- Message Type (a value of 255 is used for HI3-PDU's).
- Direction.
- Sequence Number.
- Length.
- Intercepting Control Element (ICE) type.

T-PDU contains the intercepted information.

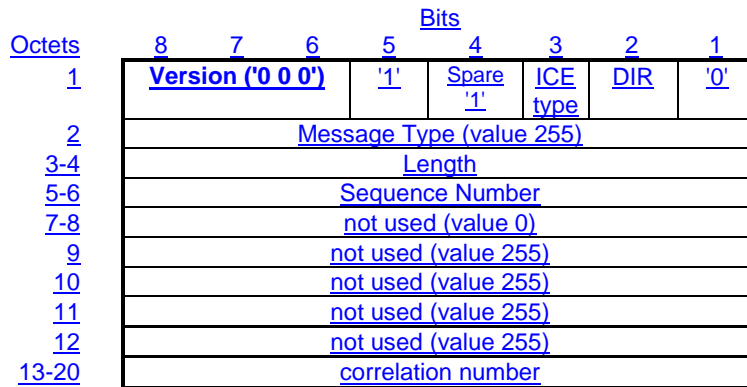
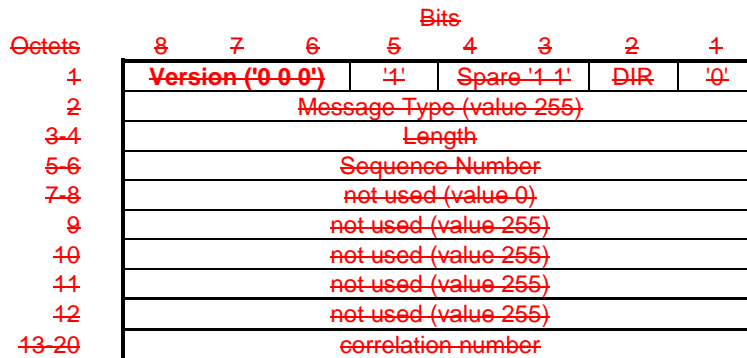


Figure C.1: Outline of ULIC header

For interception tunneling the ULIC header shall be used as follows:

- Version shall be set to 0 to indicate the first version of ULIC header.
- DIR indicates the direction of the T-PDU:
 - "1" indicating uplink (from observed mobile user); and
 - "0" indicating downlink (to observed mobile user).
- Message Type shall be set to 255 (the unique value that is used for T-PDU within GTP [12]).
- Length shall be the length, in octets, of the signalling message excluding the ULIC header. Bit 8 of octet 3 is the most significant bit and bit 1 of octet 4 is the least significant bit of the length field.
- Sequence Number is an increasing sequence number for tunneled T-PDUs. Bit 8 of octet 5 is the most significant bit and bit 1 of octet 6 is the least significant bit of the sequence number field.
- Correlation Number consists of two parts: GGSN-ID identifies the GGSN which creates the Charging-ID.

Charging-ID is defined in [12] and assigned uniquely to each PDP context activation on that GGSN (4 octets).

The correlation number consist of 8 octets. The requirements for this correlation number are similar to that defined for charging in [12], chapter 5.4. Therefore it is proposed to use the Charging-ID, defined in [12] , chapter 5.4 as part of correlation number. The Charging-ID is signaled to the new SGSN in case of SGSN-change so the tunnel identifier could be used "seamlessly" for the HI3 interface.

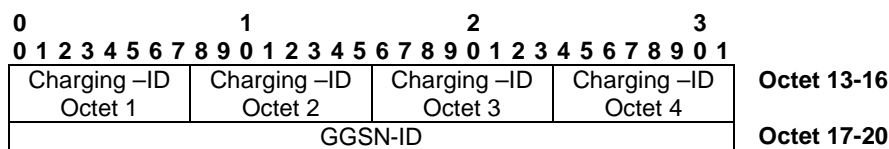


Figure C.2: Outline of correlation number

- [Intercepting Control Element \(ICE, see ref \[19\]\) type. Indicates whether the T-PDU was intercepted in the GGSN or in the SGSN:](#)

"0" indicating GGSN; and

"1" indicating SGSN.

[This parameter is needed only in case the GGSN and the SGSN use the same Delivery Function/Mediation Function for the delivery of Content of Communication.](#)

The ULIC header is followed by a subsequent payload information element. Only one payload information element is allowed in a single ULIC message.

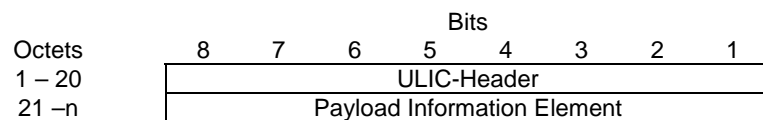


Figure C.3: ULIC header followed by the subsequent payload Information Element

The payload information element contains the header and the payload of the communication between the intercepted subscriber and the other party.

C.1.3 Definition of ULIC header version 1

ULIC-header version 1 is defined in ASN.1 (ref [5]) (see annex B.4) and is encoded according to BER (ref [6]). It contains the following attributes:

- Object Identifier (hi3DomainId)
- ULIC header [ASN.1](#) version (version)
~~set to version 1.~~
- lawful interception identifier (IID, optional)
sending of lawful interception identifier is application dependant; it is done according to national requirements.
- correlation number (correlation-Number). As defined in clause 6.1.3
- time stamp (timeStamp, optional),
sending of time stamp is application dependant; it is done according to national requirements.
- sequence number (sequence-number). Sequence Number is an increasing sequence number for tunneled T-PDUs. Handling of sequence number is application dependent; it is done according to national requirements (e.g. unique sequence number per PDP-context).
- T-PDU direction (t-PDU-direction)
indicates the direction of the T-PDU (from the target or to the target).
- [ICE type \(ice-type, optional\)](#)
[indicates the applicable Intercepting Control Element \(see ref. \[19\]\) in which the T-PDU was intercepted. This parameter is needed only in case the GGSN and the SGSN use the same Delivery Function/Mediation Function for the delivery of Content of Communication.](#)

The ULIC header is followed by a subsequent payload information element. Only one payload information element is allowed in a single ULIC message (see annex B.4).

The payload information element contains the header and the payload of the communication between the intercepted subscriber and the other party.

***** END OF MODIFICATION *****

3GPP TSG-SA3-LI Meeting #15
 San Antonio, USA, 11-13 October 2004

Tdoc **S3LI04_158r1**

CR-Form-v7.1
CHANGE REQUEST
⌘ 33.108 CR 061 ⌘ rev ⌘ - ⌘ Current version: 6.7.0 ⌘

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:	⌘ Correction to ULIC header		
Source:	⌘ SA3-LI		
Work item code:	⌘ SEC1-LI	Date:	⌘ 12/10/2004
Category:	⌘ A	Release:	⌘ Rel-6
	Use <u>one</u> 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 <u>one</u> of the following releases: Ph2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) Rel-7 (Release 7)

Reason for change:	⌘ In case a centralized DF3/MF is serving both GGSN and SGSN, packets intercepted in both SGSN and GGSN are sent through the same DF3/MF to LEMF over HI3 interface. In the information sent over HI3 interface there is no indication allowing LEMF to distinguish whether the received packet was intercepted in the GGSN or in the SGSN.
Summary of change:	⌘ The ULIC header is modified to carry information about the type of node (GGSN or SGSN) in which the packet was intercepted. Moreover, the definition of National Parameter, which was missing in the current version of the specification, has been added to clause C1.3.
Consequences if not approved:	⌘ Wrong information sent to LEMF; in the mentioned cases, LEMF would receive duplicated/mixed copies of packets and it would be not possible for LEMF to distinguish which packet was intercepted in the GGSN and which was intercepted in the SGSN.

Clauses affected:	⌘ B.4, C.1.2, C.1.3										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications ⌘ Test specifications ⌘ O&M Specifications ⌘	
Y	N										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input checked="" type="checkbox"/>										
Other comments:	⌘										

*** FIRST MODIFICATION ***

B.4 Contents of communication (HI3 PS)

```
Umts-HI3-PS {itu-t(0) identified-organization(4) etsi(0) securityDomain(2) lawfulIntercept(2)
threeGPP(4) hi3(2) r6(6) version-23(23)}
```

```
DEFINITIONS IMPLICIT TAGS ::=
```

```
BEGIN
```

```
IMPORTS
```

```
GPRSCorrelationNumber
```

```
FROM UmtsHI2Operations
{itu-t(0) identified-organization(4) etsi(0) securityDomain(2) lawfulIntercept(2) threeGPP(4)
hi2(1) r6(6) version-3(3)} -- from 3GPP UmtsHI2Operations
```

```
LawfulInterceptionIdentifier,
```

```
TimeStamp
```

```
FROM HI2Operations
{itu-t(0) identified-organization(4) etsi(0) securityDomain(2) lawfulIntercept(2) hi2(1)
version5(5)}; -- from ETSI HI2Operations TS 101 671v2.9.1
```

```
-- Object Identifier Definitions
```

```
-- Security DomainId
lawfulInterceptDomainId OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0)
securityDomain(2) lawfulIntercept(2)}
```

```
-- Security Subdomains
```

```
threeGPPSUBDomainId OBJECT IDENTIFIER ::= {lawfulInterceptDomainId threeGPP(4)}
hi3DomainId OBJECT IDENTIFIER ::= {threeGPPSUBDomainId hi3(2) r6(6) version-23(23)}
```

```
CC-PDU ::= SEQUENCE
```

```
{
  uLIC-header      [1] ULIC-header,
  payload          [2] OCTET STRING
}
```

```
ULIC-header ::= SEQUENCE
```

```
{
  hi3DomainId      [0] OBJECT IDENTIFIER, -- 3GPP HI3 Domain
  version          [1] Version,
  lIID             [2] LawfulInterceptionIdentifier OPTIONAL,
  correlation-Number [3] GPRSCorrelationNumber,
  timeStamp        [4] TimeStamp OPTIONAL,
  sequence-number  [5] INTEGER (0..65535),
  t-PDU-direction [6] TPDU-direction,
  ...,
  national-HI3-ASN1parameters [7] National-HI3-ASN1parameters OPTIONAL,
  -- encoded per national requirements
  ice-type         [8] ICE-type OPTIONAL
  -- The ICE-type indicates the applicable Intercepting Control Element(see ref [19]) in which
  -- the T-PDU is intercepted.
}
```

```
Version ::= ENUMERATED
```

```
{
  version1(1),
  ...
  version3(3)
}
```

```
TPDU-direction ::= ENUMERATED
```

```
{
  from-target      (1),
  to-target        (2),
  unknown          (3)
}
```

```
National-HI3-ASN1parameters ::= SEQUENCE
```

```
{
```

```

countryCode    [1] PrintableString (SIZE (2)),
    -- Country Code according to ISO 3166-1 [39],
    -- the country to which the parameters inserted after the extension marker apply
    ...
    -- In case a given country wants to use additional national parameters according to its law,
    -- these national parameters should be defined using the ASN.1 syntax and added after the
    -- extension marker (...).
    -- It is recommended that "version parameter" and "vendor identification parameter" are
    -- included in the national parameters definition. Vendor identifications can be
    -- retrieved from IANA web site.
}
    
```

```

ICE-type ::= ENUMERATED
{
    sgsn      (1),
    ggsn      (2),
    ...
}
    
```

END-- OF Umts-HI3-PS

***** NEXT MODIFICATION *****

C.1.2 Definition of ULIC header version 0

ULIC header contains the following attributes:

- Correlation Number.
- Message Type (a value of 255 is used for HI3-PDU's).
- Direction.
- Sequence Number.
- Length.
- Intercepting Control Element (ICE) type.

T-PDU contains the intercepted information.

Octets	Bits							
	8	7	6	5	4	3	2	1
1	Version ('0 0 0')		'1'	Spare '1 1'		DIR	'0'	
2	Message Type (value 255)							
3-4	Length							
5-6	Sequence Number							
7-8	not used (value 0)							
9	not used (value 255)							
10	not used (value 255)							
11	not used (value 255)							
12	not used (value 255)							
13-20	correlation number							

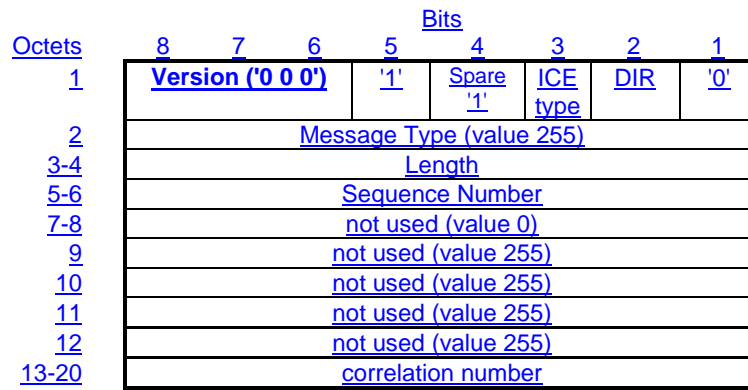


Figure C.1: Outline of ULIC header

For interception tunneling the ULIC header shall be used as follows:

- Version shall be set to 0 to indicate the first version of ULIC header.
- DIR indicates the direction of the T-PDU:
 - "1" indicating uplink (from observed mobile user); and
 - "0" indicating downlink (to observed mobile user).
- Message Type shall be set to 255 (the unique value that is used for T-PDU within GTP [17]).
- Length shall be the length, in octets, of the signalling message excluding the ULIC header. Bit 8 of octet 3 is the most significant bit and bit 1 of octet 4 is the least significant bit of the length field.
- Sequence Number is an increasing sequence number for tunneled T-PDUs. Bit 8 of octet 5 is the most significant bit and bit 1 of octet 6 is the least significant bit of the sequence number field.

NOTE: When a handoff occurs between SGSNs, the DF3 serving the LEA may change. If the DF3 serving an LEA changes as a result of an handoff between SGSNs, contiguous sequencing may not occur as new sequencing may be initiated at the new DF3. Accordingly, the LEA should not assume that sequencing shall be contiguous when handoff occurs between SGSNs and the DF3 serving the LEA changes.

- Correlation Number consists of two parts: GGSN-ID identifies the GGSN which creates the Charging-ID.

Charging-ID is defined in [17] and assigned uniquely to each PDP context activation on that GGSN (4 octets).

The correlation number consist of 8 octets. The requirements for this correlation number are similar to that defined for charging in [17]. Therefore it is proposed to use the Charging-ID, defined in [17] as part of correlation number. The Charging-ID is signalled to the new SGSN in case of SGSN-change so the tunnel identifier could be used "seamlessly" for the HI3 interface.

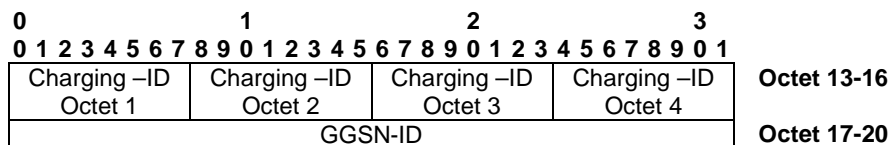


Figure C.2: Outline of correlation number

- Intercepting Control Element (ICE, see ref [19]) type. Indicates whether the T-PDU was intercepted in the GGSN or in the SGSN:

"0" indicating GGSN; and

"1" indicating SGSN.

This parameter is needed only in case the GGSN and the SGSN use the same Delivery Function/Mediation Function for the delivery of Content of Communication.

The ULIC header is followed by a subsequent payload information element. Only one payload information element is allowed in a single ULIC message.

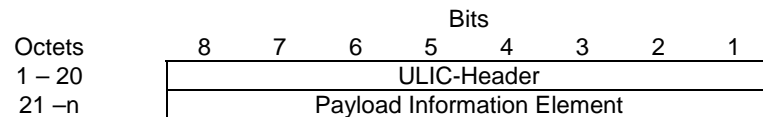


Figure C.3: ULIC header followed by the subsequent payload Information Element

The payload information element contains the header and the payload of the communication between the intercepted subscriber and the other party.

***** NEXT MODIFICATION *****

C.1.3 Definition of ULIC header version 1

ULIC-header version 1 is defined in ASN.1 [5] (see annex B.4) and is encoded according to BER [6]. It contains the following attributes:

- Object Identifier (hi3DomainId)
- ULIC header [ASN.1](#) version (version)
~~set to version 1.~~
- lawful interception identifier (IIID, optional)
sending of lawful interception identifier is application dependant; it is done according to national requirements.
- correlation number (correlation-Number). As defined in clause 6.1.3
- time stamp (timeStamp, optional),
sending of time stamp is application dependant; it is done according to national requirements.
- sequence number (sequence-number). Sequence Number is an increasing sequence number for tunneled T-PDUs. Handling of sequence number is application dependent; it is done according to national requirements (e.g. unique sequence number per PDP-context).

NOTE: When a handoff occurs between SGSNs, the DF3 serving the LEA may change. If the DF3 serving an LEA changes as a result of an handoff between SGSNs, contiguous sequencing may not occur as new sequencing may be initiated at the new DF3. Accordingly, the LEA should not assume that sequencing shall be contiguous when handoff occurs between SGSNs and the DF3 serving the LEA changes.

- TPDU direction (t-PDU-direction)
indicates the direction of the T-PDU (from the target or to the target).
- [National parameters \(nationalParameters, optional\)](#)
[this parameter is encoded according to national requirements](#)
- [ICE type \(ice-type, optional\)](#)
[indicates whether the T-PDU was intercepted in the GGSN or in the SGSN. This parameter is needed only in case the GGSN and the SGSN use the same Delivery Function/Mediation Function for the delivery of Content of Communication.](#)

The ULIC header is followed by a subsequent payload information element. Only one payload information element is allowed in a single ULIC message (see annex B.4).

The payload information element contains the header and the payload of the communication between the intercepted subscriber and the other party.

***** END OF MODIFICATION *****

CHANGE REQUEST

33.108 CR 062 rev - Current version: **6.7.0**

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:	Correction on parameter GprsOperationErrorCode		
Source:	SA3-LI		
Work item code:	SEC1-LI	Date:	12/10/2004
Category:	F	Release:	Rel-6
	Use <u>one</u> 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 <u>one</u> of the following releases: Ph2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) Rel-7 (Release 7)

Reason for change:	In TS 33.108, the parameter GprsOperationErrorCode is defined as an octet string of fixed size (2 octets), including the IEI and the cause value, according to the general definition in TS 24.008. This does not take in account possible "V" formatting (only one octet) of the parameter which is foreseen by 3GPP TS 24.008 for SM cause and GMM cause.
Summary of change:	The ASN.1 definition of the parameter GprsOperationErrorCode is changed to have variable length in order to allow sending only one octet with the SM/GMM cause.
Consequences if not approved:	In case the IEI for SM/GMM cause is not available at the DF2/MF, it would not be possible to send the parameter GprsOperationErrorCode in the format foreseen by ASN.1. Wrong information would be sent to the LEMF.

Clauses affected:	B.3						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px;">X</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications	X	<input checked="" type="checkbox"/>				
X							
<input checked="" type="checkbox"/>							
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px;">X</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications	X	<input checked="" type="checkbox"/>				
X							
<input checked="" type="checkbox"/>							
Other comments:							

B.3 Intercept related information (HI2 PS and IMS)

Declaration of ROSE operation umts-sending-of-IRI is ROSE delivery mechanism specific. When using FTP delivery mechanism, data UmtsIRIsContent must be considered.

ASN1 description of IRI (HI2 interface)

```
UmtsHI2Operations {itu-t(0) identified-organization(4) etsi(0) securityDomain(2) lawfulIntercept(2)
threeGPP(4) hi2(1) r6(6) version-56(56)}
```

DEFINITIONS IMPLICIT TAGS ::=

BEGIN

IMPORTS

```
OPERATION,
ERROR
FROM Remote-Operations-Information-Objects
{joint-iso-itu-t(2) remote-operations(4) informationObjects(5) version1(0)}

LawfulInterceptionIdentifier,
TimeStamp,
Network-Identifier,
National-Parameters,
National-HI2-ASN1parameters,
DataNodeAddress,
IPAddress,
IP-value,
X25Address

FROM HI2Operations
{itu-t(0) identified-organization(4) etsi(0) securityDomain(2)
lawfulIntercept(2) hi2(1) version5(5)}; -- Imported from TS 101 671
```

-- Object Identifier Definitions

```
-- Security DomainId
lawfulInterceptDomainId OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0)
securityDomain(2) lawfulIntercept(2)}

-- Security Subdomains
threeGPPSUBDomainId OBJECT IDENTIFIER ::= {lawfulInterceptDomainId threeGPP(4)}
hi2DomainId OBJECT IDENTIFIER ::= {threeGPPSUBDomainId hi2(1) r6(6) version-56(56)}
```

umts-sending-of-IRI OPERATION ::=

```
{
  ARGUMENT      UmtsIRIsContent
  ERRORS        { OperationErrors }
  CODE          global:{threeGPPSUBDomainId hi2(1) opcode(1)}
}
-- Class 2 operation . The timer shall be set to a value between 3 s and 240 s.
-- The timer.default value is 60s.
-- NOTE: The same note as for HI management operation applies.
```

UmtsIRIsContent ::= CHOICE

```
{
  umtsIRIContent      UmtsIRIContent,
  umtsIRISequence     UmtsIRISequence
}
```

UmtsIRISequence ::= SEQUENCE OF UmtsIRIContent

```
-- Aggregation of UmtsIRIContent is an optional feature.
-- It may be applied in cases when at a given point in time
-- several IRI records are available for delivery to the same LEA destination.
-- As a general rule, records created at any event shall be sent
-- immediately and not withheld in the DF or MF in order to
-- apply aggregation.
-- When aggregation is not to be applied,
-- UmtsIRIContent needs to be chosen.
```

```

UmtsIRIContent ::= CHOICE
{
  iRI-Begin-record      [1] IRI-Parameters, -- include at least one optional parameter
  iRI-End-record        [2] IRI-Parameters,
  iRI-Continue-record   [3] IRI-Parameters, -- include at least one optional parameter
  iRI-Report-record     [4] IRI-Parameters -- include at least one optional parameter
}

```

```

unknown-version      ERROR ::= { CODE local:0}
missing-parameter    ERROR ::= { CODE local:1}
unknown-parameter-value ERROR ::= { CODE local:2}
unknown-parameter    ERROR ::= { CODE local:3}

```

```

OperationErrors ERROR ::=

```

```

{
  unknown-version |
  missing-parameter |
  unknown-parameter-value |
  unknown-parameter
}

```

```

-- This values may be sent by the LEMF, when an operation or a parameter is misunderstood.

```

```

-- Parameters having the same tag numbers must be identical in Rel-5 and Rel-6 modules.

```

```

IRI-Parameters ::= SEQUENCE
{
  hi2DomainId          [0] OBJECT IDENTIFIER, -- 3GPP HI2 domain
  iRIversion           [23] ENUMERATED
  {
    version2 (2),
    ...,
    version3 (3),
    version4 (4),
    -- note that version5 (5) cannot be used as it was missed in the version 5 of this
    -- ASN.1 module.
    version6 (6)
  } OPTIONAL,
  -- if not present, it means version 1 is handled
  lawfulInterceptionIdentifier [1] LawfulInterceptionIdentifier,
  -- This identifier is associated to the target.
  timeStamp            [3] TimeStamp,
  -- date and time of the event triggering the report.)
  initiator            [4] ENUMERATED
  {
    not-Available      (0),
    originating-Target (1),
    -- in case of GPRS, this indicates that the PDP context activation, modification
    -- or deactivation is MS requested
    terminating-Target (2),
    -- in case of GPRS, this indicates that the PDP context activation, modification or
    -- deactivation is network initiated
    ...
  } OPTIONAL,

  locationOfTheTarget [8] Location OPTIONAL,
  -- location of the target subscriber
  partyInformation    [9] SET SIZE (1..10) OF PartyInformation OPTIONAL,
  -- This parameter provides the concerned party, the identiy(ies) of the party
  --)and all the information provided by the party.

  serviceCenterAddress [13] PartyInformation OPTIONAL,
  -- e.g. in case of SMS message this parameter provides the address of the relevant
  -- server within the calling (if server is originating) or called (if server is
  -- terminating) party address parameters
  sms                 [14] SMS-report OPTIONAL,
  -- this parameter provides the SMS content and associated information

  national-Parameters [16] National-Parameters OPTIONAL,
  gPRSCorrelationNumber [18] GPRSCorrelationNumber OPTIONAL,
  gPRSevent            [20] GPRSevent OPTIONAL,
  -- This information is used to provide particular action of the target
  -- such as attach/detach
  sgsnAddress          [21] DataNodeAddress OPTIONAL,
  gPRSOperationErrorCode [22] GPRSOperationErrorCode OPTIONAL,
  ggsnAddress          [24] DataNodeAddress OPTIONAL,
  qos                  [25] UmtsQos OPTIONAL,
  networkIdentifier    [26] Network-Identifier OPTIONAL,
  smsOriginatingAddress [27] DataNodeAddress OPTIONAL,

```

```

smSTerminatingAddress [28] DataNodeAddress OPTIONAL,
imSEvent [29] IMSEvent OPTIONAL,
sIPMessage [30] OCTET STRING OPTIONAL,
servingSGSN-number [31] OCTET STRING (SIZE (1..20)) OPTIONAL,
servingSGSN-address [32] OCTET STRING (SIZE (5..17)) OPTIONAL,
    -- Octets are coded according to 3GPP TS 23.003 [25]
    ...,
    national-HI2-ASN1parameters [255] National-HI2-ASN1parameters OPTIONAL
}
-- Parameters having the same tag numbers must be identical in Rel-5 and Rel-6 modules

```

```
-- PARAMETERS FORMATS
```

```

PartyInformation ::= SEQUENCE
{
    party-Qualifier [0] ENUMERATED
    {
        gPRS-Target(3),
        ...
    },
    partyIdentity [1] SEQUENCE
    {
        imei [1] OCTET STRING (SIZE (8)) OPTIONAL,
            -- See MAP format [4]

        imsi [3] OCTET STRING (SIZE (3..8)) OPTIONAL,
            -- See MAP format [4] International Mobile
            -- Station Identity E.212 number beginning with Mobile Country Code

        msISDN [6] OCTET STRING (SIZE (1..9)) OPTIONAL,
            -- MSISDN of the target, encoded in the same format as the AddressString
            -- parameters defined in MAP format document [4], § 14.7.8

        e164-Format [7] OCTET STRING (SIZE (1 .. 25)) OPTIONAL,
            -- E164 address of the node in international format. Coded in the same format as
            -- the calling party number parameter of the ISUP (parameter part:[5])

        sip-uri [8] OCTET STRING OPTIONAL,
            -- See [26]

        ...,
        tel-url [9] OCTET STRING OPTIONAL,
            -- See [36]
    },

    services-Data-Information [4] Services-Data-Information OPTIONAL,
        -- This parameter is used to transmit all the information concerning the
        -- complementary information associated to the basic data call
    ...
}

```

```

Location ::= SEQUENCE
{
    globalCellID [2] GlobalCellID OPTIONAL,
        --see MAP format (see [4])
    rAI [4] Rai OPTIONAL,
        -- the Routeing Area Identifier is coded in accordance with the § 10.5.5.15 of
        -- document [9] without the Routing Area Identification IEI (only the
        -- last 6 octets are used)
    gsmLocation [5] GSMLocation OPTIONAL,
    umtsLocation [6] UMTSLocation OPTIONAL,
    sAI [7] Sai OPTIONAL,
        -- format: PLMN-ID 3 octets (no. 1 - 3)
        -- LAC 2 octets (no. 4 - 5)
        -- SAC 2 octets (no. 6 - 7)
        -- (according to 3GPP TS 25.413)
    ...
}

```

```

GlobalCellID ::= OCTET STRING (SIZE (5..7))
Rai ::= OCTET STRING (SIZE (6))
Sai ::= OCTET STRING (SIZE (7))

```

```

GSMLocation ::= CHOICE
{
    geoCoordinates [1] SEQUENCE
    {

```

```

latitude      [1] PrintableString (SIZE(7..10)),
               -- format :      XDDMMSS.SS
longitude     [2] PrintableString (SIZE(8..11)),
               -- format :      XDDMMSS.SS
mapDatum      [3] MapDatum DEFAULT WGS84,
               ...,
azimuth       [4] INTEGER (0..359) OPTIONAL
               -- The azimuth is the bearing, relative to true north.
},
-- format :      XDDMMSS.SS
-- X             : N(orth), S(outh), E(ast), W(est)
-- DD or DDD    : degrees (numeric characters)
-- MM           : minutes (numeric characters)
-- SS.SS        : seconds, the second part (.SS) is optional
-- Example :
-- latitude short form      N502312
-- longitude long form     E1122312.18

utmCoordinates [2] SEQUENCE
{
  utm-East      [1] PrintableString (SIZE(10)),
  utm-North     [2] PrintableString (SIZE(7)),
  -- example   utm-East      32U0439955
  --           utm-North     5540736
  mapDatum      [3] MapDatum DEFAULT WGS84,
  ...,
  azimuth       [4] INTEGER (0..359) OPTIONAL
               -- The azimuth is the bearing, relative to true north.
},

utmRefCoordinates [3] SEQUENCE
{
  utmref-string PrintableString (SIZE(13)),
  mapDatum      MapDatum DEFAULT WGS84,
  ...
},
-- example 32UPU91294045

wGS84Coordinates [4] OCTET STRING
  -- format is as defined in [37]; polygon type of shape is not allowed.
}

MapDatum ::= ENUMERATED
{
  wGS84,
  wGS72,
  eD50, -- European Datum 50
  ...
}

```

```

UMTSLocation ::= CHOICE {
  point          [1] GA-Point,
  pointWithUnCertainty [2] GA-PointWithUnCertainty,
  polygon        [3] GA-Polygon
}

```

```

GeographicalCoordinates ::= SEQUENCE {
  latitudeSign    ENUMERATED { north, south },
  latitude        INTEGER (0..8388607),
  longitude       INTEGER (-8388608..8388607),
  ...
}

```

```

GA-Point ::= SEQUENCE {
  geographicalCoordinates GeographicalCoordinates,
  ...
}

```

```

GA-PointWithUnCertainty ::= SEQUENCE {
  geographicalCoordinates GeographicalCoordinates,
  uncertaintyCode         INTEGER (0..127)
}

```

```

maxNrOfPoints INTEGER ::= 15

```

```

GA-Polygon ::= SEQUENCE (SIZE (1..maxNrOfPoints)) OF

```



```
SEQUENCE {
    geographicalCoordinates    GeographicalCoordinates,
    ...
}
```

```
SMS-report ::= SEQUENCE
{
    SMS-Contents [3] SEQUENCE
    {
        sms-initiator [1] ENUMERATED -- party which sent the SMS
        {
            target (0),
            server (1),
            undefined-party (2),
            ...
        },
        transfer-status [2] ENUMERATED
        {
            succeed-transfer (0), -- the transfer of the SMS message succeeds
            not-succeed-transfer(1),
            undefined (2),
            ...
        } OPTIONAL,
        other-message [3] ENUMERATED -- in case of terminating call, indicates if
        -- the server will send other SMS
        {
            yes (0),
            no (1),
            undefined (2),
            ...
        } OPTIONAL,
        content [4] OCTET STRING (SIZE (1 .. 270)) OPTIONAL,
        -- Encoded in the format defined for the SMS mobile
        ...
    }
}
```

```
GPRSCorrelationNumber ::= OCTET STRING (SIZE(8..20))
```

```
GPRSEvent ::= ENUMERATED
{
    pDPContextActivation (1),
    startOfInterceptionWithPDPContextActive (2),
    pDPContextDeactivation (4),
    gPRSAttach (5),
    gPRSDetach (6),
    locationInfoUpdate (10),
    SMS (11),
    pDPContextModification (13),
    servingSystem (14),
    ...
}
-- see [19]
```

```
IMSevent ::= ENUMERATED
{
    sIPmessage (1),
    ...
}
```

```
Services-Data-Information ::= SEQUENCE
{
    gPRS-parameters [1] GPRS-parameters OPTIONAL,
    ...
}
```

```
GPRS-parameters ::= SEQUENCE
{
    pDP-address-allocated-to-the-target [1] DataNodeAddress OPTIONAL,
    aPN [2] OCTET STRING (SIZE(1..100)) OPTIONAL,
    pDP-type [3] OCTET STRING (SIZE(2)) OPTIONAL,
    ...
}
```

```
GPRSOperationErrorCode ::= OCTET STRING (SIZE(2))
--- refer to standard [9] for values(GMM cause or SM cause parameter).
```

```
-- The parameter shall carry the GMM cause value or the SM cause value, as defined in the standard  
-- [9], without the IEI.
```

```
UmtsQos ::= CHOICE  
{  
  qosMobileRadio [1] OCTET STRING,  
    -- The qosMobileRadio parameter shall be coded in accordance with the § 10.5.6.5 of  
    -- document [9] without the Quality of service IEI and Length of  
    -- quality of service IE (. That is, first  
    -- two octets carrying 'Quality of service IEI' and 'Length of quality of service  
    -- IE' shall be excluded).  
  qosGn [2] OCTET STRING  
    -- qosGn parameter shall be coded in accordance with § 7.7.34 of document [17]  
}
```

```
END -- OF UmtsHI2Operations
```

CHANGE REQUEST

33.108 CR 063 rev - Current version: **6.7.0**

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:	Correction to the IMPORTS statements		
Source:	SA3 LI		
Work item code:	SEC1-LI	Date:	12/10/2004
Category:	F	Release:	Rel-6
	<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>		<p>Use <u>one</u> of the following releases:</p> <p>Ph2 (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> <p>Rel-7 (Release 7)</p>

Reason for change:	<p>ETSI TS 101 671 is approaching stability level at which it would be upgraded to ETSI ES 201 671 Edition 3. This CR offers to correct imports statements in 33.108, so that parameters imported from ETSI module would be most up to date and error free.</p> <p>Sub clause B.5 does not need update. Another CR "Adding domain ID to HI3 CS domain module" addresses possible update to sub clause B.6.</p> <p>Besides, release 6 branches were added to the modules under B.3a.</p>
Summary of change:	Imports statements were updated, so that imported parameters are error free.
Consequences if not approved:	Possible wrong interpretation of ASN.1 parameters at LEMF.

Clauses affected:	Annexes B.3, B.3a, B.4.						
Other specs affected:	<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;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications	
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<input checked="" type="checkbox"/>	Test specifications					
	<input checked="" type="checkbox"/>	O&M Specifications					
Other comments:							

B.3 Intercept related information (HI2 PS and IMS)

Declaration of ROSE operation umts-sending-of-IRI is ROSE delivery mechanism specific. When using FTP delivery mechanism, data UmtsIRIsContent must be considered.

ASN1 description of IRI (HI2 interface)

```
UmtsHI2Operations {itu-t(0) identified-organization(4) etsi(0) securityDomain(2) lawfulIntercept(2)
threeGPP(4) hi2(1) r6(6) version-65(65)}
```

```
DEFINITIONS IMPLICIT TAGS ::=
```

```
BEGIN
```

```
IMPORTS

OPERATION,
ERROR
FROM Remote-Operations-Information-Objects
{joint-iso-itu-t(2) remote-operations(4) informationObjects(5) version1(0)}

LawfulInterceptionIdentifier,
TimeStamp,
Network-Identifier,
National-Parameters,
National-HI2-ASN1parameters,
DataNodeAddress,
IPAddress,
IP-value,
X25Address

FROM HI2Operations
{itu-t(0) identified-organization(4) etsi(0) securityDomain(2)
lawfulIntercept(2) hi2(1) version75(75)}; -- Imported from TS 101 671v2.11.1
```

-- Object Identifier Definitions

```
-- Security DomainId
lawfulInterceptDomainId OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0)
securityDomain(2) lawfulIntercept(2)}

-- Security Subdomains
threeGPPSUBDomainId OBJECT IDENTIFIER ::= {lawfulInterceptDomainId threeGPP(4)}
hi2DomainId OBJECT IDENTIFIER ::= {threeGPPSUBDomainId hi2(1) r6(6) version-65(65)}
```

*** Next modification ***

```
-- Parameters having the same tag numbers must be identical in Rel-5 and Rel-6 modules.
IRI-Parameters ::= SEQUENCE
{
  hi2DomainId [0] OBJECT IDENTIFIER, -- 3GPP HI2 domain
  iRIVersion [23] ENUMERATED
  {
    version2-(2),
    ...,
    version3-(3),
    version4-(4),
    version6(6)
  } OPTIONAL,
  -- if not present, it means version 1 is handled
```

*** Next modification ***

B.3a Interception related information (HI2 CS)

For North America the use of J-STD-25 A[23] is recommended.

Declaration of ROSE operation sending-of-IRI is ROSE delivery mechanism specific. When using FTP delivery mechanism, data IRI-Content must be considered.

ASN1 description of IRI (HI2 CS interface)

```
UmtsCS-HI2Operations
{ itu-t (0) identified-organization (4) etsi (0) securityDomain (2) lawfulIntercept (2) threeGPP(4)
hi2CS (3) r6\(6\) version-32\(32\) }
```

DEFINITIONS IMPLICIT TAGS ::=

BEGIN

```
IMPORTS OPERATION,
  ERROR
  FROM Remote-Operations-Information-Objects
  { joint-iso-itu-t (2) remote-operations(4) informationObjects(5) version1(0) }

  LawfulInterceptionIdentifier,
  TimeStamp,
  Intercepted-Call-State,
  PartyInformation,
  CallContentLinkCharacteristics,
  CommunicationIdentifier,
  CC-Link-Identifier,
  National-Parameters,
  National-HI2-ASN1parameters,

  FROM HI2Operations
  { itu-t(0) identified-organization(4) etsi(0) securityDomain(2)
    lawfulIntercept(2) hi2(1) version75\(75\) } -- Imported from TS 101 671v2.11.1 ASN-1

  Location,
  SMS-report

  FROM UmtsHI2Operations
  { itu-t(0) identified-organization(4) etsi(0) securityDomain(2)
    lawfulIntercept(2) threeGPP(4) hi2(1) r6(6) version-64\(64\) };
  -- Imported from TS 33.108v6.8.0

-- Object Identifier Definitions

-- Security DomainId
lawfulInterceptDomainId OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0)
securityDomain(2) lawfulIntercept(2)}

-- Security Subdomains
threeGPPSUBDomainId OBJECT IDENTIFIER ::= {lawfulInterceptDomainId threeGPP(4)}
hi2CSDomainId OBJECT IDENTIFIER ::= {threeGPPSUBDomainId hi2CS(3) r6\(6\) version-32\(32\)}
```

*** Next modification ***

```
IRI-Parameters ::= SEQUENCE
{
  hi2CSDomainId [0] OBJECT IDENTIFIER OPTIONAL, -- 3GPP HI2 CS domain

  iRVersion [23] ENUMERATED
  {
    version1(1),
    ...,
    version2(2),
    version3(3)
  } OPTIONAL,
  -- if not present, it means version 1 is handled
```

*** Next modification ***

B.4 Contents of communication (HI3 PS)

```
Umts-HI3-PS {itu-t(0) identified-organization(4) etsi(0) securityDomain(2) lawfulIntercept(2)
threeGPP(4) hi3(2) r6(6) version-32\(32\)}
```

```
DEFINITIONS IMPLICIT TAGS ::=
```

```
BEGIN
```

```
IMPORTS
```

```
GPRSCorrelationNumber
```

```
FROM UmtsHI2Operations
```

```
{itu-t(0) identified-organization(4) etsi(0) securityDomain(2) lawfulIntercept(2) threeGPP(4)
```

```
hi2(1) r6(6) version-63(63)} -- Imported from TS 33.108v6.8.0from 3GPP UmtsHI2Operations
```

```
LawfulInterceptionIdentifier,
```

```
TimeStamp
```

```
FROM HI2Operations
```

```
{itu-t(0) identified-organization(4) etsi(0) securityDomain(2) lawfulIntercept(2) hi2(1)
```

```
version75(75)}; -- from ETSI HI2Operations TS 101 671v2.119.1
```

CHANGE REQUEST

33.108 CR 064 rev - Current version: **6.7.0**

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:	Syntax Error in Annex B.3		
Source:	SA WG3-LI		
Work item code:	SEC1-LI	Date:	06/10/2004
Category:	F	Release:	Rel-6
	Use <u>one</u> 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 <u>one</u> of the following releases: Ph2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) Rel-7 (Release 7)

Reason for change:	In Annex B.3 there is a minor Syntax Error, the comma at the end of the line 'tel_url' is incorrect. However, as the ASN.1 tools (Syntax Checker, Compiler) do not tolerate this error, it needs to be corrected.
Summary of change:	Correction of a syntax error in the HI2 module
Consequences if not approved:	Compilation cannot complete successfully

Clauses affected:	Annex B.3						
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">Y</td> <td style="padding: 2px 5px;">N</td> </tr> <tr> <td style="padding: 2px 5px;"></td> <td style="padding: 2px 5px; text-align: center;">X</td> </tr> </table>	Y	N		X	Other core specifications	
	Y	N					
		X					
		X	Test specifications				
	X	O&M Specifications					
Other comments:							

```
-- PARAMETERS FORMATS
```

```
PartyInformation ::= SEQUENCE
{
  party-Qualifier [0] ENUMERATED
  {
    gPRS-Target(3),
    ...
  },
  partyIdentity [1] SEQUENCE
  {
    imei [1] OCTET STRING (SIZE (8)) OPTIONAL,
    -- See MAP format [4]

    imsi [3] OCTET STRING (SIZE (3..8)) OPTIONAL,
    -- See MAP format [4] International Mobile
    -- Station Identity E.212 number beginning with Mobile Country Code

    msISDN [6] OCTET STRING (SIZE (1..9)) OPTIONAL,
    -- MSISDN of the target, encoded in the same format as the AddressString
    -- parameters defined in MAP format document [4], § 14.7.8

    e164-Format [7] OCTET STRING (SIZE (1 .. 25)) OPTIONAL,
    -- E164 address of the node in international format. Coded in the same format as
    -- the calling party number parameter of the ISUP (parameter part:[5])

    sip-uri [8] OCTET STRING OPTIONAL,
    -- See [26]

    ...
    tel-url [9] OCTET STRING OPTIONAL,
    -- See [36]
  },
  services-Data-Information [4] Services-Data-Information OPTIONAL,
  -- This parameter is used to transmit all the information concerning the
  -- complementary information associated to the basic data call
  ...
}
```


CHANGE REQUEST

⌘ **33.108 CR 065** ⌘ rev **-** ⌘ Current version: **6.7.0** ⌘

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:	⌘ Deleting CC from SIP message		
Source:	⌘ SA3 LI		
Work item code:	⌘ SEC1-LI	Date:	⌘ 12/10/2004
Category:	⌘ B	Release:	⌘ Rel-6
	Use <u>one</u> 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 <u>one</u> of the following releases: <i>Ph2</i> (GSM Phase 2) <i>R96</i> (Release 1996) <i>R97</i> (Release 1997) <i>R98</i> (Release 1998) <i>R99</i> (Release 1999) <i>Rel-4</i> (Release 4) <i>Rel-5</i> (Release 5) <i>Rel-6</i> (Release 6) <i>Rel-7</i> (Release 7)

Reason for change:	⌘ IRI-only interception is granted in some countries and therefore it is illegal to send SIP messages to LEMF that contain CC data. Similar problem was solved for SMS by having ' content ' parameter under ' SMS-report ' type optional. This CR proposes to comply with such legal requirement by defining new enumerated value to IMSevent type. Besides, an editorial change is proposed: in IMSevent type definition both the type and the parametr should be in boldface font.
Summary of change:	⌘ New value is defined under IMSevent type.
Consequences if not approved:	⌘ Possible wrong interpretation of the ' sIPMessage ' parameter at LEMF.

Clauses affected:	⌘ 7.2, Annex B.3.						
Other specs affected:	<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;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Other core specifications ⌘	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Y	N						
<input type="checkbox"/>	<input checked="" type="checkbox"/>						
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> Test specifications	X	<input checked="" type="checkbox"/>				
X							
<input checked="" type="checkbox"/>							
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table> O&M Specifications	X	<input checked="" type="checkbox"/>				
X							
<input checked="" type="checkbox"/>							
Other comments:	⌘						

7.2 IRI for IMS

In addition, information on non-transmission related actions of a target constitute IRI and is sent via HI2, e.g. information on subscriber controlled input.

The IRI may be subdivided into the following categories:

1. Control information for HI2 (e.g. correlation information).
2. Basic data context information, for standard data transmission between two parties (e.g. SIP-message).

For each event, a Record is sent to the LEMF, if this is required. The following table gives the mapping between event type received at DF2 level and record type sent to the LEMF.

Table 7.1: Mapping between IMS Events and HI2 Records Type

Event	IRI Record Type
SIP-Message	REPORT

A set of information is used to generate the record. The records used transmit the information from mediation function to LEMF. This set of information can be extended in the CSCF or DF2 MF, if [new IEs are available and if](#) this is necessary in a specific country. The following table gives the mapping between information received per event and information sent in records.

Table 7.2: Mapping between IMS Events Information and IRI Information

Parameter	Description	HI2 ASN.1 parameter
Observed SIP URI	Observed SIP URI	partyInformation (sip-uri)
Observed TEL URL	Observed TEL URL	partyInformation (tel-url)
Event type	IMS Event	IMSevent
Event date	Date of the event generation in the CSCF	timestamp
Event time	Time of the event generation in the CSCF	
Network identifier	Unique number of the intercepting CSCF	NetworkIdentifier
Correlation number	Unique number for each PDP context delivered to the LEMF, to help the LEA, to have a correlation between each PDP Context and the IRI.	gPRSCorrelationNumber
Lawful interception identifier	Unique number for each lawful authorization.	lawfulInterceptionIdentifier
SIP message	Either wwhole SIP message, or SIP message header. SIP message header is used if warrant requires only IRI. In such case, specific content in the SIPMessage (e.g. 'Message', etc.) must be deleted.	SIPMessage

NOTE: LIID parameter must be present in each record sent to the LEMF.

7.2.1 Events and information

This clause describes the information sent from the Delivery Function (DF) to the Law Enforcement Monitoring Facility (LEMF) to support Lawfully Authorized Electronic Surveillance (LAES). The information is described as records and information carried by a record. This focus is on describing the information being transferred to the LEMF.

The IRI events and data are encoded into records as defined in the Table 7-1 Mapping between IMS Events and HI2 Records Type and Annex B.3 Intercept related information (HI2). IRI is described in terms of a 'causing event' and information associated with that event. Within each IRI Record there is a set of events and associated information elements to support the particular service.

The communication events described in Table 7-1: Mapping between the IMS Event and HI2 Record Type and Table 7-2: Mapping between IMS Events Information and IRI Information convey the basic information for reporting the disposition of a communication. This clause describes those events and supporting information.

Each record described in this clause consists of a set of parameters. Each parameter is either:

- mandatory (M) - required for the record,
- conditional (C) - required in situations where a condition is met (the condition is given in the Description), or
- optional (O) - provided at the discretion of the implementation.

The information to be carried by each parameter is identified. Both optional and conditional parameters are considered to be OPTIONAL syntactically in ASN.1 Stage 3 descriptions. The Stage 2 inclusion takes precedence over Stage 3 syntax.

Table 7.3: SIP-Message REPORT Record

Parameter	MOC	Description/Conditions
observed SIP-URI	C	SIP URI of the interception target (if available)
observed TEL-URL	C	TEL URL of the interception target (if available)
event type	M	Provide IMS event type.
event date	M	Provide the date and time the event is detected.
event time		
network identifier	M	Shall be provided.
lawful intercept identifier	M	Shall be provided.
correlation number	C	If available and not included in the SIP-message
SIP message	M	The relevant SIP message <u>or SIP message header.</u>

***** Next Modification *****

B.3 Intercept related information (HI2 PS and IMS)

Declaration of ROSE operation umts-sending-of-IRI is ROSE delivery mechanism specific. When using FTP delivery mechanism, data UmtsIRIsContent must be considered.

ASN1 description of IRI (HI2 interface)

```
UmtsHI2Operations {itu-t(0) identified-organization(4) etsi(0) securityDomain(2) lawfulIntercept(2)
threeGPP(4) hi2(1) r6(6) version-65(65)}
```

```
DEFINITIONS IMPLICIT TAGS ::=
```

```
BEGIN
```

```
IMPORTS
```

```

OPERATION,
ERROR
FROM Remote-Operations-Information-Objects
{joint-iso-itu-t(2) remote-operations(4) informationObjects(5) version1(0)}

LawfulInterceptionIdentifier,
TimeStamp,
Network-Identifier,
National-Parameters,
National-HI2-ASN1parameters,
DataNodeAddress,
IPAddress,
IP-value,
X25Address

FROM HI2Operations
{itu-t(0) identified-organization(4) etsi(0) securityDomain(2)
lawfulIntercept(2) hi2(1) version5(5)}; -- Imported from TS 101 671
```

```
-- Object Identifier Definitions
```

```
-- Security DomainId
lawfulInterceptDomainId OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0)
securityDomain(2) lawfulIntercept(2)}
```

```

-- Security Subdomains
threeGPPSUBDomainId OBJECT IDENTIFIER ::= {lawfulInterceptDomainId threeGPP(4)}
hi2DomainId OBJECT IDENTIFIER ::= {threeGPPSUBDomainId hi2(1) r6(6) version-65(65)}

```

*** Next Modification ***

```

-- Parameters having the same tag numbers must be identical in Rel-5 and Rel-6 modules.
IRI-Parameters ::= SEQUENCE
{
  hi2DomainId [0] OBJECT IDENTIFIER, -- 3GPP HI2 domain
  iRVersion [23] ENUMERATED
  {
    version2 (2),
    ...,
    version3 (3),
    version4 (4),
    version6 (6)
  } OPTIONAL,
  -- if not present, it means version 1 is handled

```

*** Next Modification ***

```

IMSevent ::= ENUMERATED
{
  unfilteredSIPmessage (1),
  -- This value indicates to LEMF that the whole SIP message is sent.
  ...,
  sIPheaderOnly (2)
  -- If warrant requires only IRI then specific content in a 'sIPMessage'
  -- (e.g. 'Message', etc.) has been deleted before sending it to LEMF.
}

```

CHANGE REQUEST

33.108 **CR 066** rev - Current version: 6.7.0

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:	☞ Adding domain ID to HI3 CS domain module		
Source:	☞ SA3 LI		
Work item code:	☞ SEC1-LI	Date:	☞ 12/10/2004
Category:	☞ B	Release:	☞ Rel-6
	<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>		<p>Use <u>one</u> of the following releases:</p> <p>Ph2 (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> <p>Rel-7 (Release 7)</p>

Reason for change:	<p>☞ All ASN.1 modules in 33.108 (HI2 PS and IMS, HI2 CS, HI3 PS), but HI3 CS include domain ID definitions. This CR offers to add domain ID to HI3 CS domain module as well.</p> <p>The CR offers to add optional hi3CSDomainId parameter with tag 0, and optional version parameter with tag 23 to UMTS-Content-Report type definition. This would be a backward incompatible change.</p> <p>Besides, the CR offers to replace under the operations hi3CircuitLISubDomainId by hi3CSDomainId. This change replaces ETSI branch by 3GPP one.</p>
Summary of change:	☞ hi3CSDomainId and version parameters were added to the annex B.6, and ETSI branch of operations was replaced by 3GPP branch.
Consequences if not approved:	☞ Possible wrong interpretation of ASN.1 parameters at LEMF.

Clauses affected:	☞ Annex B.6													
Other specs affected:	<table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> <td></td> </tr> <tr> <td style="width: 20px;">☞</td> <td style="width: 20px;">X</td> <td>Other core specifications</td> </tr> <tr> <td></td> <td>X</td> <td>Test specifications</td> </tr> <tr> <td></td> <td>X</td> <td>O&M Specifications</td> </tr> </table>	Y	N		☞	X	Other core specifications		X	Test specifications		X	O&M Specifications	☞
Y	N													
☞	X	Other core specifications												
	X	Test specifications												
	X	O&M Specifications												
Other comments:	☞													

B.6 User data packet transfer (HI3 CS)

Declaration of ROSE operations circuit-Call-related-Services and no-circuit-Call-related-Services are ROSE delivery mechanism specific. When using FTP delivery mechanism, data Content-Report must be considered.

ASN.1 description of circuit data transfer operation (HI3 interface)

```

UMTS-HI3CircuitLIOperations
{itu-t(0) identified-organization(4) etsi(0) securityDomain(2) lawfulIntercept(2) threeGPP(4)
hi3CS(4) r6(6) version2+(2+)}

DEFINITIONS IMPLICIT TAGS ::=

-- The following operations are used to transmit user data, which can be exchanged via the DSS1,
-- ISUP or MAP signalling (e.g. UUS).

BEGIN

IMPORTS OPERATION,
  ERROR
  FROM Remote-Operations-Information-Objects
  {joint-iso-itu-t (2) remote-operations(4) informationObjects(5) version1(0)}

  hi3CircuitLISubDomainId
  FROM
  SecurityDomainDefinitions
  { itu-t (0) identified-organization (4) etsi (0) securityDomain (2)}

  LawfulInterceptionIdentifier,
  CommunicationIdentifier,
  TimeStamp,
  OperationErrors,
  Supplementary-Services,

  FROM HI2Operations
  {itu-t(0) identified-organization(4) etsi(0) securityDomain(2)
lawfulIntercept(2) hi2(1) version73(73)} -- Imported from TS 101 671v2.11.1-Edition-3

SMS-report
  FROM UmtsHI2Operations
  {itu-t(0) identified-organization(4) etsi(0) securityDomain(2) lawfulIntercept(2)
threeGPP(4) hi2(1) version-2(2)};

-- Object Identifier Definitions

-- Security DomainId
lawfulInterceptDomainId OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0)
securityDomain(2) lawfulIntercept(2)}

-- Security Subdomains
threeGPPSUBDomainId OBJECT IDENTIFIER ::= {lawfulInterceptDomainId threeGPP(4)}
hi3CSDomainId OBJECT IDENTIFIER ::= {threeGPPSUBDomainId hi3CS(4) r6(6) version-2(2)}

UMTS-circuit-Call-related-Services OPERATION ::=
{
  ARGUMENT      UMTS-Content-Report
  ERRORS        { OperationErrors }
  CODE          global:{ hi3CSDomainId hi3CircuitLISubDomainId circuit-Call-Serv (1) version1 (1)}
}
-- Class 2 operation. The timer shall be set to a value between 3 s and 240 s.
-- The timer default value is 60s.
-- NOTE: The same note as for HI management operation applies.

```

```

UMTS-no-Circuit-Call-related-Services OPERATION ::=
{
  ARGUMENT      UMTS-Content-Report
  ERRORS        { OperationErrors }
  CODE          global:{ hi3CSDomainId hi3CircuitLISubDomainId-no-Circuit-Call-Serv (2) version1
(1)}
}
-- Class 2 operation. The timer must be set to a value between 10s and 120s.
-- The timer default value is 60s.

```

```

UMTS-Content-Report ::= SEQUENCE
{
  hi3CSDomainId [0] OBJECT IDENTIFIER OPTIONAL, -- 3GPP HI3 CS Domain.
  -- When FTP is used this parametr shall be sent to LEMF.
  version [23] ENUMERATED
  {
    version1(1),
    ...
  } OPTIONAL,
  lawfulInterceptionIdentifier [6] LawfulInterceptionIdentifier OPTIONAL,
  communicationIdentifier [1] CommunicationIdentifier,
  -- Used to uniquely identify an intercepted call: the same as used for the relevant IRI.
  -- Called "callIdentifier" in edition 1 ES 201 671.
  timeStamp [2] TimeStamp,
  initiator [3] ENUMERATED
  {
    originating-party(0),
    terminating-party(1),
    forwarded-to-party(2),
    undefined-party(3),
    ...
  } OPTIONAL,
  content [4] Supplementary-Services OPTIONAL,
  -- UUI are encoded in the format defined for the User-to-user information parameter
  -- of the ISUP protocol (see EN 300 356 [30]). Only one UUI parameter is sent per message.
  sms-report [5] SMS-report OPTIONAL,
  ...
}

```

END -- UMTS-HI3CircuitLIOperations

CHANGE REQUEST

33.108 CR CRNum rev - Current version: **6.7.0**

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:	Syntax Error in Annex B.3a		
Source:	SA3 LI		
Work item code:	SEC1-LI	Date:	12/10/2004
Category:	F	Release:	Rel-6
Use <u>one</u> 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 <u>one</u> of the following releases: Ph2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) Rel-7 (Release 7)	

Reason for change:	In Annex B3a there are 5 minor Syntax Errors, which ASN.1 tools (Syntax Checker, Compiler) do not tolerate.
Summary of change:	Correction of syntactic errors in the HI2 CS module.
Consequences if not approved:	Compilation fails.

Clauses affected:	Annex B.3										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px; text-align: center;">X</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px; text-align: center;">X</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px; text-align: center;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications	
	Y	N									
		X									
		X									
	X										
		Test specifications									
		O&M Specifications									
Other comments:											

B.3a Interception related information (HI2 CS)

For North America the use of J-STD-25 A[23] is recommended.

Declaration of ROSE operation sending-of-IRI is ROSE delivery mechanism specific. When using FTP delivery mechanism, data IRI-Content must be considered.

ASN1 description of IRI (HI2 CS interface)

```
UmtsCS-HI2Operations
{ itu-t (0) identified-organization (4) etsi (0) securityDomain (2) lawfulIntercept (2) threeGPP(4)
hi2CS (3) version-2 (2)}
```

```
DEFINITIONS IMPLICIT TAGS ::=
```

```
BEGIN
```

```
IMPORTS OPERATION,
  ERROR
  FROM Remote-Operations-Information-Objects
  {joint-iso-itu-t (2) remote-operations(4) informationObjects(5) version1(0)}

  LawfulInterceptionIdentifier,
  TimeStamp,
  Intercepted-Call-State,
  PartyInformation,
  CallContentLinkCharacteristics,
  CommunicationIdentifier,
  CC-Link-Identifier,
  National-Parameters,
  National-HI2-ASN1parameters;

  FROM HI2Operations
  {itu-t(0) identified-organization(4) etsi(0) securityDomain(2)
  lawfulIntercept(2) hi2(1) version5(5)} -- Imported from TS 101 671 ASN.1

  Location,
  SMS-report

  FROM UmtsHI2Operations
  {itu-t(0) identified-organization(4) etsi(0) securityDomain(2)
  lawfulintercept(2) threeGPP(4) hi2(1) r6(6) version-4(4)};

-- Object Identifier Definitions

-- Security DomainId
lawfulInterceptDomainId OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0)
securityDomain(2) lawfulIntercept(2)}

-- Security Subdomains
threeGPPSUBDomainId OBJECT IDENTIFIER ::= {lawfulInterceptDomainId threeGPP(4)}
hi2CSDomainId OBJECT IDENTIFIER ::= {threeGPPSUBDomainId hi2CS(3) version-2(2)}
```

```
umtsCS-sending-of-IRI OPERATION ::=
```

```
{
  ARGUMENT    UmtsCS-IRIsContent
  ERRORS      { OperationErrors }
  CODE        global:{ threeGPPSUBDomainID hi2CS(3) opcode(1)}
}
-- Class 2 operation. The timer shall be set to a value between 3 s and 240 s.
-- The timer.default value is 60s.
-- NOTE: The same note as for HI management operation applies.
```

```
UmtsCS-IRIsContent ::= CHOICE
```

```
{
  iRIContent      UmtsCS-IRIContent,
  iRISequence     UmtsCS-IRISequence
}
```

```
+}
```

```

UmtsCS-IRISequence ::= SEQUENCE OF UmtsCS-IRIContent
  -- Aggregation of UmtsCS-IRIContent is an optional feature.
  -- It may be applied in cases when at a given point in time several IRI records are
  -- available for delivery to the same LEA destination.
  -- As a general rule, records created at any event shall be sent immediately and shall
  -- not held in the DF or MF in order to apply aggregation.
  -- When aggregation is not to be applied, UmtsCS-IRIContent needs to be chosen.

UmtsCS-IRIContent ::= CHOICE
{
  iRI-Begin-record [1] IRI-Parameters,
    --at least one optional parameter must be included within the iRI-Begin-Record
  iRI-End-record [2] IRI-Parameters,
  iRI-Continue-record [3] IRI-Parameters,
    --at least one optional parameter must be included within the iRI-Continue-Record
  iRI-Report-record [4] IRI-Parameters,
    --at least one optional parameter must be included within the iRI-Report-Record
  ...
}

```

```

unknown-version          ERROR ::= { CODE local:0}
missing-parameter        ERROR ::= { CODE local:1}
unknown-parameter-value  ERROR ::= { CODE local:2}
unknown-parameter        ERROR ::= { CODE local:3}

```

```

OperationErrors ERROR ::=

```

```

{
  unknown-version |
  missing-parameter |
  unknown-parameter-value |
  unknown-parameter
}

```

```

--These values may be sent by the LEMF, when an operation or a parameter is misunderstood.

```

```

IRI-Parameters ::= SEQUENCE
{
  hi2CSDomainId [0] OBJECT IDENTIFIER OPTIONAL, -- 3GPP HI2 CS domain

  iRIversion [23] ENUMERATED
  {
    version1(1),
    ...,
    version2(2)
  } OPTIONAL,
  -- if not present, it means version 1 is handled
  lawfulInterceptionIdentifier [1] LawfulInterceptionIdentifier,
  -- This identifier is associated to the target.
  communicationIdentifier [2] CommunicationIdentifier,
  -- used to uniquely identify an intercepted call.

  timeStamp [3] TimeStamp,
  -- date and time of the event triggering the report.
  intercepted-Call-Direct [4] ENUMERATED
  {
    not-Available(0),
    originating-Target(1),
    terminating-Target(2),
    ...
  } OPTIONAL,
  intercepted-Call-State [5] Intercepted-Call-State OPTIONAL,
  -- Not required for UMTS. May be included for backwards compatibility to GSM
  ringingDuration [6] OCTET STRING (SIZE (3)) OPTIONAL,
  -- Duration in seconds. BCD coded : HHMMSS
}

```

```

-- Not required for UMTS. May be included for backwards compatibility to GSM
conversationDuration [7] OCTET STRING (SIZE (3)) OPTIONAL,
-- Duration in seconds. BCD coded : HHMMSS
-- Not required for UMTS. May be included for backwards compatibility to GSM
locationOfTheTarget [8] Location OPTIONAL,
-- location of the target subscriber
partyInformation [9] SET SIZE (1..10) OF PartyInformation OPTIONAL,
-- This parameter provides the concerned party (Originating, Terminating or forwarded
-- party), the identity(ies) of the party and all the information provided by the party.
callContentLinkInformation [10] SEQUENCE
{
  cCLink1Characteristics [1] CallContentLinkCharacteristics OPTIONAL,
  -- information concerning the Content of Communication Link Tx channel established
  -- toward the LEMF (or the sum signal channel, in case of mono mode).
  cCLink2Characteristics [2] CallContentLinkCharacteristics OPTIONAL,
  -- information concerning the Content of Communication Link Rx channel established
  -- toward the LEMF.
  ...
} OPTIONAL,
release-Reason-Of-Intercepted-Call [11] OCTET STRING (SIZE (2)) OPTIONAL,
-- Release cause coded in [31] format.
-- This parameter indicates the reason why the
-- intercepted call cannot be established or why the intercepted call has been
-- released after the active phase.
nature-Of-The-intercepted-call [12] ENUMERATED
{
  --Not required for UMTS. May be included for backwards compatibility to GSM
  --Nature of the intercepted "call":
  gSM-ISDN-PSTN-circuit-call(0),
  -- the possible UUS content is sent through the HI2 or HI3 "data" interface
  -- the possible call content call is established through the HI3 „circuit„ interface
  gSM-SMS-Message(1),
  -- the SMS content is sent through the HI2 or HI3 "data" interface
  uUS4-Messages(2),
  -- the UUS content is sent through the HI2 or HI3 "data" interface
  tETRA-circuit-call(3),
  -- the possible call content call is established through the HI3 "circuit" interface
  -- the possible data are sent through the HI3 "data" interface
  teTRA-Packet-Data(4),
  -- the data are sent through the HI3 "data" interface
  gPRS-Packet-Data(5),
  -- the data are sent through the HI3 "data" interface
  ...
} OPTIONAL,
serviceCenterAddress [13] PartyInformation OPTIONAL,
-- e.g. in case of SMS message this parameter provides the address of the relevant
-- server within the calling (if server is originating) or called
-- (if server is terminating) party address parameters
sMS [14] SMS-report OPTIONAL,
-- this parameter provides the SMS content and associated information
cC-Link-Identifier [15] CC-Link-Identifier OPTIONAL,
-- Depending on a network option, this parameter may be used to identify a CC link
-- in case of multiparty calls.
national-Parameters [16] National-Parameters OPTIONAL,
...
umts-Cs-Event [33] Umts-Cs-Event OPTIONAL,
-- Care should be taken to ensure additional parameter numbering does not conflict with
-- ETSI TS 101 671 or Annex B.3 of this document (PS HI2).
national-HI2-ASN1parameters [255] National-HI2-ASN1parameters OPTIONAL
}

```

```

Umts-Cs-Event ::= ENUMERATED

```

```

{
  call-establishment (1),
  answer (2),
  supplementary-Service (3),
  handover (4),
  release (5),
  sMS (6),
  location-update (7),
  subscriber-Controlled-Input (8),
  ...
}

```

```

END -- OF UmtsCS-HI2Operations

```

CHANGE REQUEST

33.108 CR 068 rev - Current version: **6.7.0**

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:	HI2 SIP Content clarification		
Source:	SA 3 LI		
Work item code:	SEC1-LI	Date:	12/10/2004
Category:	C	Release:	Rel-6
Use <u>one</u> 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 <u>one</u> of the following releases: Ph2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) Rel-7 (Release 7)	

Reason for change:	National requirements should be included
Summary of change:	If the national regulation forbids the delivery of specific content in the SIP parameter on HI2 this should be mentioned in the standard
Consequences if not approved:	Problems with the regulators in these specific countries

Clauses affected:	7.2										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">Y</td> <td style="padding: 2px 5px;">N</td> </tr> <tr> <td style="padding: 2px 5px;"> </td> <td style="padding: 2px 5px;">X</td> </tr> <tr> <td style="padding: 2px 5px;"> </td> <td style="padding: 2px 5px;">X</td> </tr> <tr> <td style="padding: 2px 5px;"> </td> <td style="padding: 2px 5px;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications	
	Y	N									
		X									
	X										
	X										
		Test specifications									
		O&M Specifications									
Other comments:											

****** Changes ******

7.2 IRI for IMS

In addition, information on non-transmission related actions of a target constitute IRI and is sent via HI2, e.g. information on subscriber controlled input.

The IRI may be subdivided into the following categories:

1. Control information for HI2 (e.g. correlation information).
2. Basic data context information, for standard data transmission between two parties (e.g. SIP-message).

For each event, a Record is sent to the LEMF, if this is required. The following table gives the mapping between event type received at DF2 level and record type sent to the LEMF.

Table 7.1: Mapping between IMS Events and HI2 Records Type

Event	IRI Record Type
SIP-Message	REPORT

A set of information is used to generate the record. The records used transmit the information from mediation function to LEMF. This set of information can be extended in the CSCF or DF2 MF, if this is necessary in a specific country. The following table gives the mapping between information received per event and information sent in records.

Table 7.2: Mapping between IMS Events Information and IRI Information

Parameter	Description	HI2 ASN.1 parameter
Observed SIP URI	Observed SIP URI	partyInformation (sip-url)
Observed TEL URL	Observed TEL URL	partyInformation (tel-url)
Event type	IMS Event	iMSevent
Event date	Date of the event generation in the CSCF	timeStamp
Event time	Time of the event generation in the CSCF	
Network identifier	Unique number of the intercepting CSCF	networkIdentifier
Correlation number	Unique number for each PDP context delivered to the LEMF, to help the LEA, to have a correlation between each PDP Context and the IRI.	gPRSCorrelationNumber
Lawful interception identifier	Unique number for each lawful authorization.	lawfulInterceptionIdentifier
SIP message	Whole SIP message	sIPMessage

NOTE1: LIID parameter must be present in each record sent to the LEMF.

NOTE2: [Details for the parameter SIP message. If the warrant requires only signaling information, specific content in the parameter 'SIP message' like IMS \(Immediate Messaging\) has to be deleted/filtered.](#)

7.2.1 Events and information

This clause describes the information sent from the Delivery Function (DF) to the Law Enforcement Monitoring Facility (LEMF) to support Lawfully Authorized Electronic Surveillance (LAES). The information is described as records and information carried by a record. This focus is on describing the information being transferred to the LEMF.

The IRI events and data are encoded into records as defined in the Table 7-1 Mapping between IMS Events and HI2 Records Type and Annex B.3 Intercept related information (HI2) [1]. IRI is described in terms of a 'causing event' and information associated with that event. Within each IRI Record there is a set of events and associated information elements to support the particular service.

The communication events described in Table 7-1: Mapping between the IMS Event and HI2 Record Type and Table 7-2: Mapping between IMS Events Information and IRI Information convey the basic information for reporting the disposition of a communication. This clause describes those events and supporting information.

Each record described in this clause consists of a set of parameters. Each parameter is either:

- mandatory (M) - required for the record,
- conditional (C) - required in situations where a condition is met (the condition is given in the Description), or
- optional (O) - provided at the discretion of the implementation.

The information to be carried by each parameter is identified. Both optional and conditional parameters are considered to be OPTIONAL syntactically in ASN.1 Stage 3 descriptions. The Stage 2 inclusion takes precedence over Stage 3 syntax.

Table 7.3: SIP-Message REPORT Record

Parameter	MOC	Description/Conditions
observed SIP-URI	C	SIP URI of the interception target (if available)
observed TEL-URL	C	TEL URL of the interception target (if available)
event type	M	Provide IMS event type.
event date	M	Provide the date and time the event is detected.
event time		
network identifier	M	Shall be provided.
lawful intercept identifier	M	Shall be provided.
correlation number	C	If available and not included in the SIP-message
SIP message	M	The relevant SIP message