Technical Specification Group Services and System Aspects   **TSGS#18(02)0705**
Meeting #18, New Orleans, USA, 9-12 December 2002

Source:	**SA WG3**
Title:	**1 CR to 33.108 (Rel-5): Essential corrections to the Annex C.1 (ULIC)**
Document for:	**Approval**
Agenda Item:	**7.3.3**

SA doc#	Spec	CR	R	Phase	Subject	Cat	Current Version	WI	SA WG3 doc#
SP-020705	33.108	002		Rel-5	Essential correction to the LI events generated during RAU, when PDP context is active	F	5.1.0	SEC1-LI	S3-020491

3GPP TSG-SA LI Meeting #12
Location, Country, Date

Tdoc ⌘ S3LI02_130r4

CR-Form-v7

CHANGE REQUEST

⌘ **33.108** CR **002** ⌘ **rev** **-** ⌘ Current version: **5.1.0** ⌘

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

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

Title: ⌘	Essential corrections to the Annex C.1 (ULIC)
Source: ⌘	SA WG3
Work item code: ⌘	SEC1-LI

Date: ⌘ 24.09.2002

Category: ⌘	**F**

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 <u>TR 21.900</u>.

Release: ⌘ REL-5

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)

Reason for change: ⌘	Subclause C.1 is common for ULICv0 and ULICv1. Object Identifier is missing from the ULICv1 header definition.
Summary of change:⌘	Typo corrected and Object Identifier has been added to the ULICv1 header definition.
Consequences if not approved: ⌘	Collision of a clause title with the respective subclause title. Ambiguity in definition of 'information element' that might lead to confusion.

Clauses affected: ⌘	Annex C.1

	Y	N	
Other specs affected: ⌘		X	Other core specifications ⌘
		X	Test specifications
		X	O&M Specifications

Other comments: ⌘

C.1   UMTS LI correlation header version 0

C.1.1   Introduction

The header and the payload of the communication between the intercepted subscriber and the other party (later called: Payload Information Element) is duplicated. A new header (later called: ULIC-Header) is added before it is sent to LEMF.

Data packets with the ULIC header shall be sent to the LEA -via UDP/IP or TCP/IP.

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.

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 [12]).

- Length shall be the length, in octets, of the signaling 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 and guarantees a unique identification of the tunnel to the LEA over a long time. The requirements for this identification 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.
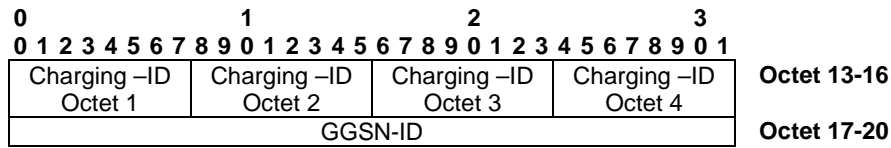
0	1	2	3	
0 1 2 3 4 5 6 7	8 9 0 1 2 3 4 5	6 7 8 9 0 1 2 3	4 5 6 7 8 9 0 1	
Charging –ID Octet 1	Charging –ID Octet 2	Charging –ID Octet 3	Charging –ID Octet 4	**Octet 13-16**
GGSN-ID				**Octet 17-20**

Figure C.2: Outline of correlation number

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

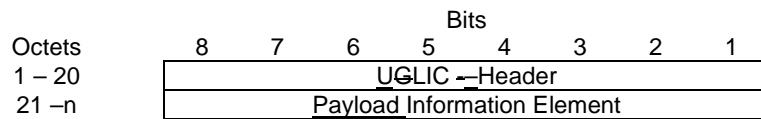|	Bits							
Octets	8	7	6	5	4	3	2	1
1 – 20	U~~G~~LIC -–Header							
21 –n	Payload Information Element							

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 version (version)
  set to version1.

- lawful interception identifier (lIID, 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).

- ── TPDU direction (t-PDU-direction)
  indicates the direction of the T-PDU (from the target or to the target).

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

C.1.4   Exceptional procedure

With ULIC over UDP: the delivering node doesn't take care about any problems at LEMF.

With ULIC over TCP: TCP tries to establish a connection to LEMF and resending (buffering in the sending node) of packets is also supported by TCP.

In both cases it might happen that content of communication gets lost (in case the LEMF or the transit network between MF and LEMF is down for a long time).

C.1.5   Other considerations

The use of IPsec for this interface is recommended.

The required functions in LEMF are:

-    Collecting and storing of the incoming packets inline with the sequence numbers.

-    Correlating of CC to IRI with the use of the correlation number in the U~~C~~LIC header.