



**Lawful Interception (LI);
Handover Interface and
Service-Specific Details (SSD) for IP delivery;
Part 7: Service-specific details for Mobile Services**

Reference

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Keywords

handover, IP, mobile, Lawful Interception,
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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Lawful Interception (LI).

The present document is part 7 of a multi-part deliverable. Full details of the entire series can be found in TS 102 232-1 [2].

Introduction

The TS 102 232 [i.1] series of standards aims to provide a common delivery interface for lawfully-intercepted material from a wide range of services. The aim of the present document is to increase the range of services to which the TS 102 232 [i.1] interface applies, by including services from 3GPP TS 33.108 [3] and ANSI/J-STD-025-B [4] within the TS 102 232 [i.1] delivery framework.

1 Scope

The present document specifies an approach for the handover of the lawfully-intercepted information that is defined in the two standards: 3GPP TS 33.108 [3] and ANSI/J-STD-025-B [4]. The present document uses the handover techniques defined in TS 102 232-1 [2]. In this way, the present document allows additional services to be delivered through a common interface.

1.1 UMTS/GPRS and EPS - 3GPP TS 33.108

The scope of the present document includes the handover of lawfully-intercepted information from the following parts of 3GPP TS 33.108 [3]:

- Intercept Related Information (IRI) from the mobile circuit-switched domain (3GPP TS 33.108, clause 5 [3]). Content of Communication (CC) from the mobile circuit-switched domain is not covered by the present document.
- IRI and CC from the mobile packet-switched domain (3GPP TS 33.108, clause 6 [3]).
- IRI and CC from the multi-media domain (3GPP TS 33.108, clause 7 [3]).
- IRI and CC from the EPS domain (3GPP TS 33.108, clause 10 [3]).

The present document does not override or supersede any specifications or requirements in 3GPP TS 33.108 [3].

1.2 CDMA2000 - ANSI/J-STD-025-B

The scope of the present document includes the handover of lawfully-intercepted information from the following parts of ANSI/J-STD-025-B [4]:

- Call identifying information from the mobile circuit-switched domain (J-STD-025-B [4], clause 5.4). Call Content (CC) from the mobile circuit-switched domain is not covered by the present document.
- Communication identifying information (CII) and CC from the mobile packet-switched domain (J-STD-025-B [4], clause 5.5).

The present document does not override or supersede any specifications or requirements in ANSI/J-STD-025-B [4].

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

2.1 Normative references

The following referenced documents are necessary for the application of the present document.

- [1] ETSI TS 101 671: "Lawful Interception (LI); Handover interface for the lawful interception of telecommunications traffic".

NOTE: Periodically TS 101 671 is published as ES 201 671. A reference to the latest version of the TS as above reflects the latest stable content from ETSI/TC LI.

- [2] ETSI TS 102 232-1: "Lawful Interception (LI); Handover Interface and Service-Specific Details (SSD) for IP delivery; Part 1: Handover specification for IP delivery".
- [3] ETSI TS 133 108: "Universal Mobile Telecommunications System (UMTS); LTE; 3G security; Handover interface for Lawful Interception (LI) (3GPP TS 33.108)".
- [4] TIA/ATIS ANSI/J-STD-025-B (August 2006): "Lawful Authorized Electronic Surveillance," as amended by ANSI/J-STD-025-B-1 (September 2006): "Lawfully Authorized Electronic Surveillance (LAES) Addendum 1 - Addition of Mobile Equipment Identifier (MEID)" and by ANSI/J-STD-025-B-2 (April 2007): "Lawfully Authorized Electronic Surveillance (LAES) - Addendum 2 - Support for Carrier Identity".
- [5] Public Law 103-414: "Communications Assistance for Law Enforcement Act (CALEA)", US 103rd Congress, 108 STAT. 4279 (October 25, 1994).

2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ETSI TS 102 232 (all parts): "Lawful Interception (LI); Handover Interface and Service-Specific Details (SSD) for IP delivery".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TS 102 232-1 [2] and TS 101 671 [1] apply.

call-identifying information: ANSI/J-STD-025-B [4] states that this term is defined in CALEA Section 102 (2) [5] to be "dialling or signalling information that identifies the origin, direction, destination, or termination of each communication generated or received by a subscriber by means of any equipment, facility, or service of a TSP."

NOTE: This term is always used in expanded format.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ASN.1	Abstract Syntax Notation One
ATIS	Alliance for Telecommunications Industry Solutions
CC	Call Content (ANSI)
CC	Content of Communication (ETSI and 3GPP)
CDMA	Code Division Multiple Access
CII	Communication-Identifying Information
CIN	Communications Identity Number
CSP	Communications Service Provider

NOTE: CSP covers all Access Providers, Network Operators and Service Providers.

EPC	Evolved Packet Core
EPS	Evolved Packet System
GPRS	General Packet Radio Service
IP	Internet Protocol
IRI	Intercept Related Information

LAES	Lawfully Authorized Electronic Surveillance (Committee of ATIS)
LEMF	Law Enforcement Monitoring Facility
LI	Lawful Interception
LTE	Long Term Evolution (of UMTS)
MF	Mediation Function (at CSP)
PDU	Protocol Data Unit
PTSC	Packet Technologies and Systems Committee (Committee of ATIS)
PS	Packet Switched
TIA	Telecommunications Industry Association
uLIC	UMTS LI Correlation
UMTS	Universal Mobile Telecommunication System

4 General

4.1 Approach

The present document forms part 7 of the TS 102 232 family of standards, in that it is a service-specific component of the TS 102 232-1 [2] framework.

3GPP TS 33.108 [3] and ANSI/J-STD-025-B [4] define the interception behaviour that leads to IRI, Communication-Identifying Information (CII) or call-identifying information events on the handover interface, for both the packet data domain and circuit switched domain.

4.2 Reference model

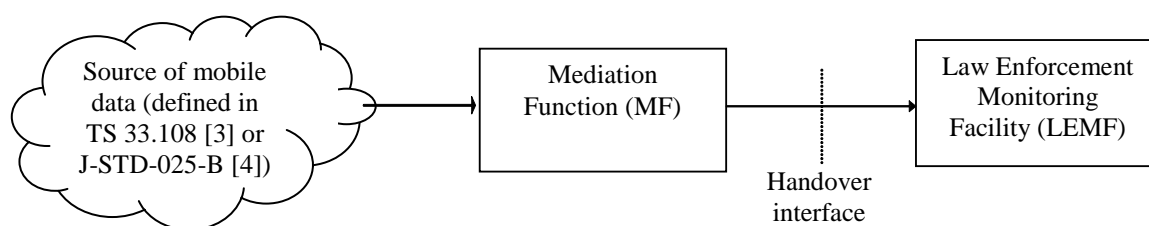


Figure 1: Reference model

5 GPRS/UMTS Headers, data exchange and networks

5.1 Approach

TS 102 232-1 [2] describes a technique for data exchange, and specifies the headers that shall be associated with the results of interception. The present document follows TS 102 232-1 [2] regarding headers, data exchange and networks demonstrates how the header fields in TS 102 232-1 [2] can be populated in a direct and straightforward manner using the interception information available in 3GPP TS 33.108 [3].

5.2 Structures

IRI events from 3GPP TS 33.108 [3], for both circuit and packet switched services, are sent using the uMTSIRI element of IRIContents.

CC from packet switched services are sent using the uMTSCC element CCContent, which is an OCTET STRING.

6 GPRS/UMTS Intercept Related Information (IRI) and Content of Communication (CC)

6.1 Definition of IRI events and CC

IRI events are defined as per 3GPP TS 33.108 [3].

6.2 IRI format

IRI events are defined as per 3GPP TS 33.108 [3] for both circuit and packet switched services. They are sent using the uMTSIRI element of IRIContents.

Fields which are duplicated in the 3GPP TS 33.108 [3] and TS 102 232-1 [2] structures should be populated consistently in both structures. Clause A.1 gives guidance on mapping between 3GPP TS 33.108 [3] elements and TS 102 232-1 [2] elements for IRI.

6.3 CC format

CC from packet switched services are sent using the uMTSCC element CCContents, which is an OCTET STRING. The OCTET STRING will be as defined in the payload element of the CC-PDU structure in 3GPP TS 33.108 [3], clause B.4.

The information in the uLIC-header element of CC-PDU will be used to populate the header information in the LI-PS-PDU structure of TS 102 232-1 [2]. Clause A.1 gives guidance on the mapping between these elements.

7 CDMA2000 Headers, data exchange and networks

7.1 Approach

TS 102 232-1 [2] describes a technique for data exchange, and specifies the headers that shall be associated with the results of interception. The present document follows TS 102 232-1 [2] regarding headers, data exchange and networks. It demonstrates how the ANSI/J-STD-025-B [4] data is to be carried in the corresponding CC and IRI payload fields of TS 102 232-1 [2] and how the header fields in TS 102 232-1 [2] must be populated using the corresponding information from the ANSI/J-STD-025-B [4] data structures.

Permission has been given to ETSI/TC LI by TIA and ATIS to make use of Annex I of the TIA/ATIS joint standard J-STD-025B [4], which contains the ASN.1 code for that standard, in the present document. That Annex 1 contains the code as prepared in text form by the PTSC LAES committee of ATIS, and subsequently amended by the changes defined by J-STD-025-B-1 [4] and by J-STD-025-B-2 [4].

7.2 Structures

Call-identifying information in J-STD-025-B [4], clauses 6.3 and 6.4 for circuit switched services is sent by carrying the imported LAESProtocol element of Laesp-j-std-025-b as LAESProtocol in IRIContents. This contains the LAESMessage parameter that defines the LAES messages.

CII events from J-STD-025-B [4], clause 6.5 for packet switched services are sent by carrying the imported CDMA2000LAESMessage element of CDMA2000CIIModule as cDMA2000LAESMessage in IRIContents.

CC for J-STD-025-B, clause 6.6.2.1 [4] packet switched services is sent by carrying the imported CCIPPacketHeader element of CDMA2000CCModule in CCContents.

8 CDMA2000 Communication-Identifying Information (CII), Call-Identifying Information and Call Content (CC)

The TS 102 232-1 [2] fields in PSHeader must be populated using the corresponding fields from the ANSI/J-STD-025-B [4] data structures as shown in table 1:

Table 1: Populating the PSHeader

TS 102 232-1 [2] element	Source from ANSI/J-STD-025-B	Comments
pSHeader.lawfulInterceptionIdentifier	casIdentity	Same value
pSHeader.communicationIdentifier.networkIdentifier.networkElementIdentifier	iapSystemIdentity	Same value
pSHeader.timeStamp	timeStamp (note)	Same value
NOTE: The source timestamp is in generalized time format. The optional use of MicroSecondTimeStamp does not apply.		

9 EPS Headers, data exchange and networks

9.1 Approach

TS 102 232-1 [2] describes a technique for data exchange, and specifies the headers that shall be associated with the results of interception. The present document follows TS 102 232-1 [2] regarding headers, data exchange and networks demonstrates how the header fields in TS 102 232-1 [2] can be populated in a direct and straightforward manner using the interception information available in 3GPP TS 33.108 [3].

9.2 Structures

IRI events from 3GPP TS 33.108 [3], for EPS services, are sent using the ePSIRI element of IRIContents.

CC from EPS services is sent using the ePSCC element of CCContent, which is an OCTET STRING.

10 EPS Intercept Related Information (IRI) and Content of Communication (CC)

10.1 Definition of IRI events and CC

IRI events are defined as per 3GPP TS 33.108 [3].

10.2 IRI format

IRI events for EPS services are defined as per clause 10 of 3GPP TS 33.108 [3]. They are sent using the ePSIRI element of IRIContents.

Fields which are duplicated in the 3GPP TS 33.108 [3] and TS 102 232-1 [2] structures should be populated consistently in both structures. Clause A.1 gives guidance on mapping between 3GPP TS 33.108 [3] elements and TS 102 232-1 [2] elements for IRI.

10.3 CC format

CC from EPS is sent using the ePSCC element of CCContents, which is an OCTET STRING. The OCTET STRING will be as defined in the payload element of the CC-PDU structure in 3GPP TS 33.108 [3], clause B.10.

The information in the uLIC-header element of CC-PDU will be used to populate the header information in the LI-PS-PDU structure of TS 102 232-1 [2]. Clause A.1 gives guidance on the mapping between these elements.

Annex A (normative): ASN.1 for IRI and CC

A.1 Note on integrating ASN.1 structures

A.1.1 Header field mappings

Table A.1 shows how elements of the TS 102 232-1 [2] PSHeader structure should be populated from information in the 3GPP TS 33.108 [3] IRI-Parameters structure.

Table A.1: 3GPP TS 33.108 [3] to TS 102 232-1 [2] PSHeader mapping

TS 102 232-1 [2] PSHeader element	Source from 3GPP TS 33.108 [3]
lawfulInterceptionIdentifier	Copied directly from IRI-Parameters.lawfulInterceptionIdentifier
authorizationCountryCode	Supplied directly by the MF
communicationIdentifier	See below for individual elements
networkIdentifier	See below for individual elements
operatorIdentifier	Copied directly from IRI-Parameters.networkIdentifier.operatorIdentifier
eTSI671NEID	Copied directly from IRI-Parameters.networkIdentifier. Network-Element-Identifier
communicationIdentityNumber	See clause A.1.2
deliveryCountryCode	Supplied directly by the MF
sequenceNumber	Supplied directly by the MF
timeStamp	Copied from IRI-Parameters.timeStamp. This requires a conversion from HI2Operations.TimeStamp to GeneralizedTime

Table A.2 shows how elements of the TS 102 232-1 [2] IRIPayload structure should be populated from information in the 3GPP TS 33.108 [3] structures.

Table A.2: 3GPP TS 33.108 [3] to TS 102 232-1 [2] IRIPayload mapping

TS 102 232-1 [2] IRIPayload element	Source from 3GPP TS 33.108 [3]
iRIType	Inferred from UmtsIRIContent or EpsIRIContent
timeStamp	Copied from IRI-Parameters.timeStamp (assuming no aggregation of PDUs) This requires a conversion from HI2Operations.TimeStamp to GeneralizedTime
iRIContents	See below for individual elements
uMTSIRI	See below for individual elements
iRI-Parameters	Copied directly from IRI-Parameters, if handing over packet domain IRI
iRI-CS-Parameters	Copied directly from IRI-Parameters, if handing over circuit switched IRI
ePSIRI	See below for individual elements
iRI-EPS-Parameters	Copied directly from IRI-Parameters, if handing over EPS IRI

Table A.3 shows how elements of the TS 102 232-1 [2] PSHeader structure should be populated from information in the 3GPP TS 33.108 [3] CC-PDU structure.

Table A.3: 3GPP TS 33.108 [3] to TS 102 232-1 [2] PSHeader mapping

TS 102 232-1 [2] PSHeader element	Source from 3GPP TS 33.108 [3]
lawfulInterceptionIdentifier	Copied from CC-PDU.uLIC-header.IIID
authorizationCountryCode	Supplied directly by the MF
communicationIdentifier	See below for individual elements
networkIdentifier	See below for individual elements
operatorIdentifier	Supplied directly by the MF (see 3GPP TS 33.108, clause 5.2.4 [3])
eTSI671NEID	Supplied directly by the MF (see 3GPP TS 33.108, clause 5.2.4 [3])
communicationIdentityNumber	See clause A.1.2
deliveryCountryCode	Supplied directly by the MF
sequenceNumber	Supplied directly by the MF
timeStamp	Copied from CC-PDU.uLIC-header.timeStamp This requires a conversion from HI2Operations.TimeStamp to GeneralizedTime

Table A.4 shows how elements of the TS 102 232-1 [2] CCPayload structure should be populated from information in the 3GPP TS 33.108 [3] structures.

Table A.4: 3GPP TS 33.108 [3] to TS 102 232-1 [2] CCPayload mapping

TS 102 232-1 CCPayload element	Source from 3GPP TS 33.108 [3]
payloadDirection	Copied from CC-PDU.uLIC-header.t-PDU-direction This requires a trivial translation between TPDU-direction and PayloadDirection enumerated types
timeStamp	Copied from CC-PDU.uLIC-header.timeStamp This requires a conversion from HI2Operations.TimeStamp to GeneralizedTime
ccContents	See below for individual elements
uMTSCC	Bytes copied from CC-PDU.payload
ePSCC	Bytes copied from CC-PDU.payload

A.1.2 CIN allocation

CIN allocation follows TS 102 232-1, clause 5.2.4 [2]. The CIN extension field may be used, if required, using the CorrelationValues field as described in 3GPP TS 33.108 [3].

Annex B (informative): Change request history

Status of the present document: TS 102 232-7 Service-specific details for Mobile Services		
TC LI approval Date	Version	Remarks
January 2008	2.1.1	First publication of the TS after approval by ETSI/TC LI#17 (22-24 January 2008, Como) Rapporteur of version 2.1.1 is Chris White (GTEN)
February 2011	2.2.1	Included Change Request: TS 102 232-07CR001 (Cat B) Addition of Service-Specific Details for CDMA2000 This CR was approved by TC LI#26 (15-17 February 2011, Sophia Antipolis): Version 2.2.1 prepared by Peter van der Arend (Vodafone) (Chairman TC LI) Rapporteur of this specification is Mark Shepherd (NTAC)
May 2012	3.1.1	Included Change Request: TS 102 232-07CR002 (Cat B) Introduce changes to accommodate EPS This CR was approved by TC LI#30 (14-16 May 2012, Amsterdam): Version 3.1.1 prepared by Peter van der Arend (Vodafone) (Chairman TC LI) Rapporteur of this specification is Mark Shepherd (NTAC)

History

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