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Lawful Interception (LI) - Retained data handling - Handover interface for the request and delivery of retained data

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Foreword

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

The ASN.1 module and XML schema are also available as an electronic attachment to the original document from the ETSI site (see details in clause A.3.1.2).

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1 Scope

The present document contains handover requirements and a handover specification for the data that is identified in EU Directive 2006/24/EC on Data Retention [1]. The handover requirements from TS 102 656 [2] are derived from the requirements contained in and implied by the EU Directive [1] and by other national legislations. The present document considers both the requesting of retained data and the delivery of the results.

The present document defines an electronic interface. An informative annex describes how this interface may be adapted for manual techniques. Apart from in annex I, the present document does not consider manual techniques.

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific.

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2.1 Normative references

The following referenced documents are indispensable for the application of the present document. For dated references, only the edition cited applies. For non-specific references, the latest edition of the referenced document (including any amendments) applies.

[1] Directive 2006/24/EC of the European Parliament and of the Council of 15 March 2006 on the retention of data generated or processed in connection with the provision of publicly available electronic communications services or of public communications networks and amending Directive 2002/58/EC.

[2] ETSI TS 102 656: "Lawful Interception (LI); Retained Data; Requirements of Law Enforcement Agencies for handling Retained Data".

[3] 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".

[4] ISO 3166-1: "Codes for the representation of names of countries and their subdivisions - Part 1: Country codes".

[5] ISO 4217: "Codes for the representation of currencies and funds".

[6] 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.

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[7] ETSI EN 300 356 (all parts): "Integrated Services Digital Network (ISDN); Signalling System No.7 (SS7); ISDN User Part (ISUP) version 4 for the international interface".

[8] ETSI TS 100 974: "Digital cellular telecommunications system (Phase 2+); Mobile Application Part (MAP) Specification (3GPP TS 09.02)".

[9] ETSI TS 124 008: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Mobile radio interface Layer 3 specification; Core network protocols; Stage 3 (3GPP TS 24.008)".

[10] ETSI TS 125 431: "Universal Mobile Telecommunications System (UMTS); UTRAN Iub interface Layer 1 (3GPP TS 25.431)".

[11] ETSI TS 133 108: "Universal Mobile Telecommunications System (UMTS); LTE; 3G security; Handover interface for Lawful Interception (LI) (3GPP TS 33.108)".

[12] ETSI TS 101 109: "Digital cellular telecommunications system (Phase 2+); Universal Geographical Area Description (GAD) (3GPP TS 03.32)".

[13] FIPS PUB 186-2: "Digital Signature Standard (DSS)".

[14] IETF RFC 2616: "Hypertext Transfer Protocol - HTTP/1.1".

[15] IETF RFC 2818: "HTTP Over TLS".

[16] ETSI TS 123 040: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Technical realization of Short Message Service (SMS) (3GPP TS 23.040)".

[17] IETF RFC 0793: "Transmission Control Protocol".

[18] IETF RFC 2581: "TCP Congestion Control".

[19] IETF RFC 2988: "Computing TCP's Retransmission timer".

[20] IETF RFC 1122: "Requirements for Internet Hosts - Communication Layers".

[21] IETF RFC 0791: "Internet Protocol".

[22] ETSI ES 282 002: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN Emulation Sub-system (PES); Functional architecture".

[23] IETF RFC 0822: "Standard for the format of ARPA internet text messages".

[24] IETF RFC 2822: "Internet Message Format".

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2.2 Informative references

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Not applicable.

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3 Definitions and abbreviations

3.1 Definitions

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

Authorized Organization: any authority legally authorized to request or receive retained data e.g. a Law Enforcement Agency

Handover Interface A (HI-A): administrative handover interface comprising requests for information and their responses

Handover Interface B (HI-B): data handover interface comprising the retained data transmission of information

lawful authorization: permission granted to an Authorized Organization under certain conditions to request specified telecommunications retained data and requiring co-operation from a network operator/service provider/access provider

NOTE: Typically, this refers to a warrant or order issued by a lawfully authorized body.

location information: information relating to the geographic, physical or logical location of an identity relating to an interception subject

number: any address (E.164, IP, email, URI) used for routing in a network or in a service on a user level or network/service level

request: legal requirement for a Communications Service Provider (CSP) to disclose retained data in accordance with relevant national law

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requesting authority: any entity possessing the necessary jurisdiction and authority pursuant to law to compel a service provider to deliver retained subscriber information or traffic data specified in a query

response to request of information: response from the CSP to the requesting authority acknowledging or rejecting a request for information

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retained data record: set of data elements for a specific subscriber/user related to a specific service transaction

service transaction: instance of a service given by a CSP to a subscriber/user

service transaction record: set of data elements describing a service transaction (details to be determined)

transmission of information: transmission of retained data from the CSP to the requesting authority

3.2 Abbreviations

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

ADSL	Asymmetric Digital Subscriber Line
APN	Access Point Name
ASN	Abstract Syntax Notation
BER	Basic Encoding Rules
CPE	Customer Premises Equipment
CS	Circuit Switched
CSP	Communications Service Provider
CSPID	CSP Identifier
DNS	Domain Name System
DSA	Digital Signature Algorithm
DSL	Digital Subscriber Line
DSS	Digital Signature Standard
DVD	Digital Versatile Disc or Digital Video Disc
EMS	Enhanced Messaging Service
GGSN	Gateway GPRS Support Node
GPRS	General Packet Radio Service

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GSM	Global System for Mobile communications
HI	Handover Interface
HTTP	HyperText Transfer Protocol
HTTPS	HyperText Transfer Protocol over Secure Socket Layer
ICCID	Integrated Circuit Card ID
ID	IDentifier
IEI	Information Element Identifier
IMAP	Internet Message Access Protocol
IMEI	International Mobile Equipment Identity
IMS	IP Multimedia Subsystem
IMSI	International Mobile Subscriber Identity
IP	Internet Protocol
IPSec	Internet Protocol Security
IRI	Intercept Related Information
ISDN	Integrated Services Digital Network
ISUP	ISDN User Part
LAN	Local Area Network
LI	Lawful Interception
MAC	Media Access Control
MMS	Multimedia Messaging Service
MSC	Mobile Switching Centre
MSISDN	Mobile Subscriber ISDN number
MSN	Multiple Subscriber Number
NA	Network Access
NAS	Network Access Server
PDP	Packet Data Protocol
PDU	Protocol Data Unit
PS	Packet Switched
PSTN	Public Switched Telephone Network
PUK	Personal Unblocking Key
RAI	Routing Area Identifier
RD	Retained Data
RDHI	Retained Data Handover Interface
SAI	Service Area Identifier
SGSN	Serving GPRS Support Node
SHA	Secure Hash Algorithm
SIM	Subscriber Identity Module
SIP	Session Initiation Protocol
SMS	Short Message Service
SMTP	Simple Mail Transfer Protocol
TCP	Transmission Control Protocol
TLS	Transport Layer Security
UMTS	Universal Mobile Telecommunication System
URI	Uniform Resource Identifier
UTF	Unicode Transformation Format
UTM	Universal Transverse Mercator
WGS	World Geodetic System
XML	eXtensible Markup Language

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4 Overview of handover interface

4.1 Reference model

The generic Handover Interface adopts a two-port structure such that administrative request/response information (HI-A) and Retained Data Information (HI-B) are logically separated.

Figure 1 is the reference model for the request and transmission of retained telecommunications data.

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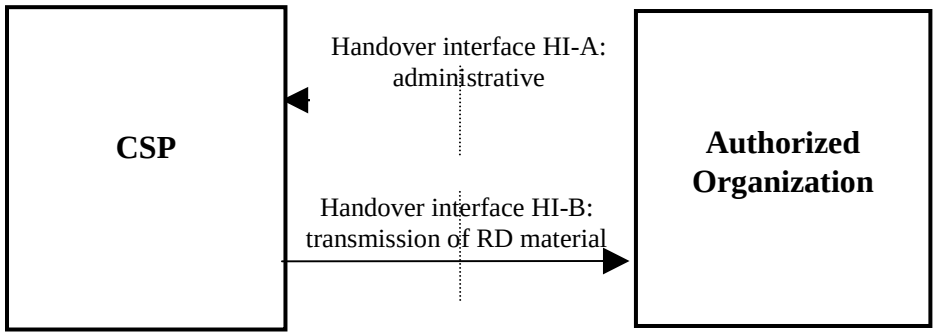

NOTE 1: The term Authorized Organization covers any agency legally authorized to make RDHI requests (see clause 3.1).
NOTE 2: HI-B delivers data from CSP to the Authorized Organization. There may be related supporting lower level messages from the Authorized Organization to CSP on HI-B.

Figure 1: Functional diagram showing handover interface HI

Each of these two parties can be expanded to show some of their internal functions. This is not to proscribe how implementations of the present document must be organized, and is purely informational.

Within the CSP block, three internal CSP functions can be identified: an *administrative function to* manage the RD requests and responses; a *data collection function* to collect data from the various internal network elements and prepare the data for retention; a *data store management function* to index and store the data, execute queries, and manage the maximum retention period for RD.

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Within the Authorized Organization block, two functions can be identified: an *issuing authority* responsible for initiating new RDHI requests; a *receiving authority* to accept the RDHI responses. In many situations, the authority issuing a request will also be the authority to receive the responses. However, the issuing authority may indicate a different delivery point for HI-B responses, in which case the issuing authority and receiving authority will be different.

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These internal functions, and the interfaces between them, do not form a normative part of the present document.

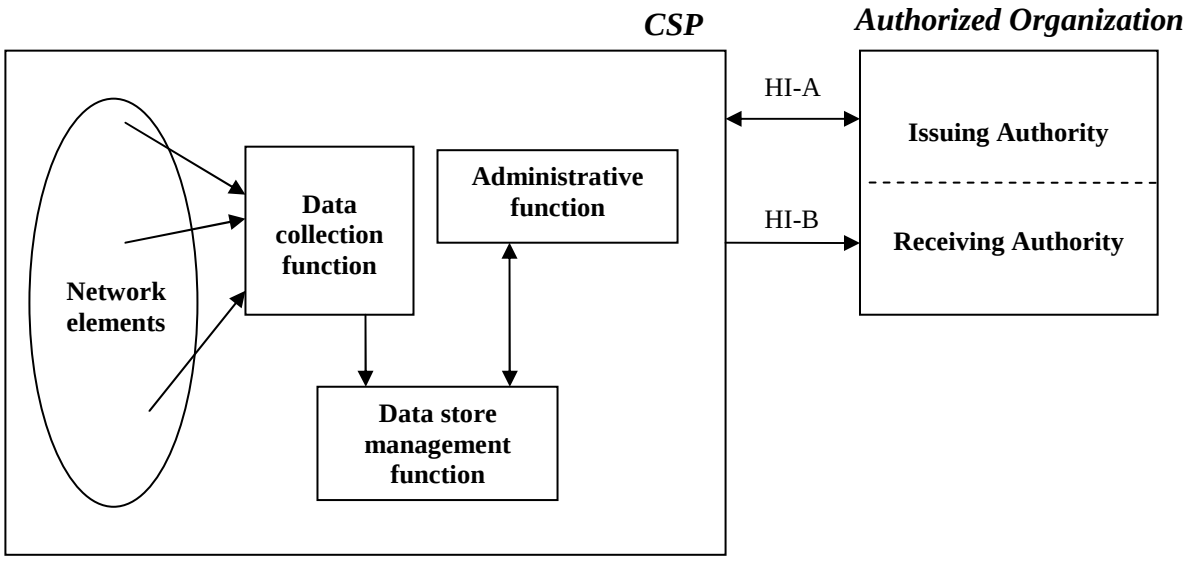

Figure 2: Functional model (informative)

A CSP or Authorized Organization may outsource some of its internal functions to a third party. It is a national option whether or not outsourcing is allowed, or whether conditions apply.

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4.2 Structure of document and applicable communication domains

The present document defines a framework that applies to all Retained Data. The present document defines a range of services (as shown in figure 3). The present document contains one annex for each service (annex B onwards).

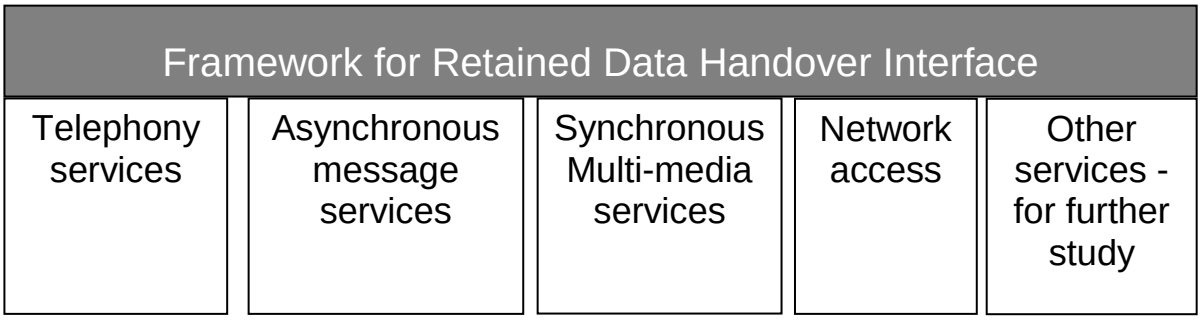

Figure 3: Framework structure

The framework defines the message procedures, the identifying and header information for each message, data exchange techniques, and security measures. Each service-specific annex defines the information that is available within that particular service.

This handover interface does not mandate or require CSPs to create data by inspecting or analyzing communication content.

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The scope of each service is as follows:

- Telephony services covers those services offering the facilities listed in clause B.1. It covers services that provides PSTN/ISDN functionality (either offered over PSTN/ISDN or emulated PSTN/ISDN (as defined in ES 282 002 [22]) over IP) including GSM/UMTS-CS, SMS and MMS.

SIST-TS ETSI/TS 102 657 V1.4.1:2012
https://standards.iteh.ai/catalog/standards/sist/cd04d921-e4c7-4f61-9094-0b09d745ee99/sist-ts-etsi-ts-102-657-v1-4-1-2012

NOTE 1: EMS (3GPP TS 23.040 [16]) is handled as SMS.

- Asynchronous messaging services covers asynchronous communications involving the intermediate storage of messages, as defined in clause C.1. This includes e-mail, webmail but excludes chat, which is synchronous, and excludes SMS and MMS.

- Synchronous multimedia services are not covered by the present document. Specifically, the present document does not contain details for interactive or synchronous communication sessions beyond the telephony services.

- Network access services covers the services offering a capability to access public networks (typically the internet), including GPRS/UMTS-PS, as defined in clause E.1.

NOTE 2: Data about subscriber are common to all services, as shown in the type declaration *GenericSubscriberInfo*. Even if the interface specification includes a copy of subscriber records embedded within each type of service, these records may be stored in just one copy in the Retained Data repository on the operator side and with references to/from the subscribed-to services in order to reduce storage size.

The present document is extensible: additional services may be added in future. Common SIP/IMS calls/communications are not handled by the present document.