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| 3GPP TR 33.929-9 V0.0.1 (2024-07) |
| Technical Report |
| 3rd Generation Partnership Project;Technical Specification Group Services and Systems Aspects;Security;Lawful Interception (LI) implementation guidance;LI for PTC(Release 19) |
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# Foreword

This Technical Report has been produced by the 3rd Generation Partnership Project (3GPP).

The present document is part of a multi-part TR as described below:

* Part 1: LI for IMS based services. See TR 33.929-1 [10].
* Part 2: LI for IMS based STIR/SHAKEN. See TR 33.929-2 [11].
* Part 3: LI for messaging services. See TR 33.929-3 [12].
* Part 4: LI for data in 5G core. See TR 33.929-4 [13].
* Part 5: LI for ID association caching. See TR 33.929-5 [14].
* Part 6: LI for IMS based RCS. See TR 33.929-6 [15].
* Part 7: LI location acquisition capabilities. See TR 33.929-7 [16].
* Part 8: LI for MMS. See TR 33.929-8 [17].
* Part 9: LI for PTC (present document).

In Part 1, the illustrations of LI for IMS-based services focus on the LI aspects of IMS sessions which include the architecture topologies and the call flows covering basic sessions, redirected sessions, target non-local ID, conferencing, roaming (local break-out and home-routed roaming).

In Part 2, the illustrations of LI for IMS based STIR/SHAKEN focus on various STIR/SHAKEN related LI reporting scenarios.

In Part 3, the illustrations of LI for messaging services focus on SMS over NAS and SMS over IP.

In Part 4, the illustrations of LI for data in 5G core focus on the LI aspects of data interception focussing on the PDU session related events including the handover scenarios.

In Part 5, the illustrations of LI for ID association caching focus on the capabilities used to provide the temporary identity to permanent identity (and vice-versa) associations known to the CSP network. The illustrations include the architectural concepts and few examples of use-cases encountering various timing scenarios.

In Part 6, the illustrations of LI for IMS based RCS focus on the architecture topologies and the call flows when the RCS service is offered by the CSP or by a Third Party Provider.

In Part 7, the illustrations of LI location acquisition capabilities focus on the conceptual overview and the flow diagrams for location reporting, LALS and location acquisition.

In Part 8, the illustrations of LI for MMS focus on the conceptual overview and the flow diagrams for MMS.

In Part 9 (present document), the illustrations of LI for PTC focus on the conceptual overview and the flow diagrams for MCPTT and PoC, the two commonly referred to as Push to Talk over Cellular (PTC).

# Introduction

Unlike the previous generation of LI technical specifications, the latest LI technical specifications (TS 33.126 [2], TS 33.127 [3], TS 33.128 [4]) contain only the normative part of the requirements. However, the implementers may need additional information such as architectural diagrams, conceptual scenarios, flow-diagrams and additional background information to better understand the requirements in those specifications. The present document collects the relevant informative annexes from the previous generation of LI technical specifications and then expands them to include the similar level of details as for latest technologies such as 5G.

# 1 Scope

The present document provides architectural diagrams, conceptual scenarios, flow-diagrams, examples, and other background information which can be useful to implement the LI functions defined in TS 33.126 [2], TS 33.127 [3] and TS 33.128 [4].

The present document covers the LI for PTC that include the illustrations covering the conceptual overview and the flow diagrams for MCPTT and PoC commonly referred to as Push to Talk over Cellular.

# 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] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 33.126: "Lawful Interception requirements".

[3] 3GPP TS 33.127: "Lawful Interception (LI) architecture and functions".

[4] 3GPP TS 33.128: "Protocol and procedures for Lawful Interception (LI)".

[5] 3GPP TS 24.147: "Conferencing using the IP Multimedia (IM) Core Network (CN) subsystem; Stage 3".

[6] 3GPP TS 23.501: "System architecture for the 5G System".

[7] 3GPP TS 24.174: "Support of multi-device and multi-identity in the IP Multimedia Subsystem (IMS); Stage 3".

[8] 3GPP TS 23.228: "IP Multimedia Subsystem (IMS), Stage 2".

[9] 3GPP TR 33.928: "ADMF logic for provisioning Lawful Interception (LI)".

[10] 3GPP TR 33.929-1: "Lawful Interception (LI) implementation guidance; LI for IMS-based services".

[11] 3GPP TR 33.929-2: "Lawful Interception (LI) implementation guidance; LI for IMS based STIR/SHAKEN".

[12] 3GPP TR 33.929-3: "Lawful Interception (LI) implementation guidance; LI for messaging services".

[13] 3GPP TR 33.929-4: "Lawful Interception (LI) implementation guidance; LI for data in 5G core".

[14] 3GPP TR 33.929-5: "Lawful Interception (LI) implementation guidance; LI for ID Association Caching ".

[15] 3GPP TR 33.929-6: "Lawful Interception (LI) implementation guidance; LI for IMS based RCS".

[16] 3GPP TR 33.929-7: "Lawful Interception (LI) implementation guidance; LI location acquisition capabilities".

[17] 3GPP TR 33.929-8: "Lawful Interception (LI) implementation guidance; LI for MMS".

# 3 Definitions of terms, symbols and abbreviations

## 3.1 Terms

For the purposes of the present document, the terms given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

## 3.2 Symbols

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

None.

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

3GPP 3rd Generation Partnership Program

ADMF Administration Function

AMF Access and Mobility Management Function

APN Access Pointe Name

AS Application Server

BBIFF Bearer Binding Intercept and Forward Function

BBIFF-C Bearer Binding Intercept and Forward Function Control plane

BBIFF-U Bearer Binding Intercept and Forward Function User plane

BGCF Border Gateway Control Function

CC Content of Communication

CSCF Call Session Control Function

CSP Communication Service Provider

CUPS Control and User Plane Separation

DNN Data Network Name

eCNAM Enhanced Calling NAMe

EPC Evolved Packet Core

E-CSCF Emergency Call Session Control Function

HPLMN Home PLMN

HSS Home Subscriber Server

H-SMF Home SMF

H-UPF Home UPF

IBCF Interrogating Border Control Function

I-CSCF Interrogating CSCF

ID Identity

IMPI IP Multimedia Private Identity

IMPU IP Multimedia Public Identity

IMS IP Multimedia Subsystem

IMS-AGW IMS Media Gateway

IRI Intercept Related Information

LALS Lawful Access Location Services

LBO Local Break Out

LEA Law Enforcement Agency

LEMF Law Enforcement Monitoring Facility

LI Lawful Interception

LICF Lawful Interception Control Function

LI\_HI1 LI\_Handover Interface 1

LI\_HI2 LI\_Handover Interface 2

LI\_HI3 LI\_Handover Interface 3

LIPF LI Provisioning Function

LI\_T1 Lawful Interception Triggering Interface 1

LI\_T3 Lawful Interception Triggering Interface 3

LI\_X1 Lawful Interception Internal Interface 1

LI\_X2 Lawful Interception Internal Interface 2

LI\_X3 Lawful Interception Internal Interface 3

LMISF LI Mirror IMS State Function

LMISF-CC LMISF for the handling of CC

LMISF-IRI LMISF for the handling of IRI

LTE Long Term Evolution

MCPTT Mission Critical Push To Talk

MDF Mediation and Delivery Function

MDF2 Mediation and Delivery Function 2

MDF3 Mediation and Delivery Function 3

MGCF Media Gateway Control Function

MMS Multimedia Message Service

MRFC Media Resource Function Controller

MRFP Multimedia Resource Function Processor

N9HR N9 Home Routed

NAS Non-Access Stratum

NR New Radio

PASSporT Personal ASSertion Token

P-CSCF Proxy Call Session Control Function

PDN Packet Data Network

PEI Permanent Equipment Identifier

PGW PDN Gateway

PGW-C PDN Gateway Control Plane

PGW-U PDN Gateway User Plane

PLMN Public Land Mobile Network

PoC Push to talk over Cellular

POI Point Of Interception

PTC Push to Talk over Cellular

RCD Rich Call Data

RCS Rich Communication Suite

S8HR S8 Home Routed

S-CSCF Serving Call Session Control Function

SDP Session Description Protocol

SHAKEN Signature-based Handling of Asserted information using toKENs

SMF Session Management Function

SGW Serving Gateway

SGW-C Serving Gateway Control Plane

SGW-U Serving Gateway User Plane

SMS Short Messaging Service

SUPI Subscriber Permanent Identifier

SIP Session Initiation Protocol

STIR Secure Telephony Identity Revisited

TF Triggering Function

TrGW Transit Gateway

UDM Unified Data Management

UE User Equipment

UPF User Plane Function

VPLMN Visited PLMN

V-SMF Visted SMF

V-UPF Visited UPF

xCC LI\_X3 Communications Content

xIRI LI\_X2 Intercept Related Information

# 4 Illustration of LI for PTC

# 5 Example call flows of LI for PTC

Annex C (informative):
Bibliography

Annex X (informative):
Change history

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| **Change history** |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
| 2024-07 | SA3LI#94 | S3i240512  |  |  |  | Initial version | 0.0.1 |