

ETSI TS 103 280 V2.12.1 (2024-04)



Lawful Interception (LI); Dictionary for common parameters

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Foreword

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

The ASN.1, JSON Schema and XSD technical implementations are both available as an electronic attachment to the present document.

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

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1 Scope

The present document defines a dictionary of parameters that are commonly used in multiple TC LI specifications. Aside from defining a dictionary, the present document aims to provide technical means for other specifications to use. It is encouraged to use the present document in the development of new specifications.

It is foreseen that regular maintenance of the present document is required. As such, release management requirements will be defined.

Before accepting any new common parameter, the present document will provide a set of requirements the parameter has to comply to in order to become a common parameter.

2 References

2.1 Normative 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 <https://docbox.etsi.org/Reference>.

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

- [1] [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".
- [2] [W3C® Recommendation 5 April 2012](#): "W3C XML Schema Definition Language (XSD) 1.1 Part 2: Datatypes".
- [3] [Recommendation ITU-T X.680](#): "Information technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation".
- [4] [Recommendation ITU-T E.164](#): "The international public telecommunication numbering plan".
- [5] [Recommendation ITU-T E.212](#): "The international identification plan for public networks and subscriptions".
- [6] [ETSI TS 123 003](#): "Digital cellular telecommunications system (Phase 2+) (GSM); Universal Mobile Telecommunications System (UMTS); LTE; 5G; Numbering, addressing and identification (3GPP TS 23.003)".
- [7] [ETSI TS 102 657](#): "Lawful Interception (LI); Retained data handling; Handover interface for the request and delivery of retained data".
- [8] [IETF RFC 791](#): "Internet Protocol".
- [9] [IETF RFC 4632](#): "Classless Inter-domain Routing (CIDR): The Internet Address Assignment and Aggregation Plan".
- [10] [IETF RFC 8200](#): "Internet Protocol, Version 6 (IPv6) Specification".
- [11] [IETF RFC 4291](#): "IP Version 6 Addressing Architecture".
- [12] [IETF RFC 793](#): "Transmission Control Protocol".

NOTE: IETF RFC 793 has been obsoleted by IETF RFC 9293.

- [13] [IETF RFC 768](#): "User Datagram Protocol".
- [14] [IEEE 802.3™](#): "IEEE Standard for Ethernet".
- [15] [IETF RFC 5322](#): "Internet Message Format".
- [16] WHATWG community: "[HTML Living standard](#)".
- [17] [IETF RFC 4122](#): "A Universally Unique IDentifier (UUID) URN Namespace".
- [18] [ISO 3166-1](#): "Codes for the representation of names of countries and their subdivisions -- Part 1: Country codes".
- [19] Void.
- [20] [ISO/IEC 7812-1:2017](#): "Identification cards -- Identification of issuers -- Part 1: Numbering system".
- [21] [IETF RFC 3261](#): "SIP: Session Initiation Protocol".
- [22] [IETF RFC 3966](#): "The tel URI for Telephone Numbers".
- [23] [NIMA Technical Report 8350.2](#): "Department of Defense World Geodetic System 1984, Its Definition and Relationships With Local Geodetic Systems".
- [24] [ETSI TS 123 501](#): "5G; System architecture for the 5G System (5GS) (3GPP TS 23.501)".
- [25] [ETSI TS 133 501](#): "5G; Security architecture and procedures for 5G System (3GPP TS 33.501)".
- [26] [IETF RFC 7542](#): "The Network Access Identifier".
- [27] [ETSI TS 124 501](#): "5G; Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3 (3GPP TS 24.501)".
- [28] [ETSI TS 103 120](#): "Lawful Interception (LI); Interface for warrant information".
- [29] [W3C® Recommendation 16 August 2006](#): "Extensible Markup Language (XML) 1.1 (Second Edition)".
- [30] [IETF RFC 6530](#): "Overview and Framework for Internationalized Email".
- [31] [IETF RFC 7042](#): "IANA Considerations and IETF Protocol and Documentation Usage for IEEE 802 Parameters".
- [32] [ETSI TS 102 221](#): "Smart Cards; UICC-Terminal interface; Physical and logical characteristics".
- [33] [ETSI TS 129 571](#): "5G; 5G System; Common Data Types for Service Based Interfaces; Stage 3 (3GPP TS 29.571)".
- [34] IANA: "[Assigned Internet Protocol Numbers](#)".
- [35] [IETF Draft draft-bhutton-json-schema-01](#): "JSON Schema: A Media Type for Describing JSON Documents".
- [36] [ECMA-262](#): "ECMAScript® 2023 Language Specification".
- [37] [IEEE 802.1Q™-2014](#): "IEEE Standard for Local and metropolitan area networks -- Bridges and Bridged Networks".
- [38] [ISO 3779:2009](#): "Road vehicles - Vehicle identification number (VIN) - Content and structure".

2.2 Informative 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.

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

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.

Not applicable.

3 Definition of terms, symbols and abbreviations

3.1 Terms

Void.

3.2 Symbols

Void.

3.3 Abbreviations

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

| | |
|---------|---|
| 3GPP | 3 rd Generation Partnership Project |
| ASCII | American Standard Code for Information Interchange |
| ASN.1 | Abstract Syntax Notation One |
| CC | Content of Communication |
| CI | Cell Identity |
| CGI | Cell Global Identification |
| CIDR | Classless Inter-Domain Routing |
| CSP | Communications Service Provider |
| E-UTRAN | Evolved Universal Terrestrial Radio Access Network |
| ECGI | E-UTRAN Cell Global Identification |
| ECI | E-UTRAN Cell Identity |
| EUI | Extended Unique Identifier |
| GPSI | Generic Public Subscription Identifier |
| HEX | HEXadecimal |
| HI | Handover Interface |
| HI1 | Handover Interface port 1 (for administrative information) |
| HI2 | Handover Interface port 2 (for Intercept Related Information) |
| HI3 | Handover Interface port 3 (for Content of Communication) |
| IANA | Internet Assigned Numbers Authority |
| ICCID | Integrated Circuit Card Identifier |
| IEC | International Electrotechnical Commission |
| IEEE | Institute of Electrical and Electronics Engineers |
| IEI | Information Element Identifier |
| IETF | Internet Engineering Task Force |
| IMEI | International Mobile station Equipment Identity |
| IMEISV | International Mobile station Equipment Identity and Software Version number |
| IMSI | International Mobile Subscriber Identity |
| IP | Internet Protocol |
| IPv4 | Internet Protocol version 4 |

| | |
|-------|---|
| IPv6 | Internet Protocol version 6 |
| IRI | Intercept Related Information |
| ISO | International Organization for Standardization |
| ITU-T | International Telecommunication Union - Telecommunication |
| JSON | JavaScript Object Notation |
| LAC | Location Area Code |
| LDID | Lawful Disclosure IDentifier |
| LEA | Law Enforcement Agency |
| LIID | Lawful Interception Identifier |
| MAC | Media Access Control |
| MCC | Mobile Country Code |
| MNC | Mobile Network Code |
| NAI | Network Access Identifier |
| NCGI | NR Cell Global Identification |
| NCI | NR Cell Identity |
| NIMA | National Imagery and Mapping Agency |
| NR | New Radio |
| PEI | Permanent Equipment Identifier |
| RFC | Request For Comments |
| SIP | Session Initialization Protocol |
| SUCI | Subscription Concealed Identifier |
| SUPI | Subscription Permanent Identifier |
| TCP | Transmission Control Protocol |
| UDP | User Datagram Protocol |
| URI | Uniform Resource Identifier |
| UTC | Coordinated Universal Time |
| UUID | Universally Unique Identifier |
| VIN | Vehicle Identification Number |
| VLAN | Virtual Local Area Network |
| WGS84 | World Geodetic System 1984 |
| XML | eXtended Markup Language |
| XSD | XML Schema Definition |

4 Release management

This clause describes the release management requirements. The requirements are:

- The version of the present document is defined as <major>.<minor>.<patch>.
- The major version should be incremented when making a backwards incompatible change.
- The minor version should be incremented when adding backwards compatible functionality.
- The patch version should be incremented when fixing a backwards compatible bug.
- Once a major version has been incremented, the previous major version will be supported for 2 years after publication of the new version. Change requests issued to a version that is no longer supported will need to be issued for the latest supported major version.

5 Parameter requirements

5.0 Introduction

This clause describes the requirements a parameter should comply to in order to be specified as a common parameter.

5.1 Parameter attributes

Name

- The parameter should be assigned a unique name. The naming conventions used are described in clause 5.2.

Description

- A description of the parameter should be provided.

Usage guidance

- If there are circumstances in which additional usage guidance is applicable, use cases may be described in this attribute.

References to other specifications

- If the parameter is specified in another specification (such as an RFC), a reference to that specification shall be provided. If possible, the reference should point to the exact clause in the specification.

EXAMPLE: Specify one or more sample values of the parameter.

Technical means to define and validate the parameter

- If possible, provide a regular expression to specify the value that is accepted by this parameter. Implementations may be required to perform additional validation on the value. The regular expression is defined per clause 5.4. Define the parameter in the XSD [2] in clause 7.1. When converting a regular expression to an XSD [2] pattern, escape any XML [29] markup characters in the regular expression per XML [29], section 2.4 to create a valid XSD [2] pattern.
- Define the parameter in the ASN.1 [3] in clause 7.2.
- Define the parameter in the JSON Schema [35] in clause 7.3. Unless otherwise specified, the JSON definition shall be a translation of the XSD definition, following the translation given in annex C.

5.2 Parameter naming conventions (2024-04)

Allowed characters

- The following character classes are allowed: A-Z, a-z and 0-9.

Camel casing

- The name of the parameter is to be CamelCased, where the first character is uppercased. Any acronyms should be uppercased.

EXAMPLE:

- IPv4Address.
- SIPURI.
- EmailAddress.

5.3 Technology conventions

The used technologies defined in clause 7 may impose requirements that conflict with the requirements in clauses 5.1 and 5.2. In the case of a conflict and in exceptional cases, it is allowed to deviate from the requirements above.

5.4 Regular expression conventions

Regular expressions used for validation shall be limited to the regular expression capabilities supported by both XSD [2] patterns and ECMAScript regular expressions (see ECMA-262 [36], section 22.2.1, as used by JSON Schema [35] patterns).

Given the high disparity of regular expression implementations, the regular expressions should be limited to the following features (inspired by JSON Schema [35], section 6.4):

1. Individual Unicode characters. Unicode characters for XSD [2] need to be encoded using an appropriate XML [29] entity.
2. Character classes: "[abc]" (simple character classes), and "[a-z]" (range character classes).
3. Negated character classes: "^abc" (negated simple character classes), and "[^a-z]" (negated range character classes).
4. Simple quantifiers: "." (any character except new line and line feed), "*" (zero or more occurrences), "+" (one or more occurrence), and "?" (zero or one occurrence).
5. Range quantifiers: "{ n }" (exactly n occurrences), "{ n , m }" (between n and m occurrences), and "{ n , }" (at least n occurrences).
6. Grouping and alternation: "(" and ")" (simple grouping), and "|" (alternation).

As XSD [2] patterns are matched to the entire value, regular expressions shall not start with the anchor "^" or end with the anchor "\$". When regular expressions are mapped to a JSON Schema [35] pattern per table C.2, the anchors are required.

6 Parameter dictionary

6.1 LIID

| Name | LIID |
|-------------|---|
| Description | <p>For each target identity related to an interception measure, the authorized CSP operator shall assign a special Lawful Interception Identifier (LIID), which has been agreed between the LEA and the CSP. It is used within parameters of all HI interface ports.</p> <p>Using an indirect identification, pointing to a target identity makes it easier to keep the knowledge about a specific interception target limited within the authorized CSP operators and the handling agents at the LEA.</p> <p>The Lawful Interception Identifier LIID is a component of the CC delivery procedure and of the IRI records. It shall be used within any information exchanged at the Handover Interfaces HI2 and HI3 for identification and correlation purposes.</p> <p>The LIID format shall consist of alphanumeric characters. It might for example, among other information, contain a lawful authorization reference number, and the date, when the lawful authorization was issued.</p> <p>The authorized CSP shall either enter a unique LIID for each target identity of the interception subject or as a national option a single LIID for multiple target identities all pertaining to the same interception subject.</p> <p>EXAMPLE: The interception subject has a telephony service with three telephone numbers. The CSP enters for each telephone number an own LIID, or optionally enters one LIID for all three telephone numbers.</p> <p>If more than one LEA intercepts the same target identity, there shall be unique LIIDs assigned, relating to each LEA.</p> |