ETSI TS 103 280 V1.2.1 (2016-08)

Lawful Interception (LI);
Dictionary for common parameters

Reference
RTS/LI-00136

Keywords
dictionary, Lawful Interception, security

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Contents

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (https://ipr.etsi.org/).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

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

It contains also the XSD technical implementation as attachment to the original document available from the ETSI site.

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).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

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 be 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 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.

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)".

[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); 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, DARPA Internet Program Protocol Specification".

[9] IETF RFC 4632: "Classless Inter-domain Routing (CIDR): The Internet Address Assignment and Aggregation Plan".

[10] IETF RFC 2460: "Internet Protocol, Version 6 (IPv6) Specification".

[11] IETF RFC 4291: "IP Version 6 Addressing Architecture".

[12] IETF RFC 793: "Transmission Control Protocol, DARPA Internet Program Protocol Specification".

[13] IETF RFC 768: "User Datagram Protocol".

[14] IEEE 802.3: "IEEE Standard for Ethernet".

[15] IETF RFC 5322: "Internet Message Format".

[16] W3C Recommendation 28 October 2014: "HTML5 A vocabulary and associated APIs for HTML and XHTML".

[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] IEEE Std 1003.1-2008: "Standard for Information Technology - Portable Operating System Interface (POSIX(R))".

[20] ISO/IEC 7812-1:2015: "Identification cards -- Identification of issuers -- Part 1: Numbering system".

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 reference 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 Abbreviations

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

ASCII	American Standard Code for Information Interchange
ASN.1	Abstract Syntax Notation One
CC	Content of Communication
CIDR	Classless Inter-Domain Routing
CSP	Communications Service Provider
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)
IMEI	International Mobile station Equipment Identity
IMSI	International Mobile Subscriber Identity
IP	Internet Protocol
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
IRI	Intercept Related Information
LEA	Law Enforcement Agency
LIID	Lawful Interception Identifier
MAC	Media Access Control
RFC	Request For Comments
TCP	Transmission Control Protocol
UDP	User Datagram Protocol
UTC	Coordinated Universal Time
UUID	Universally Unique IDentifier
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 or 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 expressions follow the IEEE POSIX [19], section 9 regular expression format but shall be limited to the regular expression capabilities supported by XSD [2].

Define the parameter in the XSD [2] in section 7.1.

Define the parameter in the ASN.1 [3] in section 7.2.

5.2 Parameter naming conventions

Allowed characters

The following characters 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.

6 Parameter dictionary

LIID

Name	LIID
Description	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. 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. 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. 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. 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. 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. If more than one LEA intercepts the same target identity, there shall be unique LIIDs assigned, relating to each LEA.
Usage guidance	The LIID is defined as an OCTET STRING in ASN.1. This means it is possible to use binary octets or ASCII printable characters to express the LIID. To correctly handle this, the parameter accepts both variations.
References	ETSI TS 102 232-1 [1], clause 5.2.2.
Example	`ZZZ123 (ASCII printable LIID)` `46565527098f6bcd4621d373cade4e832627b4f6ff00ff00ff (Binary LIID, represented in HEX)`
Regular expression	`^([!-~]{1,25})|([0-9a-f]{26,50})$`
XSD	LIID, simpleType
ASN.1	LIID, OCTET STRING

UTCDateTime

Name	UTCDateTime
Description	A UTC timestamp with second precision.
Usage guidance	-
References	W3C XML Schema Definition Language [2], section 3.3.7
Example	2015-12-27T13:37:00Z
Regular expression	`^[0-9]{4}-[0-9]{2}-[0-9]{2}T[0-9]{2}:[0-9]{2}:[0-9]{2}Z$`
XSD	UTCDateTime, simpleType
ASN.1	See clause 7.2

UTCMicrosecondDateTime

Name	UTCMicrosecondDateTime
Description	A UTC timestamp with microsecond precision.
Usage guidance	-
References	W3C XML Schema Definition Language [2], section 3.3.7
Example	2015-12-27T13:37:00.012345Z
Regular expression	`^[0-9]{4}-[0-9]{2}-[0-9]{2}T[0-9]{2}:[0-9]{2}:[0-9]{2}\.[0-9]{6}Z$`
XSD	UTCMicrosecondDateTime, simpleType
ASN.1	See clause 7.2

QualifiedDateTime

Name	QualifiedDateTime
Description	A timestamp with second precision and timezone qualifier.
Usage guidance	-
References	W3C XML Schema Definition Language [2], section 3.3.7
Example	2015-12-27T13:37:00+02:00
Regular expression	`^[0-9]{4}-[0-9]{2}-[0-9]{2}T[0-9]{2}:[0-9]{2}:[0-9]{2}(Z|[+-][0-9]{2}:[0-9]{2})$`
XSD	QualifiedDateTime, simpleType
ASN.1	See clause 7.2

QualifiedMicrosecondDateTime

Name	QualifiedMicrosecondDateTime
Description	A timestamp with microsecond precision and timezone qualifier.
Usage guidance	-
References	W3C XML Schema Definition Language [2], section 3.3.7
Example	2015-12-27T13:37:00.012345+02:00
Regular expression	`^[0-9]{4}-[0-9]{2}-[0-9]{2}T[0-9]{2}:[0-9]{2}:[0-9]{2}\.[0-9]{6}(Z|[+-][0-9]{2}:[0-9]{2})$`
XSD	QualifiedMicrosecondDateTime, simpleType
ASN.1	See clause 7.2

InternationalE164

Name	InternationalE164
Description	E.164 Number in fully international format, written as decimal digits.
Usage guidance	-
References	Recommendation ITU-T E.164 [4], clause 6
Example	31612345678
Regular expression	`^[0-9]{1,15}$`
XSD	InternationalE164, simpleType
ASN.1	See clause 7.2

IMSI

Name	IMSI
Description	International Mobile Subscriber Identity, written as decimal digits.
Usage guidance	-
References	Recommendation ITU-T E.212 [5], clause 6.1
Example	204081234567890
Regular expression	`^[0-9]{15}$`
XSD	IMSI, simpleType
ASN.1	See clause 7.2

IMEI

Name	IMEI
Description	International Mobile station Equipment Identity, written as decimal digits without the Luhn check digit, annex B of ISO/IEC 7812-1 [20].
Usage guidance	To avoid implementation issues, the IMEI parameter explicitly excludes the Luhn check digit, annex B of ISO/IEC 7812-1 [20]. (See notes 1 and 2)
References	3GPP TS 23.003 [6], clause 6
Example	35395803121326
Regular expression	`^[0-9]{14}$`
XSD	IMEI, simpleType
ASN.1	See clause 7.2
NOTE 1: ETSI TS 102 657 [7] clause E.3 identifies potential issues with the inclusion/exclusion of the check digit. As such, the IMEI parameter is explicitly specified without the check digit.	
NOTE 2: The IMEICheckDigit parameter can be used when the check digit is explicitly required.	

IMEICheckDigit

Name	IMEICheckDigit
Description	International Mobile station Equipment Identity, written as decimal digits with the Luhn check digit, annex B of ISO/IEC 7812-1 [20].
Usage guidance	
References	3GPP TS 23.003 [6], clause 6
Example	35395803121326
Regular expression	^[0-9]{15}$
XSD	IMEICheckDigit, simpleType
ASN.1	See clause 7.2

IPv4Address

Name	IPv4Address
Description	IPv4 address, written in dotted decimal notation.
Usage guidance	-
References	IETF RFC 791 [8]
Example	192.0.2.1
Regular expression	^((25[0-5]|2[0-4][0-9]|[01]?[0-9]?[0-9])\.){3}(25[0-5]|2[0-4][0-9]|[01]?[0-9]?[0-9])$
XSD	IPv4Address, simpleType
ASN.1	See clause 7.2

IPv4CIDR

Name	IPv4CIDR
Description	IPv4 CIDR, written in dotted decimal notation followed by CIDR notation.
Usage guidance	-
References	IETF RFC 791 [8], IETF RFC 4632 [9]
Example	192.0.2.0/24
Regular expression	^((25[0-5]|2[0-4][0-9]|[01]?[0-9]?[0-9])\.){3}(25[0-5]|2[0-4][0-9]|[01]?[0-9]?[0-9])/([1-2]?[0-9]|3[0-2])$
XSD	IPv4CIDR, simpleType
ASN.1	See clause 7.2

IPv6Address

Name	IPv6Address
Description	IPv6 address, written as eight groups of four hexadecimal digits separated by a colon.
Usage guidance	It is recognized that IPv6 address formatting has various options. To reduce complexity in technical implementations, the IPv6Address parameter restricts the address to the fully uncompressed representation of the IPv6 address.
References	IETF RFC 2460 [10]
Example	2001:db8:0000:0000:0000:0000:0000:0001
Regular expression	^([0-9a-f]{4}:){7}([0-9a-f]{4})$
XSD	IPv6Address, simpleType
ASN.1	See clause 7.2

IPv6CIDR

Name	IPv6CIDR
Description	IPv6 CIDR, written as eight groups of four hexadecimal digits separated by a colon followed by CIDR notation.
Usage guidance	See IPv6Address parameter for usage guidance.
References	IETF RFC 2460 [10], IETF RFC 4632 [9] and IETF RFC 4291 [11]
Example	2001:db8:0000:0000:0000:0000:0000:0000/48
Regular expression	^([0-9a-f]{4}:){7}([0-9a-f]{4})/(([1-9][0-9]?)|(1[0-1][0-9])|(12[0-8]))$
XSD	IPv6CIDR, simpleType
ASN.1	See clause 7.2

IPAddress

Name	IPAddress
Description	Either a IPv4Address parameter or IPv6Address parameter.
Usage guidance	-
References	-
Example	XSD <IPAddress> <IPv4Address>192.0.2.1</IPv4Address> </IPAddress>
Regular expression	-
XSD	IPAddress, complexType
ASN.1	See clause 7.2

IPCIDR

Name	IPCIDR
Description	Either a IPv4CIDR parameter or IPv6CIDR parameter.
Usage guidance	-
References	-
Example	XSD <IPCIDR> <IPv4CIDR>192.0.2.0/24</IPv4CIDR> </IPCIDR>
Regular expression	-
XSD	IPCIDR, complexType
ASN.1	See clause 7.2

TCPPort

Name	TCPPort
Description	TCP port, written in decimal notation.
Usage guidance	-
References	IETF RFC 793 [12]
Example	22
Regular expression	^([1-9][0-9]{0,3}|[1-5][0-9]{4}|6[0-4][0-9]{3}|65[0-4][0-9]{2}|655[0-2][0-9]|6553[0-5])$
XSD	TCPPort, simpleType
ASN.1	See clause 7.2

TCPPortRange

Name	TCPPortRange
Description	TCP port range, consists of a 'start' TCPPort parameter and an 'end' TCPPort parameter.
Usage guidance	The start and end values are inclusive.
References	-
Example	Regular expression 1024-2048 XSD <TCPPortRange> <start>1024</start> <end>2048</end> </TCPPortRange>
Regular expression	^([1-9][0-9]{0,3}|[1-5][0-9]{4}|6[0-4][0-9]{3}|65[0-4][0-9]{2}|655[0-2][0-9]|6553[0-5])-([1-9][0-9]{0,3}|[1-5][0-9]{4}|6[0-4][0-9]{3}|65[0-4][0-9]{2}|655[0-2][0-9]|6553[0-5])$
XSD	TCPPortRange, complexType
ASN.1	See clause 7.2

UDPPort

Name	UDPPort
Description	UDP port, written in decimal notation.
Usage guidance	-
References	IETF RFC 768 [13]
Example	53
Regular expression	^([0-9]{1,4}|[1-5][0-9]{4}|6[0-4][0-9]{3}|65[0-4][0-9]{2}|655[0-2][0-9]|6553[0-5])$
XSD	UDPPort, simpleType
ASN.1	See clause 7.2

UDPPortRange

Name	UDPPortRange
Description	UDP port range, consists of a 'start' UDPPort parameter and an 'end' UDPPort parameter.
Usage guidance	The start and end values are inclusive.
References	-
Example	Regular expression 2048-4096 XSD <UDPPortRange> <start>2048</start> <end>4096</end> </UDPPortRange>
Regular expression	^([0-9]{1,4}|[1-5][0-9]{4}|6[0-4][0-9]{3}|65[0-4][0-9]{2}|655[0-2][0-9]|6553[0-5])-([0-9]{1,4}|[1-5][0-9]{4}|6[0-4][0-9]{3}|65[0-4][0-9]{2}|655[0-2][0-9]|6553[0-5])$
XSD	UDPPortRange, complexType
ASN.1	See clause 7.2

Port

Name	Port
Description	Either a TCPPort parameter or a UDPPort parameter.
Usage guidance	-
References	-
Example	XSD <Port> <TCPPort>22</TCPPort> </Port>
Regular expression	^([0-9]{1,4}|[1-5][0-9]{4}|6[0-4][0-9]{3}|65[0-4][0-9]{2}|655[0-2][0-9]|6553[0-5])$
XSD	Port, complexType
ASN.1	See clause 7.2

PortRange

Name	PortRange
Description	Either a TCPPortRange parameter or a UDPPortRange parameter.
Usage guidance	The start and end values are inclusive.
References	-
Example	XSD <PortRange> <TCPPortRange> <start>2048</start> <end>4096</end> </TCPPortRange> </PortRange>
Regular expression	-
XSD	PortRange, complexType
ASN.1	See clause 7.2

IPAddressPort

Name	IPAddressPort
Description	Combination of an IPAddress parameter and a Port parameter.
Usage guidance	-
References	-
Example	XSD <IPAddressPort> <address> <IPv4Address>192.0.2.1</IPv4Address> </address> <port> <TCPPort>22</TCPPort> </port> </IPAddressPort>
Regular expression	-
XSD	IPAddressPort, complexType
ASN.1	See clause 7.2

IPAddressPortRange

Name	IPAddressPortRange
Description	Combination of an IPAddress parameter and a PortRange parameter.
Usage guidance	-
References	-
Example	XSD <IPAddressPortRange> <address> <IPv4Address>192.0.2.1</IPv4Address> </address> <portRange> <TCPPortRange> <start>2048</start> <end>4096</end> </TCPPortRange> </portRange> </IPAddressPortRange>
Regular expression	-
XSD	IPAddressPortRange, complexType
ASN.1	See clause 7.2

MACAddress

Name	MACAddress
Description	MAC address, written as six groups of two hexadecimal digits separated by a colon.
Usage guidance	-
References	IEEE 802.3 [14]
Example	c0:ff:ee:c0:ff:ee
Regular expression	^([a-f0-9]{2}:){5}[a-f0-9]{2}$
XSD	MACAddress, simpleType
ASN.1	See clause 7.2

EmailAddress

Name	EmailAddress
Description	E-mail address
Usage guidance	-
References	IETF RFC 5322 [15]
Example	john.doe@example.com
Regular expression	^[a-zA-Z0-9.!#$%&'*+\/=?^`{\|}~-]+@[a-zA-Z0-9]([a-zA-Z0-9-]{0,61} [a-zA-Z0-9])?(\.[a-zA-Z0-9]([a-zA-Z0-9-]{0,61}[a-zA-Z0-9])?)*$ See note.
XSD	EmailAddress, simpleType
ASN.1	See clause 7.2
NOTE: The regular expression above is sourced from the W3C HTML5 Recommendation [16].	

UUID

Name	UUID
Description	UUID
Usage guidance	-
References	IETF RFC 4122 [17]
Example	`de305d54-75b4-431b-adb2-eb6b9e546013`
Regular expression	`^[a-f0-9]{8}-[a-f0-9]{4}-[a-f0-9]{4}-[a-f0-9]{4}-[a-f0-9]{12}$`
XSD	UUID, simpleType
ASN.1	See clause 7.2

ISOCountryCode

Name	ISOCountryCode
Description	An ISO 3166-1 alpha-2 [18] two-letter country code.
Usage guidance	-
References	ISO 3166-1 alpha-2 [18]
Example	`"NL"`
Regular expression	`^[A-Z]{2}$`
XSD	ISOCountryCode, simpleType
ASN.1	See clause 7.2

ShortString

Name	ShortString
Description	A string with a maximum length of 255 characters.
Usage guidance	-
References	-
Example	`string`
Regular expression	-
XSD	ShortString, simpleType
ASN.1	See clause 7.2

LongString

Name	LongString
Description	A string with a maximum length of 65 535 characters.
Usage guidance	-
References	-
Example	`string`
Regular expression	-
XSD	ShortString, simpleType
ASN.1	See clause 7.2

7 Technical implementation

7.1 XSD

The XSD definition is defined in annex A. The XSD file named "TS_103_280_v010101.xsd" is contained in archive "ts_103280v010201p0.zip" which accompanies the present document.

The targetNamespace of the XSD is set to 'http://uri.etsi.org/03280/common/2015/08'. The XSD version is set to 1.1.1.

The targetNamespace shall be increased in the event of a major release as defined in clause 4 and the requirement to do so. The year in the targetNamespace shall be set to the year and month of publication of the major release.

The XSD version shall be increased according to the versioning scheme as defined in clause 4. A change to the present document shall not necessarily lead to a new XSD version. The XSD version shall only be increased when a change to the XSD is required, as such the version of the present document and the XSD version may differ.

As the XSD version is not part of the targetNamespace, an implementation should take into account that the appropriate version is used when importing the XSD.

7.2 ASN.1

The ASN.1 definition is defined in annex B. The ASN.1 file named "TS_103_280_v010201.asn1" is contained in archive "ts_103280v010201p0.zip" which accompanies the present document.

The ASN.1 object identifier is defined as itu-t(0) identified-organization(4) etsi(0) common-parameters(3280) version121(121).

The ASN.1 version shall be increased according to the versioning scheme as defined in clause 4. A change to the present document shall not necessarily lead to a new ASN.1 version. The ASN.1 version shall only be increased when a change to the ASN.1 is required, as such the version of the present document and the ASN.1 version may differ.

Annex A (normative): XSD definition

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns="http://uri.etsi.org/03280/common/2015/08"
targetNamespace="http://uri.etsi.org/03280/common/2015/08" version="1.1.1"
elementFormDefault="qualified">
    <xs:simpleType name="ShortString">
        <xs:restriction base="xs:string">
            <xs:maxLength value="255"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="LongString">
        <xs:restriction base="xs:string">
            <xs:maxLength value="65535"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="LIID">
        <xs:restriction base="xs:normalizedString">
            <xs:pattern value="([!-~]{1,25})|([0-9a-f]{26,50})"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="UTCDateTime">
        <xs:restriction base="xs:dateTime">
            <xs:pattern value="[0-9]{4}-[0-9]{2}-[0-9]{2}T[0-9]{2}:[0-9]{2}:[0-9]{2}Z"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="UTCMicrosecondDateTime">
        <xs:restriction base="xs:dateTime">
            <xs:pattern value="[0-9]{4}-[0-9]{2}-[0-9]{2}T[0-9]{2}:[0-9]{2}:[0-9]{2}\.[0-9]{6}Z"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="QualifiedDateTime">
        <xs:restriction base="xs:dateTime">
            <xs:pattern value="[0-9]{4}-[0-9]{2}-[0-9]{2}T[0-9]{2}:[0-9]{2}:[0-9]{2}(Z|[+-][0-
9]{2}:[0-9]{2})"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="QualifiedMicrosecondDateTime">
        <xs:restriction base="xs:dateTime">
            <xs:pattern value="[0-9]{4}-[0-9]{2}-[0-9]{2}T[0-9]{2}:[0-9]{2}:[0-9]{2}\.[0-9]{6}(Z|[+-
][0-9]{2}:[0-9]{2})"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="InternationalE164">
        <xs:restriction base="xs:token">
            <xs:pattern value="[0-9]{1,15}"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="IMSI">
        <xs:restriction base="xs:token">
            <xs:pattern value="[0-9]{15}"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="IMEI">
        <xs:restriction base="xs:token">
            <xs:pattern value="[0-9]{14}"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="IMEICheckDigit">
        <xs:restriction base="xs:token">
            <xs:pattern value="[0-9]{15}"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="IPv4Address">
        <xs:restriction base="xs:token">
            <xs:pattern value="((25[0-5]|2[0-4][0-9]|[01]?[0-9]?[0-9])\.){3}(25[0-5]|2[0-4][0-
9]|[01]?[0-9]?[0-9])"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="IPv4CIDR">
        <xs:restriction base="xs:token">
            <xs:pattern value="((25[0-5]|2[0-4][0-9]|[01]?[0-9]?[0-9])\.){3}(25[0-5]|2[0-4][0-
9]|[01]?[0-9]?[0-9])/([1-2]?[0-9]|3[0-2])"/>
```

```
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="IPv6Address">
        <xs:restriction base="xs:token">
            <xs:pattern value="([0-9a-f]{4}:){7}([0-9a-f]{4})"/>
        </xs:restriction>
    </xs:simpleType>
     <xs:simpleType name="IPv6CIDR">
        <xs:restriction base="xs:token">
            <xs:pattern value="([0-9a-f]{4}:){7}([0-9a-f]{4})/(([1-9][0-9]?)|(1[0-1][0-9])|(12[0-
8]))"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="IPAddress">
        <xs:choice>
            <xs:element name="IPv4Address" type="IPv4Address"/>
            <xs:element name="IPv6Address" type="IPv6Address"/>
        </xs:choice>
    </xs:complexType>
    <xs:complexType name="IPCIDR">
        <xs:choice>
            <xs:element name="IPv4CIDR" type="IPv4CIDR"/>
            <xs:element name="IPv6CIDR" type="IPv6CIDR"/>
        </xs:choice>
    </xs:complexType>
    <xs:simpleType name="TCPPort">
        <xs:restriction base="xs:integer">
            <xs:minExclusive value="1"/>
            <xs:maxInclusive value="65535"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="TCPPortRange">
        <xs:sequence>
            <xs:element name="start" type="TCPPort"/>
            <xs:element name="end" type="TCPPort"/>
        </xs:sequence>
    </xs:complexType>
    <xs:simpleType name="UDPPort">
        <xs:restriction base="xs:integer">
            <xs:minInclusive value="0"/>
            <xs:maxInclusive value="65535"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="UDPPortRange">
        <xs:sequence>
            <xs:element name="start" type="UDPPort"/>
            <xs:element name="end" type="UDPPort"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="Port">
        <xs:choice>
            <xs:element name="TCPPort" type="TCPPort"/>
            <xs:element name="UDPPort" type="UDPPort"/>
        </xs:choice>
    </xs:complexType>
    <xs:complexType name="PortRange">
        <xs:choice>
            <xs:element name="TCPPortRange" type="TCPPortRange"/>
            <xs:element name="UDPPortRange" type="UDPPortRange"/>
        </xs:choice>
    </xs:complexType>
    <xs:complexType name="IPAddressPort">
        <xs:sequence>
            <xs:element name="address" type="IPAddress"/>
            <xs:element name="port" type="Port"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="IPAddressPortRange">
        <xs:sequence>
            <xs:element name="address" type="IPAddress"/>
            <xs:element name="portRange" type="PortRange"/>
        </xs:sequence>
    </xs:complexType>
    <xs:simpleType name="MACAddress">
        <xs:restriction base="xs:token">
            <xs:pattern value="([a-f0-9]{2}:){5}[a-f0-9]{2}"/>
        </xs:restriction>
    </xs:simpleType>
```

```
    <xs:simpleType name="EmailAddress">
        <xs:restriction base="ShortString">
            <xs:pattern value="[a-zA-Z0-9\.!#$%&amp;amp;'\*\+\\/=\?\^_`\{\|\}~\-]+@[a-zA-Z0-9]([a-zA-Z0-
9-]{0,61}[a-zA-Z0-9])?(\.[a-zA-Z0-9]([a-zA-Z0-9-]{0,61}[a-zA-Z0-9])?)*"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="UUID">
        <xs:restriction base="xs:token">
            <xs:pattern value="[a-f0-9]{8}-[a-f0-9]{4}-[a-f0-9]{4}-[a-f0-9]{4}-[a-f0-9]{12}"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="ISOCountryCode">
        <xs:restriction base="xs:token">
            <xs:pattern value="[A-Z]{2}"/>
        </xs:restriction>
    </xs:simpleType>
</xs:schema>
```

Annex B (normative): ASN.1 definition

```
Common-Parameters
{itu-t(0) identified-organization(4) etsi(0) common-parameters(3280) version121(121)}

DEFINITIONS IMPLICIT TAGS EXTENSIBILITY IMPLIED ::= BEGIN

-- Object Identifier definitions

commonParameterDomainId OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0) common-
parameters(3280) version121(121)}

-- Common Parameter: LIID (as defined in clause 6)

LIID ::= OCTET STRING (SIZE (1..25))

END
```

History

Document history		
V1.1.1	August 2015	Publication
V1.1.2	August 2015	Publication
V1.2.1	August 2016	Publication