



## **Lawful Interception (LI); Dictionary for common parameters**

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**Reference**

RTS/LI-00158

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**Keywords**

dictionary, Lawful Interception, security

**ETSI**

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# 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.

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# 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.

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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>.

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) 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); 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".
- [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: "IEEE 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".
- [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".

## 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.

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## 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
ISO	International Organisation for Standardisation
ITU-T	International Telecommunication Union - Telecommunication
LEA	Law Enforcement Agency

LIID	Lawful Interception Identifier
MAC	Media Access Control
POSIX	Portable Operating System Interface
RFC	Request For Comments
SIP	Session Initialization Protocol
TCP	Transmission Control Protocol
UDP	User Datagram Protocol
URI	Uniform Resource Identifier
UTC	Coordinated Universal Time
UUID	Universally Unique IDentifier
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.

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## 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.

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# 6 Parameter dictionary

### 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>
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	<p>ZZZ123 (ASCII printable LIID)</p> <p>46565527098f6bcd4621d373cade4e832627b4f6ff00ff00ff (Binary LIID, represented in HEX)</p>
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	Not defined

### 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	Not defined

### QualifiedDateTime

Name	QualifiedDateTime
Description	A timestamp with second precision and timezone qualifier.
Usage guidance	-
References	W3C XML Schema Definition Language 1.1 Part 2: Datatypes [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	<p>QualifiedDateTime, GeneralizedTime</p> <p>Timestamps shall be provided with a timezone qualifier. The fractional part of a second shall not be present. Local time format shall not be used.</p>

**QualifiedMicrosecondDateTime**

<b>Name</b>	QualifiedMicrosecondDateTime
<b>Description</b>	A timestamp with microsecond precision and timezone qualifier.
<b>Usage guidance</b>	-
<b>References</b>	W3C XML Schema Definition Language 1.1 Part 2: Datatypes [2], section 3.3.7
<b>Example</b>	2015-12-27T13:37:00.012345+02:00
<b>Regular expression</b>	<code>^[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})\$</code>
<b>XSD</b>	QualifiedMicrosecondDateTime, simpleType
<b>ASN.1</b>	QualifiedMicrosecondDateTime, GeneralizedTime Timestamps shall be provided with a timezone qualifier. The fractional part of a second with no more than 6 digits shall be present. Local time format shall not be used.

**InternationalE164**

<b>Name</b>	InternationalE164
<b>Description</b>	E.164 Number in fully international format, written as decimal digits.
<b>Usage guidance</b>	-
<b>References</b>	Recommendation ITU-T E.164 [4], clause 6
<b>Example</b>	31612345678
<b>Regular expression</b>	<code>^[0-9]{1,15}\$</code>
<b>XSD</b>	InternationalE164, simpleType
<b>ASN.1</b>	Not defined

**IMSI**

<b>Name</b>	IMSI
<b>Description</b>	International Mobile Subscriber Identity, written as decimal digits.
<b>Usage guidance</b>	-
<b>References</b>	Recommendation ITU-T E.212 [5], clause 6.1 3GPP TS 23.003 [6], clause 2.2 and clause 2.3
<b>Example</b>	204081234567890
<b>Regular expression</b>	<code>^[0-9]{6,15}\$</code>
<b>XSD</b>	IMSI, simpleType
<b>ASN.1</b>	Not defined

**IMEI**

<b>Name</b>	IMEI
<b>Description</b>	International Mobile station Equipment Identity, written as decimal digits without the Luhn check digit, annex B of ISO/IEC 7812-1 [20].
<b>Usage guidance</b>	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)
<b>References</b>	3GPP TS 23.003 [6], clause 6
<b>Example</b>	35395803121326
<b>Regular expression</b>	<code>^[0-9]{14}\$</code>
<b>XSD</b>	IMEI, simpleType
<b>ASN.1</b>	Not defined

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**

<b>Name</b>	IMEICheckDigit
<b>Description</b>	International Mobile station Equipment Identity, written as decimal digits with the Luhn check digit, annex B of ISO/IEC 7812-1 [20].
<b>Usage guidance</b>	
<b>References</b>	3GPP TS 23.003 [6], clause 6
<b>Example</b>	35395803121326
<b>Regular expression</b>	^[0-9]{15}\$
<b>XSD</b>	IMEICheckDigit, simpleType
<b>ASN.1</b>	Not defined

**IPv4Address**

<b>Name</b>	IPv4Address
<b>Description</b>	IPv4 address, written in dotted decimal notation.
<b>Usage guidance</b>	-
<b>References</b>	IETF RFC 791 [8]
<b>Example</b>	192.0.2.1
<b>Regular expression</b>	^((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])\$
<b>XSD</b>	IPv4Address, simpleType
<b>ASN.1</b>	Not defined

**IPv4CIDR**

<b>Name</b>	IPv4CIDR
<b>Description</b>	IPv4 CIDR, written in dotted decimal notation followed by CIDR notation.
<b>Usage guidance</b>	-
<b>References</b>	IETF RFC 791 [8] and IETF RFC 4632 [9]
<b>Example</b>	192.0.2.0/24
<b>Regular expression</b>	^((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])\$
<b>XSD</b>	IPv4CIDR, simpleType
<b>ASN.1</b>	Not defined

**IPv6Address**

<b>Name</b>	IPv6Address
<b>Description</b>	IPv6 address, written as eight groups of four hexadecimal digits separated by a colon.
<b>Usage guidance</b>	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.
<b>References</b>	IETF RFC 8200 [10]
<b>Example</b>	2001:db8:0000:0000:0000:0000:0000:0001
<b>Regular expression</b>	^([0-9a-f]{4}:){7}([0-9a-f]{4})\$
<b>XSD</b>	IPv6Address, simpleType
<b>ASN.1</b>	Not defined

**IPv6CIDR**

<b>Name</b>	IPv6CIDR
<b>Description</b>	IPv6 CIDR, written as eight groups of four hexadecimal digits separated by a colon followed by CIDR notation.
<b>Usage guidance</b>	See IPv6Address parameter for usage guidance.
<b>References</b>	IETF RFC 8200 [10], IETF RFC 4632 [9] and IETF RFC 4291 [11]
<b>Example</b>	2001:db8:0000:0000:0000:0000:0000:0000/48
<b>Regular expression</b>	^([0-9a-f]{4}:){7}([0-9a-f]{4})/(((1[0-9] 0[0-9]) (12[0-8]))\$
<b>XSD</b>	IPv6CIDR, simpleType
<b>ASN.1</b>	Not defined

**IPAddress**

<b>Name</b>	IPAddress
<b>Description</b>	Either a IPv4Address parameter or IPv6Address parameter.
<b>Usage guidance</b>	-
<b>References</b>	-
<b>Example</b>	XSD <pre>&lt;IPAddress&gt;   &lt;IPv4Address&gt;192.0.2.1&lt;/IPv4Address&gt; &lt;/IPAddress&gt;</pre>
<b>Regular expression</b>	-
<b>XSD</b>	IPAddress, complexType
<b>ASN.1</b>	Not defined

**IPCIDR**

<b>Name</b>	IPCIDR
<b>Description</b>	Either a IPv4CIDR parameter or IPv6CIDR parameter.
<b>Usage guidance</b>	-
<b>References</b>	-
<b>Example</b>	XSD <pre>&lt;IPCIDR&gt;   &lt;IPv4CIDR&gt;192.0.2.0/24&lt;/IPv4CIDR&gt; &lt;/IPCIDR&gt;</pre>
<b>Regular expression</b>	-
<b>XSD</b>	IPCIDR, complexType
<b>ASN.1</b>	Not defined

**TCPPort**

<b>Name</b>	TCPPort
<b>Description</b>	TCP port, written in decimal notation.
<b>Usage guidance</b>	-
<b>References</b>	IETF RFC 793 [12]
<b>Example</b>	22
<b>Regular expression</b>	^([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])\$
<b>XSD</b>	TCPPort, simpleType
<b>ASN.1</b>	TCPPort, INTEGER

**TCPPortRange**

<b>Name</b>	TCPPortRange
<b>Description</b>	TCP port range, consists of a 'start' TCPPort parameter and an 'end' TCPPort parameter.
<b>Usage guidance</b>	The start and end values are inclusive.
<b>References</b>	-
<b>Example</b>	Regular expression 1024-2048  XSD <pre>&lt;TCPPortRange&gt;   &lt;start&gt;1024&lt;/start&gt;   &lt;end&gt;2048&lt;/end&gt; &lt;/TCPPortRange&gt;</pre>
<b>Regular expression</b>	^([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])\$
<b>XSD</b>	TCPPortRange, complexType
<b>ASN.1</b>	TCPPortRange, SEQUENCE

**UDPPort**

<b>Name</b>	UDPPort
<b>Description</b>	UDP port, written in decimal notation.
<b>Usage guidance</b>	-
<b>References</b>	IETF RFC 768 [13]
<b>Example</b>	53
<b>Regular expression</b>	<code>^([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])\$</code>
<b>XSD</b>	UDPPort, simpleType
<b>ASN.1</b>	UDPPort, INTEGER

**UDPPortRange**

<b>Name</b>	UDPPortRange
<b>Description</b>	UDP port range, consists of a 'start' UDPPort parameter and an 'end' UDPPort parameter.
<b>Usage guidance</b>	The start and end values are inclusive.
<b>References</b>	-
<b>Example</b>	Regular expression 2048-4096 XSD <pre> &lt;UDPPortRange&gt;   &lt;start&gt;2048&lt;/start&gt;   &lt;end&gt;4096&lt;/end&gt; &lt;/UDPPortRange&gt; </pre>
<b>Regular expression</b>	<code>^([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])\$</code>
<b>XSD</b>	UDPPortRange, complexType
<b>ASN.1</b>	UDPPortRange, SEQUENCE

**Port**

<b>Name</b>	Port
<b>Description</b>	Either a TCPPort parameter or a UDPPort parameter.
<b>Usage guidance</b>	-
<b>References</b>	-
<b>Example</b>	XSD <pre> &lt;Port&gt;   &lt;TCPPort&gt;22&lt;/TCPPort&gt; &lt;/Port&gt; </pre>
<b>Regular expression</b>	<code>^([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])\$</code>
<b>XSD</b>	Port, complexType
<b>ASN.1</b>	Port, CHOICE

**PortRange**

<b>Name</b>	PortRange
<b>Description</b>	Either a TCPPortRange parameter or a UDPPortRange parameter.
<b>Usage guidance</b>	The start and end values are inclusive.
<b>References</b>	-
<b>Example</b>	XSD <pre> &lt;PortRange&gt;   &lt;TCPPortRange&gt;     &lt;start&gt;2048&lt;/start&gt;     &lt;end&gt;4096&lt;/end&gt;   &lt;/TCPPortRange&gt; &lt;/PortRange&gt; </pre>
<b>Regular expression</b>	-
<b>XSD</b>	PortRange, complexType
<b>ASN.1</b>	PortRange, CHOICE

**IPAddressPort**

<b>Name</b>	IPAddressPort
<b>Description</b>	Combination of an IPAddress parameter and a Port parameter.
<b>Usage guidance</b>	-
<b>References</b>	-
<b>Example</b>	XSD <pre> &lt;IPAddressPort&gt;   &lt;address&gt;     &lt;IPv4Address&gt;192.0.2.1&lt;/IPv4Address&gt;   &lt;/address&gt;   &lt;port&gt;     &lt;TCPPort&gt;22&lt;/TCPPort&gt;   &lt;/port&gt; &lt;/IPAddressPort&gt; </pre>
<b>Regular expression</b>	-
<b>XSD</b>	IPAddressPort, complexType
<b>ASN.1</b>	Not defined

**IPAddressPortRange**

<b>Name</b>	IPAddressPortRange
<b>Description</b>	Combination of an IPAddress parameter and a PortRange parameter.
<b>Usage guidance</b>	-
<b>References</b>	-
<b>Example</b>	XSD <pre> &lt;IPAddressPortRange&gt;   &lt;address&gt;     &lt;IPv4Address&gt;192.0.2.1&lt;/IPv4Address&gt;   &lt;/address&gt;   &lt;portRange&gt;     &lt;TCPPortRange&gt;       &lt;start&gt;2048&lt;/start&gt;       &lt;end&gt;4096&lt;/end&gt;     &lt;/TCPPortRange&gt;   &lt;/portRange&gt; &lt;/IPAddressPortRange&gt; </pre>
<b>Regular expression</b>	-
<b>XSD</b>	IPAddressPortRange, complexType
<b>ASN.1</b>	Not defined

**MACAddress**

<b>Name</b>	MACAddress
<b>Description</b>	MAC address, written as six groups of two hexadecimal digits separated by a colon.
<b>Usage guidance</b>	-
<b>References</b>	IEEE 802.3 [14]
<b>Example</b>	c0:ff:ee:c0:ff:ee
<b>Regular expression</b>	^([a-f0-9]{2}:){5}[a-f0-9]{2}\$
<b>XSD</b>	MACAddress, simpleType
<b>ASN.1</b>	Not defined

**EmailAddress**

<b>Name</b>	EmailAddress
<b>Description</b>	E-mail address
<b>Usage guidance</b>	-
<b>References</b>	IETF RFC 5322 [15]
<b>Example</b>	john.doe@example.com
<b>Regular expression</b>	^[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.
<b>XSD</b>	EmailAddress, simpleType
<b>ASN.1</b>	Not defined
NOTE: The regular expression above is sourced from the W3C HTML5 Recommendation [16].	

**UUID**

<b>Name</b>	UUID
<b>Description</b>	UUID
<b>Usage guidance</b>	-
<b>References</b>	IETF RFC 4122 [17]
<b>Example</b>	de305d54-75b4-431b-adb2-eb6b9e546013
<b>Regular expression</b>	^[a-f0-9]{8}-[a-f0-9]{4}-[a-f0-9]{4}-[a-f0-9]{4}-[a-f0-9]{12}\$
<b>XSD</b>	UUID, simpleType
<b>ASN.1</b>	Not defined

**ISOCountryCode**

<b>Name</b>	ISOCountryCode
<b>Description</b>	An ISO 3166-1 [18] alpha-2 two-letter country code.
<b>Usage guidance</b>	-
<b>References</b>	ISO 3166-1 [18] alpha-2
<b>Example</b>	"NL"
<b>Regular expression</b>	^[A-Z]{2}\$
<b>XSD</b>	ISOCountryCode, simpleType
<b>ASN.1</b>	Not defined

**ShortString**

<b>Name</b>	ShortString
<b>Description</b>	A string with a maximum length of 255 characters.
<b>Usage guidance</b>	-
<b>References</b>	-
<b>Example</b>	string
<b>Regular expression</b>	-
<b>XSD</b>	ShortString, simpleType
<b>ASN.1</b>	Not defined

**LongString**

<b>Name</b>	LongString
<b>Description</b>	A string with a maximum length of 65 535 characters.
<b>Usage guidance</b>	-
<b>References</b>	-
<b>Example</b>	string
<b>Regular expression</b>	-
<b>XSD</b>	ShortString, simpleType
<b>ASN.1</b>	Not defined

**SIPURI**

<b>Name</b>	SIPURI
<b>Description</b>	SIP URI
<b>Usage guidance</b>	-
<b>References</b>	IETF RFC 3261 [21], section 19.1
<b>Example</b>	sip:user@example.com
<b>Regular expression</b>	<code>^sips?:[a-zA-Z0-9!#\$%&amp;-'=?-\\[_~%]+</code>
<b>XSD</b>	SIPURI, simple type
<b>ASN.1</b>	Not defined

**TELURI**

<b>Name</b>	TELURI
<b>Description</b>	TEL URI
<b>Usage guidance</b>	-
<b>References</b>	IETF RFC 3966 [22]
<b>Example</b>	tel:+447700900000
<b>Regular expression</b>	<code>^tel:[a-zA-Z0-9!#\$%&amp;-'=?-\\[_~%]+</code>
<b>XSD</b>	TELURI, simple type
<b>ASN.1</b>	Not defined

**WGS84CoordinateDecimal**

<b>Name</b>	WGS84CoordinateDecimal
<b>Description</b>	A geographical latitude-longitude coordinate, referring to the WGS84 reference ellipsoid, given in decimal notation
<b>Usage guidance</b>	-
<b>References</b>	NIMA Technical Report 8350.2 [23] (for WGS84 definition itself, not for the syntax defined here)
<b>Example</b>	XSD <WGS84CoordinateDecimal> <latitude>N43.616000</latitude> <longitude>E007.053000</longitude> </WGS84CoordinateDecimal>
<b>Regular expression</b>	-
<b>XSD</b>	WGS84CoordinateDecimal, complexType
<b>ASN.1</b>	WGS84CoordinateDecimal, SEQUENCE

**WGS84LatitudeDecimal**

<b>Name</b>	WGS84LatitudeDecimal
<b>Description</b>	A geographical latitude, referring to the WGS84 reference ellipsoid, given in decimal notation
<b>Usage guidance</b>	The latitude is given as two digits before the decimal point, left-padded with zero where necessary. The latitude is specific to six decimal places, right-padded with zero where necessary.
<b>References</b>	NIMA Technical Report 8350.2 [23] (for WGS84 definition itself, not for the syntax defined here)
<b>Example</b>	N43.616000
<b>Regular expression</b>	<code>^[NS][0-9]{2}\.[0-9]{6}\$</code>
<b>XSD</b>	WGS84LatitudeDecimal, simpleType
<b>ASN.1</b>	WGS84LatitudeDecimal, OCTET STRING



**WGS84LongitudeDecimal**

<b>Name</b>	WGS84LongitudeDecimal
<b>Description</b>	A geographical longitude, referring to the WGS84 reference ellipsoid, given in decimal notation
<b>Usage guidance</b>	The longitude is given as three digits before the decimal point, left-padded with zero where necessary. The longitude is specific to six decimal places, right-padded with zero where necessary.
<b>References</b>	NIMA Technical Report 8350.2 [23] (for WGS84 definition itself, not for the syntax defined here)
<b>Example</b>	E007.053000
<b>Regular expression</b>	<code>^[EW][0-9]{3}\.[0-9]{6}\$</code>
<b>XSD</b>	WGS84LongitudeDecimal, simpleType
<b>ASN.1</b>	WGS84LongitudeDecimal, OCTET STRING

**WGS84CoordinateAngular**

<b>Name</b>	WGS84CoordinateAngular
<b>Description</b>	A geographical latitude-longitude coordinate, referring to the WGS84 reference ellipsoid, given in angular notation
<b>Usage guidance</b>	-
<b>References</b>	NIMA Technical Report 8350.2 [23] (for WGS84 definition itself, not for the syntax defined here)
<b>Example</b>	XSD <pre>&lt;WGS84CoordinateAngular&gt;   &lt;latitude&gt;N433700.62&lt;/latitude&gt;   &lt;longitude&gt;E0070310.42&lt;/longitude&gt; &lt;/WGS84CoordinateAngular&gt;</pre>
<b>Regular expression</b>	-
<b>XSD</b>	WGS84CoordinateAngular, complexType
<b>ASN.1</b>	WGS84CoordinateAngular, SEQUENCE

**WGS84LatitudeAngular**

<b>Name</b>	WGS84LatitudeAngular
<b>Description</b>	A geographical latitude, referring to the WGS84 reference ellipsoid, given in angular notation
<b>Usage guidance</b>	Values are specified as "XDDMMSS.ss", i.e. a concatenation of the following fixed-length values, each padded with zeroes where necessary: A one-character hemisphere indicator, "N" or "S". A two-digit value indicating degrees A two-digit value indicating arc-minutes A two-digit value indicating whole arc-seconds A decimal point A two-digit value indicating fractional arc-seconds
<b>References</b>	NIMA Technical Report 8350.2 [23] (for WGS84 definition itself, not for the syntax defined here)
<b>Example</b>	N433700.62
<b>Regular expression</b>	<code>^[NS][0-9]{2}[0-9]{2}\.[0-9]{2}\$</code>
<b>XSD</b>	WGS84LatitudeAngular, simpleType
<b>ASN.1</b>	WGS84LatitudeAngular, OCTET STRING

**WGS84LongitudeAngular**

<b>Name</b>	WGS84LongitudeAngular
<b>Description</b>	A geographical longitude, referring to the WGS84 reference ellipsoid, given in angular notation.
<b>Usage guidance</b>	Values are specified as "XDDMMSS.ss" i.e. a concatenation of the following fixed-length values, each padded with zeroes where necessary: A one-character hemisphere indicator, "E" or "W". A three-digit value indicating degrees A two-digit value indicating arc-minutes A two-digit value indicating whole arc-seconds A decimal point A two-digit value indicating fractional arc-seconds
<b>References</b>	NIMA Technical Report 8350.2 [23] (for WGS84 definition itself, not for the syntax defined here)
<b>Example</b>	E0070310.42
<b>Regular expression</b>	^[EW][0-9]{7}\.[0-9]{2}\$
<b>XSD</b>	WGS84LongitudeAngular, simpleType
<b>ASN.1</b>	WGS84LongitudeAngular, OCTET STRING

---

## 7 Technical implementation

### 7.1 XSD

The XSD definition is defined in annex A. The XSD file named "TS\_103\_280\_v020201.xsd" is contained in archive "ts\_103280v020201p0.zip" which accompanies the present document.

The targetNamespace of the XSD is set to 'http://uri.etsi.org/03280/common/2017/07'. The XSD version is set to 2.2.1.

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\_v020201.asn1" is contained in archive "ts\_103280v020201p0.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) version221(221).

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/2017/07"
targetNamespace="http://uri.etsi.org/03280/common/2017/07" version="2.2.1"
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]{6,15}"/>
    </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: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\.\!#\%&'\*\+\|\/=\?\^\_`\\{\}\~\-\ ]+@[a-zA-Z0-9-]{0,61}[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:simpleType name="SIPURI">
  <xs:restriction base="xs:anyURI">
    <xs:pattern value="sips?:[a-zA-Z0-9!#$%&'-;=?-\[\]\_~%]+" />
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="TELURI">
  <xs:restriction base="xs:anyURI">
    <xs:pattern value="tel:[a-zA-Z0-9!#$%&'-;=?-\[\]\_~%]+" />
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="WGS84CoordinateDecimal">
  <xs:sequence>
    <xs:element name="latitude" type="WGS84LatitudeDecimal" />
    <xs:element name="longitude" type="WGS84LongitudeDecimal" />
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="WGS84LatitudeDecimal">
  <xs:restriction base="xs:string">
    <xs:pattern value="[NS][0-9]{2}\.[0-9]{6}" />
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="WGS84LongitudeDecimal">
  <xs:restriction base="xs:string">
    <xs:pattern value="[EW][0-9]{3}\.[0-9]{6}" />
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="WGS84CoordinateAngular">
  <xs:sequence>
    <xs:element name="latitude" type="WGS84LatitudeAngular" />
    <xs:element name="longitude" type="WGS84LongitudeAngular" />
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="WGS84LatitudeAngular">
  <xs:restriction base="xs:string">
    <xs:pattern value="[NS][0-9]{6}\.[0-9]{2}" />
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="WGS84LongitudeAngular">
  <xs:restriction base="xs:string">
    <xs:pattern value="[EW][0-9]{7}\.[0-9]{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) version221(221)}

DEFINITIONS IMPLICIT TAGS EXTENSIBILITY IMPLIED ::= BEGIN

-- Object Identifier definitions

commonParameterDomainId OBJECT IDENTIFIER ::= {itu-t(0) identified-organization(4) etsi(0) common-
parameters(3280) version221(221)}

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

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

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

TCPPort ::= INTEGER (1..65535)

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

TCPPortRange ::= SEQUENCE
{
    start [0] TCPPort,
    end   [1] TCPPort
}

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

UDPPort ::= INTEGER (0..65535)

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

UDPPortRange ::= SEQUENCE
{
    start [0] UDPPort,
    end   [1] UDPPort
}

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

Port ::= CHOICE
{
    tCPPort [0] TCPPort,
    uDPPort [1] UDPPort
}

-- Common Parameter: PortRange (as defined clause 6)

PortRange ::= CHOICE
{
    tCPPortRange [0] TCPPortRange,
    uDPPortRange [1] UDPPortRange
}

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

QualifiedDateTime ::= GeneralizedTime

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

QualifiedMicrosecondDateTime ::= GeneralizedTime

-- Common Parameter: WGS84CoordinateDecimal (as defined in clause 6)

WGS84CoordinateDecimal ::= SEQUENCE
{
    latitude  [0] WGS84LatitudeDecimal,
    longitude [1] WGS84LongitudeDecimal
}

-- Common Parameter: WGS84LatitudeDecimal (as defined in clause 6)

```

```
WGS84LatitudeDecimal ::= OCTET STRING (SIZE (10))

-- Common Parameter: WGS8LongitudeDecimal (as defined in clause 6)

WGS84LongitudeDecimal ::= OCTET STRING (SIZE (11))

-- Common Parameter: WGS84CoordinateAngular (as defined in clause 6)

WGS84CoordinateAngular ::= SEQUENCE
{
    latitude  [0] WGS84LatitudeAngular,
    longitude [1] WGS84LongitudeAngular
}

-- Common Parameter: WGS84LatitudeAngular (as defined in clause 6)

WGS84LatitudeAngular ::= OCTET STRING (SIZE (10))

-- Common Parameter: WGS8LongitudeAngular (as defined in clause 6)

WGS84LongitudeAngular ::= OCTET STRING (SIZE (11))

END
```

## Annex C (informative): Change Request history

Status of the present document Dictionary for common parameters		
TC LI approval date	Version	Remarks
June 2015	1.1.1	First publication of the TS after approval by ETSI TC LI#39 Document prepared by Steije van Schelt (rapporteur)
August 2016	1.1.2	Revision for a minor editorial correction
January 2017	1.2.1	Included Change Requests agreed by LI#42: CR001r1, LI(16)P42024r1 (Cat D) Addition of XSD annex to ETSI TS 103 280 CR002r1, LI(16)P420r1 (Cat B) ASN.1 definitions in ETSI TS 103 280 Document prepared by Steije van Schelt (rapporteur)
June 2017	2.1.1	Included Change Requests: CR003r1 (agreed by LI#43), LI(16)P43009r1 (Cat F) Short IMSI CR005 (agreed by LI#45), LI(17)P45025 (Cat B) Addition of SIP URI and TEL URI to common definitions CR006r1 (agreed by LI#45), LI(17)P45026r1 (Cat B) Addition of ASN.1 definitions to ETSI TS 103 280 Document prepared by Steije van Schelt (EVE compliancy solutions, rapporteur)
June 2018	2.2.1	Included Change Requests: CR007r3 (agreed by LI#48), LI(18)P48008r3 (Cat B) Clarification to UTC time parameters and addition of WGS84 Location Parameters CR008 (agreed by LI#48), LI(18)P48020 (Cat D) Correction of the Regular Expression contained in the Definition of EmailAddress Document prepared by Steije van Schelt (EVE compliancy solutions, rapporteur)



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## History

Document history		
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