

Lawful Interception (LI); ASN.1 Object Identifiers in Lawful Interception and Retained data handling Specifications



Reference

RTR/LI-00067

Keywords

ASN.1, object identifier

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

Important notice

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<http://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, please send your comment to one of the following services:

http://portal.etsi.org/chaicor/ETSI_support.asp

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2010.
All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™**, **TIPHON™**, the TIPHON logo and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.

3GPP™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

LTE™ is a Trade Mark of ETSI currently being registered

for the benefit of its Members and of the 3GPP Organizational Partners.

GSM® and the GSM logo are Trade Marks registered and owned by the GSM Association.

Contents

Intellectual Property Rights	4
Foreword.....	4
1 Scope	5
2 References	5
2.1 Normative references	5
2.2 Informative references.....	5
3 Definitions and abbreviations.....	6
3.1 Definitions.....	6
3.2 Abbreviations	7
4 Structure of the ETSI domain.....	7
4.1 Tree structure.....	7
4.2 Description of the ETSI domain.....	7
Annex A: Change Request history.....	14
Annex B: Bibliography	15
History	16

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 (<http://webapp.etsi.org/IPR/home.asp>).

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 Report (TR) has been produced by ETSI Technical Committee Lawful Interception (LI).

1 Scope

The present document gives an overview over the relevant Object Identifiers (OID) used in Lawful Interception and Retained data handling specifications of ETSI and other specifications from ITU-T and ISO.

2 References

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

- For a specific reference, subsequent revisions do not apply.
- Non-specific reference may be made only to a complete document or a part thereof and only in the following cases:
 - if it is accepted that it will be possible to use all future changes of the referenced document for the purposes of the referring document;
 - for informative references.

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.

2.1 Normative references

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

Not applicable.

2.2 Informative references

The following referenced documents are not essential to the use of the present document but they assist the user with regard to a particular subject area. For non-specific references, the latest version of the referenced document (including any amendments) applies.

- [i.1] Void.
- [i.2] ETSI ES 201 671: "Lawful Interception (LI); Handover interface for the lawful interception of telecommunications traffic".
- [i.3] ETSI TS 101 671: "Lawful Interception (LI); Handover Interface for the lawful interception of telecommunications traffic".

NOTE: Periodically TS 101 671 is published as ES 201 671. A reference to the latest version of the TS as above reflects the latest stable content from ETSI/TC LI.

- [i.4] ETSI TS 133 108: "Universal Mobile Telecommunications System (UMTS); LTE; 3G security; Handover interface for Lawful Interception (LI) (3GPP TS 33.108)".
- [i.5] ETSI TS 102 232: "Lawful Interception (LI); Handover specification for IP delivery".

NOTE: TS 102 232 is replaced by TS 102 232-1 [13].

- [i.6] ETSI TS 102 233: "Lawful Interception (LI); Service specific details for E-mail services".
- NOTE: TS 102 233 is replaced by TS 102 232-2 [14].
- [i.7] ETSI TS 102 234: "Lawful Interception (LI); Service-specific details for internet access services".
- NOTE: TS 102 234 is replaced by TS 102 232-3 [15].
- [i.8] ETSI TS 102 815: "Lawful Interception (LI); Service-specific details for Layer 2 Lawful Interception".
- NOTE: TS 102 815 is replaced by TS 102 232-4 [16].
- [i.9] ITU-T Recommendation X.880: "Information technology - Remote Operations: Concepts, model and notation".
- [i.10] ETSI TS 101 909-20-1: "Digital Broadband Cable Access to the Public Telecommunications Network; IP Multimedia Time Critical Services; Part 20: Lawful Interception; Sub-part 1: CMS based Voice Telephony Services".
- [i.11] ETSI TS 101 909-20-2: "Digital Broadband Cable Access to the Public Telecommunications Network; IP Multimedia Time Critical Services; Part 20: Lawful Interception; Sub-part 2: Streamed multimedia services".
- [i.12] ETSI EN 301 040: "Terrestrial Trunked Radio (TETRA); Security; Lawful Interception (LI) interface".
- [i.13] 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".
- [i.14] ETSI TS 102 232-2: "Lawful Interception (LI); Handover Interface and Service-Specific Details (SSD) for IP delivery; Part 2: Service-specific details for E-mail services".
- [i.15] ETSI TS 102 232-3: "Lawful Interception (LI); Handover Interface and Service-Specific Details (SSD) for IP delivery; Part 3: Service-specific details for internet access services".
- [i.16] ETSI TS 102 232-4: "Lawful Interception (LI); Handover Interface and Service-Specific Details (SSD) for IP delivery; Part 4: Service-specific details for Layer 2 services".
- [i.17] ETSI TS 102 232-5: "Lawful Interception (LI); Handover Interface and Service-Specific Details (SSD) for IP delivery; Part 5: Service-specific details for IP Multimedia Services".
- [i.18] ETSI TS 102 232-6: "Lawful Interception (LI); Handover Interface and Service-Specific Details (SSD) for IP delivery; Part 6: Service-specific details for PSTN/ISDN services".
- [i.19] ETSI TS 102 657: " Lawful Interception (LI); Retained data handling; Handover Interface for the request and delivery of retained data".

3 Definitions and abbreviations

3.1 Definitions

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

common domain: set of objects, which are part of the definition of a protocol or a set of related protocols

information object: well-defined piece of information, definition, or specification, which requires a name in order to, identify its use in an instance of communication

Object Identifier (OID): value (distinguishable from all other such values), which is associated with an information object

NOTE: An object identifier consists of a sequence of integers. Each integer represents a node in the object identifier tree. So, each successive integer can be thought of as a selection of an end of a branch of the tree. The branch is traversed to get to the next level in the tree.

3.2 Abbreviations

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

ASN.1	Abstract Syntax Notation One
LI	Lawful Interception
OID	Object Identifier
ROSE	Remote Operation Service Element

4 Structure of the ETSI domain

4.1 Tree structure

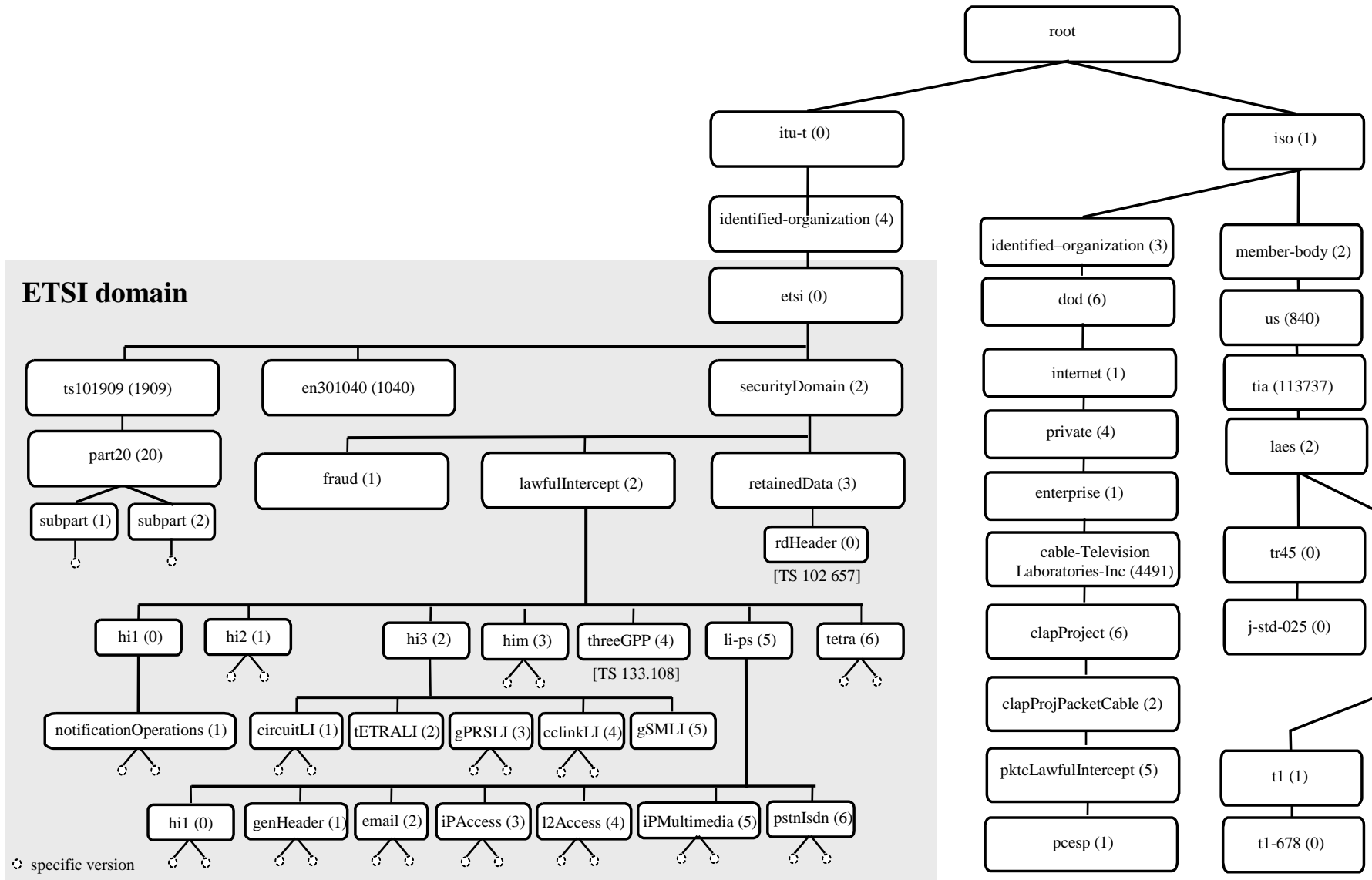
Figure 1 contains the structure for the ETSI domain with the included Lawful Intercept and Retained data handling domain and ASN.1 modules from other Lawful Interception (LI) specifications.

ETSI/TC LI will act as the formal registration authority for the Lawful Intercept and Retained data handling domain, except for the "threeGPP(4)" subdomain which is administrated by 3GPP/SA3-LI, ETSI/TC AT-D is responsible for the "ts101909(1909)" subdomain and ETSI/EP TETRA is responsible for the "en301040(1040)" subdomain.

4.2 Description of the ETSI domain

Tables 1 to 4 contain the OIDs of the ETSI domain. The entries in the last column in the tables point to the specification where the modules can be found.

For information, in addition to those OIDs defined within ETSI/TC LI, table 5 contains the OIDs for the ROSE operations. Because of the imports, the ASN.1 modules of ROSE will be included when syntax checking or compiling the LI specific ASN.1 modules.



NOTE: There are other standards which contain ASN.1 modules for interception (see <http://portal.etsi.org/li/status.asp>).

Figure 1: Tree structure of ETSI domain

Table 1: OIDs of the ETSI Lawful Intercept domain

Object Identifier				Specification			
itu-t (0)	identified-organizations(4)	etsi(0)	securityDomain(2)	fraud(1)	TR 102 503 V1.4.1 ES 201 671 [i.2], V1.1.1 clause A.4		
				hi1(0)	notification Operations (1) version1(1) version2(2) version3(3) version4(4) version5(5) version6(6)	ES 201 671 [i.2], V1.1.1 clause A.4 ES 201 671 [i.2], V2.1.1 clause D.4 TS 101 671 [i.3], V2.9.1 clause D.4 TS 101 671 [i.3], V2.11.1 clause D.4 TS 101 671 [i.3], V2.12.1 clause D.4 TS 101 671 [i.3], V.3.3.1 clause D.4	
				hi2(1)	version1(1) version2(2) version3(3) version4(4) version5(5) version6(6) version7(7) version8(8) version9(9) version10(10) version11(11)	ES 201 671 [i.2], V1.1.1 clause A.5 ES 201 671 [i.2], V2.1.1 clause D.5 TS 101 671 [i.3], V2.5.1 clause D.5 TS 101 671 [i.3], V2.7.1 clause D.5 TS 101 671 [i.3], V2.9.1 clause D.5 TS 101 671 [i.3], V2.10.1 clause D.5 TS 101 671 [i.3], V2.11.1 clause D.5 TS 101 671 [i.3], V2.12.1 clause D.5 TS 101 671 [i.3], V2.13.1 clause D.5 TS 101 671 [i.3], V2.14.1 clause D.5 TS 101 671 [i.3], V3.5.1 clause D.5	
				hi3(2)	circuitLI(1)	version1(1) version2(2) version3(3)	ES 201 671 [i.2], V1.1.1 clause A.6 ES 201 671 [i.2], V2.1.1 clause D.6 TS 101 671 [i.3], V.2.12.1 clause D.6
					tETRALI(2)	version1(1)	ES 201 671 [i.2], V1.1.1 clause A.7 For Further Study
					gPRSLI(3)	version1(1) version2(2) version3(3)	ES 201 671 [i.2], V1.1.1 clause A.8 TS 101 671 [i.3], V2.10.1 clause D.9 TS 101 671 [i.3], V2.12.1 clause D.9
					cclinkLI(4)	version1(1) version2(2) version3(3) version4(4)	ES 201 671 [i.2], V1.1.1 clause A.9 ES 201 671 [i.2], V2.1.1 clause D.8 TS 101 671 [i.3], V2.7.1 clause D.8 TS 101 671 [i.3], V.2.12.1 clause D.8
					gSMLI(5)		ES 201 671 [i.2], V2.1.1 clause D.2 For Further Study

Object Identifier					Specification				
itu-t (0)	identified-organizations(4)	etsi(0)	securityDomain(2)	lawfulIntercept(2)	him(3)	version1(1) version2(2) version3(3)	ES 201 671 [i.2], V1.1.1 clause A.3 ES 201 671 [i.2], V2.1.1 clause D.3 TS 101 671 [i.3], V2.12.1 clause D.3		
					threeGPP(4)	hi2(1)	version-1(1) version-2(2)	3GPP TS 33.108 [i.4], V5.0.0 clause B.3 3GPP TS 33.108 [i.4], V6.0.0 clause B.3	
							r5(5)	version-3(3) version-4(4)	3GPP TS 33.108 [i.4], V5.7.0 clause B.3 3GPP TS 33.108 [i.4], V5.8.0 clause B.3
							r6(6)	version-3(3)	3GPP TS 33.108 [i.4], V6.5.0 clause B.3
								version-4(4)	3GPP TS 33.108 [i.4], V6.6.0 clause B.3
								version-5(5) version-6(6)	3GPP TS 33.108 [i.4], V6.7.0 clause B.3 3GPP TS 33.108 [i.4], V6.8.0 clause B.3
						r7(7)	version-1(1) version-2(2) version-3(3)	3GPP TS 33.108 [i.4], V7.2.0 clause B.3 3GPP TS 33.108 [i.4], V7.3.0 clause B.3 3GPP TS 33.108 [i.4], V7.8.0 clause B.3	
						r8(8)	version-1(1)	3GPP TS 33.108 [i.4], V8.0.0 clause B.3	
						hi3(2)	version-1(1) r5(5)	version-2(2)	3GPP TS 33.108 [i.4], V5.0.0 clause B.4 3GPP TS 33.108 [i.4], V5.9.0 clause B.4
							r6(6)	version-1(1) version-2(2) version-3(3)	3GPP TS 33.108 [i.4], V6.5.0 clause B.4 3GPP TS 33.108 [i.4], V6.7.0 clause B.4 3GPP TS 33.108 [i.4], V6.8.0 clause B.4
							r7(7)	version-0(0)	3GPP TS 33.108 [i.4], V7.3.0 clause B.4
					hi2CS(3)	version-1(1) version-2(2)		3GPP TS 33.108 [i.4], V6.1.0 clause B.3a 3GPP TS 33.108 [i.4], V6.6.0 clause B.3a	
						r6(6)	version-3(3)	3GPP TS 33.108 [i.4], V6.8.0 clause B.3a	
						r7(7)	version-0(0) version-1(1)	3GPP TS 33.108 [i.4], V7.3.0 clause B.3a 3GPP TS 33.108 [i.4], V7.8.0 clause B.3a	
					hi3CS(4)	version1(1)		3GPP TS 33.108 [i.4], V6.5.0 clause B.6	
						r6(6)	version2(2)	3GPP TS 33.108 [i.4], V6.8.0 clause B.6	
						r7(7)	version0(0)	3GPP TS 33.108 [i.4], V7.3.0 clause B.6	
					him(5)	version1(1) version2(2)		3GPP TS 33.108 [i.4], V6.5.0 clause B.5 3GPP TS 33.108 [i.4], V7.1.0 clause B.5	
					hi2wlan(6)	r7(7)	version-1(1)	3GPP TS 33.108 [i.4], V7.8.0 clause B.7	
						r8(8)	version-1(1)	3GPP TS 33.108 [i.4], V8.0.0 clause B.7	
					hi2mbms(7)	r8(8)	version1(0)	3GPP TS 33.108 [i.4], V8.4.0 clause B.8	
hi2eps(8)	r8(8)	version-3(3)	3GPP TS 33.108 [i.4], V8.4.0 clause B.9						
hi3eps(9)	r8(8)	version-0(0)	3GPP TS 33.108 [i.4], V8.4.0 clause B.10						
hi2conf(10)	r8(8)	version-0(0)	3GPP TS 33.108 [i.4], V8.4.0 clause B.11						
hi3conf(11)	r8(8)	version-1(1)	3GPP TS 33.108 [i.4], V8.4.0 clause B.12						

Object Identifier						Specification			
itu-t (0)	identified-organizations(4)	etsi(0)	securityDomain(2)	lawfullIntercept(2)	li-ps(5)	hi1(0)	TS 102 232 [i.5], V1.1.1 clause A.1 For Further Study		
						genHeader(1)	version1(1)	TS 102 232 [i.5], V1.1.1 clause A.2	
							version2(2)	TS 102 232 [i.5], V1.2.1 clause A.2	
							version3(3)	TS 102 232 [i.5], V1.3.1 clause A.2	
							version4(4)	TS 102 232 [i.5], V1.4.1 clause A.2	
							version5(5)	TS 102 232 [i.5], V1.5.1 clause A.2	
							version6(6)	TS 102 232-1 [i.13], V2.1.1 clause A.2	
							version7(7)	TS 102 232-1 [i.13], V2.2.1 clause A.2	
							version8(8)	TS 102 232-1 [i.13], V2.3.1 clause A.2	
							version9(9)	TS 102 232-1 [i.13], V2.4.1 clause A.2	
						email(2)	version1(1)	iRI(1) cC(2)	TS 102 233 [i.6], V.1.1.1 annex D TS 102 233 [i.6], V.1.1.1 annex D TS 102 232-2 [i.14], V2.1.1 annex D
							version2(2)	iRI(1)	TS 102 233 [i.6], V.1.2.1 annex D
							version3(3)	iRI(1)	TS 102 233 [i.6], V.1.3.1 annex D TS 102 232-2 [i.14], V2.1.1 annex D
							version4(4)	iRI(1)	TS 102 232-2 [i.14], V2.3.1 annex D
						iPAccess(3)	version1(1)	iRI(1)	TS 102 234 [i.7], V1.1.1 clause 8
								cC(2)	TS 102 234 [i.7], V1.1.1 clause 8
iRIOnly(3)	TS 102 234 [i.7], V1.1.1 clause 8								
version2(2)	iRI(1)	TS 102 234 [i.7], V.1.3.1 clause 8							
	cC(2)	TS 102 234 [i.7], V.1.3.1 clause 8							
	iRIOnly(3)	TS 102 234 [i.7], V.1.3.1 clause 8							
version3(3)	iRI(1)	TS 102 234 [i.7], V.1.4.1 clause 8							
	cC(2)	TS 102 234 [i.7], V.1.4.1 clause 8							
	iRIOnly(3)	TS 102 234 [i.7], V.1.4.1 clause 8							
version4(4)	iRI(1)	TS 102 234 [i.7], V.1.6.1 clause 8							
	cC(2)	TS 102 234 [i.7], V.1.6.1 clause 8							
	iRIOnly(3)	TS 102 234 [i.7], V.1.6.1 clause 8							
version5(5)	iRI(1)	TS 102 232-3 [i.15], V2.1.1 clause 8							
	cC(2)	TS 102 232-3 [i.15], V2.1.1 clause 8							
	iRIOnly(3)	TS 102 232-3 [i.15], V2.1.1 clause 8							
version6(6)	iRI(1)	TS 102 232-3 [i.15], V2.2.1 clause 8							
	cC(2)	TS 102 232-3 [i.15], V2.2.1 clause 8							
	iRIOnly(3)	TS 102 232-3 [i.15], V2.2.1 clause 8							

Object Identifier							Specification			
itu-t (0)	identified-organizations(4)	etsi(0)	securityDomain(2)	lawfulIntercept(2)	li-ps(5)	l2Access(4)	version1(1)	iRI(1) cC(2) iRIOnly(3)	TS 102 815 [i.8], V1.1.1 clause 8.2 TS 102 815 [i.8], V1.1.1 clause 8.2 TS 102 815 [i.8], V1.1.1 clause 8.2	
							version2(2)	iRI(1) cC(2) iRIOnly(3)	TS 102 815 [i.8], V1.2.1 clause 8.2 TS 102 815 [i.8], V1.2.1 clause 8.2 TS 102 815 [i.8], V1.2.1 clause 8.2	
							version3(3)	iRI(1) cC(2) iRIOnly(3)	TS 102 815 [i.8], V1.3.1 clause 8.2 TS 102 815 [i.8], V1.3.1 clause 8.2 TS 102 815 [i.8], V1.3.1 clause 8.2	
							version4(4)	iRI(1) cC(2) iRIOnly(3)	TS 102 232-4 [i.16], V2.1.1 clause 8.1 TS 102 232-4 [i.16], V2.1.1 clause 8.1 TS 102 232-4 [i.16], V2.1.1 clause 8.1	
						iPMultimedia(5)	version1(1)	iRI(1) cC(2)	TS 102 232-5 [i.17], V2.1.1 clause 7	
							version2(2)	iRI(1) cC(2)	TS 102 232-5 [i.17], V2.2.1 clause 7	
							version3(3)	iRI(1) cC(2)	TS 102 232-5 [i.17], V2.3.1 clause 7	
						pstnIsdn(6)	version1(1)	iRI(1) cC(2)	TS 102 232-6 [i.18], V2.1.1 annex A.2	
							version2(2)	iRI(1) cC(2)	TS 102 232-6 [i.18], V2.2.1 annex A.2	
							version3(3)	iRI(1) cC(2)	TS 102 232-6 [i.18], V2.3.1 annex A.2	
						tetra(6)	hi1(1)	notificationOperations (1)	version0(0)	TS 101 671 [i.3], V3.5.1 clause D.10.2
							hi2(2)		version0(0)	TS 101 671 [i.3], V3.5.1 clause D.10.3
					him(3)			version0(0)	TS 101 671 [i.3], V3.5.1 clause D.10.1	

Table 2: OIDs of the ETSI Retained data handling domain

Object Identifier							Specification		
itu-t (0)	identified-organizations(4)	etsi(0)	securityDomain(2)	lawfulIntercept(2)	retainedData(3)	rdHeader(0)	version1(1)		TS 102 657 [i.19], V1.1.2 annex A 3.2
							version3(3)		TS 102 657 [i.19], V1.3.1 annex A 3.2
							version4(4)		TS 102 657 [i.19], V1.4.1 annex A 3.2

Table 3: OIDs of the ETSI/TC AT-D domain

Object Identifier							Specification		
itu-t (0)	identified-organizations(4)	etsi(0)	ts101909 (1909)	part20 (20)	subpart1 (1)	interceptVersion (0)		TS 101 909-20-1 [i.10], V1.1.2 annex A	
					subpart2 (2)	interceptVersion (0)		TS 101 909-20-2 [i.11], V1.1.2 annex A	

Table 4: OIDs of the ETSI/EP TETRA domain

Object Identifier					Specification
itu-t (0)	identified-organizations(4)	etsi(0)	en301040 (1040)	interceptVersion (0)	EN 301 040 [i.12], V2.0.0 annex E

Table 5: Object Identifier of ROSE

Object Identifier				Specification
joint-iso-itu-t(2)	remote-operations(4)	informationObjects(5)	version1(0)	ITU-T Recommendation X.880 [i.9], annex A

Annex A: Change Request history

Status of the present document		
ASN.1 Object Identifiers in Lawful Intercept Specifications		
Date	Version	Remarks
October 2005	1.1.1	First publication of the TR after approval by ETSI/TC LI#10 (4-6 October 2005, Sorrento); Version 1.1.1 prepared by Ralf Schmalbach (BNetzA) (rapporteur TR).
May 2006	1.2.1	Included Change Request: TR102503CR001 (cat F) on Correction of mistakes performed during ETSI publication process of v1.1.1. This CR was approved by TC LI#11 (31 January - 2 February 2006, Saint Martin); Update of versions numbers of ASN.1 modules in modified specifications during TC LI#12 (9-11 May 2006, Limassol). Version 1.2.1 prepared by Ralf Schmalbach (BNetzA) (rapporteur TR).
October 2007	1.3.1	Included Change Request: TR102503CR002 (cat F) on Update of versions numbers of ASN.1 modules in modified specifications This CR was approved by TC LI#16 (2-4 October 2007, Berlin). Version 1.3.1 prepared by Ralf Schmalbach (BNetzA) (rapporteur TR).
July 2008	1.4.1	Included Change Request: TR102503CR003r1 (cat F) on Update of versions numbers of ASN.1 modules in modified specifications This CR was approved by TC LI#18 (27-29 May 2008, Chania). Version 1.4.1 prepared by Ralf Schmalbach (BNetzA) (rapporteur TR).
February 2010	1.5.1	Included Change Requests: TR102503CR005 (cat F) on Corrections in the Tree structure This CR was approved by TC LI#19 (30 September - 2 October 2008, Prague). TR102503CR006 (cat F) on Introducing of the retained data handling domain This CR was approved by TC LI#20 (3-5 February 2009, Levi). TR102503CR007 (cat F) on Update TR in line with agreed modifications and adoption of versions numbers of ASN.1 modules in modified specifications This CR was approved by TC LI#23 (9-11 February 2010, Rome). Version 1.5.1 prepared by Ralf Schmalbach (BNetzA) (rapporteur TR)

Annex B: Bibliography

ETSI EG 200 351: "ETSI object identifier tree; Rules and registration procedures".

History

Document history		
V1.1.1	January 2006	Publication
V1.2.1	August 2006	Publication
V1.3.1	November 2007	Publication
V1.4.1	July 2008	Publication
V1.5.1	March 2010	Publication