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Intelligent transport systems — Communications access for land mobiles (CALM) — Security considerations for lawful interception

Systèmes intelligents de transport — Accès aux communications des services mobiles terrestres (CALM) — Considérations de sécurité pour interception licite

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

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Intelligent transport systems — Communications access for land mobiles (CALM) — Security considerations for lawful interception

1 Scope

This Technical Report reviews the ITS landscape and the provisions of lawful interception to ITS deployments. In particular it considers the CALM environment and the services offered in the IPv6 domain served by CALM and ITS in general.

2 Conformance

There are no conformance requirements. This clause is included to provide numerical consistency between this Technical Report and other CALM International Standards.

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3 Normative references

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

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ISO 21217, *Intelligent transport systems — Communications access for land mobiles (CALM) — Architecture*

ETSI ES 201 671, *Telecommunications security — Lawful Interception (LI) — Handover interface for the lawful interception of telecommunications traffic*

ETSI TS 101 331, *Telecommunications security — Lawful Interception (LI) — Requirements of Law Enforcement Agencies*

4 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21217 and ETSI ES 201 671 apply.

5 Abbreviated terms

CSP communication service provider

ECN electronic communication network

ECS electronic communication service

ITS intelligent transport systems

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IUR International User Requirement[1)]

LEA law enforcement agency

LEMF law enforcement monitoring facility

LI lawful interception

MF mediation function

OSS operations support system

PoI point of interception

6 Overview

6.1 General requirement

A lawful interception (LI) capability is required to support the activities of LEAs. The requirements for LI have been developed by LEAs in the IUR and published for the specific needs of telecommunications providers in ETSI TS 101 331. The obligation to support and provide LI facilities applies to any CSP operating either an ECN or an ECS. This Technical Report identifies the consequences for standardization of the provision of LI for CALM-based ITS.

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The core requirements in regional regulation that enforce LI are given in Annexes A to C, where the main impact is as follows.

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— A CSP should provide mechanisms to ensure the interception and handover of signalling of specific users, if required to by a lawful authority.

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— A CSP should provide mechanisms to ensure the interception and handover of the content of communication of specific users, if required to by a lawful authority.

The structure of a CSP is outlined in Figure 1, where providers of ECNs and ECSs are shown as specialisms of the generic CSP.

1) The IUR is provided as an annex to Reference [11].

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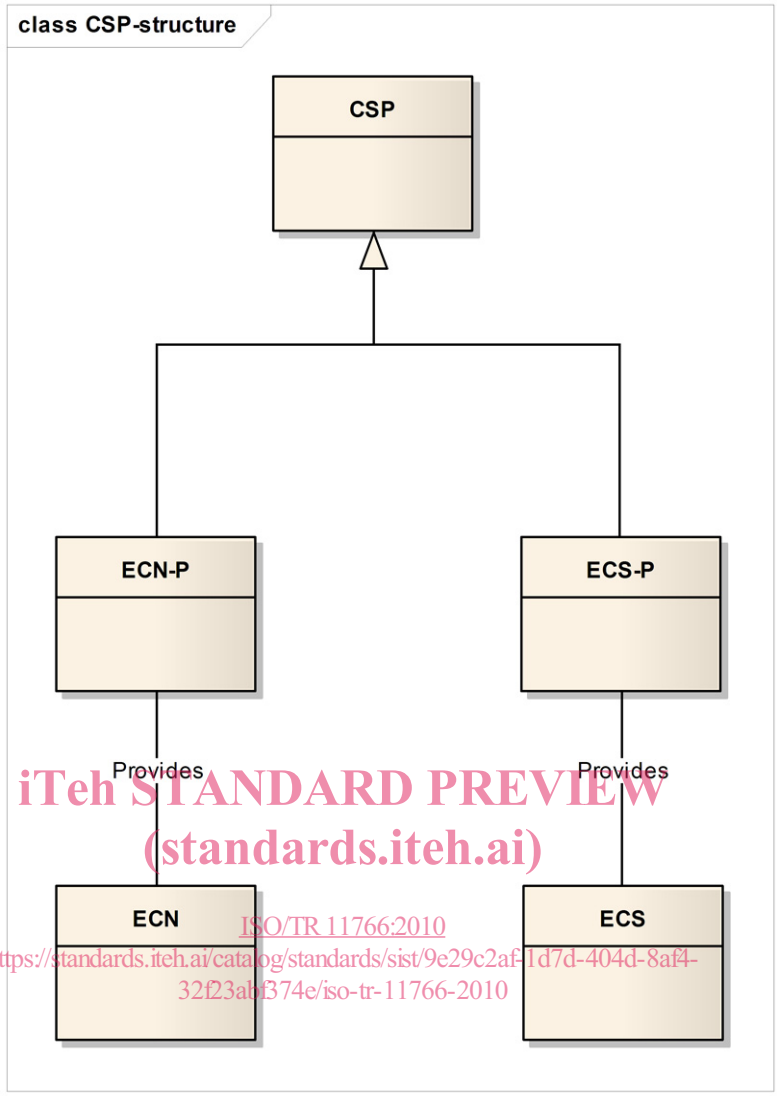

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Figure 1 — Structure of CSP relationship to ECN and ECS

6.2 Handover domain capabilities in CALM/ITS

The CALM-based ITS network should interface to the LEA and its associated LEMF using the capabilities defined in

— ETSI ES 201 671 (where handover is provisioned over ISDN networks), or

— ETSI TS 102 232-1 [4] [where handover is provisioned over packet switched (IP) networks],

or using any appropriate handover interface defined by the LEA.

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6.3 Interception domain capabilities in CALM/ITS

6.3.1 General

The general architecture for the interception domain (which covers both CALM and ITS) is defined in ETSI ES 201 158 [1] and the generic reference model for the interception domain is defined in ETSI TR 102 528 [3].

The internal intercept functions

— intercept related information internal intercept function (IRI-IIF),

— content of communication internal intercept function (CC-IIF), and

— content of communication trigger function (CCTF),

and the internal interfaces

— INI1, INI2, INI3,

— content of communication trigger interface (CCTI), and

— content of communication control interface (CCCI)

are also adopted for CALM and ITS (see Figure 2).

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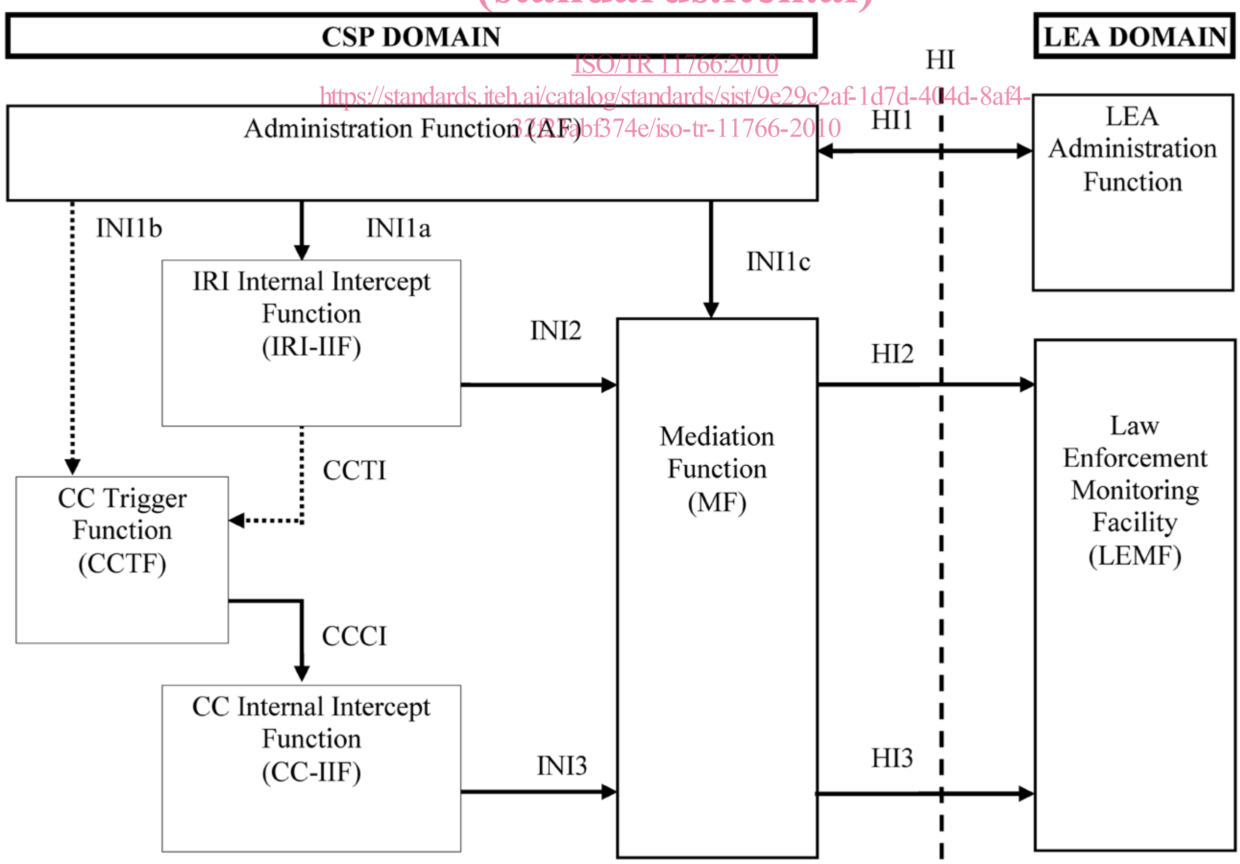

Figure 2 — Reference model for LI based on ETSI TR 102 528

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The reference model describes the following functions and interfaces.

— IRI-IIF generates signalling intercept material.

— CC-IIF generates content intercept material.

— CCTF controls the CC-IIF.

— Internal interface INI1 carries provisioning information from the lawful interception administration function (AF) to the internal intercept functions (IIF).

— Internal interface INI2 carries intercept related information (IRI) from the IRI-IIF to the MF.

— Internal interface INI3 carries content of communication (CC) information from the CC-IIF to the MF.

— CCTI carries trigger information from the IRI-IIF to the CCTF.

— CCCI carries controls information from the CCTF to the CC-IIF.

The model for LI is given as a UML class model in Figure 3.

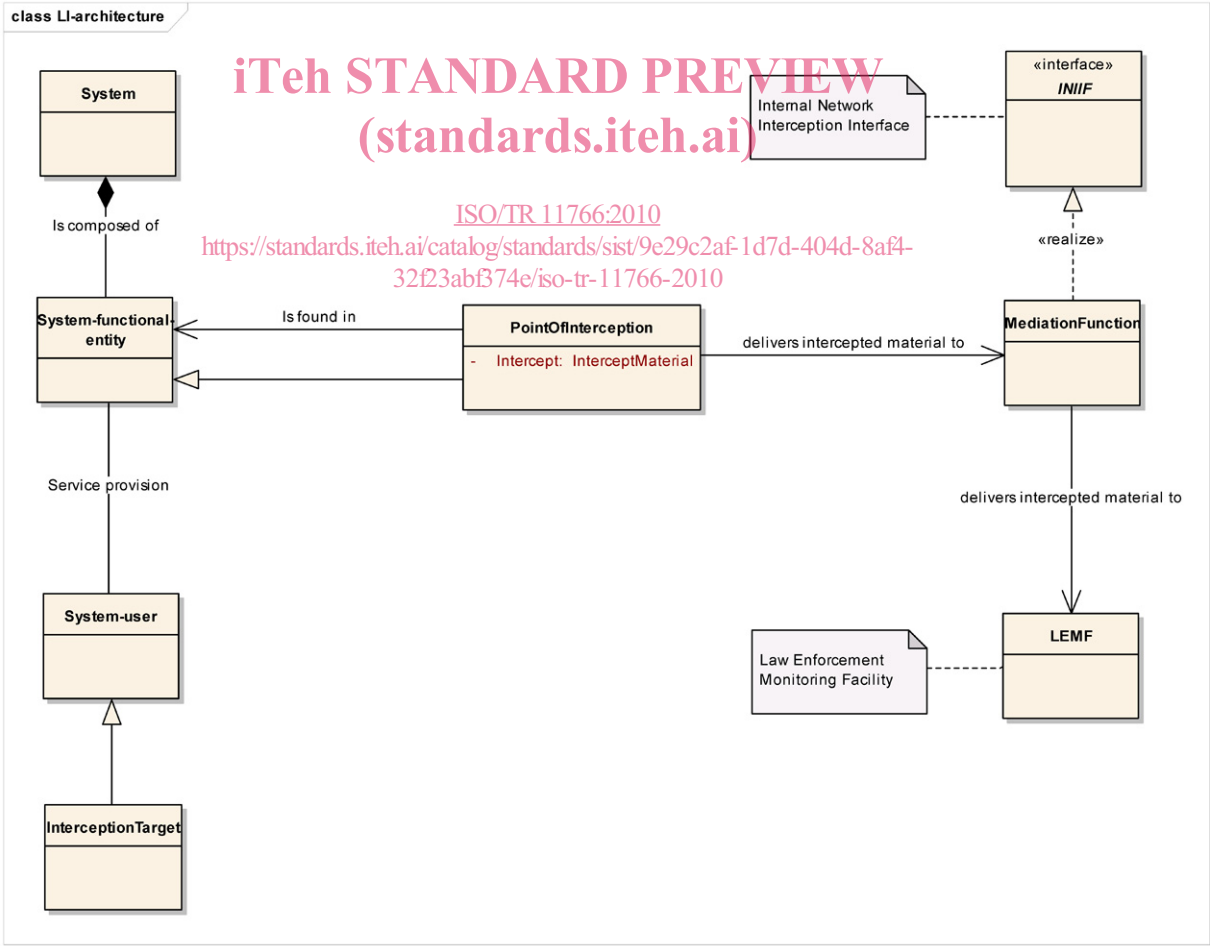

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Figure 3 — UML class model of interception

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