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Title: Global Rationalization and Integration of LI ASN.1 Modules

Spec:

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Abstract: This contribution identifies all known current versions of LI ASN.1 modules with a view to their potential rationalization and integration through a new TC LI work item proposal.

1. Introduction

Over the past several years, a number of different standards forums have usefully produced Lawful Interception (also referred to as Lawfully Authorized Electronic Surveillance) standards for a variety of IP-enabled services. Almost every significant wireline and wireless medium and application now has a stand-alone handover specification, with additional variances introduced between the legacy wireline standards used globally versus those in common use in the U.S. Although some integration has been usefully pursued for 3G specifications in dealing with the global vs. U.S. dichotomy, and TC LI has taken steps toward an integrated IP-enabled services module approach over the past two years, the larger problem of multiple handover standards remains.

This state of affairs is highly undesirable because it exacerbates costs of industry segments that must support those different standards, as well as significantly adversely affects law enforcement agencies who must cope with those different standards, and bear the increased costs and decreased functionality in their collection equipment. Indeed, the ease with which a suspect can transition among different terminal devices, media, applications and access locations worldwide within a nomadic IP-enabled services environment, compels some effective rationalization and integration of the multiple standards now existing or under development. This multiplicity of different interface specifications also creates an impediment to effective implementation of the international agreements relating to mutual cooperation on law enforcement and cybercrime matters.

2. Listing of LI ASN.1 Modules

Fortunately, all the relevant standards bodies have converged on the syntactical expression of their handover interfaces as structured ASN.1 modules containing object identifier statements. In theory, this paves the way for substantial interoperability, and movement toward a few – maybe even one – global handover interface. Annex 1 contains a compilation of all known current LI ASN.1 modules for IP-enabled services together with imports, and pointers to source documents.

There are some minor hurdles in accomplishing this rationalization and integration objective. It is apparent that a lack of uniformity exists among the LI ASN.1 modules as to compliance with different ASN.1 standard versions. There may be some lack of uniqueness in the modules as to object identifiers. Nonetheless, the existence of the modules today paves the way toward the compilation of a master global data dictionary based on these modules, as well as coordination among the sponsoring forums to develop new “rationalization-and-integration-friendly” versions.

3. Recommendation

The compilation in Annex 1 provides the basis for a work item directed at rationalization and integration of diverse stand-alone LI standards. One such result is depicted in Annex 2. This would entail the coordinated development of versions of the diverse modules that could “plug-and-play” with the existing or a future version of module LI-PS-PD. Even if a single interface proves unfeasible, the benefits obtained in reducing the number of interface specifications would merit pursuit of such a work initiative.

Annex 1. LI Packet-Mode ASN.1 Code Modules

| Module Name | Latest version: source standard; date | |
|--|---|---|
| T1S1-LAES-VoP-Abstract-Syntax-Module IMPORTS FROM Laesp-j-std-025-b [version-1] H-225-0 [v2, v4] T1S1-LAES-VoP-H323specific-Abstract-Syntax-Module [version-1] | [version-1:T1.678 20040122] | SIP VoIP <i>traffic data</i> |
| T1S1-LAES-VoP-H323specific-Abstract-Syntax-Module IMPORTS FROM H-225-0 [v2, v3,v4] T1S1-LAES-VoP-Abstract-Syntax-Module [version-1] | [version-1:T1.678 20040122] | H323 VoIP <i>traffic data</i> |
| CCDeliveryHeaderModule IMPORTS FROM Laesp-j-std-025-b [version-1] T1S1-LAES-VoP-Abstract-Syntax-Module [version-1] | [version-1: T1.678 20040122] | VoIP <i>content</i> |
| CDMA2000CIIModule IMPORTS FROM Laesp-j-std-025-b [version-1] | [version-1: TIA PN-4465-RV3 200402] | CDMA2000 <i>traffic data</i> |
| CDMA2000CCModule IMPORTS FROM Laesp-j-std-025-b [version-1] CDMA2000CIIModule [version-1] | [version-1: TIA PN-4465-RV3 200402] | CDMA2000 <i>content</i> |
| UmtsHI2Operations IMPORTS FROM HI2Operations [version3] | [version-2: TS_33108v600000 200212] | 3G <i>traffic data</i> |
| Umts-HI3-PS IMPORTS FROM UmtsHI2Operations [version-1] HI2Operations [version3] | [version-1: TS_33108v600000 200212] | 3G <i>content</i> |
| PCESP | [version-3: PKT-SP-ESP-I03-040113 20040113] | Cable <i>voice traffic data and content</i> |
| [TS101909202*] | [version _: TS_102909-20-2v000005 200405] | Cable <i>multimedia traffic data and content</i> |
| HI2Operations IMPORTS FROM Remote-Operations-Information-Objects [version-1] SecurityDomainDefinitions | [version5: TS_101671v209010 200405] | Borrowed elements <i>traffic data</i> |
| Laesp-j-std-025-b | [version-1: PN-4465-RV3 20040430] | Borrowed elements <i>traffic data</i> |
| LI-PS-PDU IMPORTS FROM HI2Operations [version4] EmailPDU [version1] IPAccessPDU [version1] UmtsHI2Operations [version-2] | [version1: TS_102232v010101 200402] | Unified IP <i>traffic data and content</i> |
| EmailPDU IMPORTS FROM HI2Operations | [version1: TS_102233v010101 200402] | Email extraction <i>traffic data</i> |
| IPAccessPDU IMPORTS FROM HI2Operations [version3] | [version1: TS_102234v010101 200402] | Internet Access Provider extraction of <i>traffic data</i> |
| CISCO-TAP-MIB IMPORTS FROM SNMPv2-SMI, SNMPv2-CONF, INET-ADDRESS-MIB, SNMPv2-TC, SNMP-FRAMEWORK-MIB, IF-MIB, CISCO-QOS-PIB-MIB, CISCO-SMI | [draft-baker-slem-mib-00: 200303] | VoIP extraction of <i>traffic data and content</i> |

Notes: TS standards are ETSI; T1 is ATIS; PKT-SP is CableLabs; PN is TIA; MIBs are IETF

* Work in progress, no name presently specified

Annex 2. Possible LI ASN.1 Module Integration

HI2 (known as real-time traffic data, intercept related information, call data, pen register/trap and trace)

T1S1-LAES-VoP-Abstract-Syntax-Module
T1S1-LAES-VoP-H323specific-Abstract-Syntax-Module
CDMA2000CIIModule
UmtsHI2Operations
PCESP
[TS101909-20-2]
EmailPDU
IPAccessPDU
CISCO-TAP-MIB
...

LI-PS-PD

HI3 (known as real-time content, communications content, call content, and Title III interception)

CCDeliveryHeaderModule
CDMA2000CCModule
Umts-HI3-PS
...

H12Operations
Laesp-j-std-025-b
H-225-0 [v2, v4]

