AQSACOM
Innovating Intelligence

Lawful Interception

"ALIS, the most flexible Lawful Interception Management System on the market"

Overview

The AQSACOM Lawful Interception System, ALIS, is a convergent Lawful Interception solution for all voice and data networks (PSTN, GSM, GPRS, 3G, LTE, CDMA, WCDMA, VoIP, xDSL, Satellite, E-Mail, etc.) using a centralized management platform.

The customer benefits of ALIS include:

> One point of contact for the LI management to ensure state-of-the art security and reliability.

> Flexible interfaces with either Internal Interception Functions (vendor equipment internal interception functions – IIF) or External Interception Functions (Probes – EIF).

> Solution scalability to ensure cost-efficiency for Communication Services Providers

> Solution flexibility to adapt to Law Enforcement requirements.

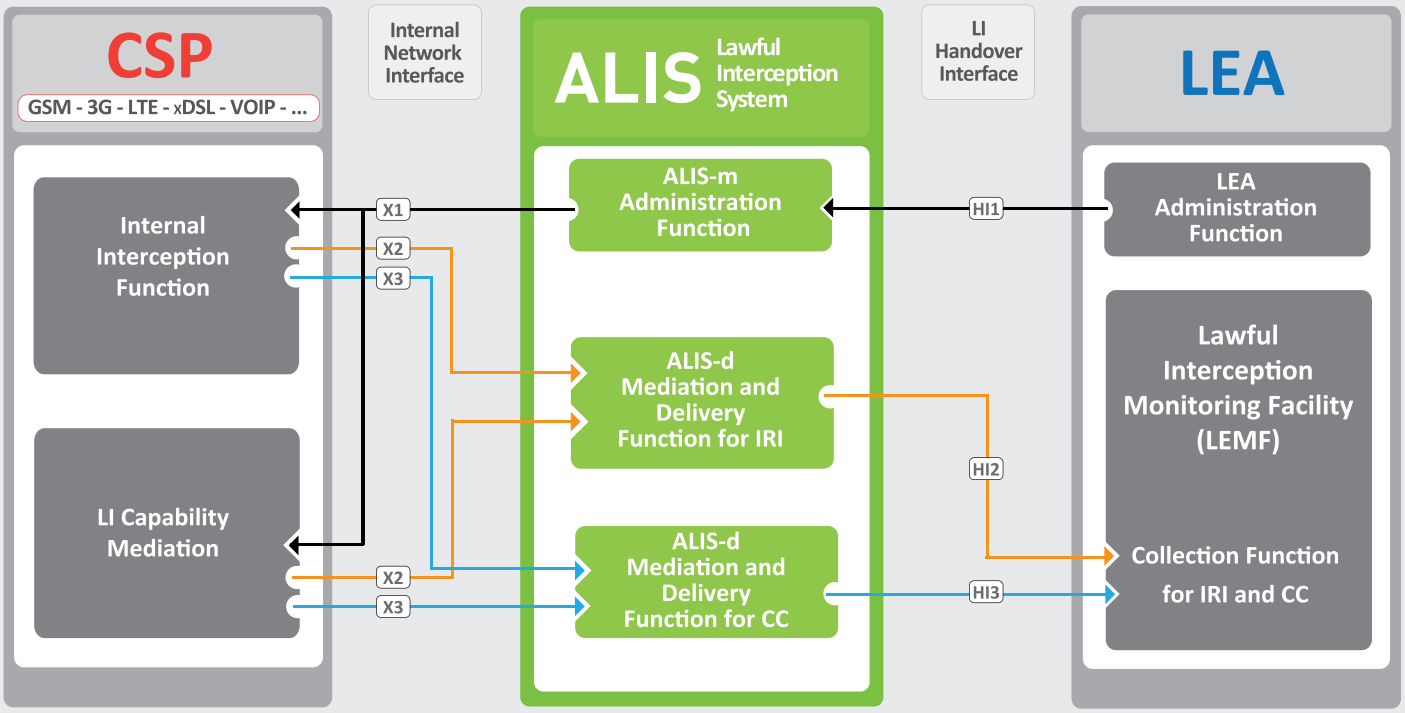
> Clear pricing and technical strategies based on a transparent and constructive collaboration.

ALIS' seamless network integration, distributed architecture and centralized management allow Communication Services Providers freedom from dependence upon proprietary network equipment and solutions. At the same time, with ALIS, evolutions within the CSP's network remain transparent to the LEA.

The ALIS platform is easy to use and requires minimal operator training, which substantially reduces the direct cost of performing lawful interception tasks.

Collectively, ALIS' features optimize operational and recurring Operator costs.

ALIS
Functional Overview



CSP	Communication Service Provider	LEA	Law Enforcement Agency
X1	Internal Network Interface for LI Provisioning (standard or proprietary)	HI1	Standard Handover Interface port 1 (for administrative information/LI Provisioning)
X2	Internal Network Interface for IRI (standard or proprietary)	HI2	Standard Handover Interface port 2 (for Intercept Related Information / IRI)
X3	Internal Network Interface for CC (standard or proprietary)	HI3	Standard Handover Interface port 3 (for Content of Communication / CC)

ALIS Overview

ALIS Core

This is the hub of ALIS. From the Core System, the mediation process between the network entity and the LEA domain is managed. The functionality of the ALIS Core remains the same regardless of the network and technology (PSTN, GSM, GPRS, 3G, LTE, CDMA, WCDMA, VoIP, xDSL, Satellite, etc.).

The Core contains the basic software components needed to set up the Lawful Interception System, including the Network Connectors, Technology Connectors, LEA Connectors for HI2 and HI3 delivery and optional HI1 LEA Connectors for provisioning. The Operator and Administrator Clients are also included in the ALIS Core.

The Core can be upgraded to integrate any newly emerging demands for more comprehensive Security, Redundancy, Alarms and Statistics.

ALIS Network Connector (NC)

Network Connectors manage the provisioning workflow of the intercepted targets for a designated network. NCs are also referred to as Application Connectors. Examples include: PSTN, GSM, GPRS, 3G, LTE, CDMA, WCDMA, VoIP, xDSL, Satellite, etc. There is a 1:1 ratio between a NC and a network or application. Multiple NC's can be managed by a single ALIS platform.

ALIS Technology Connector (TC)

Technology Connectors manage the dialogue between the ALIS platform and the Interception Function (IF) in the network. Interception Functions can be either internal to the vendor/network equipment (IIF) or external using probes (EIF).

ALIS LEA Connector (LC)

LEA Connectors manage the dialog and the intercepted data transmission between the ALIS platform and the LEA equipment that typically resides in a Monitoring Center. Depending upon the requirements, the interception data could be routed for use in other additional applications such as data storage and retention.

ALIS Features

Supported Networks

Fixed Line Networks

> IMS
> PSTN (Fixed Telephony)
> T1/E1
> SS7
> ISDN
> ...

Mobile Networks (2G/3G/4G Packet Switch and Circuit Switch)

> GSM
> GPRS
> UMTS
> CDMA
> WCDMA
> LTE (various releases)
> NGN
> IMS
> ...

IP Networks

> xDSL
> FTTH
> WiFi
> WiMAX
> Cable
> ...

Services & Protocols

VoIP Services

> SIP
> RTP
> H.323
> ...

E-Mail Services

> E-Mail Address
> POP3 User Name
> IMAP User Name
> Header Information
> Origination/Destination IP Addresses
> ...

Plus a variety of other Services, such as:

> MMS
> Voicemail
> Push-To-Talk over Cellular
> Chat
> P2P
> HTTP
> ...

Regulatory Conformance

3GPP

> TS 33.106
> TS 33.107
> TS 33.108

ETSI

> ETSI TS 102 232 – n series (IP family)
  » ETSI TS 102 232-1 for generic IP
  » ETSI TS 102 232-2 for e-mail
  » ETSI TS 102 232-3 for RADIUS/DHCP
  » ETSI TS 102 232-4 for Layer 2
  » ETSI TS 102 232-5 for VoIP
  » ETSI TS 102 232-6 for PSTN/ISDN
  » ETSI TS 102 232-7 for Mobile
> ETSI ES 201 671 for Mobile (CS/PS) & Fixed

ANSI/ATIS

> J-STD-025-A/B: Voice/CDMA
> T1.678: VoIP/Voice
> T1.IAS/IP: Internet/IP

Inter-Standard Mediation

> J-STD-025 ↔ ETSI ES 201 671
> T1.678 ↔ ETSI ES 201 671
> ETSI ES 201 671 ↔ T1.678
> ETSI ES 201 671 ↔ ETSI TS 102 232

National Variants

> Supports Multiple National Variants (i.e. Australia, Belgium, Brazil, France, Germany, India, Netherlands, New Zealand, Portugal, South Africa, Sweden, U.S.A., ...)
> LEA Web Portal
> ...

Vendor Compatability

> Acme-Packet
> Alcatel Lucent
> Broadsoft
> Cirpack
> Cisco
> Ericsson
> Huawei
> Italtel
> Juniper
> Nokia Siemens Networks
> Nortel Networks
> Qualcomm
> Redback
> Siemens
> ...

System Features

Operating System

> Linux Red Hat 64 Bit/ Windows 2008 64 Bit

System Performance

> Up to 75 IRI's per second, 15000 Simultaneous Interceptions in database, 1000 Network Elements per single ALIS Server.

> A single ALIS-d device mediates up to 32 E1's for Voice Mediation.

> A single ALIS-d device mediates up to 250 Mbps for IP Mediation.

Scalability and Modularity

> Scalable –ALIS offers the possibility to extend the system capacity and throughput by using additional ALIS-m and ALIS-d servers.

> Modular – ALIS offers the ability to incorporate ALIS-m and ALIS-d functions in a single server or to have them operate in individual servers.

IRI/CC Buffering

> Extended buffering capacity for CC via internal or external secure storage solution.

Multi-Target ID

> In cases where different identifiers (IMSI/IMEI/MSISDN) refer to the same subscriber, ALIS ensures delivery of IRI and CC from that targeted subscriber

Multi-Administration

> Allows delivery of interception products to multiple LEAs.

Media Gateway

> Allows transcoding from IP to TDM and TDM to IP.

Security Features

Consistency Checks

> Prevents malicious human intervention, and human or technical errors.

> Guarantees coherence between the data in the network internal interception functions and the interception specifications in ALIS' database. Consistency checks can occur on a regular or random basis, manually or automatically.

Secure and encrypted interfaces between the Network Components and the LEA monitoring facilities.

Secure separation of warrant information from IRI and CC.

Full Encryption Solution

> Data traffic collected & delivered
> Database encrypted
> Full encryption of ALIS HD partition
> Full encryption of traces/logs
> Encrypted backup

Secure Access

> Password Management
> Virtual Keypad
> Single Login
> Non-active Session Timeout
> ...

Encryption

> AES
> IPSec
> TLS
> SSH
> ...

Alarms System Supervision & Monitoring:

> Hardware/Software/Link/Collection and Delivery Equipment

> SNMP, Syslog, Nagios, ...

Reliability Features

Load Balancing

> Dynamic load balancing to distribute intercept data among multiple ALIS-d platforms.

System Redundancy

> High-Availability architecture to provide 99.999% availability.

Disaster Recovery System

> For worst case scenario remote location to reduce the risk of interruption of services.

Automatic/Manual Back-up

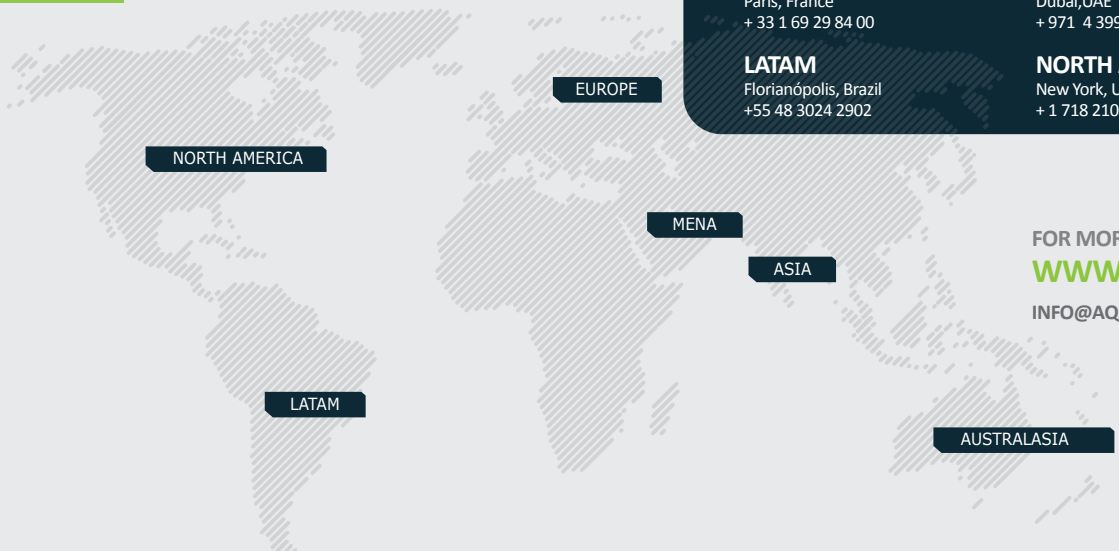
> Frequency per day/every 4 hours
> Local and/or external

Value Added Features

> Electronic Provisioning
> Statistics
> Billing
> Geographical Interception / Location Based Monitoring
> Third Party IMC (Interception Management Center)
> Number Portability
> Addition of information in the IRI
> Console Mode
> Reports dedicated to the LEA (Historical data)
> IP Traffic Filtering/Classification: HTTP/CHAT/Email/VoIP.....
> Logs
> ...

EIF (Probe) Features

> ALIS SS7 EIF
> ALIS VoIP EIF
> ALIS RADIUS EIF
> ALIS DHCP EIF
> ALIS IP EIF
> ALIS Email EIF
> ALIS MMS EIF
> ALIS GPRS EIF
> ...



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