group 2000

Lima®

We intercept any target in any network

ARCHITECTS IN SAFETY AND INTELLIGENCE

LIMA LAWFUL INTERCEPT

Single Integrated Interception Solution. All networks. All vendors. All technologies.

Cost efficient. Central Management. Multi-country and multi-vendor support.

Workflow Management. Automate warrant management process. Reduce risk of human errors.

INTRODUCTION

LIMA Lawful Intercept is Group 2000's proven industry-leading solution for Lawful Interception. Our LI solution can integrate in any fixed, cable and mobile network, with any vendor, and with all technologies. In many markets lawful interception is an obligatory requirement for telecom providers, which in most cases does not generate revenue. For that reason we believe that the operational costs for having an LI solution should be minimized. With our warrant management and workflow management features, we minimize the operational costs of the solution. These features simplify and automate the warrant management process. Another benefit of these features is that they reduce the risks of human errors.

To ensure that the complete end-to-end Lawful Interception chain from interception to Monitor Center is working as intended, our solution can be complemented with an automated end-to-end LI verification tool: LIMA Élite. As full and active member of ETSI we can timely anticipate on changes to the handover standards and thus minimizing the impact to your solution when these changes happen. For these reasons many operators world-wide chose for our LIMA LI solution. An LI solution, which is reliable, trustworthy, cost-effective, scales seamlessly with the bandwidth needs with 5G and which relieves our customers from many LI related influences out of their control.

Modular solution

LIMA Lawful Intercept is Group 2000's modular and scalable solution for Lawful Interception that consists of a central LIMA Management System which provides the ADMF function, LIMA Mediator which provides the MDF2 and MDF3 functions, LIMA CC-PAG for cost-optimization by UPF offloading and LIMA passive Monitors as required for the network.

LIMA Management System

The LIMA Management System is designed to play a central role in any Lawful Interception solution. Its scalable design allows it to be deployed in solutions ranging from a self-contained lawful interception solution in a single box to a distributed system spanning multiple countries and operators. As a user-friendly and field-proven solution, our LIMA Management System helps operators to manage and oversee their active warrants from a central location, regardless of the type and number of networks and the number of intercepts in which the interception measures are deployed. It protects investments through its modular setup, accommodating network expansion as well as network changes. The LIMA Management system also integrates with existing Lawful Interception solutions incorporating them in a centrally managed solution.

LIMA Mediator

Our LIMA Mediator can be integrated with a wide variety of Network Elements. To accommodate this variety of situations, our LIMA Mediator is designed around the concept of using Input Adapters that handle intercepted X2 (IRI or CDC) and X3 (CC or CCC) traffic.Input Adapters are available for most network equipment commonly found in Telecom and ISP networks. This includes adapters for PSTN/ISDN, VoIP/IMS/LTE, E-Mail, Fixed IP, Mobile IP, including support for the latest generation of 5G X-interfaces. Many adapters have been factory-tested with the Network Equipment vendors. On the output side, the LIMA Mediator supports all commonly used Handover standards, implemented by Output Adapters. Supported protocols include ETSI TS 102 232, ETSI TS 103 120, ETSI ES 201 671, 3GPP TS 33.108, J-STD-025-B, ATIS T1.678 DSR, ATIS LEAS, Packetcable CBIS. Countryspecific requirements can be supported also.

To control the outbound bandwidth needs in a 5G environment, the LIMA Mediator provides the capability for layer-3 and layer-4 black- / whitelist filtering.

LIMA CC-PAG

CC-PAG or CC PoI Aggregation is an optional component in the 3GPP 5G LI Architecture, but would be beneficial for any carrier requiring a highspeed 5G LI architecture. When deploying the LIMA CC-PAG function as a component in a highspeed 5G LI architecture, carriers will benefit from optimized network connectivity and improved UPF efficiency. Increased UPF efficiency is achieved by offloading specific UPF function to our LIMA CC-PAG, which will reduce the number of required UPF components. Main functions provided by the LIMA CC-PAG function are the aggregation of CC from different CC-POIs towards the MDF3 function of the LIMA Mediator, support for a more efficient X3 transport protocol from CC-POI towards the MDF3 function of the LIMA Mediator, offload encryption from UPF to CC-PAG for X3 traffic.

LIMA Monitor

The LIMA IP monitor is a robust, powerful and integrated IP probe which combines multiple IP interception functions in one physical system. The probe is able to intercept and capture all common IP, Email and VoIP traffic. Country-specific requirements can be supported also. The LIMA IP monitor is truly flexible, powerful and multi-functional whilst combining traffic analysis, interception and mediation in a single box when combined with the LIMA Mediator. The LIMA IP monitor is a passive probe, which can be easily installed in a network. Implementation of the interception solution can be done with minimal impact and visibility by avoiding integration with existing network elements.

Deployment models

LIMA Lawful Intercept supports various deployment options, ranging from deployment on standard COTS hardware, deployment on virtual machines in the carriers private cloud or as deployment in a micro-services architecture as provided with the cloud native 5G core architecture. With the latter, carriers will benefit from cost reduction, rapid deployment and N+K scalability and high-availability.

Key features

LIMA MANAGEMENT SYSTEM

Unified LI Management and control for all types of traffic and networks

Covers heterogeneous networks, multiple service providers, multiple countries

Interfaces directly to network elements or third party LI equipment

User friendly, web based operator interface

Provides real-time status overview

Centralises operational information like alarms and traffic information

Management reporting functionality

Supports large amounts of interception on a single 1U x86-based server

Multi lingual interface

Purpose-built for regulatory services

Future proof through its plug-in architecture providing unlimited extensibility

High availability support

LIMA MEDIATOR

Handles interception events (IRI data or CDC) from a broad range of sources

Handles intercepted data (CC or CCC) according to a variety of standards and proprietary protocols

Supports a wide range of handover interfaces

Supports buffering and archiving for data preservation at connection loss to MC

IDR records provide an exact audit trail of handled traffic

Conversion and transcoding for PS ‹-› CS translation

Supported handover standards:
• ETSI TS 102 232-x, ETSI TS103 120 ETSI TS 133 108, ETSI TS 201 671, including various country specific implementations like ETSI-IP. nl, TR-TKÜV, etc.
• CALEA T1.678 DSR, J-STD-025-B, etc.

Layer-3 and layer-4 black- / whitelist filtering

LIMA CC-PAG

Provides aggregation of CC from different CC-POIs towards the MDF3 function of the LIMA Mediator

Provides optimized network connectivity

Improves UPF efficiency

Results in cost-efficient highspeed LI architecture

Enables offload of encryption from UPF to CC-PAG for X3 traffic

LIMA MONITOR

Protocol monitors for passive interception of:
• E-mail (SMTP, POP, IMAP)
• Voip (SIP, RTP)
• IP traffic (IP, DHCP, Radius)

High performance – Up to 40 Gbps input per 1U x86-based server

LIMA ÉLITE

Network & technology independent – works with 2G, 3G and 4G networks of all NE vendors

LEMF independent – Integrates with LEMF Systems

LI Environment independent – Integrates with LI mediation system

Supports validation of voice calls, SMS, and mobile data interceptions

Supports the validation of Metadata and Content Interception

OUR COMPLIANCE SOLUTIONS

LIMA COMPLIANCE PORTFOLIO

- LIMA Lawful Intercept
  - Warrant Management
  - Provisioning and Mediation
  - Location enrichment
  - Passive and active IP interception
  - E-mail monitors
  - VoIP monitors
  - Mobile data monitors
  - Workflow support

- LIMA Data Retention
  - LIMA Disclosure Management
  - LIMA Data Retention store
  - Workflow support

- LIMA Élite
  - Lawful Interception End 2 End validation
  - Test LEMF functionality

LIMA NETWORK MANAGEMENT AND SENSING PORTFOLIO

- LIMA 5G CellPro

- LIMA Network Protect

- LIMA Cell Monitor

ARCHITECTS IN SAFETY AND INTELLIGENCE

WHY GROUP 2000?

- Group 2000 is an independent global solutions provider of interception and intelligence solutions
- Group 2000 delivers and preserves essential and reliable interception knowledge
- Group 2000 has global experience in the public and telecommunication domain
- Group 2000 minimizes complexity, delivering end to end solutions
- Group 2000 has technology partnerships with leading suppliers
- Group 2000 is an active member of ETSI
- Group 2000 LIMA solutions are modular and scalable to support the largest networks