

# End-2-End Lawful Interception Verification

LIMA ÉLITE

ARCHITECTS  
IN SAFETY AND  
INTELLIGENCE

**Fully Independent.** Integrates with all LI Mediation and LEMF systems.  
**Risk Compliancy.** Facilitates auditing processes and SLA Management.  
**Gain Control.** Early detection of failed interceptions.

## INTRODUCTION

Advancements in communication technology and as a result the increasing complexities in communications systems have fostered the need for advanced LI processes. Some of the communication channels that are majorly intercepted include: VoIP, Email, SMS, images and telephony. It is mandatory for telecom providers to support lawful interception by adhering to the government regulations regarding the same.

For Law Enforcement it is critical that they can trust the data provided by telecom providers, while on the other hand for telecom providers it is essential that they can trust the deployed interception technologies in their networks.

Automated end-to-end Lawful Interception test tooling would help law enforcement in validating the complete LI chain for all operators and ensures timely detection of non-compliances of telecom providers. For telecom providers end-to-end LI verification tooling and test LEMF functionality would facilitate their compliancy with government regulations.

### LIMA Élite

To help Law Enforcement and Telecom providers, Group 2000 developed LIMA Élite. With LIMA Élite, the complete paths from target interception in the network via the LI Mediation systems at the operators to the Law Enforcement Monitoring Facility (LEMF) are being tested for each network operator and technology (2G, 3G and 4G).



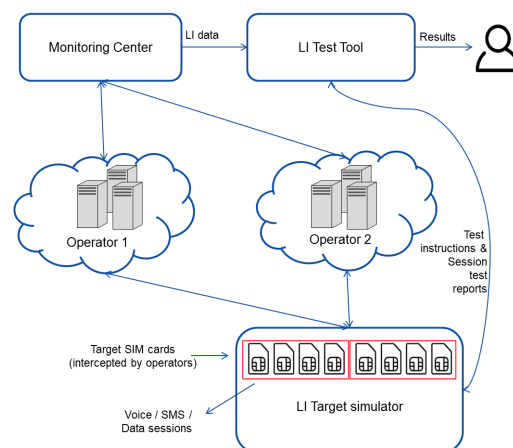
LIMA Élite is operator, network & technology independent and supports the validation of voice calls, SMS and mobile data transfer interceptions, both on metadata (IRI) and content (CC). For Law Enforcement, LIMA Élite can integrate with any LEMF.

### Our solution

LIMA Élite works independently and automatically generates calls, SMS messages and data sessions. The frequency with which this test data is generated is configurable. It will automatically cycle through the available connections, testing all operators and networks in sequence.

The SIMs used for generating test calls are being intercepted by the operators. This can be achieved through the normal process of providing warrants for these test numbers.

As a consequence all traffic generated by these test numbers is intercepted and delivered to the Monitoring Center.



By forwarding the intercepted IRI and CC data on the Monitoring Center to LIMA Élite, the application can verify the correctness of the generated metadata and their contents. In case deviations are detected between the data received and expected, the tool will immediately alert the user, so that corrective measures can be taken. In an operator environment, LIMA Élite integrates with the deployed mediation system(s) and will simulate a LEMF. For troubleshooting purposes, the test LEMF feature of LIMA Élite provides the user with the capability to download PCAPNG files from ETSI 232 mediation systems, view the decoded IRI and SMS messages and playback the call content.

The LIMA Élite solution consists of a LIMA Élite Backend and a LIMA Élite Target Simulator. A LIMA Élite Target Simulator can handle up to 12 network operators e.g. 12 operators each with a 2G, 3G and 4G network.

## User Interface

LIMA Élite is equipped with an intuitive and user friendly web-based interface giving the user precise control of the operation of the LIMA Élite solution.

KEY FEATURES	
Network & technology independent	Works with 2G, 3G, 4G networks of all NE vendors
LEMF independent	Integrates with any LEMF System
LI Environment independent	Integrates with any LI mediation system
Support validation of all interception types	Voice calls, SMS and mobile data transfers interceptions
Supports validation of Metadata and Content interception	HI2 and HI3 streams
Test LEMF	Playback of call content/audio View decoded IRI messages View SMS messages
TECHNICAL SPECIFICATIONS	
LIMA Élite Target Simulator	Supports networks (2G, 3G & 4G) of up to 12 operators
	Supported bands: FDD LTE: B1/B3/B5/B7/B8/B20 UMTS: B5/B8/B1 (850/900/2100MHz) GSM: 850/900/1800/1900MHz
LIMA Élite Backend	Operating system: CentOS 7.x or Red Hat 7.x
	User friendly web-based GUI for configuration purposes
	Comprehensive logging and auditing
	Alerting via e-mail, SNMP, Nagios
	Supports virtual and bare metal deployments

## OUR LIMA SOLUTIONS



### LIMA PORTFOLIO

Comprehensive solutions for service providers, enterprises, law enforcement, and intelligence agencies.

- LIMA Lawful Intercept
  - Warrant management
  - Provisioning and mediation
  - Passive and active IP interception
  - E-mail monitors
  - VoIP monitors
  - Mobile data monitors
  - Workflow support
- LIMA ONE
  - LIMA Lawful Intercept
  - LIMA Disclosure Management
  - LIMA Data Retention
  - LIMA Élite
  - Workflow support
- LIMA Disclosure Management
  - Data retention storage solutions
  - Data collection and mediation
  - Workflow support
- LIMA Élite
- LIMA Location Services
- LIMA Network Protect
- LIMA Cell Monitor
- LIMA Intrusion Detector

## 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

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