

Continued use of deployed IMSI catchers.
Accurate target localization and identification.
Minimum network impact.

INTRODUCTION

Law Enforcement Agencies use IMSI catchers to identify, locate and intercept mobile phone traffic of targets in criminal investigations. 5G networks provide increased privacy by design. Services responsible for intelligence gathering face severe challenges when IMSI catchers become useless on 5G networks.

Group 2000 has a powerful solution to ensure that the IMSI catchers used today can still be used tomorrow. LIMA 5G CellPro enables the law enforcement agency to accurately identify available cell towers in a selected area and force mobile subscribers to the desired technology (2G/3G/4G) where IMSI catchers can localize and identify the target.

IMSI catchers and 5G

IMSI catchers are very useful tools to law enforcement and intelligence agencies to track the location of mobile users and intercept mobile communication traffic.

By pretending to be a very powerful base station, an IMSI catcher will attract nearby mobile phones. Because mobile phones only authenticate to mobile networks and mobile networks don't authenticate to mobile phones, IMSI catchers are ideal tools to be deployed quickly, collect information about all mobile phones in the area and intercept communication by forcing the mobile phones to use no or easily breakable call encryption.



Most IMSI catchers available today support 2G, 3G and 4G.

The security architecture and procedures for 5G are specified in 3GPP TS 33.501. The authentication procedure for devices registering to mobile networks will be secured by using the EAP protocol. By using the EAP encryption protocol, it will be impossible for IMSI catchers to successfully launch a “man-in-the-middle” attack on devices as they register on the mobile network.

LIMA 5G CellPro

Group 2000 can provide the solution to law enforcement and intelligence agencies for continued use of IMSI catchers when searching for targets on 5G networks. By integrating our proven products LIMA Cell Monitor and LIMA Network Protect, we have unleashed the full potential of target interception in any area. It's called LIMA 5G CellPro.

LIMA Cell Monitor is capable of measuring all cell towers and WiFi networks in a certain area where all measurements can be done across all technologies and network bands in parallel. With central management capabilities, LIMA Cell Monitor can be configured before even reaching the location where measurements must be performed and activated upon arrival.

LIMA Cell Monitor will scan the area where a person of interest is expected to be located and provides detailed and accurate coverage information of all measured cells. With the Companion App, on-site field agents can view measured cell tower coverage information on a map and select an area where 5G network coverage should be disabled. The selected area can be modified, used to execute or a new area selection can be done.

All collected cell tower information, added with the selected area as drawn using the Companion App, is securely transferred via the dedicated modem to a preconfigured backend server. The backend server is used as data source for LIMA Network Protect. Using the measurement data and selected area provided by LIMA Cell Monitor and Companion App, LIMA Network Protect processes the location information in the background. LIMA Network Protect will identify the active 5G cells in the selected area that need to be locked and calculates the affected area automatically.

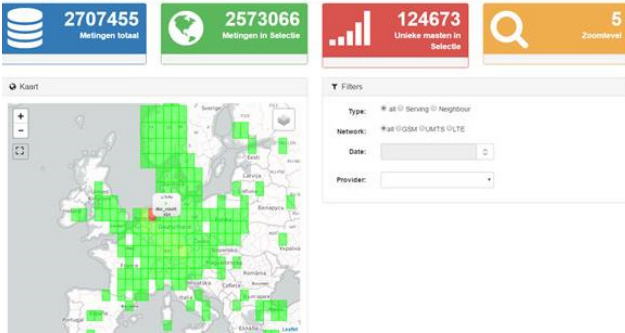
With a simple button in the Companion App, the 5G cells will be locked quickly and efficiently with minimum impact on subscribers in the area. With 5G cells being unavailable, all mobile devices in the area are forced to look for and attach to available 2G, 3G or 4G cell towers.

The IMSI catcher is able now to locate and intercept all mobile phone traffic again, including the mobile phone used by the target.



LIMA Cell Monitor

The LIMA Cell Monitor is a purpose-built device with a small form factor that collects information on cells in mobile networks. Its ability to physically host 12 modems allows measurements to take place in parallel.



This device simultaneously collects measurements on cells of different operators and technologies [2G, 3G, 4G and 5G] while mounted on a vehicle for drive testing or installed at a fixed location. The device can carry out continuous measurements and bind those to a specific location through the built-in GPS receiver.

The LIMA Cell Monitor works completely autonomously without the need for any manual interaction. To support the user of the LIMA Cell Monitor in monitoring and configuring the device, the LIMA Cell Monitor comes with a Companion App for Android devices. This LIMA Cell Monitor Companion App provides the user with an overview of the Cell Monitor status, its modems, GPS, connected networks, Wi-Fi, storage, and transmission devices.

The LIMA Cell Monitor devices are designed to start measurements immediately after power-on without any required handling. For certain investigative purposes however, users may want to set specific measurement parameters to obtain the required data. A central management application is available for these situations, where the user can remotely (centrally) manage and operate Cell Monitor devices from his or her own workstation, reducing the need for specialized personnel in the field.

LIMA Network Protect

LIMA Network Protect is a complete solution for network & subscriber barring control with a central management system. It integrates with all necessary network equipment, databases and registrars.

The LIMA Management System is the central location for the administration of cell locking requests. It guides the end-user in creating requests for cell locking based on location, address, time and affected users.

The platform supports pre-definition of high risk location areas. The end-user does not require any prior detailed network knowledge.

LIMA Network Protect will provision the plan against the network infrastructure (particularly BSC's and RNC's). The plan can be executed immediately or can be scheduled for the (near) future as required.

The system ensures all measures are removed from the network, leaving it as it was before the control took place.



BENEFITS

- Continued use of operational IMSI catchers
- Fast 5G network provisioning based on accurate cell tower coverage
- Android Companion App for user-friendly operation
- Proven technology
- Remote management
- No expert knowledge required of mobile networks

CAPABILITIES

Output Cell information (serving cells, neighbor cells), Wi-Fi information, GPS location - CSV formatted

Dedicated 1 modem per operator and technology. Non-dedicated modem switches between networks

Automatic network detection and selection based on inserted SIM cards

Configurable interval from minutes to 1 second in dedicated mode

Remote management for configuration and upgrade of firmware LIMA Cell Monitor

Companion App for Android devices

Passive Wi-Fi for scanning of 2.4 and 5.0Ghz networks

Supports GPS and GLONASS

Dedicated modem for transmitting measurement data

Allows scanning of multiple operators and technologies in parallel

TECHNICAL SPECIFICATIONS

Measurement modems up to 12 modems

1 Transmit modem

Micro SIMs

Supported technologies GSM, GPRS, EGDE, UMTS, HSPA+/WCDMA, LTE, 5G, 802.11a/b/g/n/ac

Operating voltage range 8-36V DC

Protection class IP64

Dimensions 254mm x 180 mm x 83 mm

External memory SD card - up to 32GB

VARIOUS CONTROL LEVELS

Cell (Lock/unlock)

Barring of Access Class (Normal 0-9, Special 11-15)

Technology (2G/3G/4G/5G)

Service: Voice /Data /SMS /Video /CSFB /M2M

Power level: [E]DRX, PSM

OUR COMPLIANCE SOLUTIONS



LIMA COMPLIANCE PORTFOLIO

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

- 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

For more information about Group 2000's Network Management and Sensing solutions, please visit www.group2000.com.

ARCHITECTS IN SAFETY AND INTELLIGENCE

WHY GROUP 2000?

- Group 2000 is an independent global solutions provider of interception, intelligence, network management, resilience and sensing 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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