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## Lawful Interception of Telecommunication Services

Throughout the world providers of telecommunication services are required to support law enforcement agencies in their fight against crime and terrorism. Network operators and telecommunication service providers have to install interception facilities in their network to fulfil these obligations. The legal framework of lawful interception (LI) is defined by national laws and regulations, the technical details are defined by a number of international technical standards.

Utimaco **LIMS** (Lawful Interception Management System) is a proven solution for network operators and service providers to automate the administrative and operative tasks related to lawful interception. The system is based on a central management platform for the surveillance of communication services and implements electronic interfaces to various authorized law enforcement agencies and their monitoring centers.

Utimaco **LIMS** offers the industry's broadest range of supported network elements for active interception as well as highspeed network probes for passive interception. This approach enables lawful interception in virtually any fixed, mobile, and Internet service provider's environment without any negative impact on the performance and reliability of the network and revenue generating services. Communication services supported include telephony, fax, SMS, MMS, e-mail, voicemail, VoIP, webmail and instant messaging as well as other Internet services. While the system is designed for large-scale networks with millions of subscribers, the **LIMS** suite easily scales to economically feasible solutions for networks with only a few thousand users. The modular architecture of **LIMS** facilitates cost-effective extension and adaptation to new technologies and regulatory requirements.

**LIMS** complies with international LI standards of ETSI, 3GPP, ATIS/ANSI and CableLabs and satisfies the highest security requirements to protect the privacy of all associated data. Utimaco supports providers, carriers, and LEAs in need of lawful interception solutions with consulting and technical support services, and also provides managed service models together with qualified solution partners.

### About Utimaco

For more than 25 years Utimaco is a leading global provider of data security solutions. Since 1994 Utimaco has been providing lawful interception systems for mobile and fixed network operators and Internet service providers. Utimaco Data Retention Suite was introduced in response to the EU directive 2006/24/EC and at the request of telecom customers for integrated LI and DR solutions. With more than 160 installations in 60 countries, Utimaco is a leading global supplier in the LI market.

While Utimaco data security products are now distributed by Sophos, the business units „Lawful Interception and Monitoring Solutions“ and „Hardware Security Module“ form Utimaco's operating businesses.

## Benefits

### Compliance

- ◆ Provides surveillance of all common telecommunication services in fixed and mobile networks, incl. telephony, fax, SMS, MMS, Push-to-Talk, Internet, e-mail, VoIP, webmail, instant messaging and others
- ◆ Complies with regulatory requirements in numerous countries worldwide
- ◆ Conforms to international lawful interception standards of ETSI, 3GPP, ATIS/ANSI, CableLabs and others

### Cost Efficiency

- ◆ Central management of all intercepts even in heterogeneous networks
- ◆ Modular, scalable architecture for small to very large communication networks
- ◆ Smooth integration into available networks

### Reliability

- ◆ Meets highest security demands
- ◆ No negative impact on performance or reliability of networks and services
- ◆ Continuous enhancements support the latest technologies and standards
- ◆ Close cooperation with regulatory authorities and standardization bodies
- ◆ 16 years of experience in lawful interception



## Networks & Services

- ◆ GSM, GPRS, UMTS, CDMA, CDMA2000, LTE
- ◆ PSTN (Fixed Telephony)
- ◆ xDSL, cable
- ◆ WiMAX, WLAN
- ◆ SMS, MMS, Voicemail
- ◆ PoC (Push-to-Talk over Cellular)
- ◆ Internet Access (IPv4 and IPv6)
- ◆ VoIP (SIP, RTP, H.323, SCCP)
- ◆ E-mail (POP3, SMTP, IMAP, webmail)
- ◆ other IP-based services

## Lawful Interception Standards

- ◆ ETSI TS 101 671 (voice), TS 101 331 (generic), ES 201 158 (generic), TS 102 232-1 to 102 232-6 (IP, E-Mail, VoIP)
- ◆ ANSI/ATIS: J-STD-025-B (Voice, CDMA), T1.678 (VoIP), T1.IPNA, T1.IAS (IP), T1.724 (UMTS), T1A-1072 (PoC)
- ◆ 3GPP: TS 33.106, TS 33.107, TS 33.108 (UMTS)
- ◆ PacketCable v1.5 (Cable)

## Vendor Interfaces

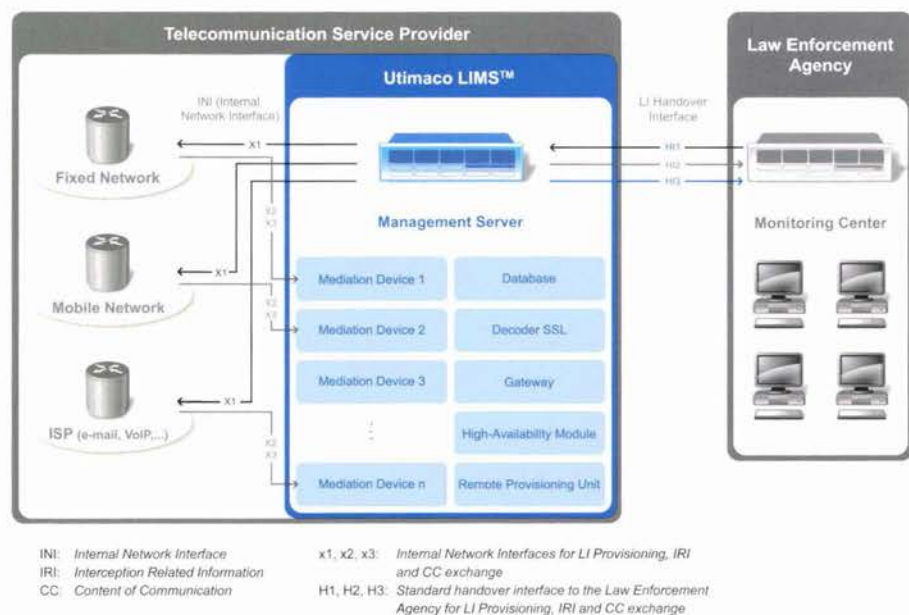
- ◆ Acme Packet, Arris, Bridgewater, Broadsoft, Casa Systems, Cisco, Ericsson, Huawei, Iptego, Juniper, Motorola, Nokia Siemens Networks, Nortel, Redback, Sitronics, Sonus, Starent Networks, Sun, Thomson-Cirpack, Unisys, Vocaltec, ZTE and others

## Performance

- ◆ Maximum number of subscribers: virtually unlimited, scalable configurations from 1,000 to several million subscribers
- ◆ Maximum number of interception targets: scalable up to thousands of parallel interception targets
- ◆ Probe performance: up to 10 Gbps per probe

## Network Interfaces

- ◆ 10/100/1000 Mb Ethernet, 10 Gb Ethernet, X.25, ISDN, E1/T1, SDH/Sonet, ATM, SS7 interfaces



## Key Features

- ◆ Central administration of intercepts and target assignments
- ◆ Active and passive interception of voice and data services
- ◆ Collection and mediation of intercepted data from all network nodes
- ◆ Standard compliant delivery of intercepted communications to the appropriate law enforcement agency
- ◆ Comprehensive user management with granular access rights
- ◆ Multi-tenancy, segregates up to 64 different networks/providers
- ◆ Authority management
- ◆ Integrated system administration and alarm monitor
- ◆ Security features
  - RBAC (Role-based Access Control)
  - Transparent separation of multiple authorities
  - Full audit trails of all user and system events
  - IPsec/SSH/TLS encryption
  - Encrypted database and backups
  - System monitor and alarms
  - System redundancy
  - Disaster recovery system
  - Automatic consistency checks
  - Secure remote access
- ◆ Remote administration of other LI systems
- ◆ Dynamic load-balancing
- ◆ Integrated billing capabilities
- ◆ Various language kits available

### Copyright Information

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# Utimaco DRS™

Automated Data Retention for Telecommunications Service Providers



## Automated Data Retention for Telecommunications Service Providers

Retention of subscriber data and communications related data has become a legal requirement for telecom operators and service providers around the world. Laws and regulations like the EU Directive 2006/24/EC oblige telecommunications service providers to retain CDRs, IPDRs, as well as subscriber data for a period of six to twenty-four months. While much of the data required is being recorded by providers already for billing and marketing purposes, these new regulations put some cumbersome and potentially costly obligations on CSPs in regards to data security, delivery of data, and completeness of information.

Utimaco has addressed these challenges with a brand-new approach that is affordable, quickly implemented, and secure. Utimaco Data Retention Suite (DRS) is a state-of-the-art, purpose-built management system for secure data retention and fast data retrieval. The system has been designed to easily integrate into existing network infrastructures that generate thousands of data records or even up to several billion records per day.

**Utimaco DRS** incorporates a configurable workflow management system which reduces operational expenses by automating the administrative tasks of request handling and delivery of search results to authorized agencies. Comprehensive security mechanisms like granular user management functionality, strong access control, encrypted storage and handover, and full audit trails of all user and system events, are fundamental features to support compliance with national regulations for data protection and for public safety.

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## Features

- ◆ Collects communications data (CDR, IPDR) and subscriber data from any telecommunications network
- ◆ Retains large amounts of data in a powerful and secure data warehouse
- ◆ Provides very fast search and analytics in billions of data records
- ◆ Automates request processing and delivers data to authorized agencies by fax, e-mail, or secure IP interfaces

## Benefits

- ◆ Complete solution to satisfy the data retention obligations of communications service providers
- ◆ Lowest operating costs due to high automation of workflows
- ◆ Cost-effective integration in existing networks of any size with various communication services
- ◆ Suitable for large networks with several billions of CDRs per day
- ◆ Reliable system security and data protection

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## Hardware Specifications

- ◆ Oracle X86 servers
- ◆ Various configurations from single server appliances to multi-server clusters
- ◆ Integrated disk storage (up to 12TB)
- ◆ External SAN from 6TB to 1000TB (RAID)
- ◆ Oracle Solaris 10 Operating System
- ◆ Sybase IQ data warehouse
- ◆ CE marked, FCC compliant, ROHS

## Services

- ◆ PSTN telephony
- ◆ Mobile telephony & data (GSM, UMTS, CDMA)
- ◆ Mobile Messaging (SMS, MMS)
- ◆ Internet Access (DSL, cable, Wimax, WLAN)
- ◆ VoIP, Push-to-Talk
- ◆ E-Mail, Webmail
- ◆ Other services on request

## Security

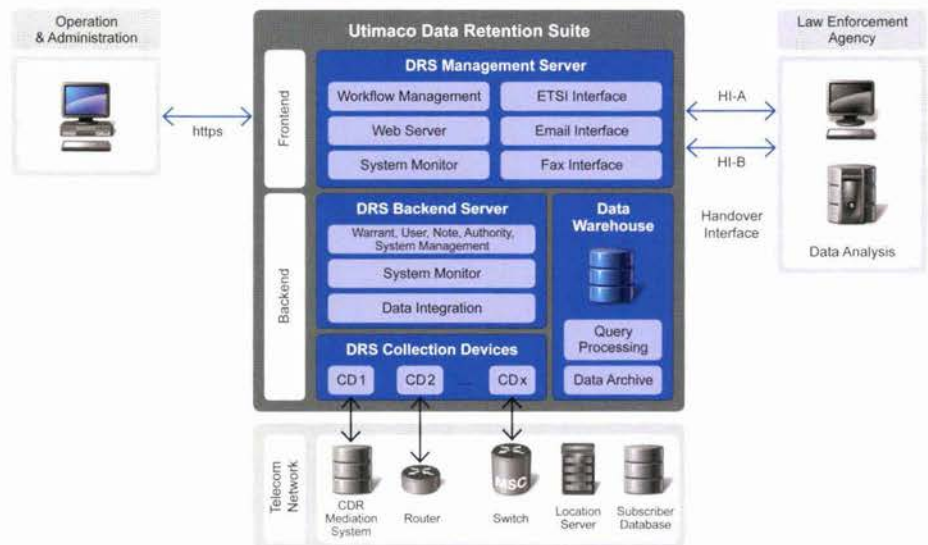
- ◆ Granular rights management
- ◆ Remote access via https (password, certificate)
- ◆ Full audit trail (encrypted)
- ◆ Data integrity protection
- ◆ Encrypted storage (optional)
- ◆ Hardened operating system

## Performance

- ◆ Loads up to 100,000 records per second (on one server)
- ◆ Average search performance: 5 sec per 1000 query results

## Norms and Standards

- ◆ EU Directive 2006/EC/24
- ◆ ETSI TS 102 656
- ◆ ETSI TS 102 657



## Highlights

### Seamless Integration

Utimaco DRS has been designed for seamless integration into existing multi-vendor and multi-service networks. The solution can be customized easily to interface with CDR/IPDR systems, log files, sub-scriber databases, and other network nodes.

### Multi-tenancy

One Utimaco DRS system can be used to administer warrants and search requests for multiple network operators and service providers. The granular rights management system of Utimaco DRS can be configured to securely segregate between networks, users, and authorities and thus supports various business models like MVNO models, managed services, or cross-border service platforms.

### High Performance & Capacity

Utimaco DRS has been optimized for simultaneous loading of massive data volumes and fast query processing. The system can ingest several billion data records per day, supporting the transaction rates generated by large telecommunications networks with millions of subscribers. Average queries results are returned in seconds not minutes.

### Strong Security

Comprehensive security features like role-based access control, encryption and integrity checks prevent unauthorized access and manipulations of sensitive data during storage and handover. Full audit trails are maintained for all system and user events to provide full accountability for evidential quality.

### High-availability

Server redundancy, RAID-5 data mirroring and real-time system monitoring are integral concepts of Utimaco DRS to satisfy highest availability demands and disaster resilience.

### Cost-efficiency

Utimaco DRS runs on broadly available and cost-efficient X86 servers and uses standard SAS/SATA disks arranged in RAID-5 arrays. This together with the excellent data compression rates reduces hardware expenses to the absolute minimum.

### Standards based

Utimaco DRS is fully compliant with latest ETSI standards in support of the European Data Retention Directive 2006/24/EC.

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