



The background of the slide features a grayscale photograph of a person's hands resting on a computer keyboard. Overlaid on the right side of the image is a snippet of programming code in a monospaced font, which appears to be Java or C-like syntax.

# Consolidating Lawful Interception – A case study

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**utimaco**<sup>®</sup>

## Utimaco at a glance ...

1.

**Headquarters:**  
**Aachen** –  
one of Germany's  
high-technology  
centers

2.

**Employees: 110+**  
(70% in R&D, Support,  
Production and over  
1000 combined man  
years of experience)

3.

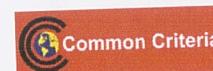
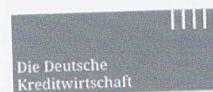
more than  
**1.000 installations**  
in over  
**80 countries**

4.

**In 2013**  
a management led  
buy out was backed  
by the investors Pinova  
and BIP

5.

**Official Security**  
clearance by the  
German government:



6.

**Revenue:**  
(FY 12/13)  
**€ 30.0 million**

## Utimaco LIMS – Competence in Lawful Interception

- Utimaco has been providing LI solutions since 1994
- Worldwide operations: around 250 LIMS installations in over 80 countries
- Lawful interception and Data Retention Systems scalable from 10 thousands to millions of subscribers
- Strong partnerships with leading telecom infrastructure vendors
- Compliant to international LI standards of ETSI, 3GPP, ANSI/ATIS, CableLabs and active member of ETSI TC LI
- Conform to numerous national telecommunication laws

# Introduction

## Motivation for Consolidation

- Lawful Interception is a legal requirement on telecom operators
  - LI systems manage LI requests from LEA
  - LI systems for different networks
  - LI systems for different services
- Network extensions by acquisition integration of smaller carriers and service providers
  - Heterogeneous networks covering multiple services
  - Different platforms from multiple vendors
  - LI platform per service

## A Case Study

### Key business imperatives (1/2)

- Consolidate LI system
  - Four distinct LI systems to be integrated
  - Legacy system to be replaced
- No Risk
  - Work on the LI system should not lead to any disruption in the LI service
- Improve efficiency
  - Workflows to be optimized
  - LI system for all services to be operated from different locations
  - Response times to be met in all cases

## A Case Study Key business imperatives (2/2)

- Reduce OPEX
  - Operational costs were to be reduced by at least 30%
- ROI in eighteen month
  - All investments to be compensated by cost savings (staff, power) within 18 months

## Technical Requirements

### How they have been defined

Consulting company of the customer prepared an evaluation report.

Result: Utimaco was asked to consolidate the system fulfill requirements

- Replacement of the LI system for the fixed network and the legacy system
- Integration of the LI system for the mobile network
- Service 50.000 active targets up to 17.000 concurrent intercepts
- Support at least 4 Gbps throughput; 500 Mbps single line throughput
- Max. response time of one second on 80% of all user inputs

## Additional Requirements

- 100% system availability. No single point of failure permissible.
- Full migration of all target data to the new system.
  - Zero data loss during the migration.
- Detailed documentation of all products and services.
- Technical training for administrators and operators.
- 24x7 technical support.
- Completion of the project within one year. Old system will be switched off at a fixed date. No more maintenance on the old system.

# Challenges and Obstacles (1/2)

## How to overcome

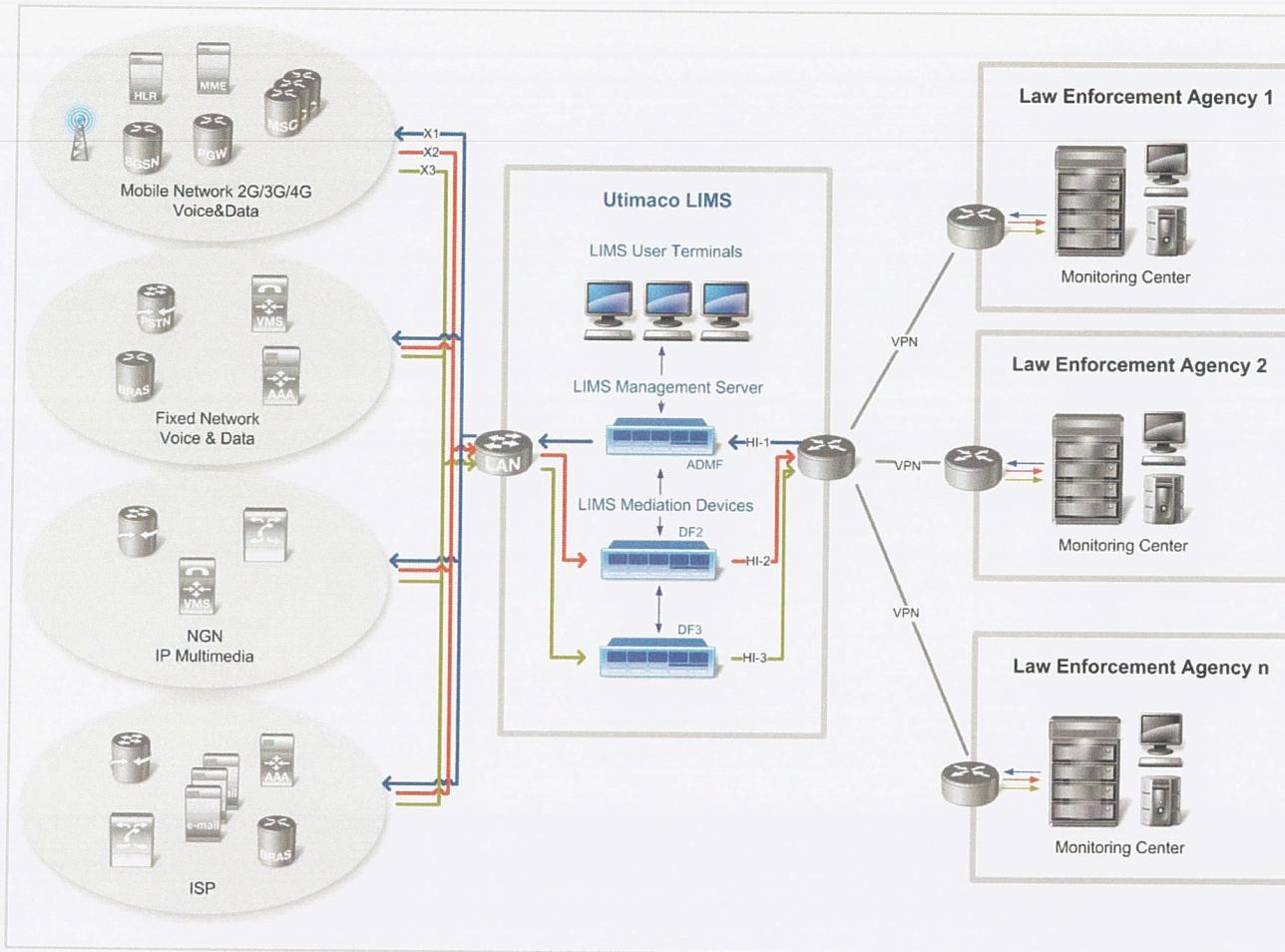
- 26 different network elements from 11 vendors.
  - Switch vendors are: Alcatel, Cisco, Ericsson, Huawei, Juniper, Nokia-Siemens and others.
  - 3000 network elements to be provisioned
- Know-how on the legacy system was dispersed among many people from different departments.
- Technical specifications of network interfaces were incomplete

## Challenges and Obstacles (2/2)

### How to overcome

- Some network elements required outdated technologies.
- Tight schedule. Fixed date to switch of the old solutions.
- Required smooth migration of thousands of targets within a few hours.

# Functional Layout Consolidated LI setup

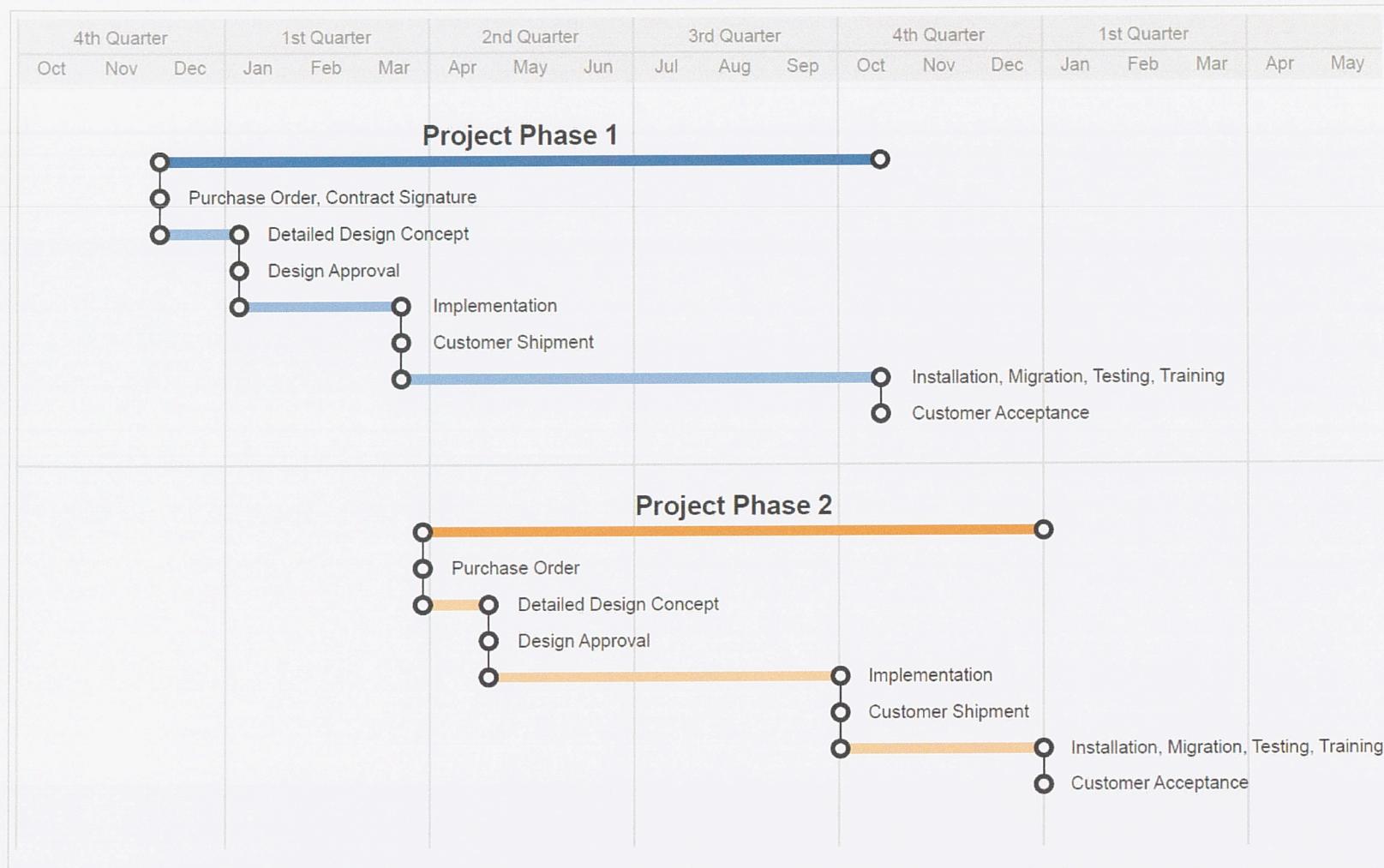


## Implementation Cornerstones

- LIMS system is spread over several physical sites
- LIMS Management Server is located at the central site
- Remote access to the LIMS MS from all sites
- LIMS mediation devices are located at 4 sites close to the NE



# Milestone Plan



## Project Phase 1

- System to be deployed in two phases
- Phase 1: all network elements already supported by Utimaco LIMS
- These nodes handle the majority of subscribers (fixed voice and fixed broadband)
- By that 80% of the intercepts migrated to the new system with phase 1

## Project Phase 2

- Remaining NEs network parts and services.
- NEs that needed to be developed.
- Implementation went smoothly as the main system was already up and running.
- Phase 2 changes are SW updates on the SW level implemented with phase 1.

## Lessons Learned (1/2)

What can go wrong what can be improved?

- Consolidation can be a complex challenge because
  - Replacing legacy systems disperse knowledge and specifications of NEs.
  - Large networks, location wise, number of NEs and services offered by the operator.
  - Risks of service outages on the LI system while migration.

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## Lessons Learned (2/2)

What can go wrong what can be improved?

- Consolidation is manageable by
  - Meticulous requirement analysis
  - Solid system design
  - Detailed project planning and regular follow up
  - Consequent project management including status reports the board
  - High attention on possible test scenarios while migration

Result is still worth it, because of significant savings and ROI within eighteen months!

## Why Utimaco Experience, Competence and Skills

- In the LI business for more than nineteen years now
- Preferred partner of many of the world's leading telecom vendors
- 250 Network interface are available out of the box
- IOT test executed before the mediation device will be delivered
- Utimaco offered the best price-performance and the shortest deployment time
- Full range of network technologies supported
- Flexibility, Independence, Reliability

## Your partner in Lawful Interception!



# Thank you for your attention!

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