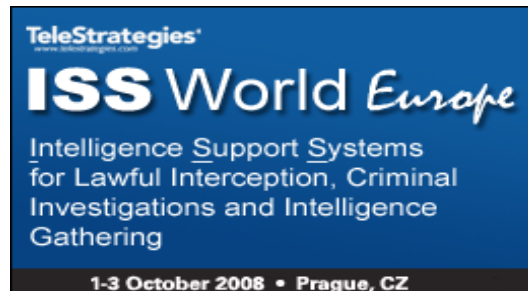


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# LIMA Lawful Interception

Lawful Interception in the evolving world of telecom



# Contents

- Introduction to Group 2000
- Challenges in Lawful Interception
- Needs for Lawful Interception
- LIMA
- Examples



## Group 2000 at a glance

- Founded in 1978
- Privately owned company
- Global focus
  - Headquarter in the Netherlands  
60+ employees
  - Regional Sales offices in Norway  
and Switzerland
- In-house development
- In-house Customer Care
- Independent LI vendor

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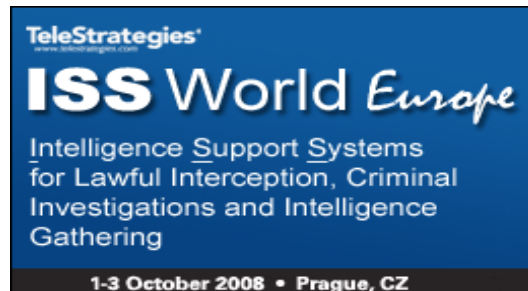
 group 2000

we develop telecom solutions

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# Challenges in Lawful Interception

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# Evolving world of telecom

- **New technologies**
- **Network migrations**
  - 2G, 2.5G and 3G networks
  - TDM, VoIP
  - Radius, DHCP
- **User bandwidth increase**
- **Legacy networks**
  - Parts of 'Old' infrastructure
  - Mix of different network element vendors
  - Networks adopted during company migrations



# Challenges for LI

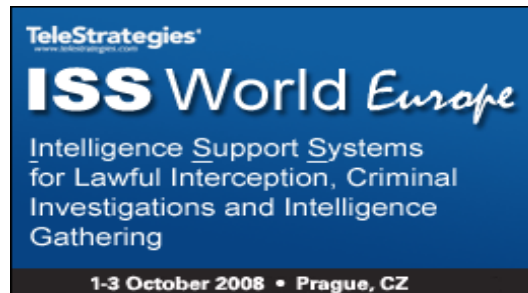
- **Country specific addendums to standards**
  - ETSI 102 232 (IP delivery)
  - ETSI 201 671 (Telecommunications traffic)
- **New networks require new LI approach**
  - Different infrastructure
  - Migration period from previous to new network topology
  - Different interface per network element
- **New LI equipment**
- **High OPEX**

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## **Needs for LI equipment**

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# General Needs for LI



- **Solution that allows:**
  - Upgrading
  - Capacity increase
  - Support for new functionality
- **Customization**
- **Single method to serve all networks/equipment**



# Needs for Management

- **Interception and network management**
  - **One 'tool' to :**
    - Manage all networks deployed
    - Manage all intercepts
    - Investigate all irregularities
  - **User and role management**
  - **Audit logging**
  - **Easy to use**
  - **Secure communication**
- **Automated interception management**

# Needs for Mediation

- **Lawful Interception Mediation equipment**
  - **Architecture that allows**
    - Merging information
    - Duplication of information
    - Allow country specific implementations
    - Central and de-central topology
    - Scalability
    - Stability
  - **Secure communication**
  - **Maintainability**

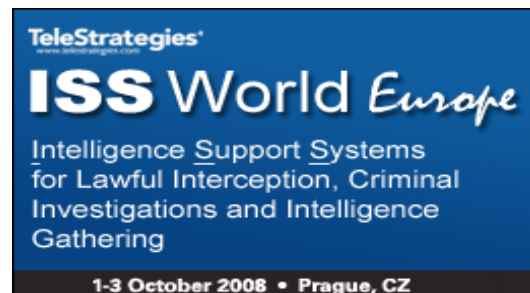
# Needs for Monitoring

- Architecture that allows
  - Monitoring specific protocols
  - Keeping track of protocol states
  - Provide all information available in the protocol
  - Central and de-central topology
  - Stable handling of clusters
  - Scalability
  - Stability

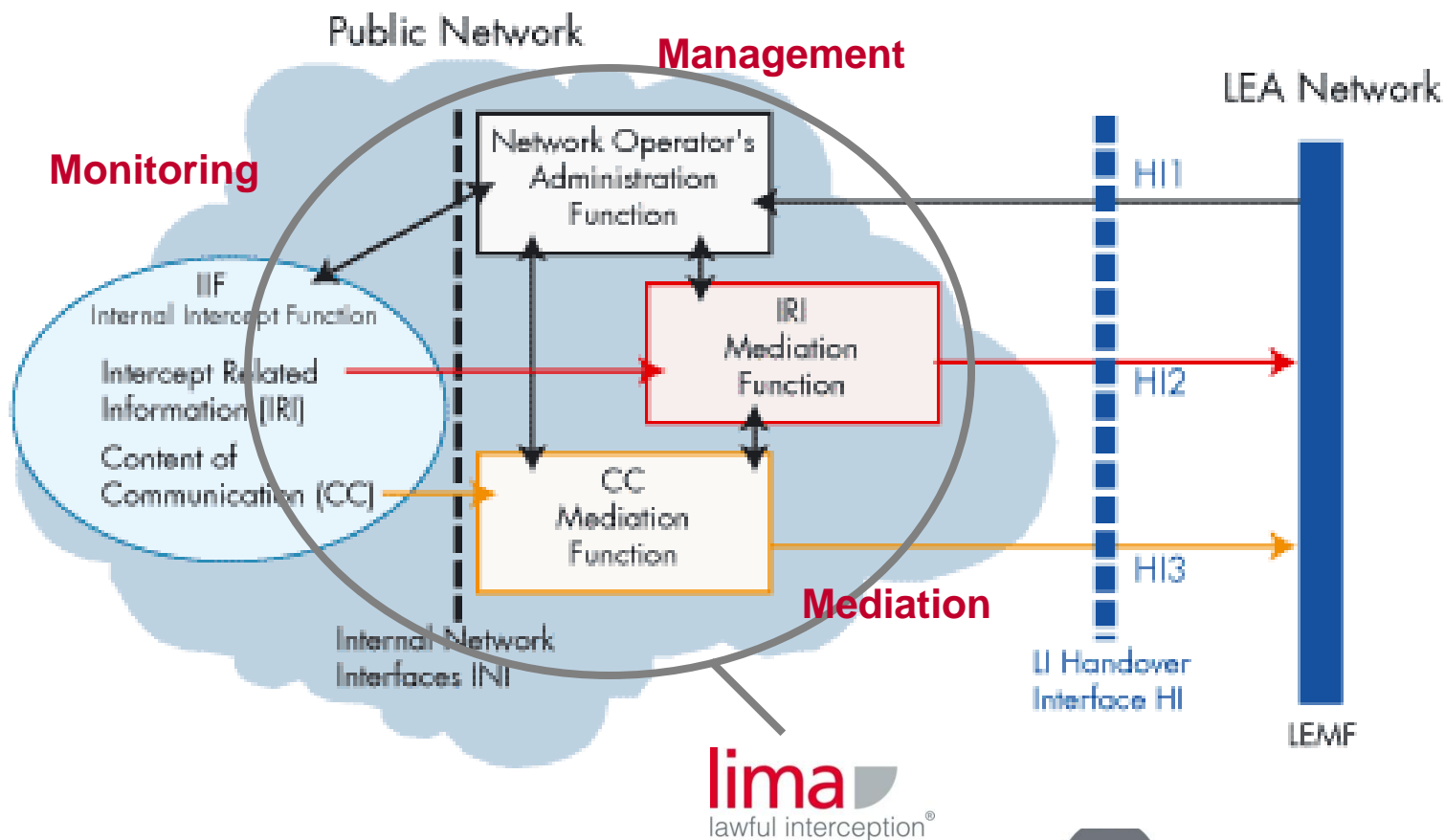
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# Lawful Interception Mediation Architecture (LIMA)

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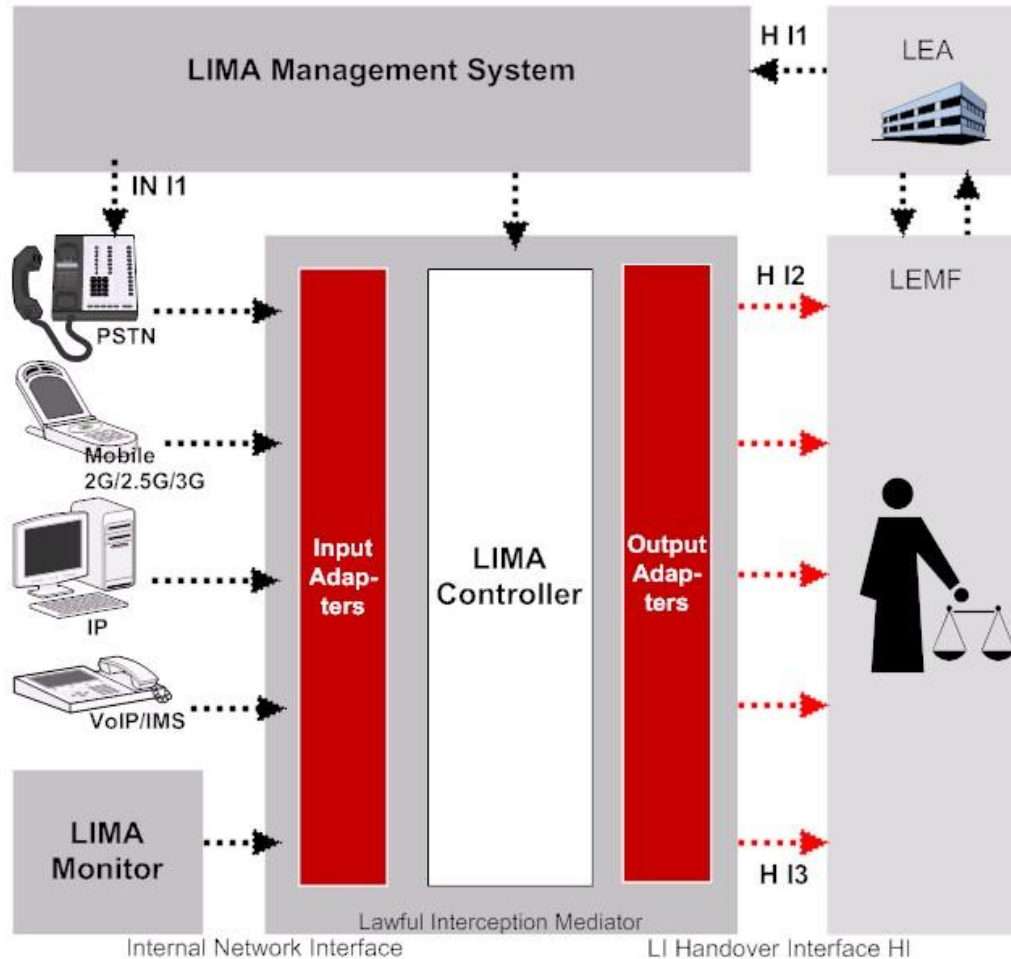
# LIMA Lawful Interception



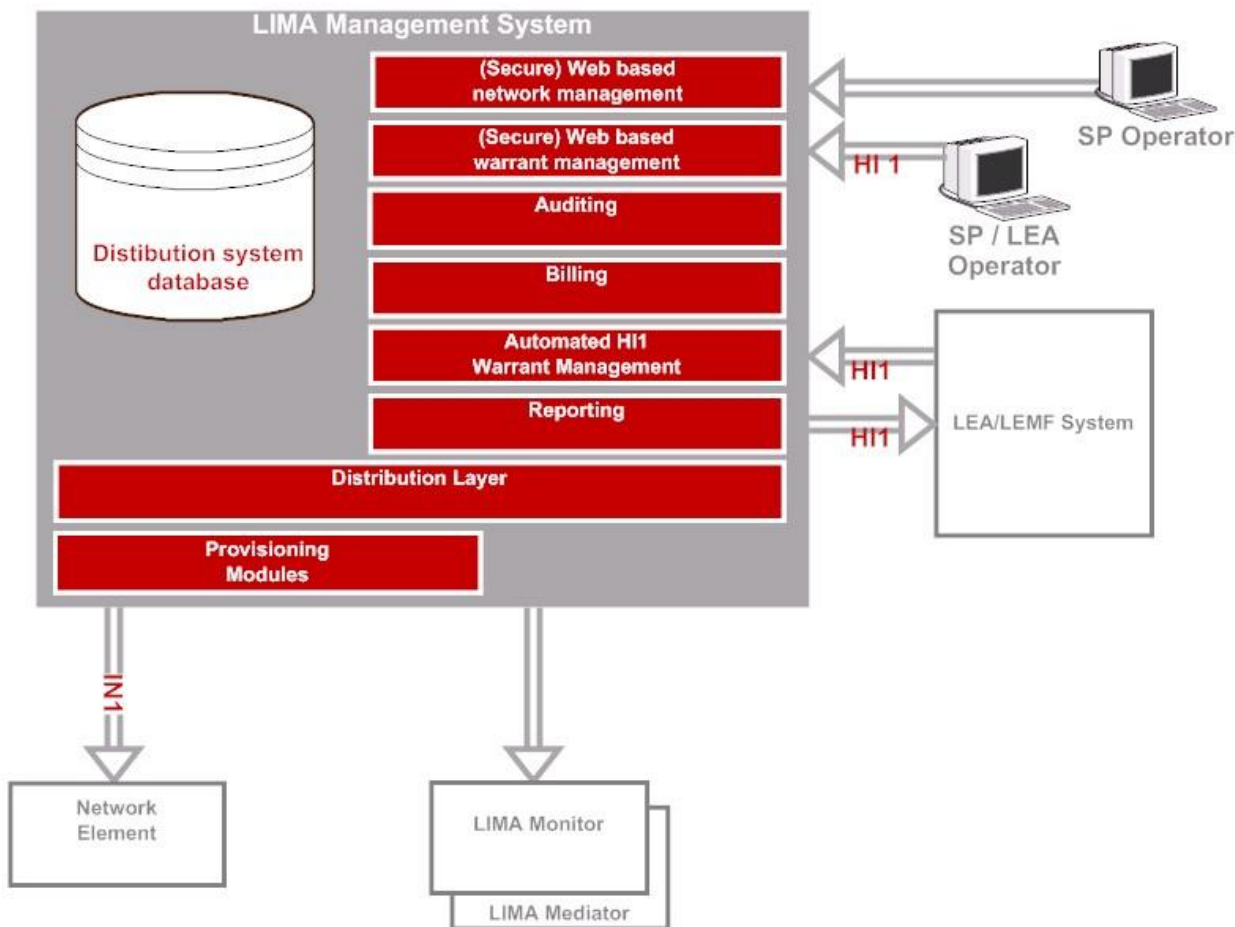
ETSI reference model



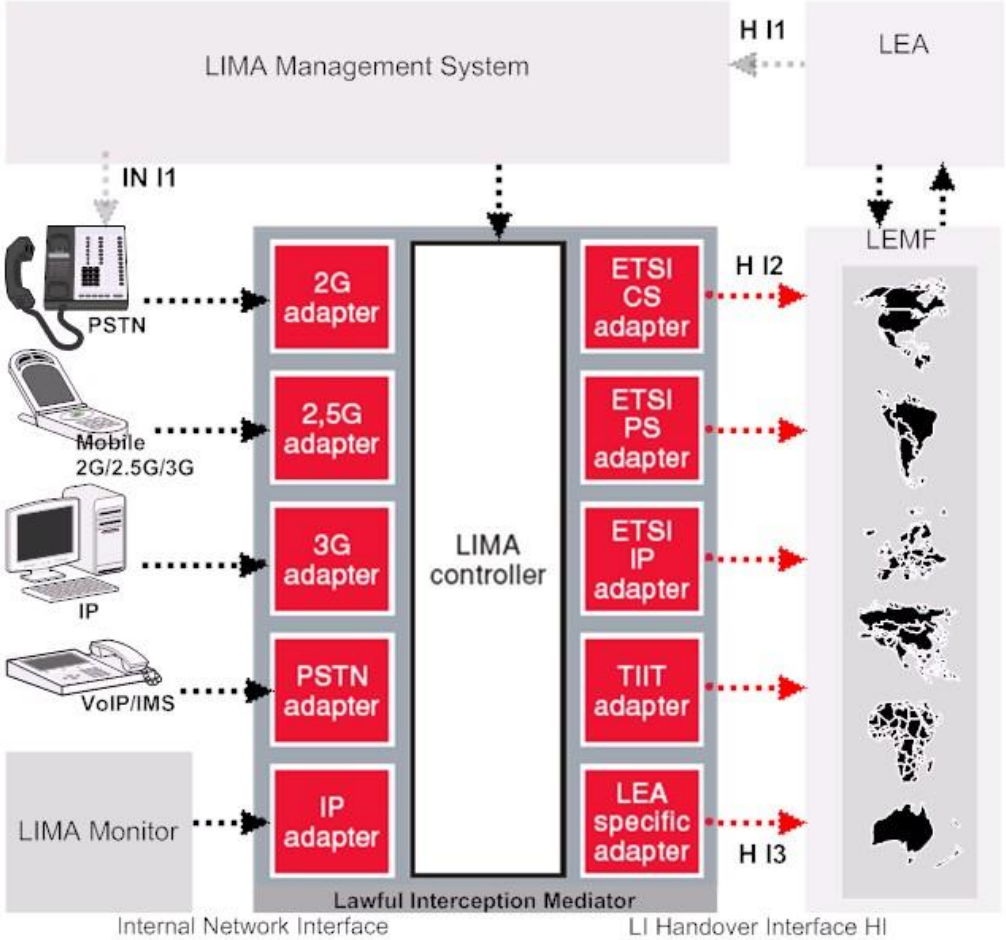
# LIMA platform architecture



# LIMA Tap Distribution System

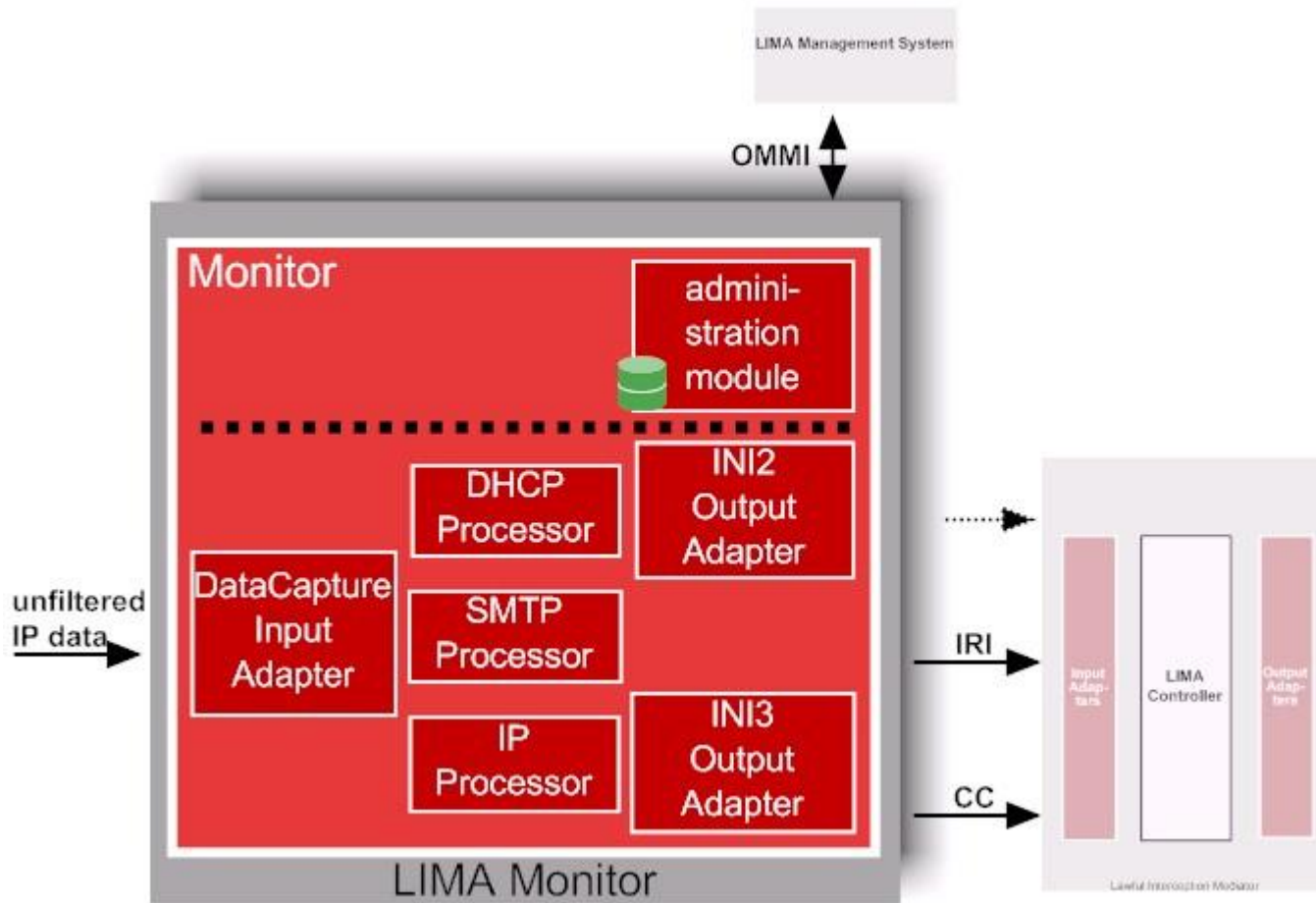


# LIMA Mediator





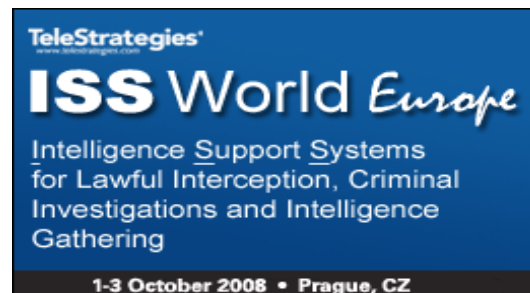
# LIMA Monitor



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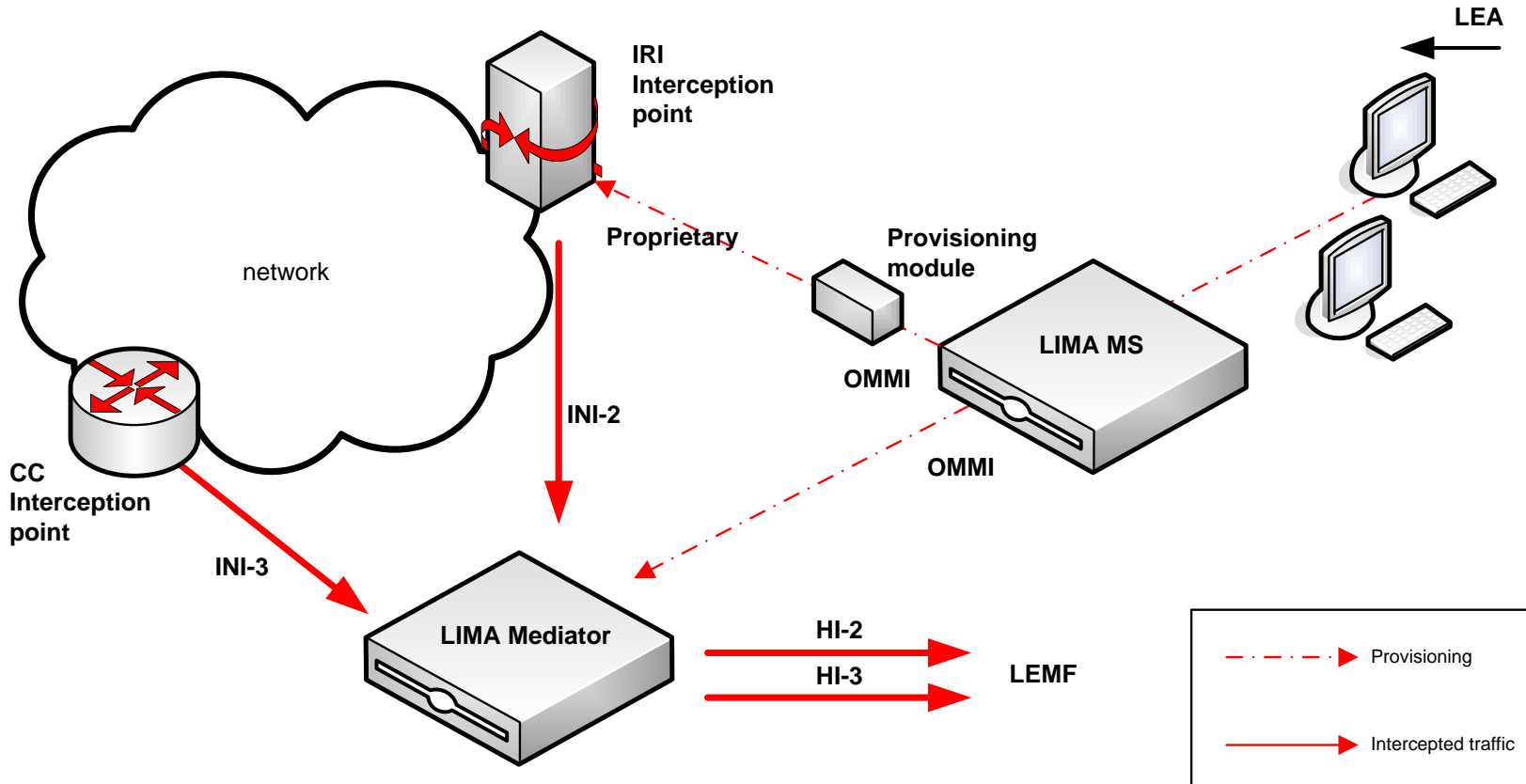
## Examples

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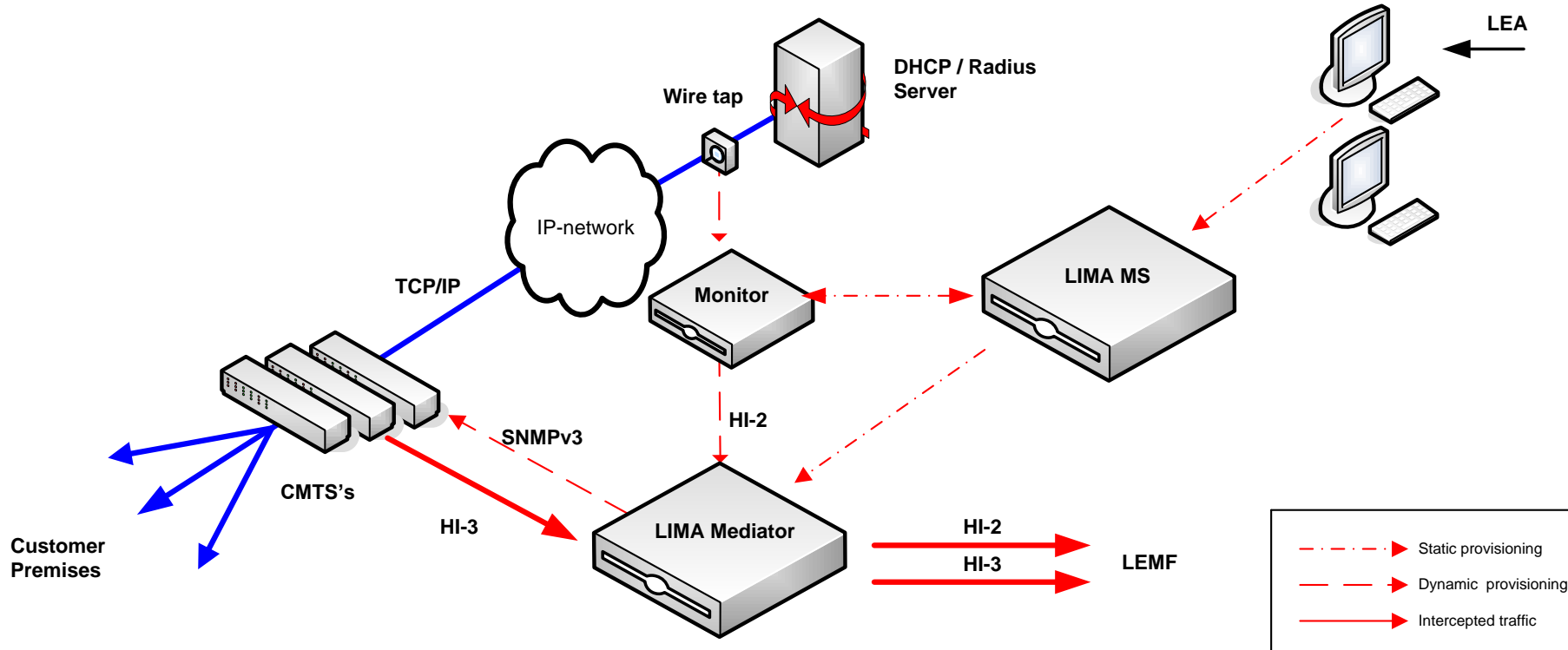




# Example (simplified)



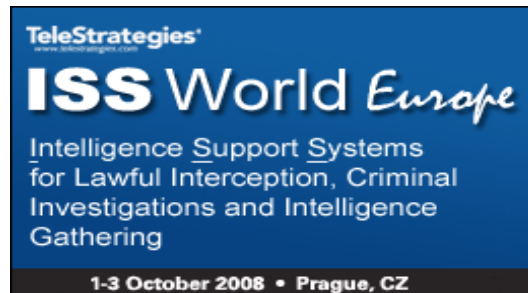
# Example (IP interception)



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## Conclusions

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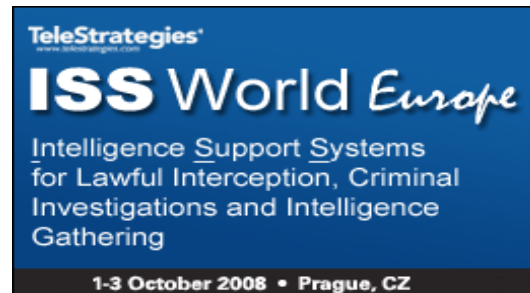
## Conclusions

- Group 2000 is market leader for Lawful Interception in The Netherlands, solution deployed in more than 14 EU countries
- Proven powerful modular and scalable lawful interception platform
- Generic platform for multiple Lawful Interception services
- Flexible expansion possibilities (functionality)
- Turn-key solution, suited for all Telco's, ISP's and Cable companies
- Suited to reduce operational costs
- Global support and customer care

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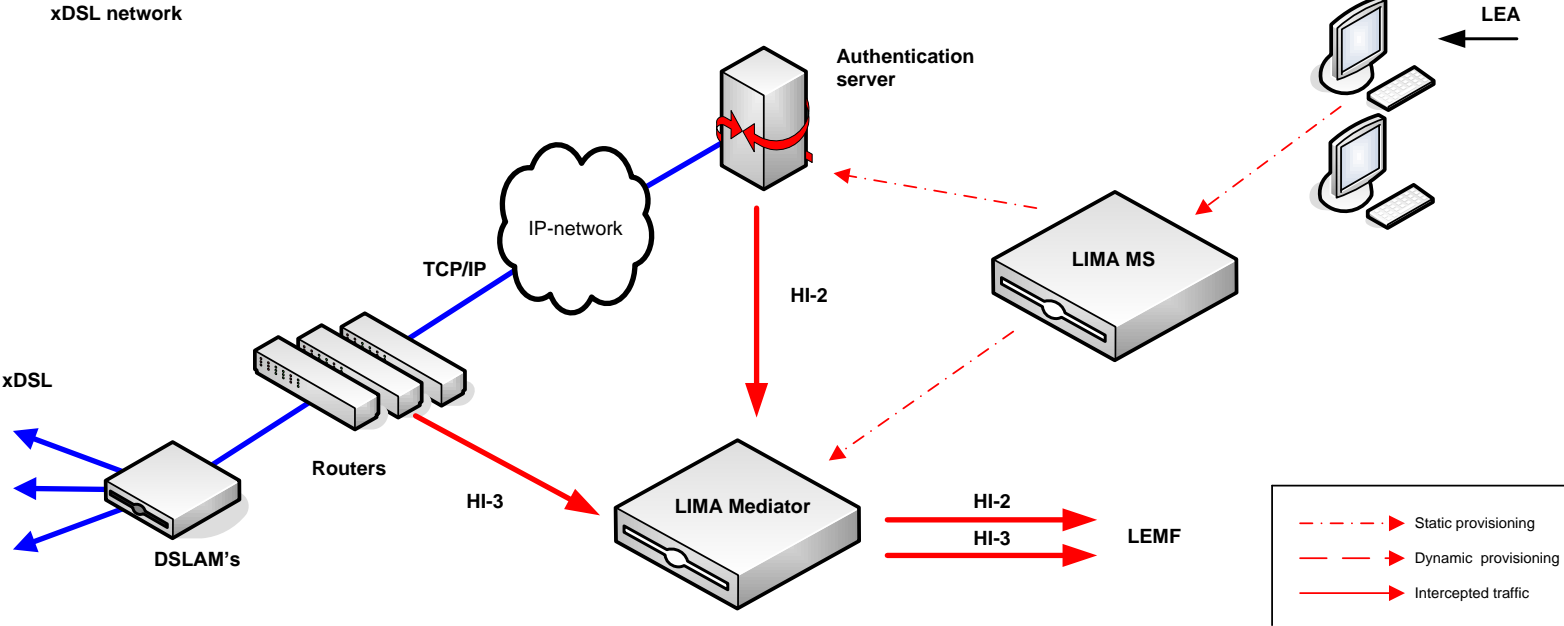
**LIMA**

**Example Architectures**

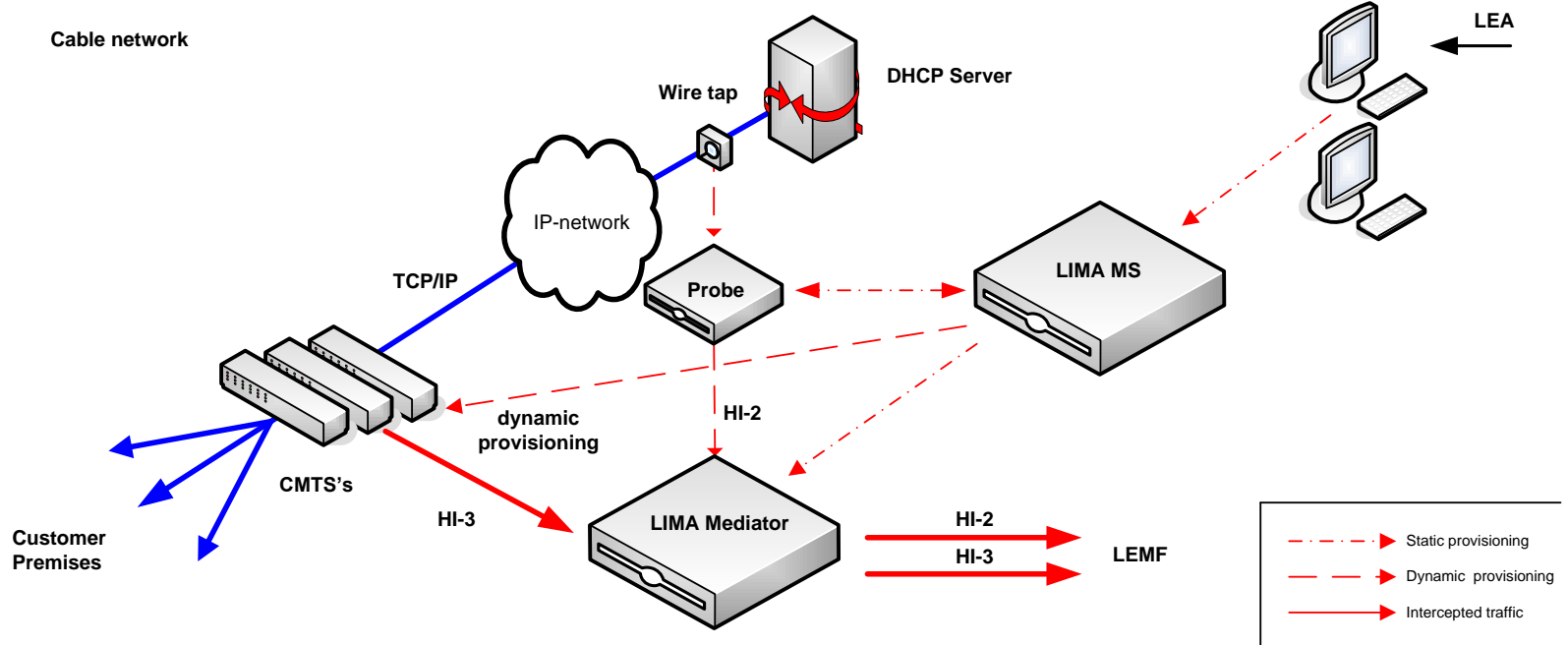




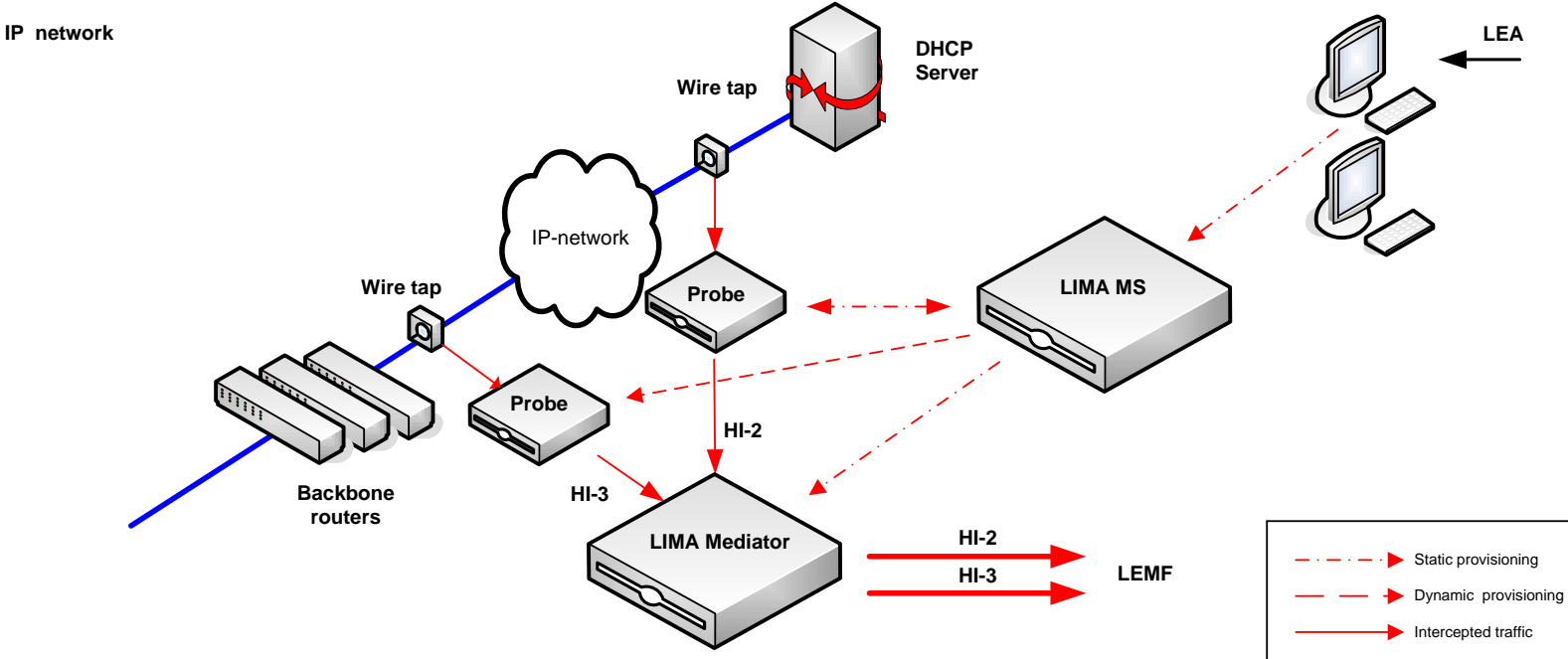
# xDSL interception – integrated solution



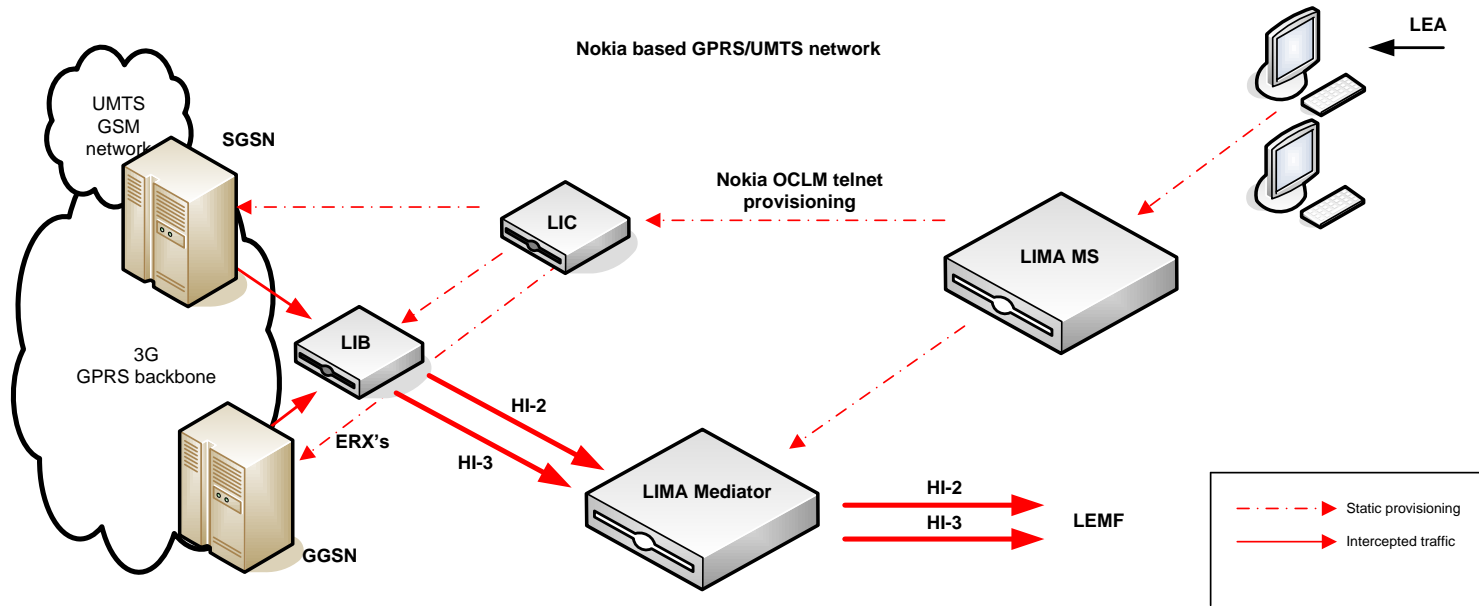
# Cable internet interception – partly integrated



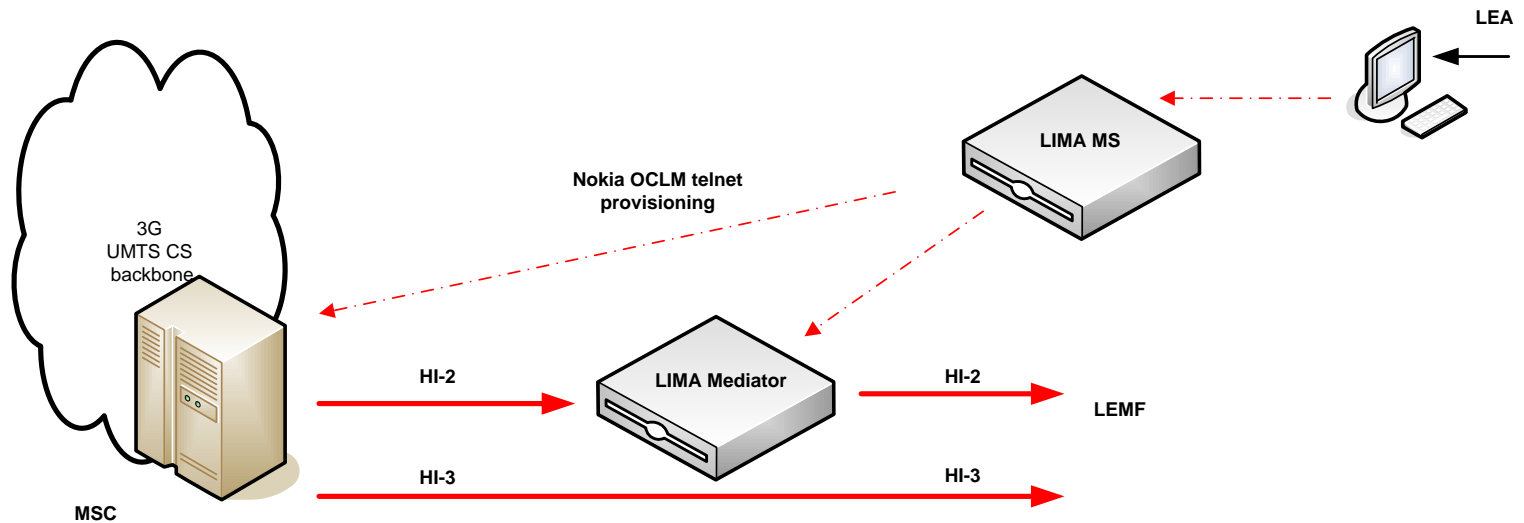
# IP interception – monitoring solution



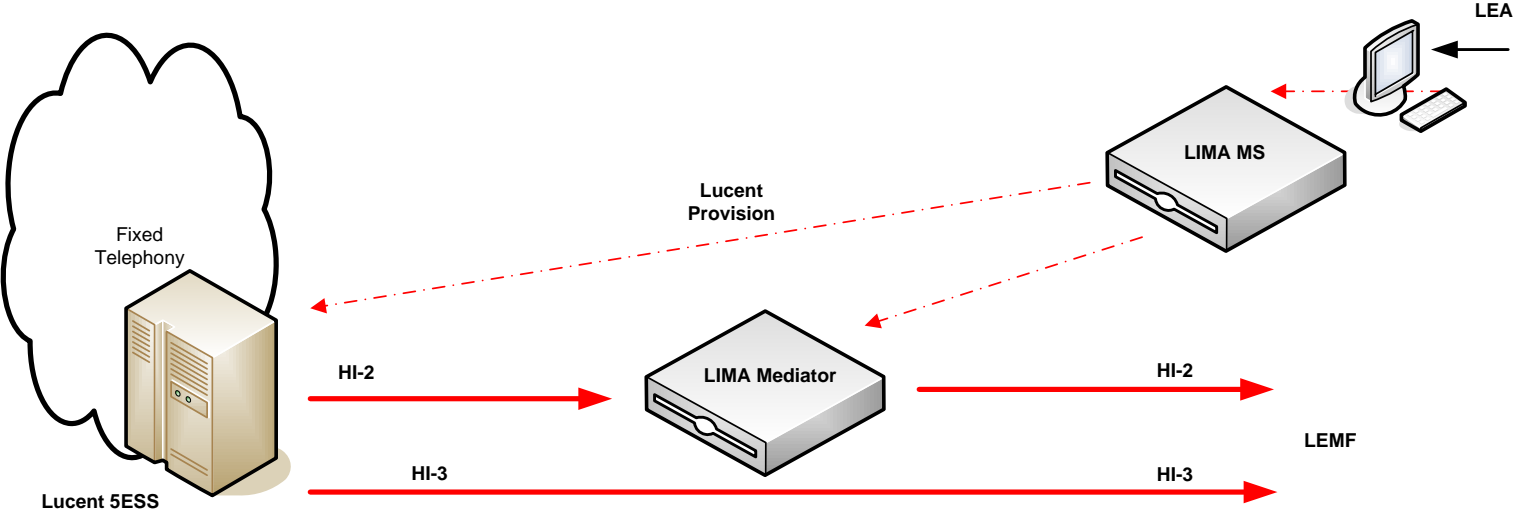
# GRPS/UMTS PS interception – Nokia example



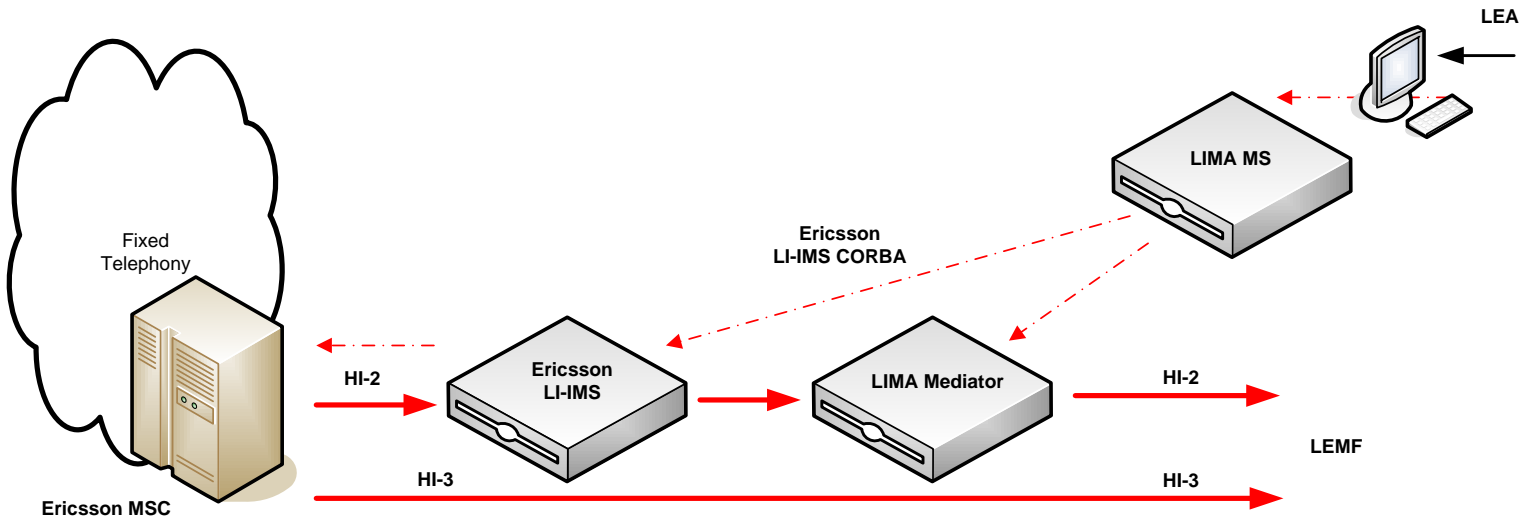
# UMTS CS interception – Nokia example



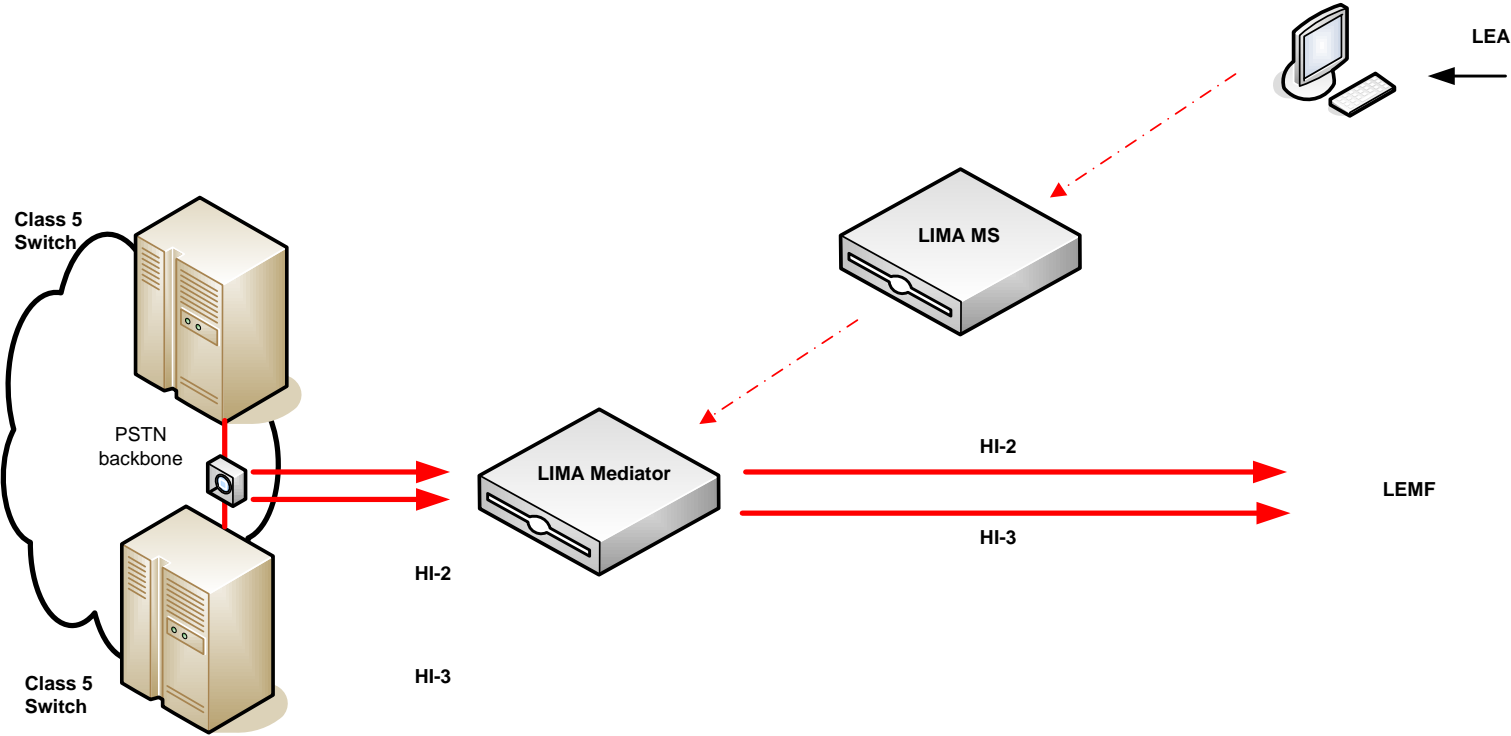
# Fixed telephony – Lucent example



# GSM interception – Ericsson example



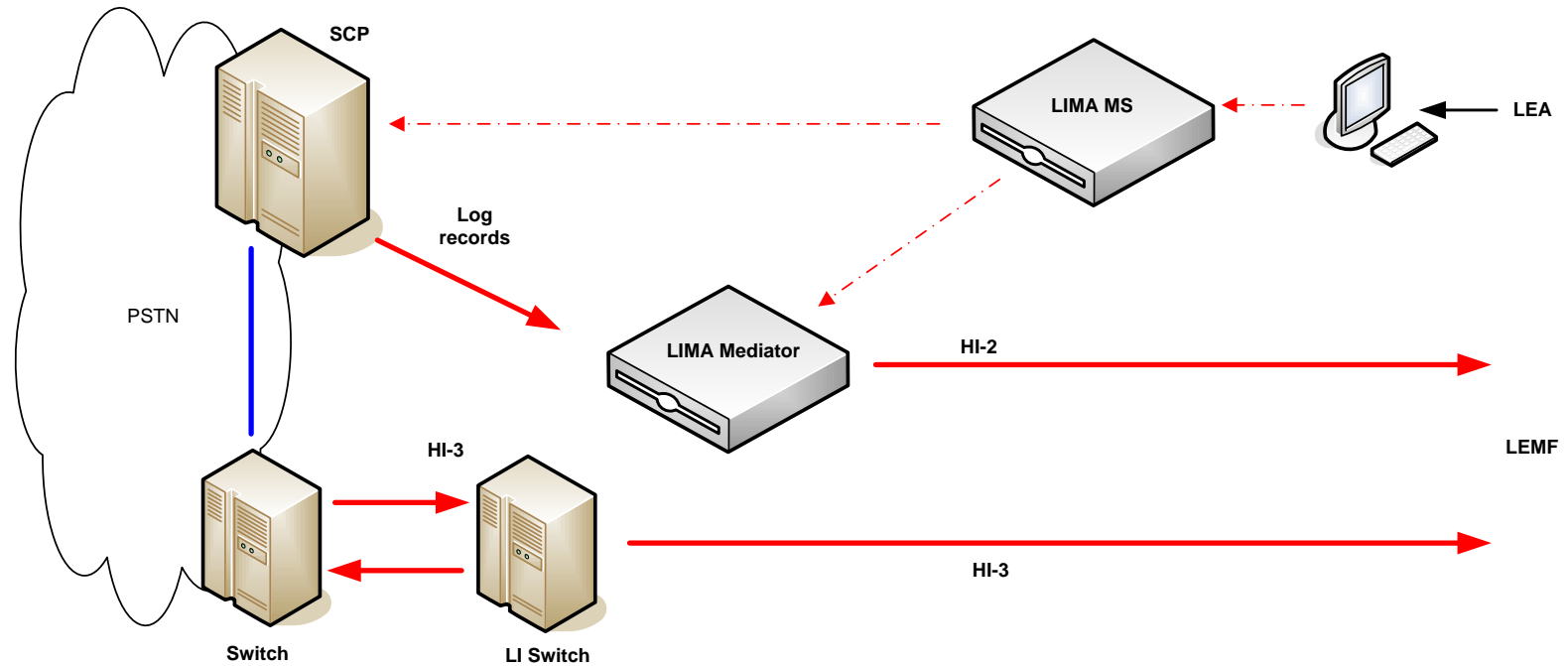
# Fixed telephony – monitoring example







# Fixed telephony – IN based interception



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## Questions ?



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