'Convergence - LI and DR A Strategic Concept '

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Law Enforcement & National Security Groups Need:

- A solution that allows them access and interrogate data from LI and DR.

- Solutions that evolve to cover new and evolving services.

- A capability to configure and focus data for analysis.

- Tools that allow data to be mixed or repackaged as new information is identified.
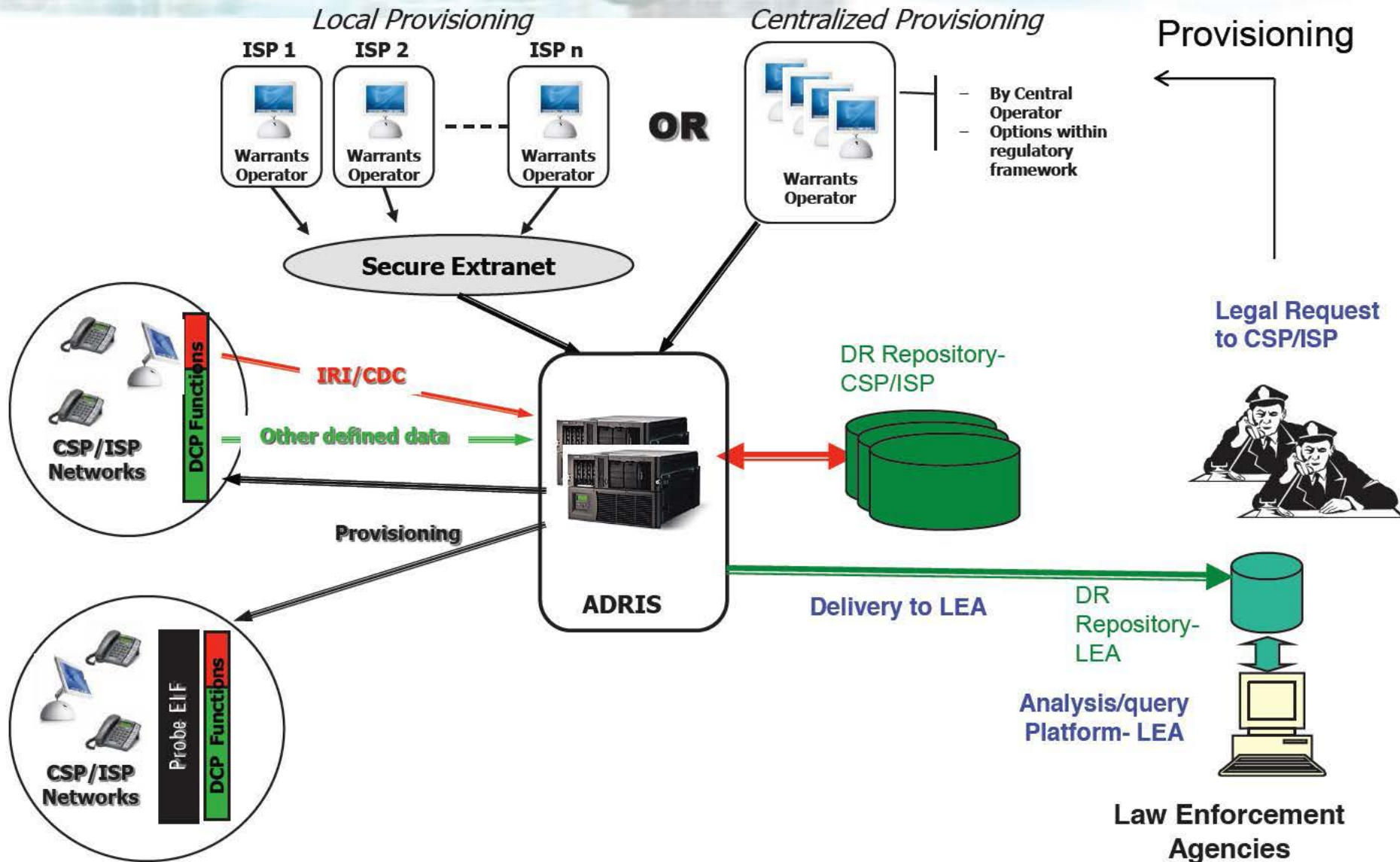
- Effective Development options.

- Secure Solutions.

Carrier/ISPs Need:
- Systems that meet National Requirements
- Solutions that don't inhibit products
- Cost effective approach.

LI Network Flow Process with Mediation

Local CSP/ISP Provisioning   Centralized Provisioning – eg TTP
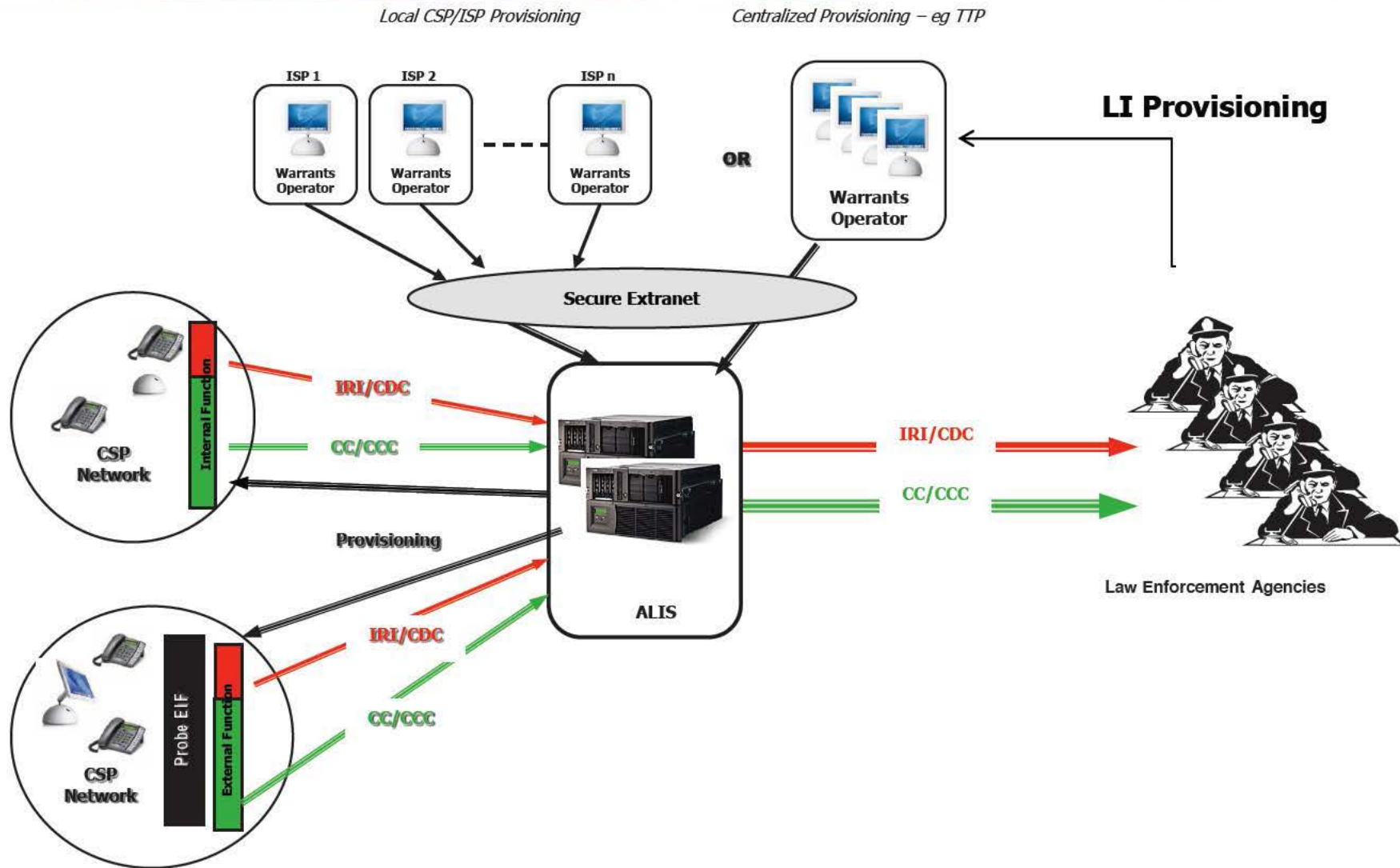
Overview of a DR Solution – CSP/ISP Focus

The Objective

Putting Lawful Interception and Data Retention Together

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Two Core Partners for an integrated solution:

- The Carriers/ISP's

- The Agencies

Overall Solution must:
- **Have an integrated architecture, CSP to LEA**
- **Compatible systems-**
    - **Defined operating interfaces**
    - **Defined Processes**
        - **Effective**
        - **Secure**
    - **Agreed roadmaps**

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Roadmaps- Fix Today, Evolve into the Future

LI or DR solutions do not have to be 'Big-Bang'.

- Fix Todays Requirement

- Identify Evolution Requirements

- Ensure you have Flexibility and Scalability.

Objective is to invest in a solution that can grow and evolve with the business for both:
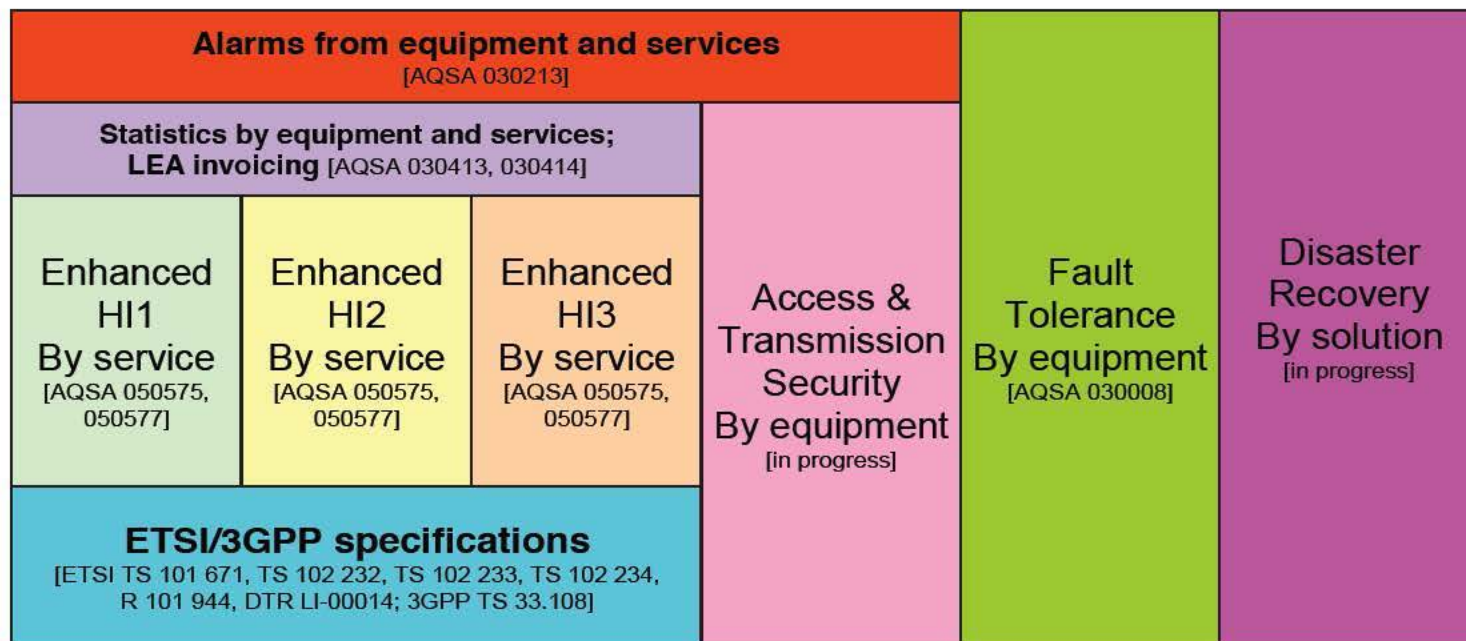- Carrier
- LEA

The 'business' on both fronts will change.

LI / DR Solution must:

➢ Interoperate with multiple telecommunication services and

➢ Support vendor-specific network elements.

Aqsacom approach

Alarms from equipment and services [AQSA 030213]					Fault Tolerance By equipment [AQSA 030008]	Disaster Recovery By solution [in progress]
Statistics by equipment and services; LEA invoicing [AQSA 030413, 030414]			Access & Transmission Security By equipment [in progress]			
Enhanced HI1 By service [AQSA 050575, 050577]	Enhanced HI2 By service [AQSA 050575, 050577]	Enhanced HI3 By service [AQSA 050575, 050577]				
ETSI/3GPP specifications [ETSI TS 101 671, TS 102 232, TS 102 233, TS 102 234, R 101 944, DTR LI -00014; 3GPP TS 33.108]						

➔ *a secure, reliable, and flexible means of telecommunication surveillance that will improve the operational efficiencies of investigations*

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Building Blocks-ADRIS Functional Approach
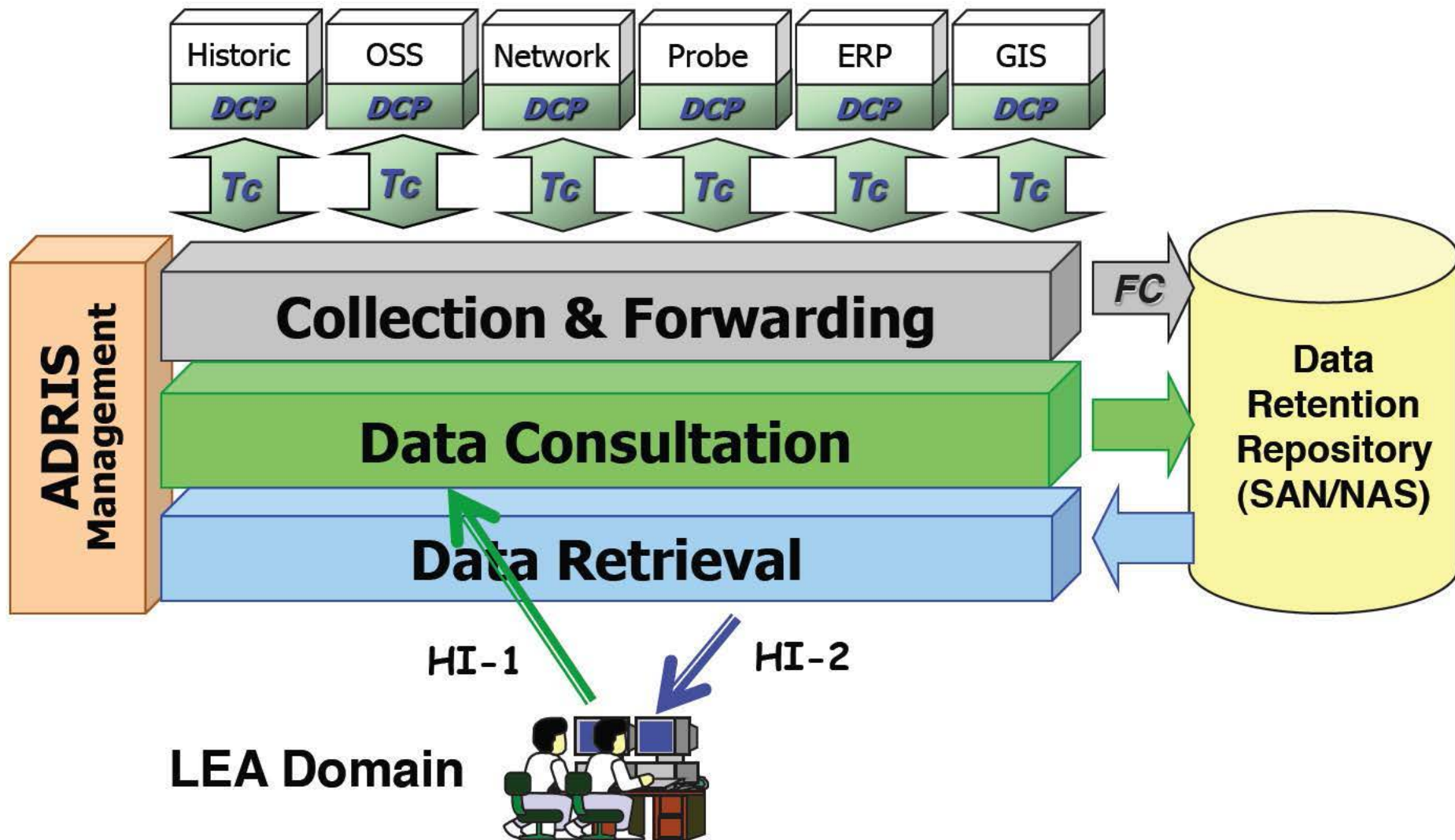
Data Storage- Considerations

Data is being captured and stored for multiple purposes:

- Action NOW- Life and Death

- Action Now- Case in progress

- Action now- Active Investigation

- Store- Possible interest

- Store for Future.

Given these 'Considerations':

Strategic Framework for Data storage:

- Prioritize/tag data in line with known search profiles.

- Store *high priority* data to enable instant and effective mining.

- Store low risk data in a way that balances cost with risk assessment.

Invest in Solutions that achieve the business need- A structured approach.

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Telecommunication Surveillance Solution Architecture

Exploitation by LEA:
- **Content consultation and analysis**
- **Traffic qualification**
- **Service operation**

LEA 1   **LEA n**
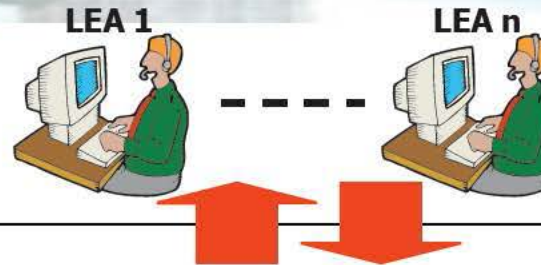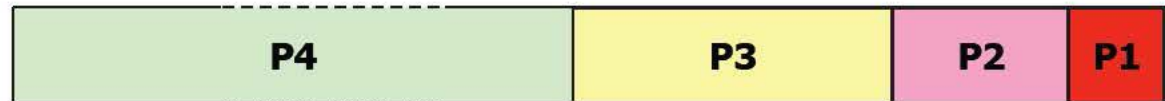
Interface D

Consolidation by LEA:
- **Profiling communication & subscribers**
- **Request for qualification of new traffic**
- **Traffic aggregations**

Analysis Tools / Rules Engine / Data Mining

Interface C

Storage by Country:
- **Mass storage Device**
- **SAN architecture**
- **Database Model**

| **P4** | **P3** | **P2** | **P1** |

Low Priority DRI   **High Priority IRI + CC**

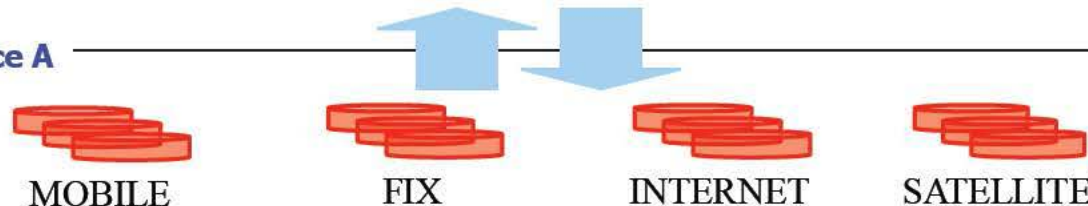**Interface B**

Mediation by Country :
- **Gathering of all data**
- **Pre-filtering process**
- **Forwarding in a secure and reliable mechanism**
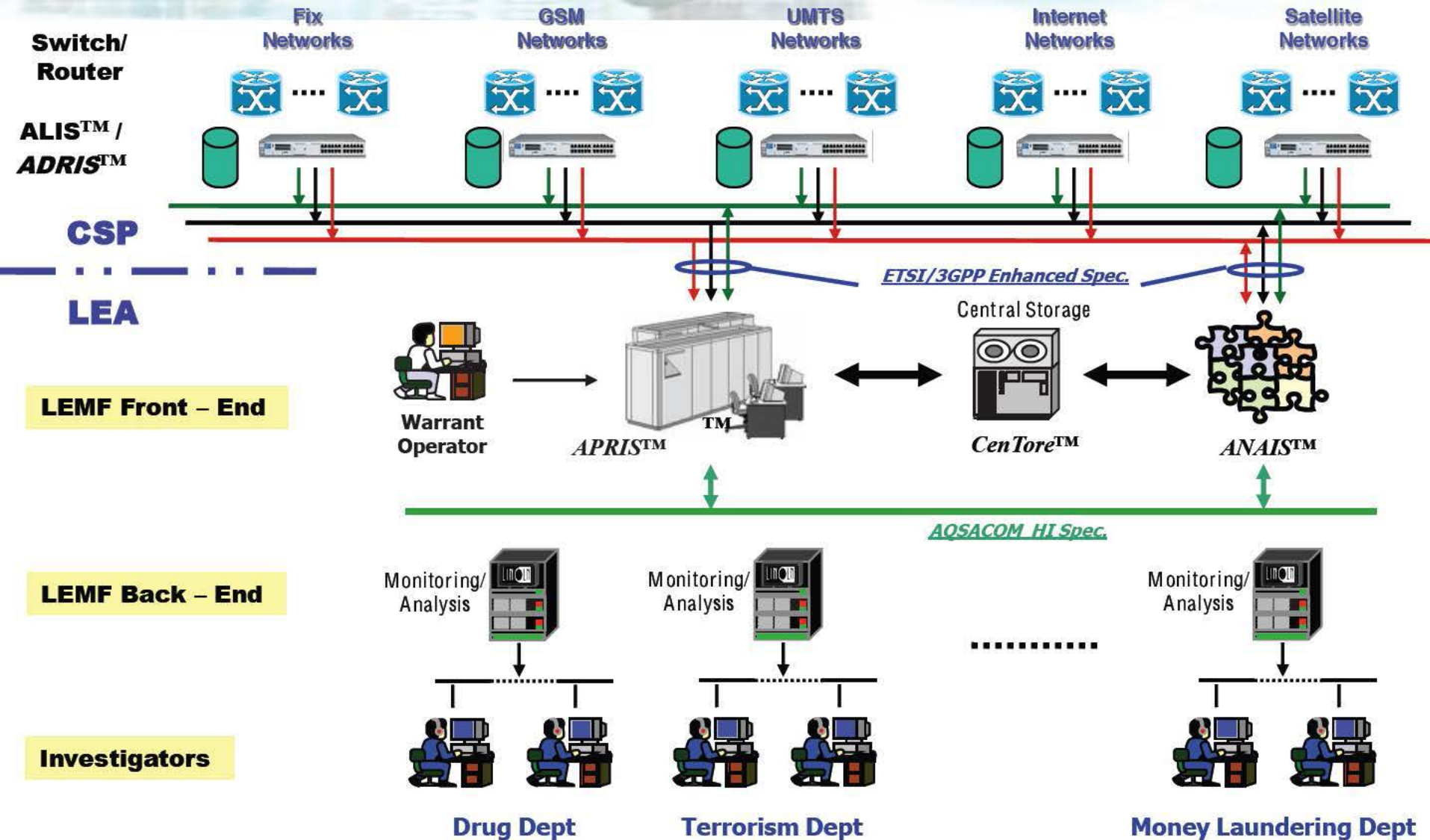
ALIS / ADRIS / Roaming Survey / MobileTrack / ...

Interface A

Extraction by Network:
- **Communication signalling information**
- **Communication content**

MOBILE   FIX   INTERNET   SATELLITE

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CEMTRIS Global Architecture

Switch/Router

Fix Networks   GSM Networks   UMTS Networks   Internet Networks   Satellite Networks

ALIS™ / ADRIS™

CSP

- - - - - - - - - -

LEA

ETSI/3GPP Enhanced Spec.

Central Storage

LEMF Front – End

Warrant Operator   APRIS™ ™   CenTore™   ANAIS™

AQSACOM HI Spec.

LEMF Back – End

Monitoring/Analysis   Monitoring/Analysis   · · · · · · · · · · ·   Monitoring/Analysis

Investigators

Drug Dept   **Terrorism Dept**   **Money Laundering Dept**

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Data Storage Principles

- Data will be stored between 6 months and up to 3 years (if following EU framework). Period varies depending upon predetermined 'value' of data.

- Data is IRI+ for DR and IRI+CC for LI.

- Data captured and stored will have varying value, from P1 to much lower priorities.

- Storing principles must allow effective mining.

- Anticipate large volumes of data, much of this 'low value'.

- But, some 'low value' data may become 'interesting' later- Must be able to retrieve and raise priority.

- LEAs do need ALL high priority data. This may include:

  - LI related material

  - Associates of people under active LI

  - People on 'high interest' list.

  This data is used for high priority Agency actions and Agency analysis.

  This is expected to be a low % of total available data.

Majority of stored data, all DR related, is for:

- General analysis looking for 'fits' against defined criminal profiles.

- Held for potential later use if 'new' areas or people of interest are identified.

  This data is available to LEAs but doesn't drive day-to-day high priority activities.

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- **LEA Treasure Chest:**
  - Known people and/or services
  - Understanding of Criminal Actions (Profiles)
- **LEA Stored Data for Analysis/Action**
  - LI- High Priority (P1)
  - Target IRI- High Priority (P2)
  - DR High Value Material- Medium Priority (P3)

  This material drives direct LEA action and is used for detailed profile analysis.

Material is stored using easy/quick access principles.

Action and Analysis- Principles 2

Stored Data at CSP/ISP:

- All data is DR related

- Data is classified 'Low Value', Priority P4 and P5

  Due to high volumes, Data is stored using 'economic' principles that allow data to be mined but with much lower urgency.

LEA Actions:

- Active analysis using broad profile testing mechanism. Action- Filter data to assess if a combination of events have occurred.

- LEAs provided with Alarm/Report if a profile match occurs.

- Profile is managed /tuned by LEAs

Summary:

- An integrated LI/DR solution is achievable and provides multiple benefits.

- LI and DR analysis together has the potential to provide a powerful analysis capability.

- Need an effective end-to-end data capture and store capability.

- A System that balances storage between LEA and CSP can optimize costs and maintain operational flexibility

- Need Flexible Architecture.

- Establish a Good, Flexible Mining capability.

- Use Profiling

- Effective, flexible Analysis tools.

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It Can Work- Some References ...

FRANCE

BELGIUM

AUSTRALIA

PORTUGAL

NEW ZEALAND

NETHERLANDS

NORWAY

SWEDEN

SOUTH AFRICA

UAE - DUBAI

USA

UNITED KINGDOM

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