Statements on Standardisation (handover interface)

- ❑ **Without standardisation each Service Provider can define its own mechanism / format for the delivery of the data (LI and/or DR) to the Monitoring Facility**

- ❑ **Without standardisation the Monitoring Facility needs to be capable of handling all the different mechanisms / layouts used by the operators**

- ❑ **Statements by Law are simplifying the national implementation process**

- ❑ **National agreement is needed on a common standard by Law Enforcement Agencies, Service Providers, Manufactures**

- ❑ **The use of a common standard is profitable for the involved parties**

- ❑ **ETSI standards as basis: Intercepted result is meeting international requirements by Law Enforcement Agencies**

- ❑ **LI Standards in ETSI/TC LI are actively developed in good harmonization and are approved by all involved parties**
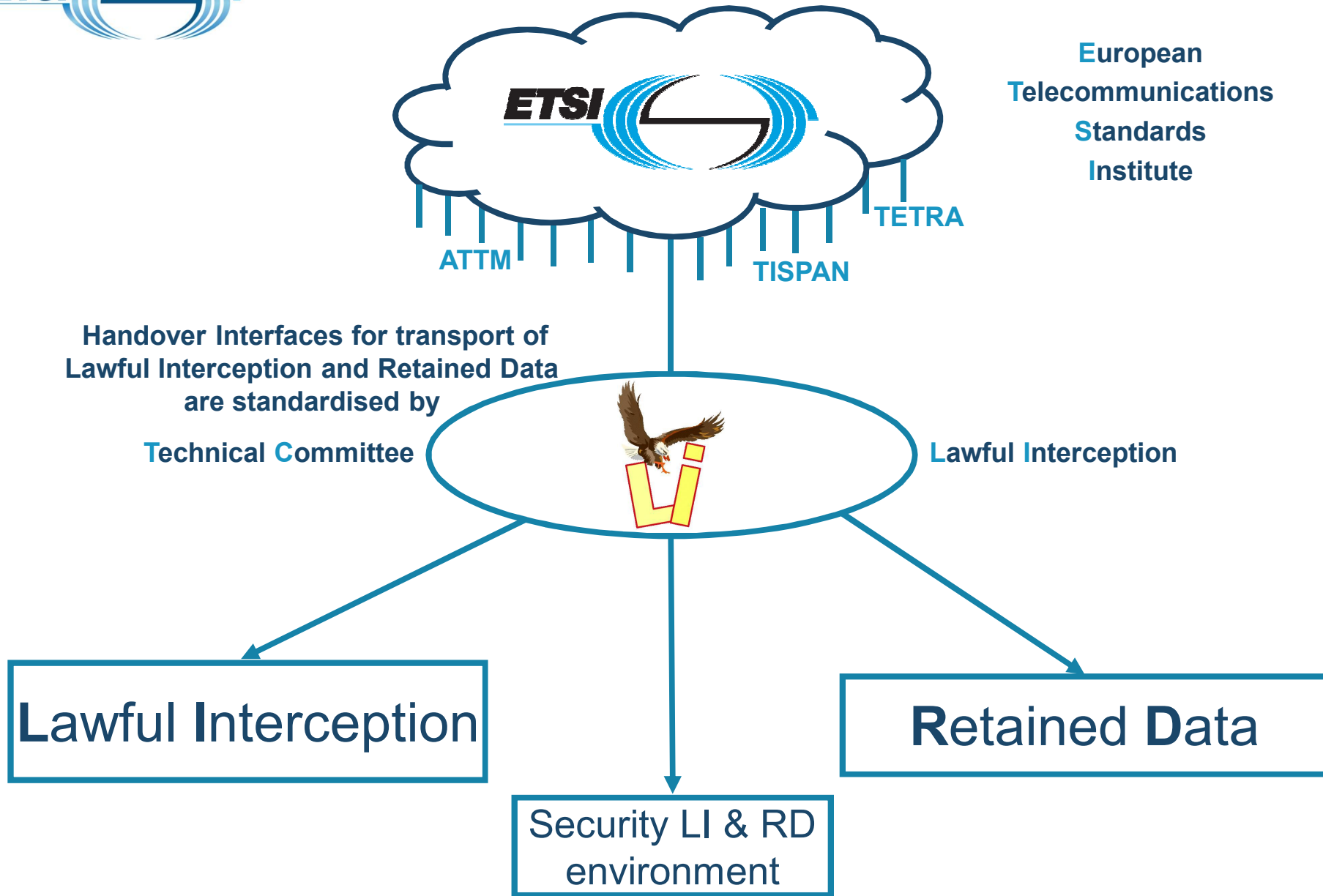
TRAINING PROGRAMME
'Lawful Interception & Data Retention'

ETSI/TC LI
Lawful Interception standardisation
and Retained Data handling

Peter van der Arend

Chairman ETSI/TC LI

(Technical Committee on Lawful Interception)

European Telecommunications Standards Institute

ATTM

TETRA

TISPAN

Handover Interfaces for transport of Lawful Interception and Retained Data are standardised by

Technical Committee ... **Lawful Interception**

Lawful Interception

Security LI & RD environment

Retained Data

Details on ETSI
Lawful Interception Standardisation

Why Lawful Interception implementation in EU

**17th January 1995: EU Council of Ministers
adopted resolution COM 96/C329/01 on Lawful Interception**

The providers of public telecommunications networks and services are legally required to make available to the authorities the information necessary to enable them to investigate telecommunications

LEA requirements (step 1)

❑ *ETSI TS 101 331*
   Requirements of Law Enforcement Agencies

   ➢ **Provides guidance in the area of co-operation by network operators/service providers with the lawful interception of telecommunications**

   ➢ **Provides a set of requirements relating to handover interfaces for the interception**

Types of Lawful Intercepted data (TS 101 331)

❑ **Intercept Related Information (IRI)**

➢ **Collection of information or data associated with telecommunication services involving the target identity:**

- **communication associated information** or data (including unsuccessful communication attempts)

- **service associated information** or data (e.g. service profile management by subscriber)

- **location information**

❑ **Content of Communication (CC)**

➢ **Information exchanged between two or more users of a telecommunications service**

General network arrangements (TS 101 331)

network

Content of Communication

interception interface (internal)

communication associated information

service associated information

location information

Handover Interface

result of interception (IRI + CC)

Law Enforcement Monitoring Facility
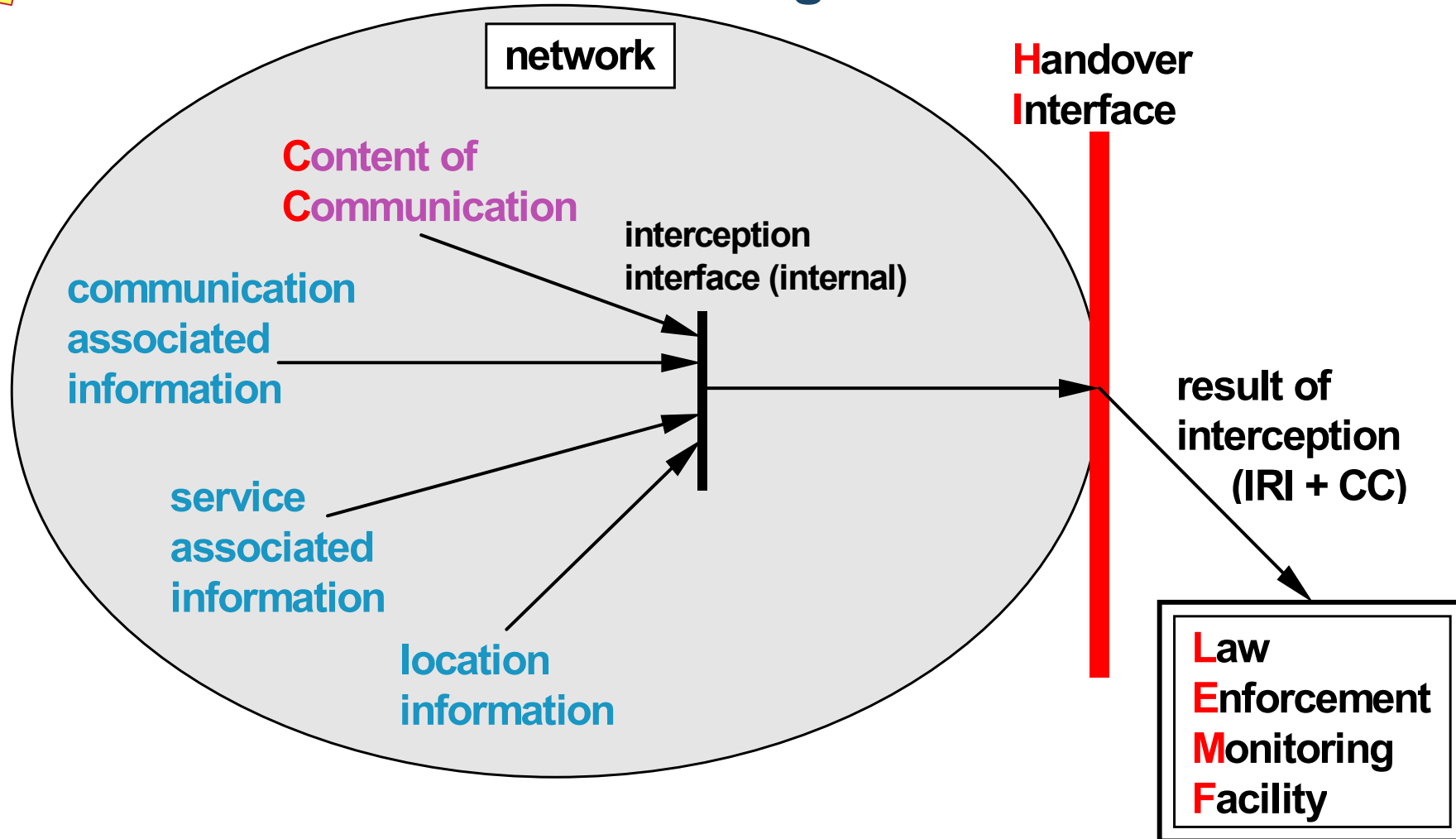
General on security of LI feature

- ❑ **Parties in the communications**
    - ➢ **Neither the target nor the other parties involved in the communications should be able to detect that interception is (de)activated or that interception is taking place**

- ❑ **Other users**
    - ➢ **Other users of any telecommunications service should not be able, by any means, to detect that any interception facility has been (de)activated or that interception is taking place**

- ❑ **Protection of Target information**
    - ➢ **Protection of Rooms, Systems, Connections**

- ❑ **Local staff**
    - ➢ **Only authorised personnel may have knowledge that interception has been activated on a target**
    - ➢ **Unauthorised persons shall not be able to detect that any interception is active on certain subscribers**

LI Handover Interface (CS) (step 3)

❑ *ETSI TS 101 671*   *(=ETSI ES 201 671)*
   Handover Interface for the Lawful Interception of Telecommunications Traffic

   ➢ **Generic flow of information and procedures and information elements, applicable to any future telecommunication network or service**

   ➢ **Circuit switched and packet data**

   ➢ **Covered technologies:
      PSTN, ISDN, GSM, UMTS (CS), GPRS, TETRA
      wireline NGN (including PSTN/ISDN emulation)
      wireline IMS PSTN simulation**

❑ *ETSI TR 102 053*
   Notes on ISDN LI functionalities

   ➢ **Implementation advice of TS 101 671 for operators**

Handover Interface ports (TS 101 671)

- ❑ **HI1: for Administrative Information**
  - ➢ **Request for lawful interception:**
    target identity, LIID, start/duration, IRI or IRI+CC,
    IRI delivery address, CC delivery address, ...
  - ➢ **Management information**

- ❑ **HI2: for delivery of Intercept Related Information (IRI)**
  - ➢ **All data related to establish the telecommunication service and to control its progress**
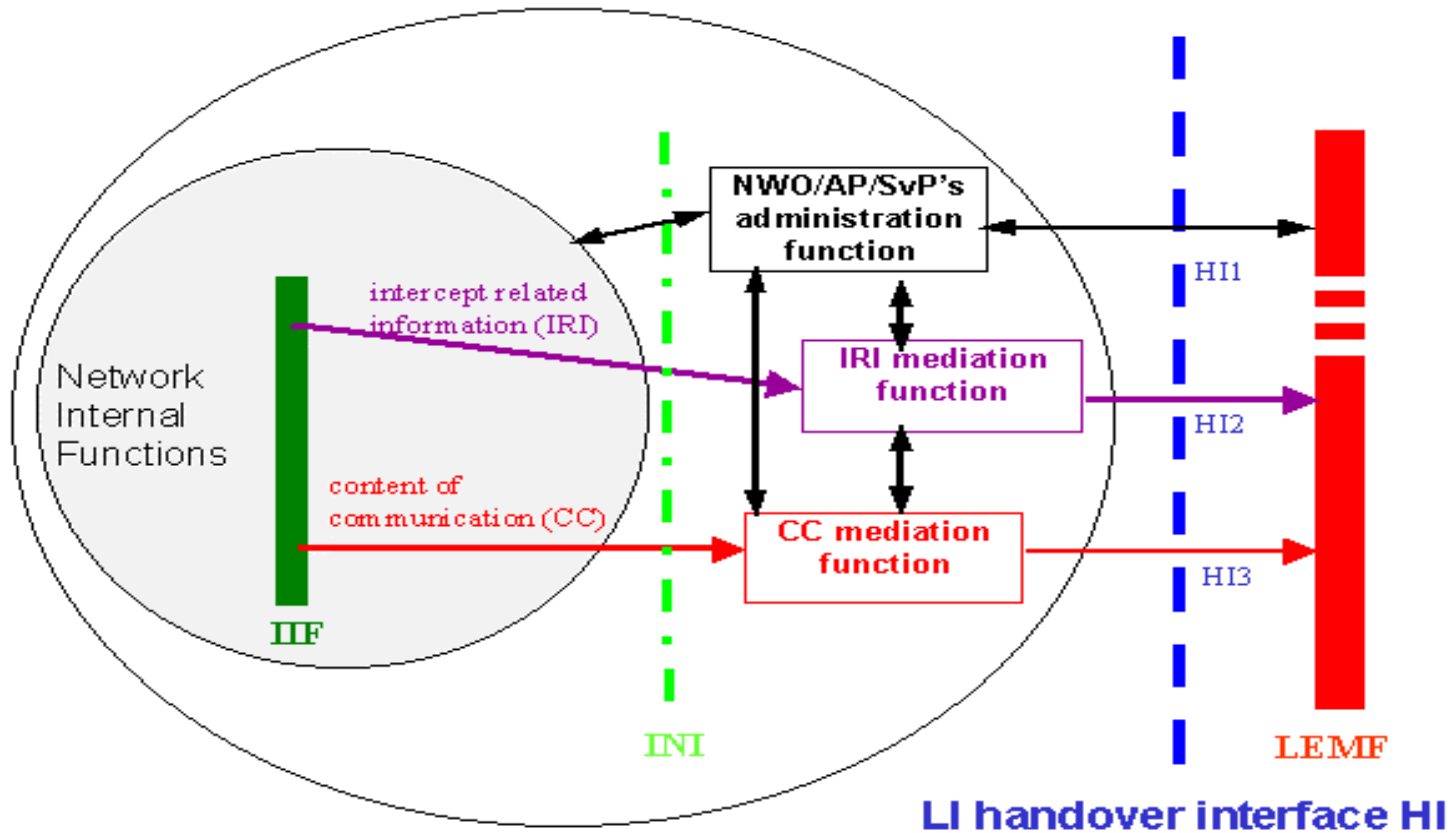 - ➢ **Correlation information**

- ❑ **HI3: for delivery of Content of Communication (CC)**
  - ➢ **Transparent en-clair copy of the communication**
  - ➢ **Correlation information**

Handover Interface Concept (TS 101 671)

IIF: internal interception function
INI: internal network interface

HI1: administrative information
HI2: intercept related information
HI3: content of communication

Details on HI2 Interface (IRI) (TS 101 671)

❑ **IRI data is defined according ASN.1 description**

  ➢ **ITU-T Recommendation X.680 (Abstract Syntax Notation One)**

❑ **IRI Communication Associated Information**

  ➢ **IRI-Begin**

    • **At first event of the communication attempt**

  ➢ **IRI-Continue**

    • **Any time during the communication (attempt)**

  ➢ **IRI-End**

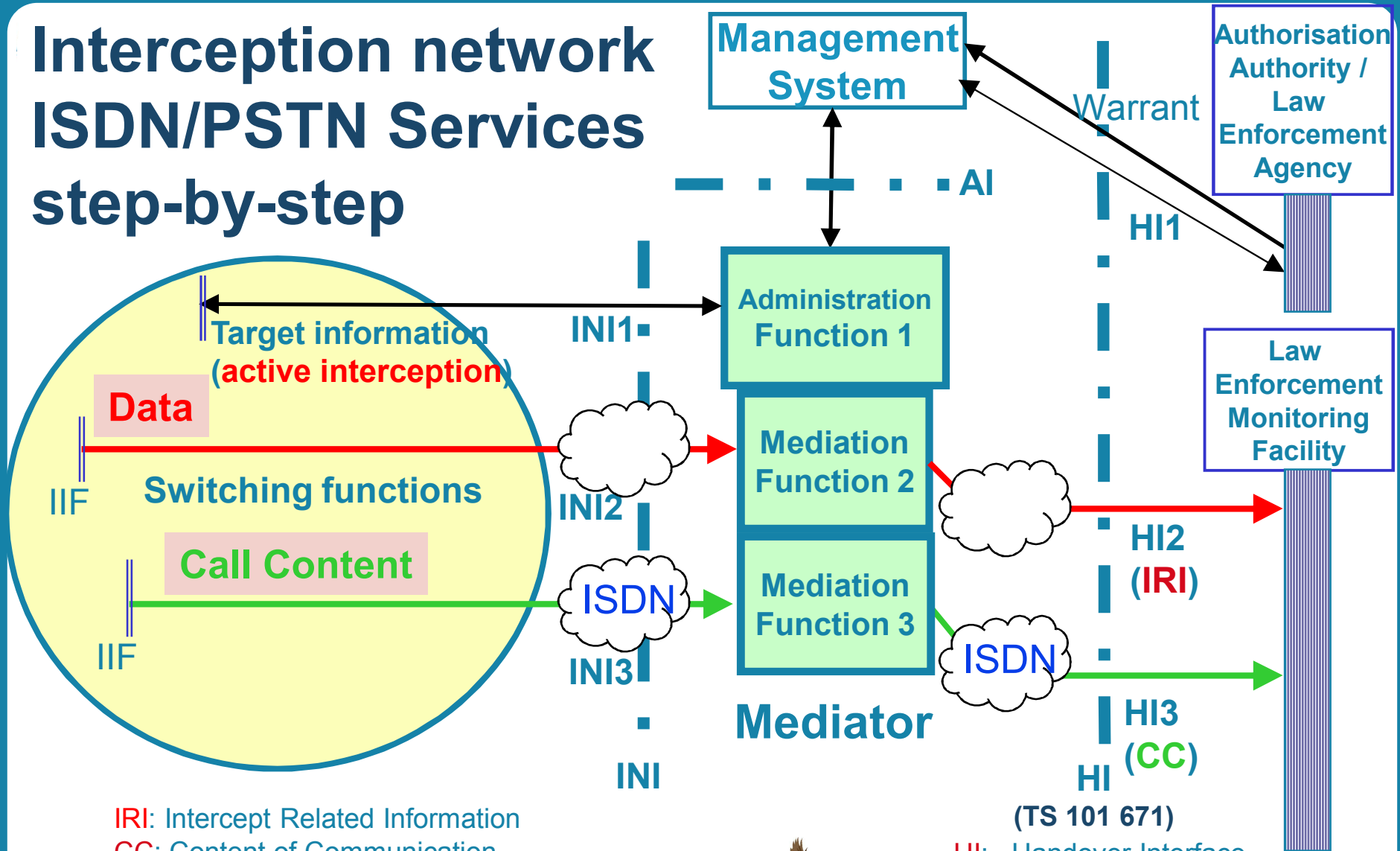   • **At the end of the communication (attempt)**

❑ **IRI Service Associated Information**

  ➢ **IRI-Report**

    • **For any non-communication related events**

Parameters in IRI records (TS 101 671)

- ❑ **LI related identities**
    - ➢ LIID, target, network operator, network element, call ID, ...
- ❑ **Timestamp**
- ❑ **Intercepted call direction (to / from target)**
- ❑ **Intercepted call state (in progress, connected)**
- ❑ **Address: Calling party / Called party / Forwarded-to-party / ..**
    - ➢ E.164, TEI, IMSI, IMEI, MSISDN, SIP URI, …
- ❑ **Ringing tone duration / conversation duration**
- ❑ **Type of intercept:**
    - ➢ PSTN, ISDN, GSM (CS), TETRA, GPRS (PD), UMTS (CS)
- ❑ **Supplementary service information**
- ❑ **Location information**
- ❑ **National parameters**
- ❑ **IRI record type (Begin, Continue, End, Report)**
- ❑ **....**

Interception network ISDN/PSTN Services step-by-step

Management System

Authorisation Authority / Law Enforcement Agency

Warrant

AI

HI1

Administration Function 1

INI1

Target information (**active interception**)

Data

IIF

Switching functions

Call Content

IIF

INI2

INI3

ISDN

Mediation Function 2

Mediation Function 3

Mediator

INI

ISDN

Law Enforcement Monitoring Facility

HI2 (**IRI**)

HI3 (**CC**)

HI

(TS 101 671)

IRI: Intercept Related Information
CC: Content of Communication
INI: Internal Network Interface
IIF: Internal Intercepting Function
AI: Administrative Interface

HI: Handover Interface
HI1: Administration
HI2: Intercept Related Information
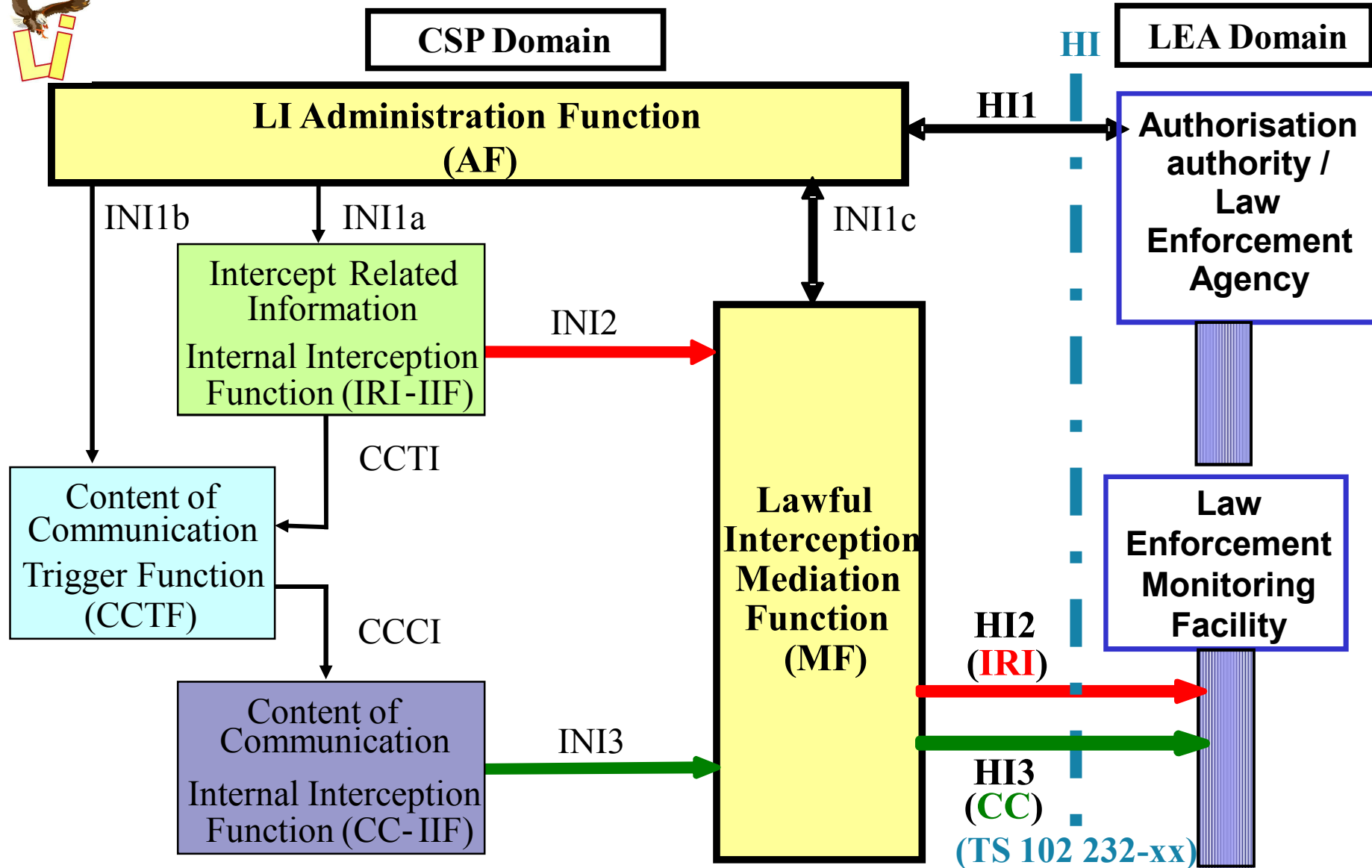HI3: Content of Communication

Architecture Reports from TC LI

❑ *ETSI TR 101 943*
Concepts of Interception in a Generic Network Architecture

  ➢ **High-level informative overview and principles regarding implementation of LI for telecommunications**

❑ *ETSI TR 102 528*
Interception domain Architecture for IP networks

  ➢ **High level reference architecture for supporting lawful interception for IP networks**

  ➢ **High level description of Internal Network Functions and Interfaces**

  ➢ **Application of the reference model to voice and multimedia over IP services, data layer 3 and layer 2 services**

  ➢ **Reference model in the network operator and communication service provider (CSP) domain** ➔

Reference model for LI in IP networks *(TR 102 528)*

CSP Domain

HI

LEA Domain

LI Administration Function (AF)

HI1

Authorisation authority / Law Enforcement Agency

INI1b

INI1a

INI1c

Intercept Related Information
Internal Interception Function (IRI-IIF)

INI2

CCTI

Content of Communication Trigger Function (CCTF)

CCCI

Content of Communication
Internal Interception Function (CC-IIF)

INI3

Lawful Interception Mediation Function (MF)

HI2 (IRI)

HI3 (CC) (TS 102 232-xx)

Law Enforcement Monitoring Facility

Handover of LI via IP Networks (step 3)

❑ *ETSI TS 102 232 part 01*   *(formerly TS 102 232)*
Delivery of IP based interception

➢ **General aspects of handover for HI2 and HI3
(as defined by TS 101 671) where the underlying transport system is based on the Internet Protocol stack.**

➢ **Modular approach used for specifying IP based handover interfaces**

➢ **Header(s) to be added to IRI and CC sent over the HI2 and HI3 interfaces (with generic information on the communication)**

➢ **Protocols for the transfer of IRI and CC across the handover interfaces**

➢ **Protocol is defined according ASN.1 description
ITU-T Recommendation X.680 (Abstract Syntax Notation One)**

➢ **To be used in conjunction with other deliverables that define the service-specific IRI data formats**

Generic header information (TS 102 232-1)

- ❑ **Generic header information to be added to HI2 and HI3 traffic**
  - ➢ LIID
  - ➢ Authorization country code
  - ➢ Communication Identifier
  - ➢ Sequence number
  - ➢ Timestamp
  - ➢ Payload direction
  - ➢ Payload type
  - ➢ Interception Type
  - ➢ IRI record type (Begin, Continue, End, Report)
  - ➢ ...

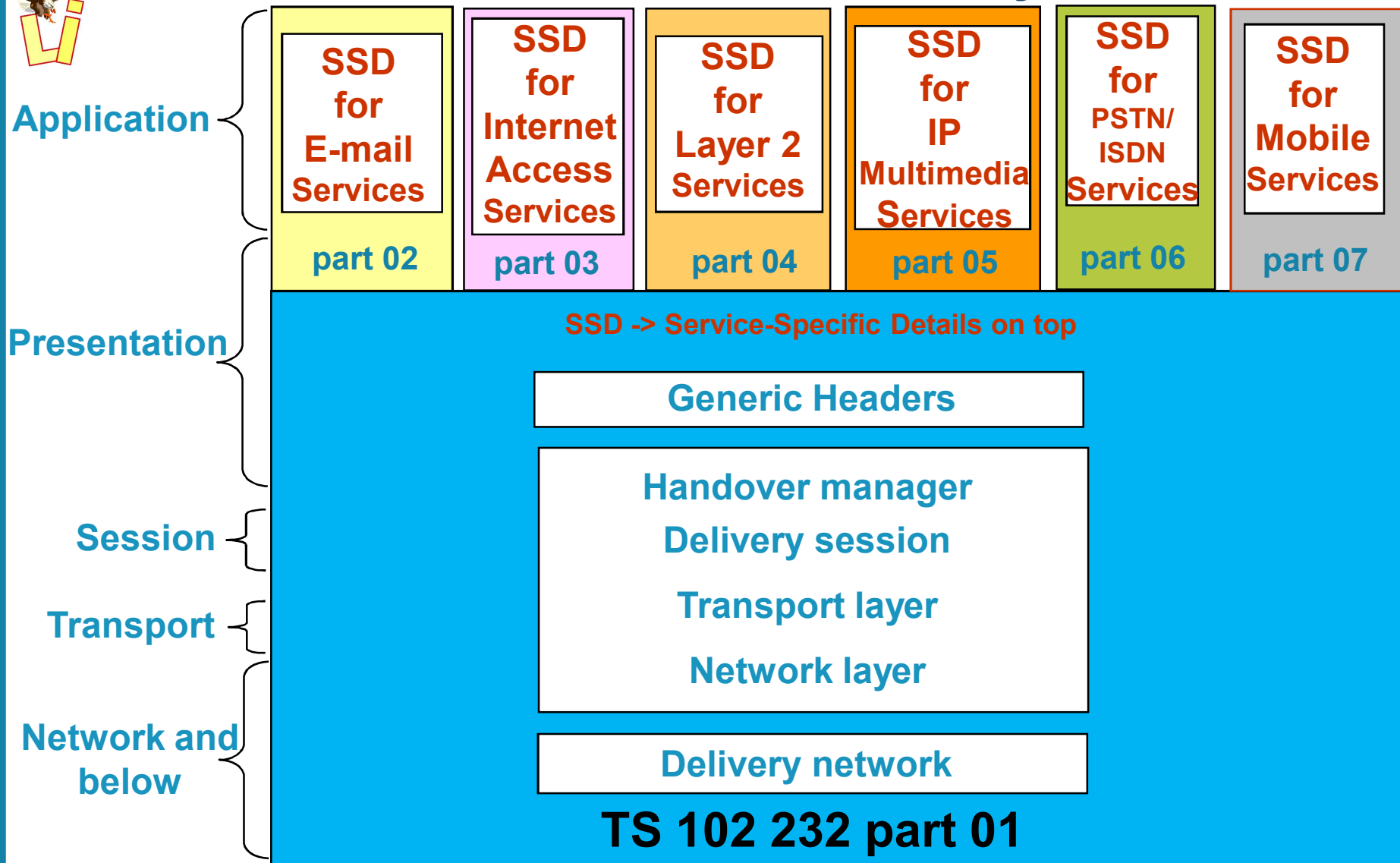# IP service-specific details (applications)

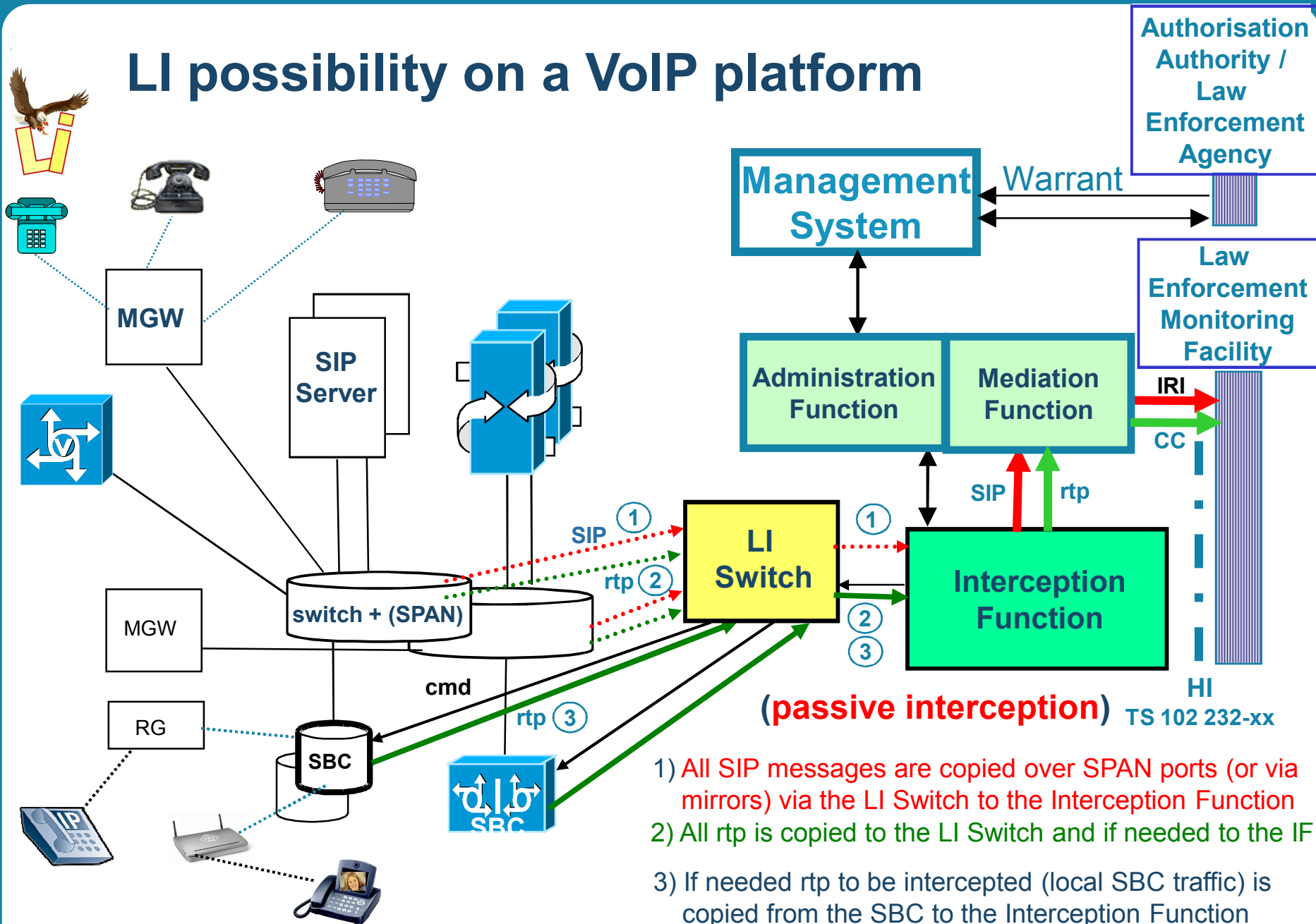- ❑ *ETSI TS 102 232 part 02*   *(formerly TS 102 233)*
  Service-specific details for E-Mail Services
    - ➢ **Description for handover of E-mail messages; MTP, POP3, IMAP4**
- ❑ *ETSI TS 102 232 part 03*   *(formerly TS 102 234)*
  Service-specific details for Internet Access Services
    - ➢ **Handover of Internet Access Information and TCP/IP info; DHCP, RADIUS**
- ❑ *ETSI TS 102 232 part 04*   *(formerly TS 102 815)*
  Service-specific details for Layer 2 Services
- ❑ *ETSI TS 102 232 part 05*
  Service-specific details for IP Multimedia Services
    - ➢ **Based on SIP and RTP, and services described by ITU-T H.323, H.248**
- ❑ *ETSI TS 102 232 part 06*
  Service-specific details for PSTN/ISDN Services
- ❑ *ETSI TS 102 232 part 07*
  Service-specific details for Mobile Services

TS 102 232 IP HO Family

Application

SSD for E-mail Services	SSD for Internet Access Services	SSD for Layer 2 Services	SSD for IP Multimedia Services	SSD for PSTN/ ISDN Services	SSD for Mobile Services
part 02	part 03	part 04	part 05	part 06	part 07

Presentation

SSD -> Service-Specific Details on top

Generic Headers

Handover manager

Delivery session

Transport layer

Network layer

Session

Transport

Delivery network

Network and below

TS 102 232 part 01

LI possibility on a VoIP platform

Authorisation Authority / Law Enforcement Agency

Management System

Warrant

Law Enforcement Monitoring Facility

Administration Function

Mediation Function

IRI

CC

MGW

SIP Server

SIP ①

rtp ②

SIP

rtp

LI Switch

①

②
③

Interception Function

switch + (SPAN)

MGW

cmd

rtp ③

RG

SBC

SBC

(passive interception) TS 102 232-xx

HI

1) All SIP messages are copied over SPAN ports (or via mirrors) via the LI Switch to the Interception Function
2) All rtp is copied to the LI Switch and if needed to the IF

3) If needed rtp to be intercepted (local SBC traffic) is copied from the SBC to the Interception Function

Security Report

❑ *ETSI TR 102 661*
Security framework in Lawful Interception and Retained Data environment

  ➢ **defining a security framework for securing Lawful Interception and Retained Data environment of the CSP and the Handover of the information**

  ➢ **Advice on Security measurements**
  ➢ **Advice on Physical security**

  CSP= Communication Service Provider

LI specifications in 3GPP (UMTS)

- ☐ *ETSI TS 133 106*   *(3GPP TS 33.106)*
  Lawful interception requirements
  - ➢ **provides basic interception requirements**
  - ➢ **partly based on ETSI TS 101 331**

- ☐ *ETSI TS 133 107*   *(3GPP TS 33.107)*
  Lawful interception architecture and functions

- ☐ *ETSI TS 133 108*   *(3GPP TS 33.108)*
 **Handover interface for Lawful Interception**

What's next on Lawful Interception ?

❑ **Next meeting ETSI/TC LI#25, September 2010**

❑ **Media Security**

❑ **LI of Local Call Local Switch (LCLS), H(e)NB**

❑ **LI of Customer Alerting Tones & Customized Ringing Signal**

❑ **Start working on Report on "eWarrant Interface"**

❑ **Development of Dynamic Triggering and CCTF Standardisation (DTS 102 677)**

> ➤ **At the moment operators need tailor made integration to keep the complete service interceptable**

> ➤ **There is a need for rules how the Network is performing Basic LI for IP related services**

> ➤ **Also rules for triggering between networks are needed**

> ➤ **International Dynamic Triggering might become an issue in the future**

Dynamic Triggering: Multiple Operator

(DTS 102 677)
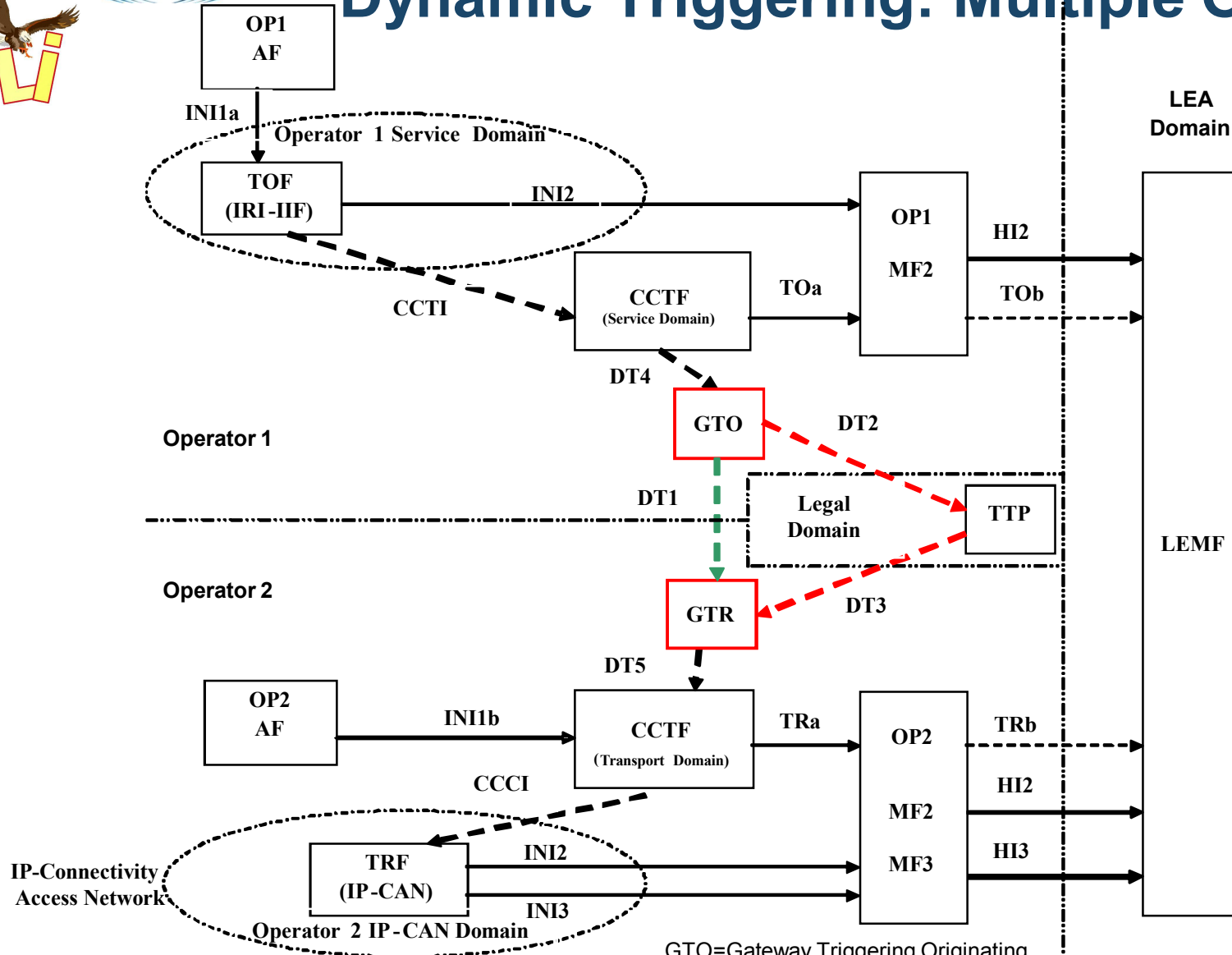
GTO=Gateway Triggering Originating
GTR=Gateway Triggering Receiving

Relationships with other bodies

- 3GPP/SA3-LI   **(LI for UMTS & GSM)**

- ETSI/EP TETRA   **(LI for Tetra system)**

- ETSI/TC TISPAN   **(LI for fixed NGN & fixed IMS)**

- ETSI/TC ATTM   **(LI for IPCableCom)**

- ETSI/TC SES   **(LI for satellite systems)**
- ETSI/TC PLT   **(LI for Powerline Communications)**

- National and Regional Law Enforcement Agencies and STC/ILETS
- ATIS/PTCS LAES SC   **(T1.678 v1 / J-STD-025-B)**

Activities in ETSI/TC LI
on
Retained Data Handover Interface

Why study on Retained Data in EU

**15th of March 2006: the European Parliament
and the Council of the European Union adopted
Directive 2006/24/EC on Data Retention**

**Data generated or processed in connection with the provision of
publicly available electronic communications services
or of
public communications networks
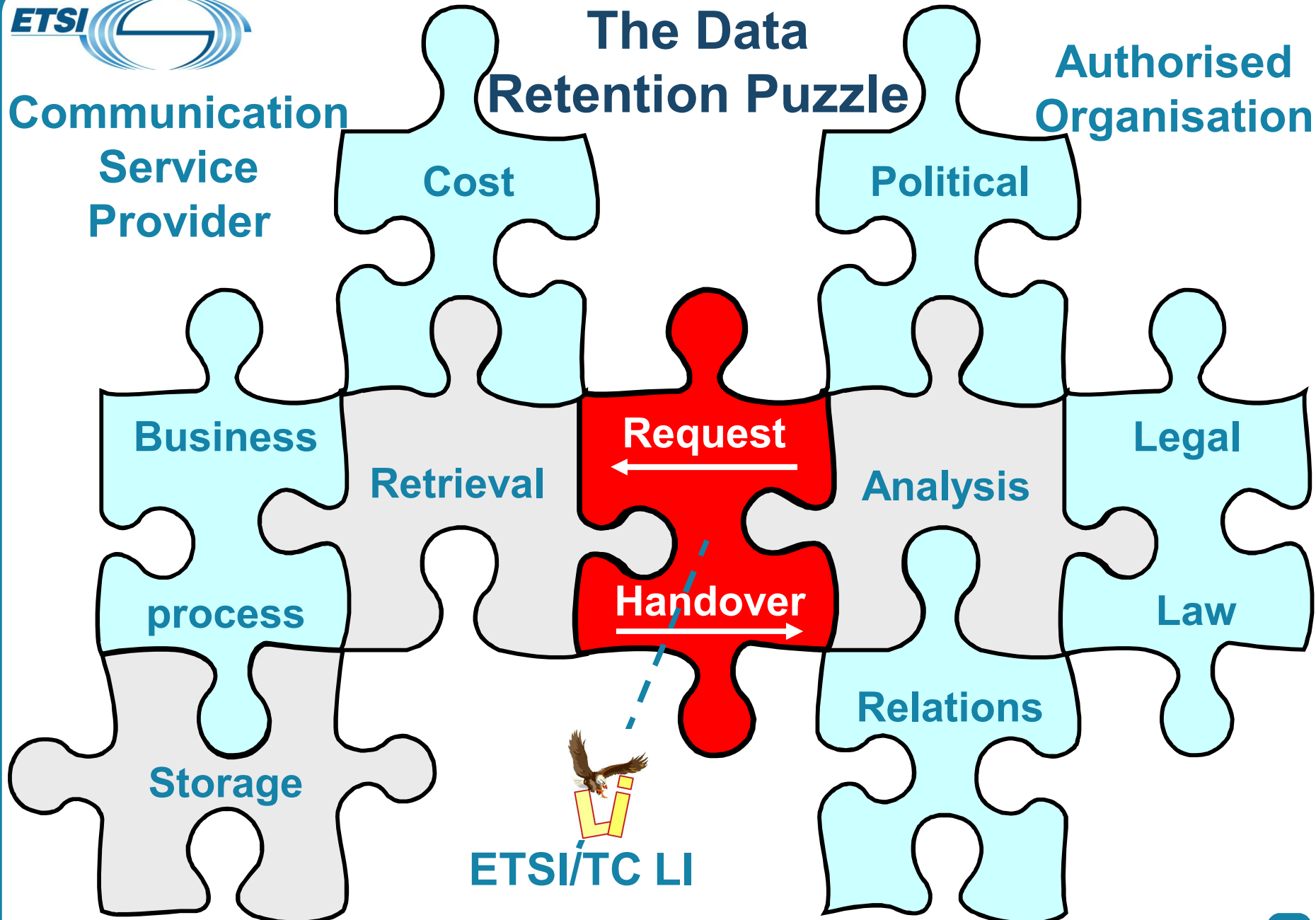need to be retained**

Applicability Directive

- ❑ **The content of the communication is not part of the directive**
- ❑ **Data to be Retained**
  - ➢ **Successful and unsuccessful communication attempts**
  - ➢ **Wireline network telephony / Wireless network telephony**
  - ➢ **Internet access / Internet e-mail / Internet telephony**
- ❑ **Categories of data to be retained**
  - ➢ **data to trace and identify the source of a communication**
  - ➢ **data to identify the destination of a communication**
  - ➢ **data to identify the date, time and duration of a communication**
  - ➢ **data to identify the type of communication**
  - ➢ **data to identify users' communication equipment or what purports to be their equipment**
  - ➢ **data to identify the location of mobile communication equipment**
- ❑ **Detailed requirements shall be defined by each Member State in its national law**

The Data Retention Puzzle

Communication Service Provider

Authorised Organisation

Cost

Political

Business process

Retrieval

Request

Analysis

Legal

Handover

Law

Storage

Relations
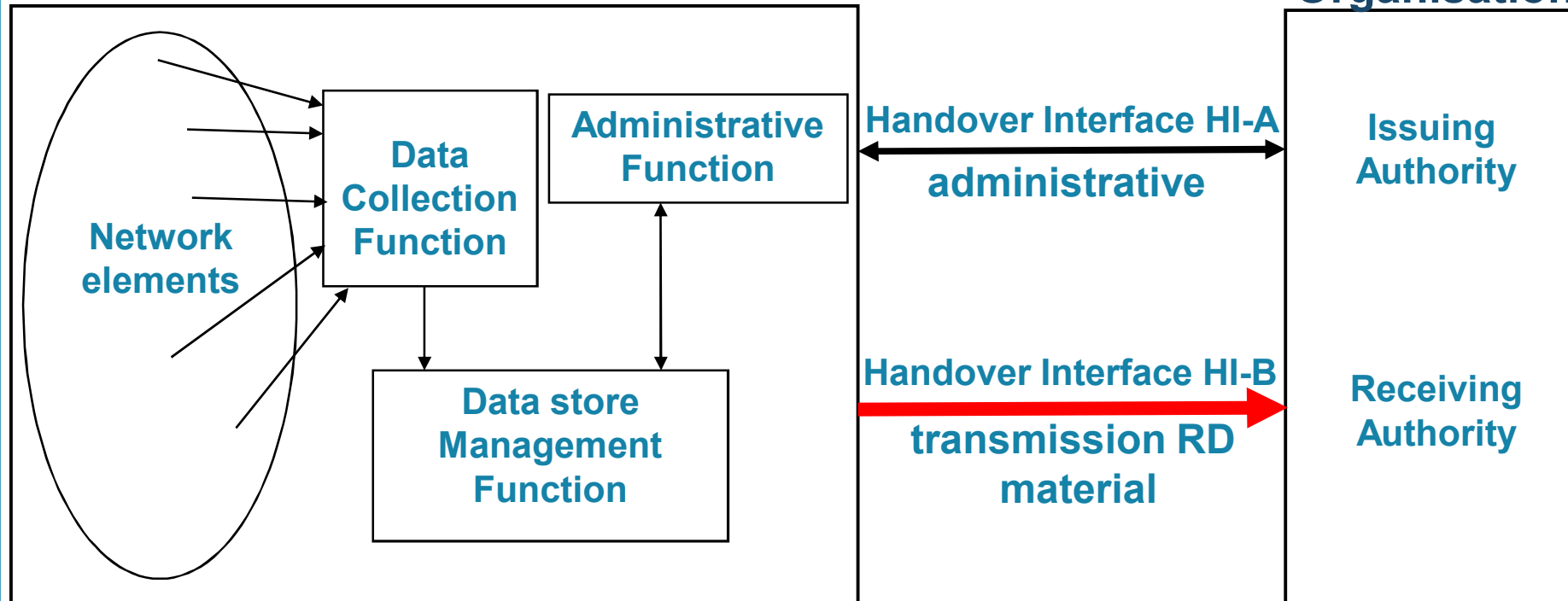
ETSI/TC LI

Why standardisation of RD handling

- ❑ **Conformance**
  - ➢ **Standards meet Data Retention Directive, national laws and agreed requirements**
  - ➢ **National options are possible**
- ❑ **Ease of use**
  - ➢ **Easier for SP to define own storage and delivery mechanism**
  - ➢ **Easier for LEA to define own requesting and receiving mechanism**
- ❑ **"Cheaper" products**
  - ➢ **Manufacturers need to develop one basic product for SP and LEA**
- ❑ **Common approach**
  - ➢ **RD Standards in ETSI are approved by all involved parties (SPs, LEAs, Manufactures)**
  - ➢ **Common way for all involved parties**
- ❑ **Continuously updated**
  - ➢ **Flexible to follow new (inter)national developments**

Functional Model *(TS 102 657)*

Communication Service Provider

Authorised Organisation

Network elements

Data Collection Function

Administrative Function

Data store Management Function

Handover Interface HI-A
administrative

Handover Interface HI-B
transmission RD material

Issuing Authority

Receiving Authority

HI-A: various kinds of administrative, request and response information from/to the Issuing Authority and the responsible organization at the CSP for RD matters.

HI-B: retained data information from the CSP to the Receiving Authority

HI-A and HI-B may be crossing borders between countries: subject to corresponding national law and/or international agreements.

Retained Data Specifications in ETSI/TC LI

- ❑ *ETSI TS 102 656*
  Requirements of LEAs for handling Retained Data
  - ➢ **guidance and requirements for the delivery and associated issues of retained data of telecommunications and subscribers**
  - ➢ **set of requirements relating to handover interfaces for retained traffic and subscriber data**
  - ➢ **requirements to support the implementation of Directive 2006/24/EC**
  - ➢ **freedom for national regulations, procedures and processes**
- ❑ *ETSI TS 102 657*
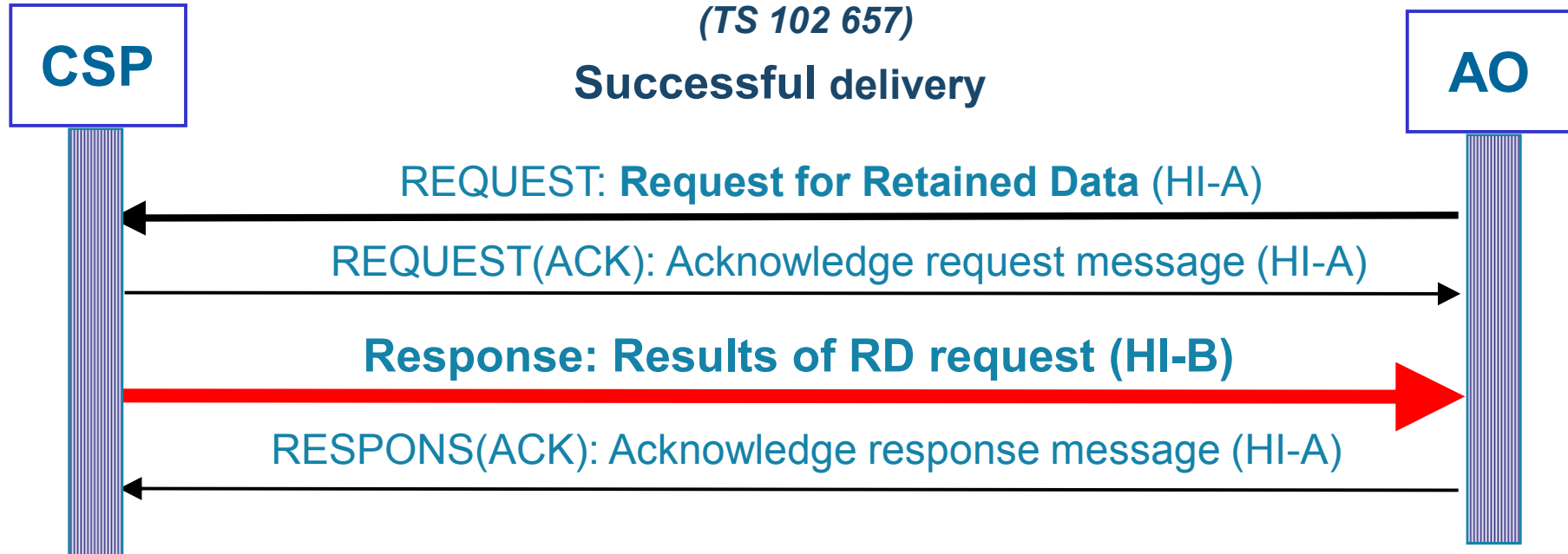 **Handover interface for the request and delivery of Retained Data**
  - ➢ **handover requirements and handover specification for the data that is identified in EU Directive 2006/24/EC on Retained Data and in national legislations as defined in TS 102 656**
  - ➢ **considers both the requesting of retained data and the delivery of the results**
  - ➢ **defines an electronic interface**

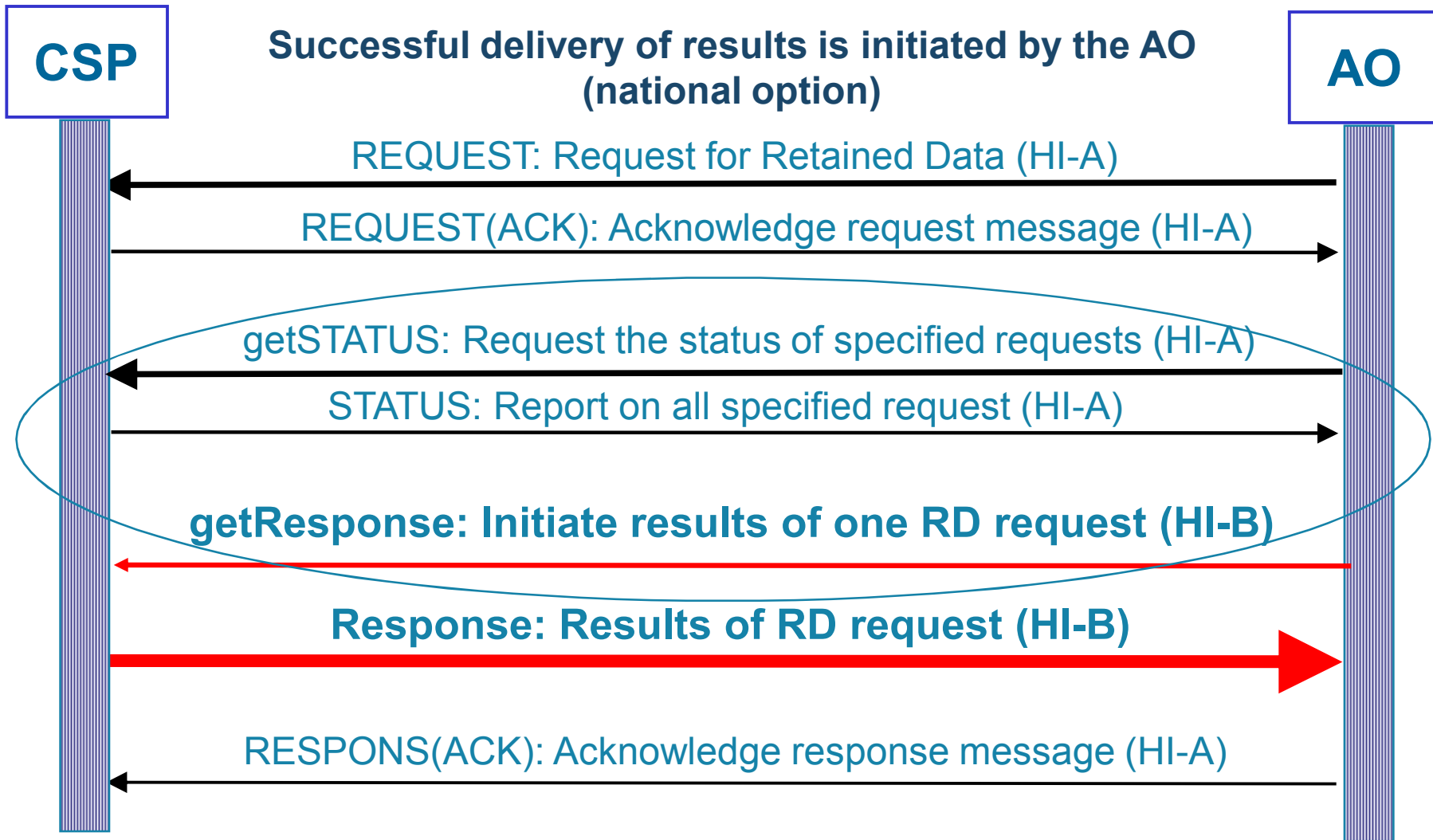# Retained Data Handover Signalling principle

(TS 102 657)

Successful delivery

CSP | **AO**

REQUEST: **Request for Retained Data** (HI-A)

REQUEST(ACK): Acknowledge request message (HI-A)

Response: Results of RD request (HI-B)

RESPONS(ACK): Acknowledge response message (HI-A)

❑ **Data exchange techniques**

  ➢ **"direct TCP" with BER encoding derived from the ASN.1**

  ➢ **"HTTP" with XML encoding**

    • **on top of the standard TCP/IP stack**

    • **choice of technique is a national option**

Retained Data Handover Signalling principle

CSP

AO

Successful delivery of results is initiated by the AO (national option)

REQUEST: Request for Retained Data (HI-A)

REQUEST(ACK): Acknowledge request message (HI-A)

getSTATUS: Request the status of specified requests (HI-A)

STATUS: Report on all specified request (HI-A)

getResponse: Initiate results of one RD request (HI-B)

Response: Results of RD request (HI-B)

RESPONS(ACK): Acknowledge response message (HI-A)

Modular approach RDHI specification

Framework for Retained Data Handover Interface			
Telephony services	Network Access services	Asynchronous message services	Synchronous Multi-media services

e.g.

PSTN/ISDN GSM/UMTS-cs SMS/MMS	Internet GPRS UMTS-ps	E-mail webmail	chat

Retained Data requests

❑ **A request may only ask for data from one service**

- ➢ **Telephony services**
- ➢ **Network access services**
- ➢ **Asynchronous message services**
- ➢ **Synchronous multi-media services**

❑ **A request may only ask for data from one category**

- ➢ **Subscriber data**   **e.g. subscriber ID, name, address, NRI**
- ➢ **Usage data**   **e.g. call records**
- ➢ **Equipment data**
- ➢ **Network element data**   **e.g. location and identity GSM base station**
- ➢ **Additional service usage**   **e.g. DSN**

❑ **A request shall list one or more request criteria**

- ➢ **Equal To**   **a specified value for a given field**
- ➢ **Range**   **a range for a given field (e.g. lower and upper bounds, using the lessThan or greaterThan operators)**
- ➢ **Member of**   **a list of values for a given field**

Examples of Requests (TS 102 657)

❑ **Request for subscription data for telephone number 0123456789, which were applicable for that number in the time span between 1 March 2010 and 15 June 2010**

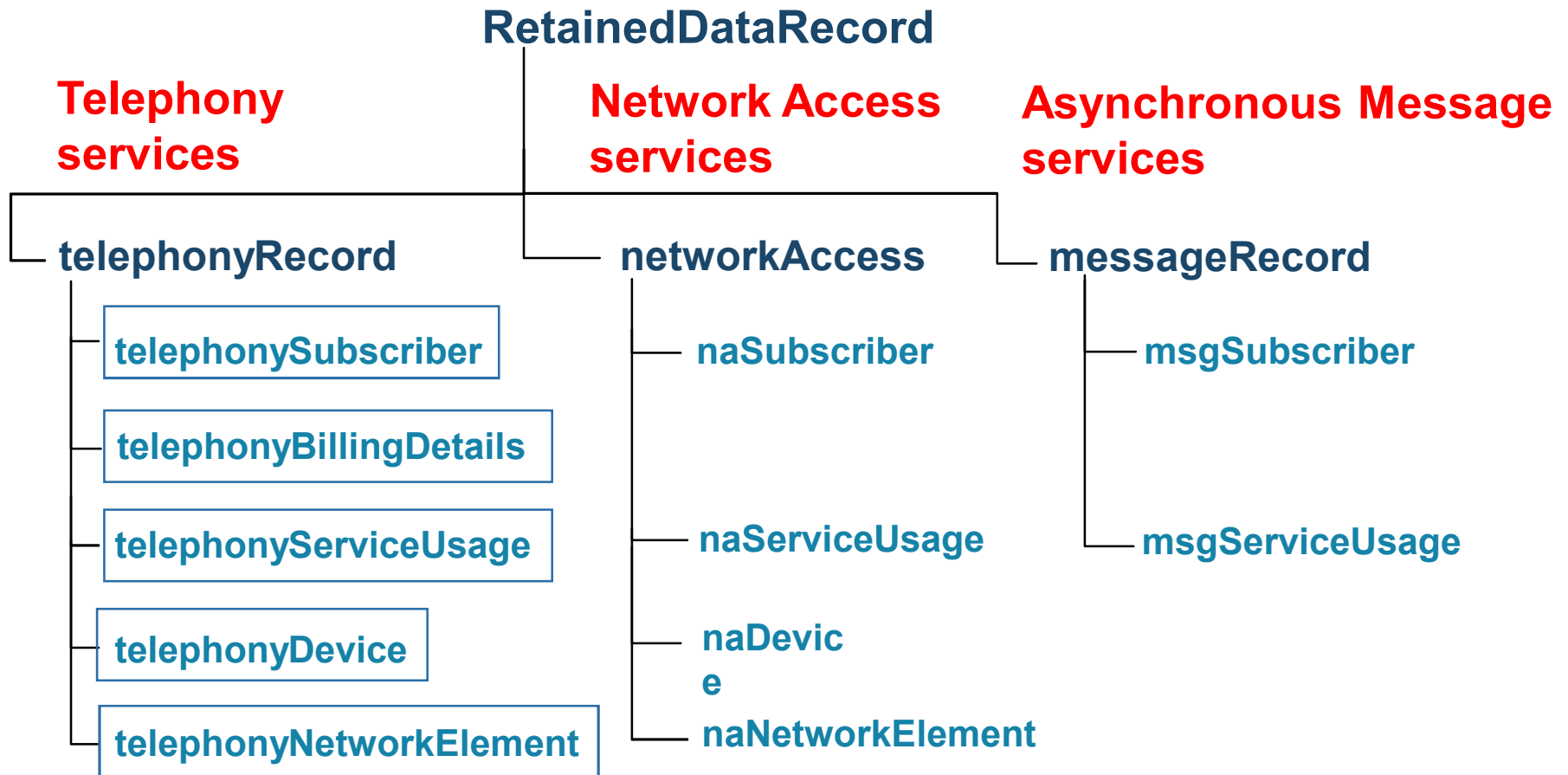| Request Parameter	Value
registeredNumber	Subscriber record for telephony service with matching phone number is returned
timeSpan	A range of times for the start of the subscription

❑ **Request for service usage records for telephone number 0123456789 for calls, which were initiated from that number between 15 May 2010 and 1 June 2010**

Request Parameter	Value
partyNumber	Telephone number of interest in the call
partyRole	Role (originating or terminating) of the telephone number specified (can be omitted)
timeSpan	A range of times for the start of the call

Schematic representation of top level ASN.1

RetainedDataRecord

Telephony services

Network Access services

Asynchronous Message services

telephonyRecord

- telephonySubscriber
- telephonyBillingDetails
- telephonyServiceUsage
- telephonyDevice
- telephonyNetworkElement

networkAccess

- naSubscriber
- naServiceUsage
- naDevice
- naNetworkElement

messageRecord

- msgSubscriber
- msgServiceUsage

TelephonyRecord: Subscriber

telephonySubscriber
- **subscriberID**
- **genericSubscriberInfo**
- **telephonySubscriberInfo**
- **subscribedTelephonyServices**
  - **SubscribedTelephonyServices**
    - **serviceID**
    - **providerID**
    - **timeSpan**
    - **registeredNumbers**
    - **registeredICCID**
    - **serviceType**
    - **installationAddress**
    - **connectionDate**
    - **iMSI**
    - **carrierPreselect**
    - **lineStatus**
    - **allocatedDeviceIDs**
    - **pUKCode**
    - **pUK2Code**
    - **iMEI**
    - **nationalTelephonySubscriptionInfo**
- **nationalTelephonySubscriberInfo**

GenericSubscriberInfo
- organizationInfo
  - name
  - contactDetails
  - nationalRegistration
- individualInfo
  - name
  - contactAddress
  - dateOfBirth
  - gender
  - identificationNumber
  - authenticationInfo

TelephonyRecord: ServiceUsage, Device and NetworkElement

telephonyServiceUsage
- partyInformation
  └ PartyInformation
    - partyNumber
    - subscriberID
    - deviceID
    - locations
    - communicationTime
    - iCCID
    - iMSI
    - natureOfAddress
    - forwardedTransferredNumber
    - terminatingTransferredNumber
    - emailAddress
    - iMEI
    - detailedLocation
    └ nationalTelephonyPartyInformation
- communicationTime
- eventInformation
  └ TelephonyEventInformation
    - time
    - type
    - party
    └ location
- endReason
- communicationType
- bearerService
- smsInformation
- ringDuration
- mmsInformation
└ nationalTelephonyServiceUsage

telephonyDevice
- **deviceIDType**
- **telephonyDeviceID**
- **subscriberID**
└ **nationalTelephonyDevice**

telephonyNetworkElement
- **telephonyNetworkID**
- **cellInformation**
- **validity**
└ **nationalTelephonyNetworkElement**

What's next on Data Retention ?

❑ **ETSI/TC LI will maintain the Retained Data standards**

  ➢ **Complete synchronous multi-media services**

  ➢ **Add new internet services as technology progress**

  ➢ **Add new parameters in line with national requirements**

❑ **Start working on a Report for Data Retention System Architecture and Internal Interfacing**

❑ **ETSI/TC LI can organise an interoperability test, if required**

  ➢ **ETSI Plugtest for checking the specifications**

❑ **ETSI/TC LI is encouraging widespread use of the RD standards!**

  ➢ **The use of the Handover standard is already promoted in international conferences and workshops**

❑ **ETSI/TC LI is keeping a close working relation with the EC/Experts Group "The Platform on Electronic Data Retention for the Investigation, Detection and Prosecution of Serious Crime"**

Activities in EC/Expert Group:

"The Platform on Electronic Data Retention for the Investigation, Detection and Prosecution of Serious Crime"

Guidance Papers in relation to its application in the DR Directive

- ❑ **"Webmail" and "Web Based Messaging"**
- ❑ **The obligation to retain E-mail logs – when must records of spam E-mails be retained?**
- ❑ **Closer understanding of the term "Transit Providers"**
- ❑ **Closer understanding of the term "third party networks and service providers"**
- ❑ **Closer understanding of the term "Internet Telephony"**

- ❑ **Closer understanding of "Centralised Data Storage" in other MS**
- ❑ **Closer understanding of the term "Data Security"**
- ❑ **Closer understanding on "Port Numbers"**
- ❑ **Closer understanding of "Unsuccessful call attempts"**
- ❑ **On "Internet Email" and "Telephony"**
- ❑ **On "Standardisation of a Data Retention Handover Interface"**

National DR Implementation

❑ **Definition of the set of elements to be retained**

❑ **Definition of the format of the requests**

❑ **Which standard to be used for the request and for the transport of the requested data** (e.g. ETSI TS 102 657)

❑ **Preparation of ETSI handover specification for national implementation**
- ➢ **definition of the optional elements for national use**
- ➢ **how to use specific elements**
- ➢ **definition of specific national elements**
- ➢ **transport mechanism to be used**
- ➢ **security mechanisms**
- ➢
- ➢

Intro on ETSI

- ❑ **A European standards organization, created in 1988, active in all areas of telecommunications**
  - ➢ **including radio communications, broadcasting and Information Technology**
- ❑ **Creates different deliverables to meet market needs**
- ❑ **Supporting EU and EFTA regulation and initiatives**
- ❑ **A not-for-profit organization   (750+ members from 60+ countries)**
- ❑ **Members: Administrations, Administration Bodies and NSOs, Network Operators, Service Providers, Manufacturers, Users**
- ❑ **Favours international and interregional collaboration**
- ❑ **All publications freely available! Downloadable from ETSI Website**

http://pda.etsi.org/pda/queryform.asp

http://portal.etsi.org

ETSI Members per country

(April 2009)

Country	Members	Country	Members	Country	Members
Albania	2	Great Britain	121	Norway	10
Andorra	1	Greece	8	Poland	6
Australia	2	Hungary	6	Portugal	2
Austria	11	Iceland	1	Qatar	1
Belgium	25	India	4	Romania	5
Bosnia Herzegovina	2	Indonesia	1	Russia	8
Bulgaria	4	Iran	1	Serbia	1
Brazil	3	Ireland	14	Singapore	1
Canada	9	Israel	7	Slovakia	3
China	8	Italy	34	Slovenia	4
Croatia	4	Japan	7	South Africa	2
Cyprus	2	Jordan	1	Spain	23
Czech Republic	5	Korea	1	Sweden	24
Denmark	19	Latvia	1	Switzerland	25
Egypt	1	Lesotho	1	Taiwan	13
Estonia	2	Lichtenstein	1	Turkey	7
Finland	15	Lithuania	1	Ukraine	3
France	82	Luxembourg	7	United Arab Emirates	2
FYROM (Macedonia)	1	Malaysia	2	United States	88
Georgia	1	Malta	2	Uzbekistan	1
Germany	108	Netherlands	28	Yemen	1
				Total	**766**
				63 Countries	

ETSI members in Cypus
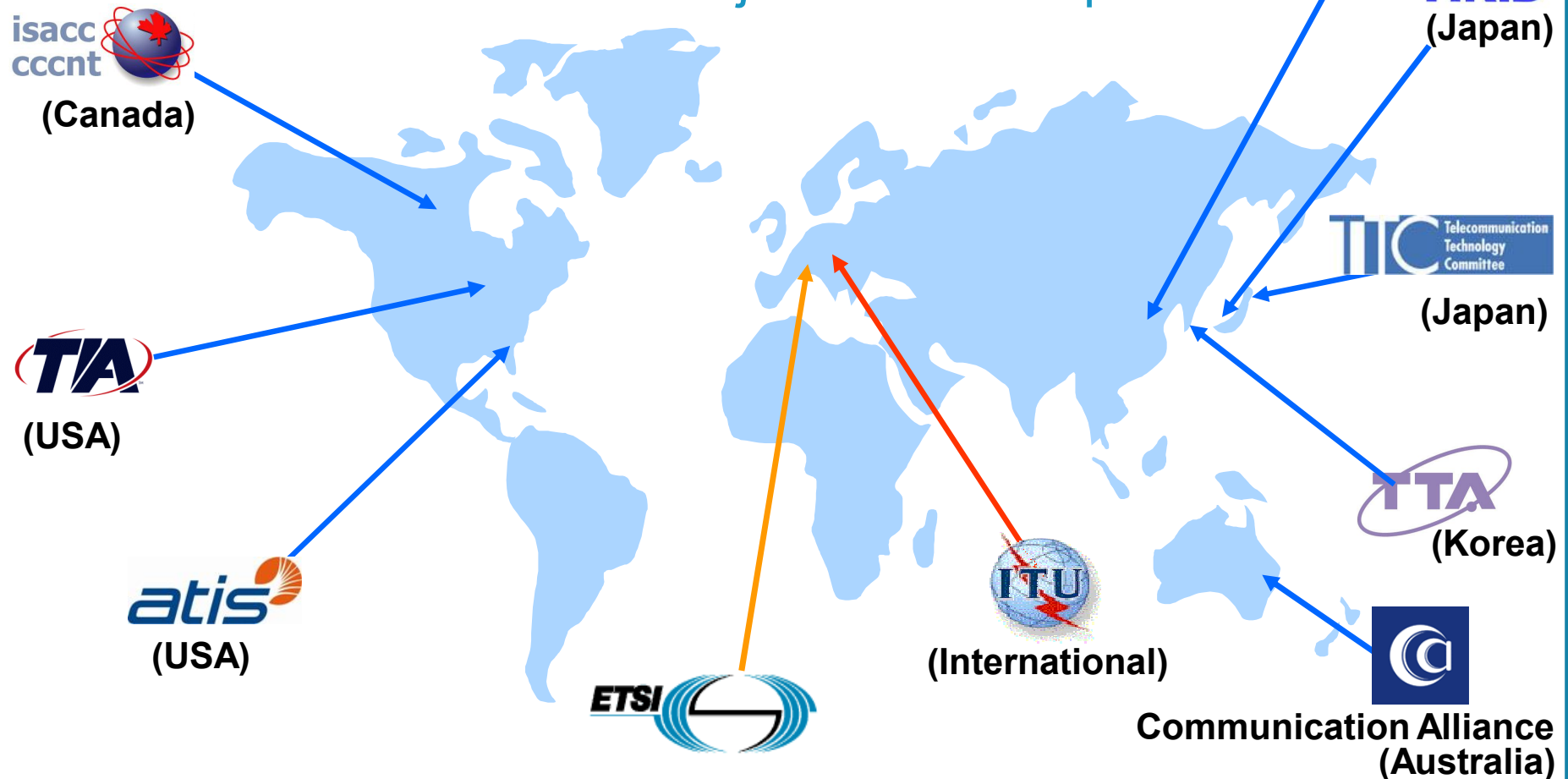
❑ **Government organisation**

  ➢ **CYS**

❑ **Network Operators**

  ➢ **Cyta**

Global Standards Collaboration

Interregional collaboration on selected standardization subjects between partners

ETSI

CCSA (China)

ARIB (Japan)

isacc cccnt (Canada)

TIC Telecommunication Technology Committee (Japan)

TIA (USA)

TTA (Korea)

atis (USA)

ITU (International)

ETSI

Communication Alliance (Australia)

Partnership Project

3rd Generation Partnership Project

specifying a W-CDMA system based on an evolution of the GSM core network, a member of the ITU's IMT-2000 family
http://www.3gpp.org

Organizational Partners:

ETSI (Europe)	**CCSA** (China)	**ARIB** (Japan)
ATIS (USA)	**TTA** (Korea)	**TTC** (Japan)

Main body in ETSI for
Lawful Interception standards development
and
Retained Data handover standardisation is
ETSI/TC LI
Technical Committee on Lawful Interception

Intro on ETSI/TC LI

- ❑ **Created as stand-alone TC in October 2002**
- ❑ **Meetings**
  - ➤ **Three plenary meetings a year are organised (35-84 participants)**
  - ➤ **Dedicated Rapporteur's meetings can be organised on a specific issue (actual study item is "Dynamic Triggering")**
- ❑ **The TC LI meetings can be attended by ETSI members**
  - ➤ **Non-ETSI members can participate by invitation of the chairman**
  - ➤ **Next plenary meeting: ETSI/TC LI#25, September 2010**
- ❑ **Participation**
  - ➤ **Government organisations: Law Enforcement Agencies, Regulators**
  - ➤ **Manufacturers, Communication Service Providers**
- ❑ **Producing reports and specifications**
  - ➤ **On Lawful Interception and Retained Data handling**
  - ➤ **Mainly on the Handover Interface**
- ❑ **Promoting globally ETSI Lawful Interception and Data Retention standards amongst operators and national bodies**

Participation in ETSI/TC LI

❑ **Law Enforcement Agencies / Governments organisations / Research organisations**

➢ **NL, UK, DE, AS, S, GR, ES, FR, FIN, CH, RU, UA, IT, NO, CY, HU, HR**

➢ **AU, CA, USA, ID, KR**

❑ **Communication Service Providers**

➢ **Vodafone Group, KPN (NL), BT, DT (DE), TeliaSonera (S), NBIP (NL) Inmarsat, RIM, Telenor, T-Mobile, Vodafone (DE), Telecom Italia Swisscom, Wind (IT), UPC, TDC (DK), Telstra (AU), Turk Telekom**

❑ **Manufacturers (switch / mediation / LEA equipment)**

➢ **Ericsson, Siemens, Nokia Siemens Networks, Trovicor, Alcatel-Lucent Pine Digital Security, Group 2000, Aqsacom, Cisco, GTEN, DARS Utimaco Safeware, Verint, Syborg, NICE Systems, Detica, Thales Iskratel, HP, ATIS Systems, SS8, Spectronic Systems, AREA ETI, IPS/Resi, Suntech, Yaana, VeriSign, ZTE, SSI Pacific**

Manufacturers may be active in more areas

Deliverables of ETSI/TC LI

❑ **ETSI/Technical Committee Lawful Interception (TC LI)**

  ➤ **on Lawful Interception:**

  ➤ *TR 101 943 v2.2.1   TR 102 503 v1.4.1   TR 102 053 v1.1.1*

  ➤ *TS 101 331 v1.3.1   ES 201 158 v1.2.1*

  ➤ *TS 101 671 v3.5.1   ES 201 671 v3.1.1*

  ➤ *TR 102 528 v1.1.1   TR 102 519 v1.1.1*

  ➤ *TS 102 232-1 v2.4.1   TS 102 232-2 v2.4.1   TS 102 232-3 v2.2.1*

  ➤ *TS 102 232-4 v2.2.1   TS 102 232-5 v2.4.1   TS 102 232-6 v2.3.1*

  ➤ *TS 102 232-7 v2.1.1*

  ➤ *on Data Retention: TS 102 656 v1.2.1   TS 102 657 v1.5.1*

  ➤ *Security Report on LI and DR: TR 102 661 v1.2.1*

More details on ETSI/TC LI can be found on:

http://portal.etsi.org/li/Summary.asp

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