



ETSI/TC LI Overview on Lawful Interception and Retained Data handling

ETSI/TC LI presentations

- ❑ **General Overview on the Work in ETSI/TC LI and Details on Lawful Interception Standardization**
 - **Peter van der Arend, Chairman ETSI/TC LI**
- ❑ **Security Framework for Lawful Interception and Retained Data**
 - **Vassilis Stathopoulos, Hellenic Authority for Communications Privacy**
- ❑ **Interception Domain Architecture for CS and IP Networks**
 - **Stefan Bjornson, Cecraftech and 1st Vice Chairman ETSI/TC LI**
- ❑ **IP Interception: VoIP, e-mail, WLAN...**
 - **Mark Lastdrager, CEO, Pine Digital Security**
- ❑ **Requirements for Handling of Retained Data**
 - **Koen Jaspers, PIDS, Ministry of Justice**
- ❑ **Handover Interface for Retained Data**
 - **Mark Shepherd, NTAC Consultant of Security, Detica**



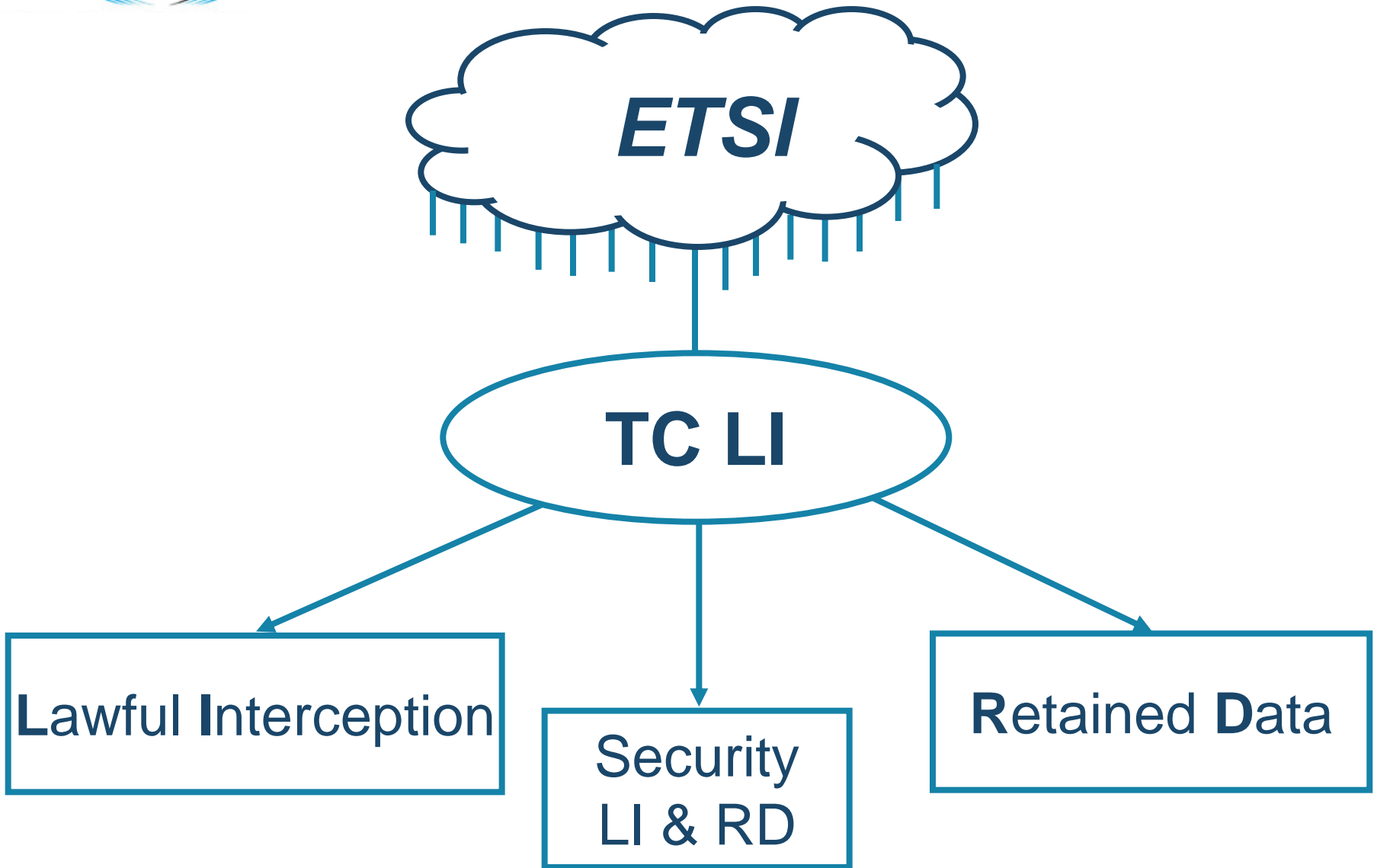
General overview on TC LI activities and Introduction on Lawful Interception standardisation

Peter van der Arend
Chairman ETSI/TC LI

**Handover Interfaces for transport of
Lawful Interception and Retained Data
are standardised in Europe by ETSI**

**European
Telecommunications
Standards
Institute**





Intro on ETSI

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

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

<http://portal.etsi.org>

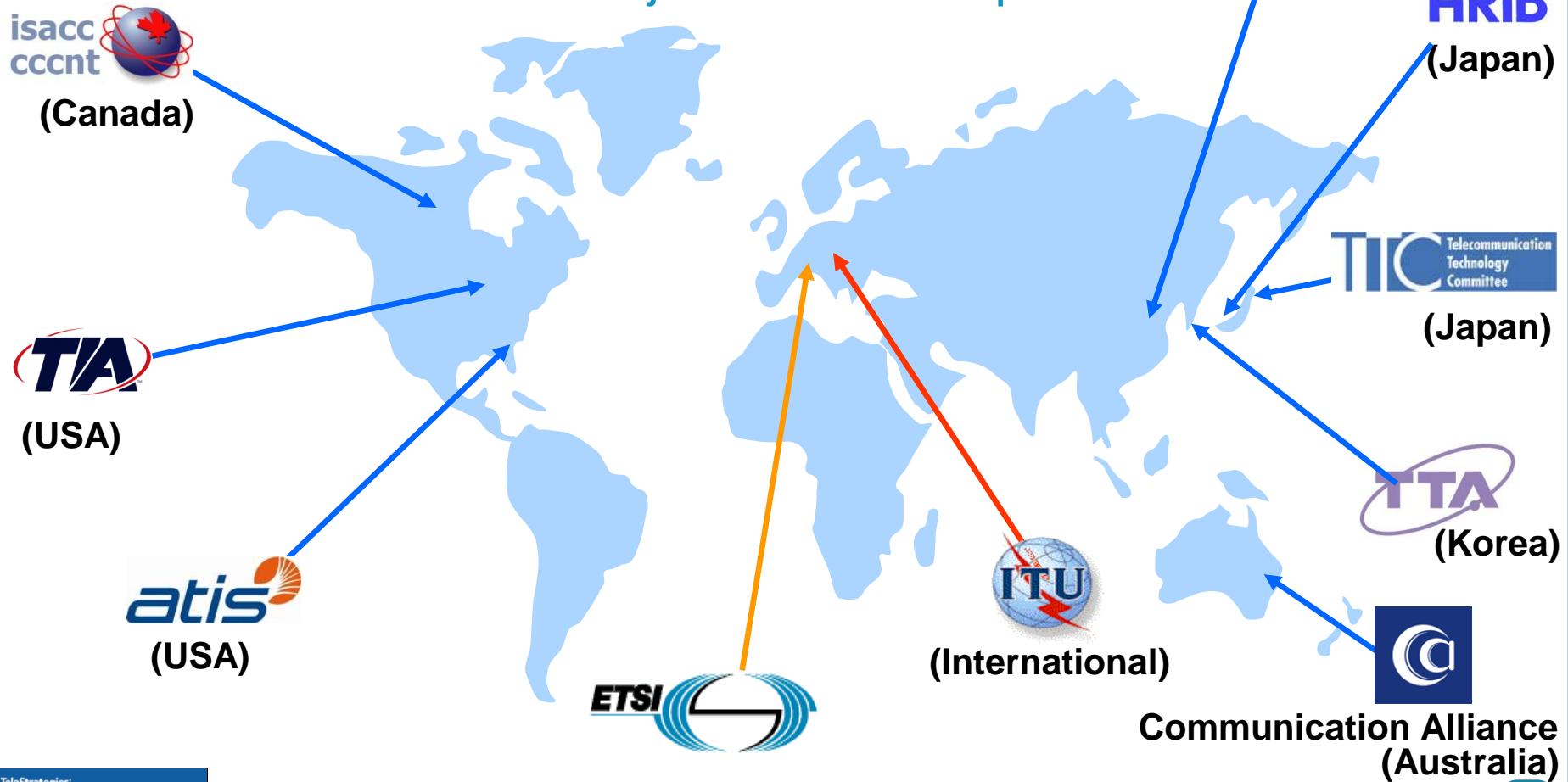
ETSI Members per country

(March 2008)

Albania	1	Great Britain	123	Poland	5
Andorra	1	Greece	8	Portugal	2
Australia	3	Hungary	6	Qatar	1
Austria	11	Iceland	1	Romania	4
Belgium	22	India	7	Russia	8
Bosnia Herzegovina	2	Iran	1	Serbia	1
Bulgaria	3	Ireland	12	Singapore	1
Brazil	2	Israel	8	Slovakia	3
Canada	9	Italy	28	Slovenia	3
China	8	Japan	7	South Africa	3
Croatia	4	Jordan	1	Spain	15
Cyprus	2	Korea	1	Sweden	24
Czech Republic	4	Latvia	2	Switzerland	20
Denmark	20	Lesotho	1	Taiwan	11
Egypt	1	Lichtenstein	1	Turkey	5
Estonia	2	Lithuania	1	Ukraine	1
Finland	15	Luxembourg	5	United Arab Emirates	2
France	71	Malaysia	1	United States	65
FYROM (Macedonia)	1	Malta	2	Uzbekistan	1
Georgia	1	Netherlands	29	Yemen	1
Germany	90	Norway	8	62 countries	707

Global Standards Collaboration

Interregional collaboration on selected standardization subjects between partners:



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)

*ISS track 3: Friday, 3 October 2008; 8:30-9:30
3GPP/SA3-LI Handling US and European Needs
Bernhard Spalt, Chairman of 3GPP/SA3-LI*

Status of ETSI Lawful Interception Standards

and

Introduction on 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



**Main body in ETSI for
Lawful Interception Standards development
and coordination is
ETSI/TC LI
Technical Committee on Lawful Interception**





Why standardisation of LI handling

- ❑ **Easier to define own LI mechanism**
 - **Guidance is given for network architecture**
 - **No need to define/invent complete own LI system**
 - **National options are possible**
- ❑ **“Cheaper” LI products**
 - **Manufacturers need to develop one basic product**
 - **National options are additional**
- ❑ **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**



History of ETSI/TC LI

- ❑ ETSI/Technical Committee Security (TC SEC)
 - Working Group Lawful Interception (SEC-WGLI) (1997)
 - *TR 102 053 v1.1.1* *ES 201 158 v1.2.1*

- ❑ ETSI/Technical Committee Lawful Interception (TC LI)
 - Established as stand-alone TC in October 2002
 - *TR 101 943 v2.2.1* *TR 102 503 v1.4.1* *TR 102 519 v1.1.1*
 - *TR 102 528 v1.1.1*
 - *TS 101 331 v1.2.1* ***TS 101 671 v3.3.1*** *ES 201 671 v3.1.1*
 - ***TS 102 232-1 v2.3.1*** *TS 102 232-2 v2.3.1* *TS 102 232-3 v2.1.1*
 - *TS 102 232-4 v2.1.1* *TS 102 232-5 v2.3.1* *TS 102 232-6 v2.2.1*
 - *TS 102 232-7 v2.1.1*
 - *TS 102 656 v1.1.2*

How ETSI/TC LI operates

- Meetings**
 - Three plenary meetings a year are organised (35-80 participants)
 - In between if necessary Rapporteur's meetings can be organised on a specific issue
- The meetings can be attended by ETSI members**
 - Non-ETSI members can participate by invitation of the chairman
- Dedicated TC LI E-mail server and FTP server**
 - Open to all ETSI (full and associated) members
- Producing reports and specifications on Lawful Interception and Retained Data**
- Promoting globally ETSI Lawful Interception 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, RU, FIN, IT, NO, CY, HU, UA
 - AU, CA, USA, KR
- ❑ **Operators**
 - KPN (NL), DT (DE), BT (UK), TeliaSonera (S), Inmarsat, Telenor (NO) UPC, Telstra, Telecom Italia, T-Mobile (DE), Vodafone, Wind, TDC (DK)
- ❑ **Manufacturers (switch / mediation / LEA equipment)**
 - Nokia Siemens Networks, Ericsson, Cisco, Alcatel-Lucent, Nortel Pine Digital Security, Aqsacom, ETI, VeriSign, GTEN, AREA, Verint, Detica, Thales, NICE Systems, Utimaco Safeware, Iskratel ATIS Systems, SS8, Spectronic, Group 2000, ZTE, HP, IPS

Manufacturers may be active in all areas

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**)

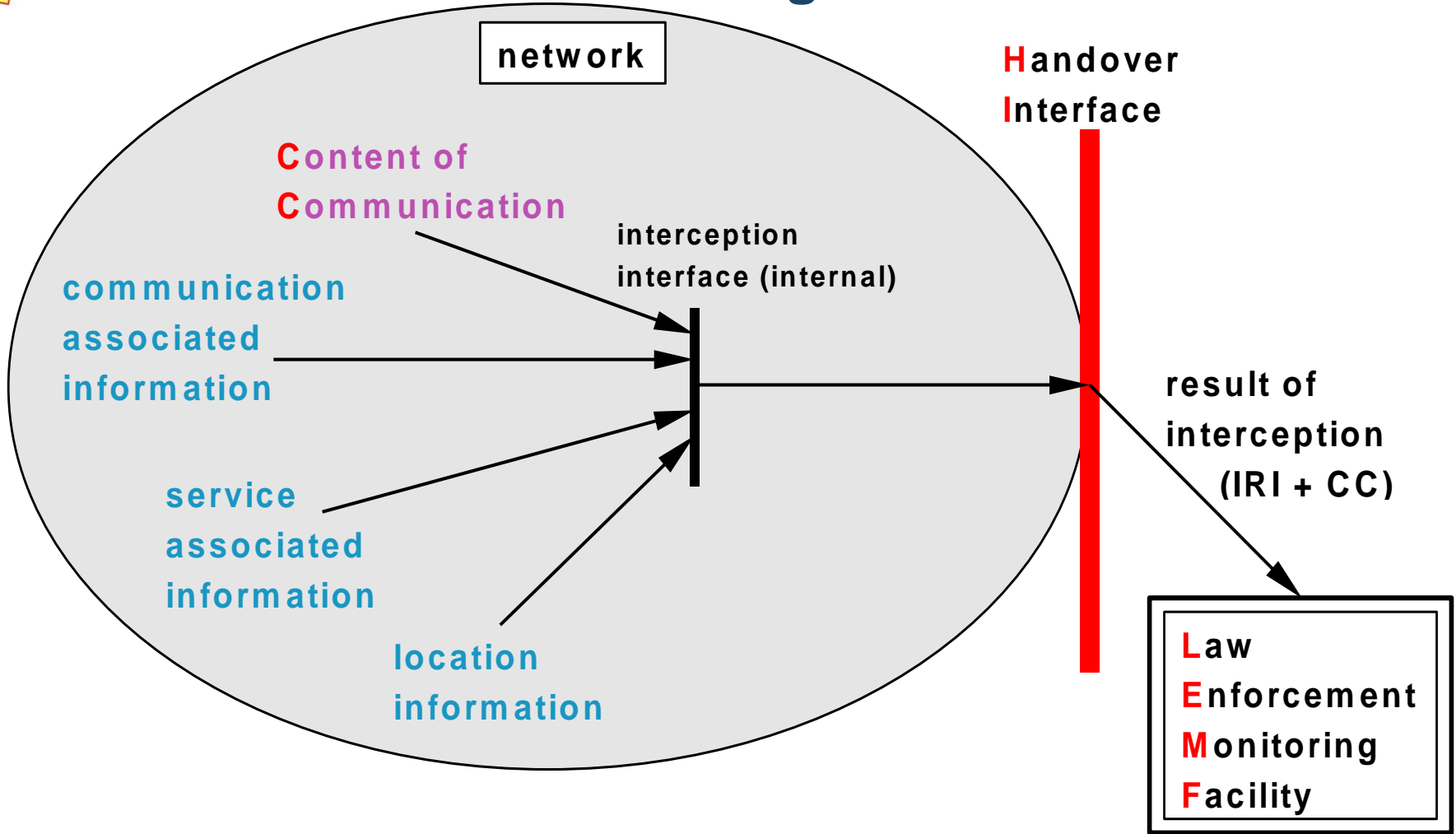
- Collection of information or data associated with telecommunication services involving the target identity:
 - **communication associated information** or data (including unsuccessful communication attempts)
 - **service associated information** or data (e.g. service profile management by subscriber)
 - **location information**

☐ Content of Communication (**CC**)

- Information exchanged between two or more users of a telecommunications service



General network arrangements (TS 101 331)



LI Handover Interface (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**
 - All data related to establish the telecommunication service and to control its progress
 - Correlation information

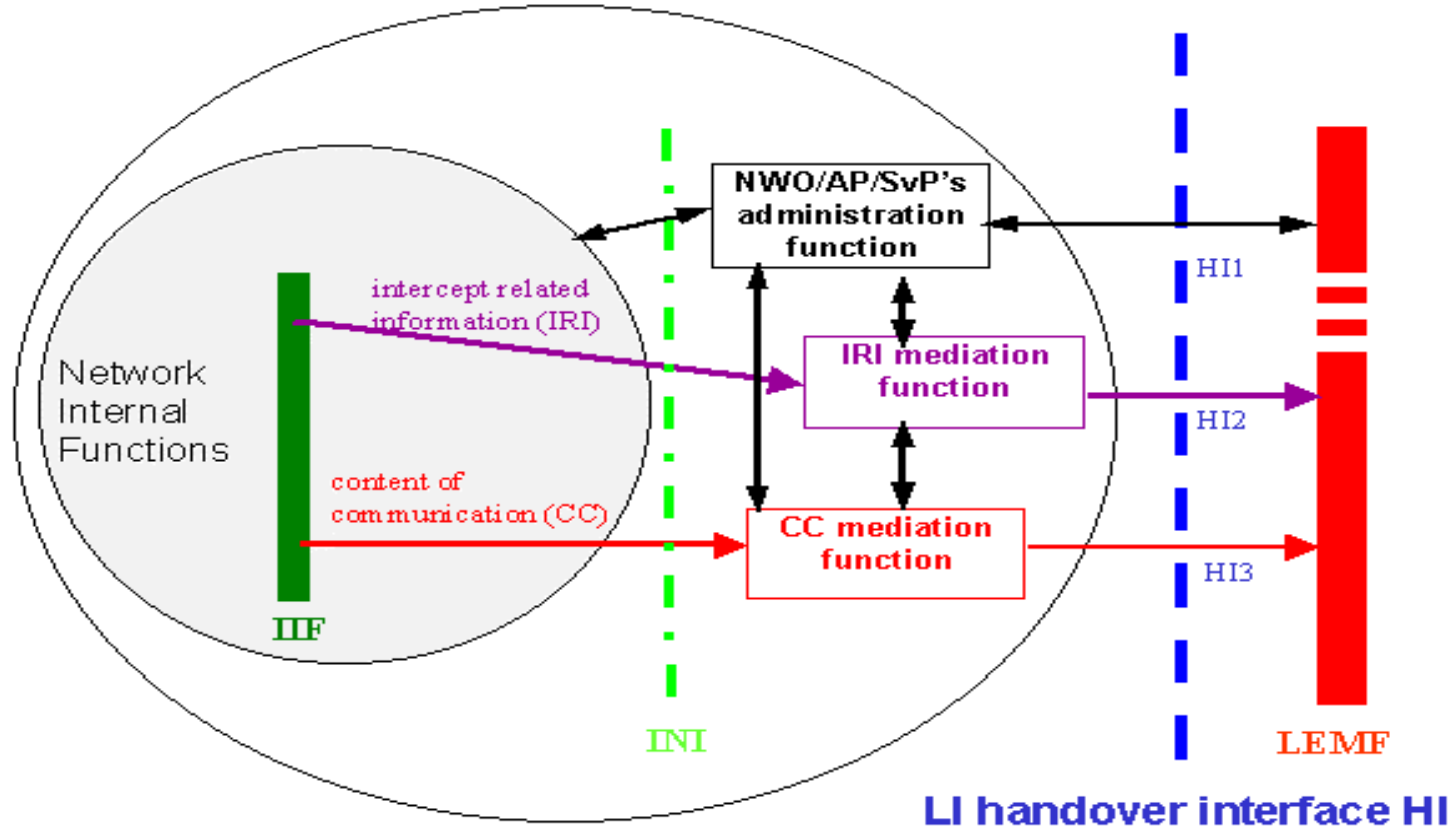
- ❑ **HI3: for delivery of Content of Communication**
 - Transparent en-clair copy of the communication
 - Correlation information



Handover Interface Concept (TS 101 671)

NWO/AP/SvP's domain

LEA domain



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)

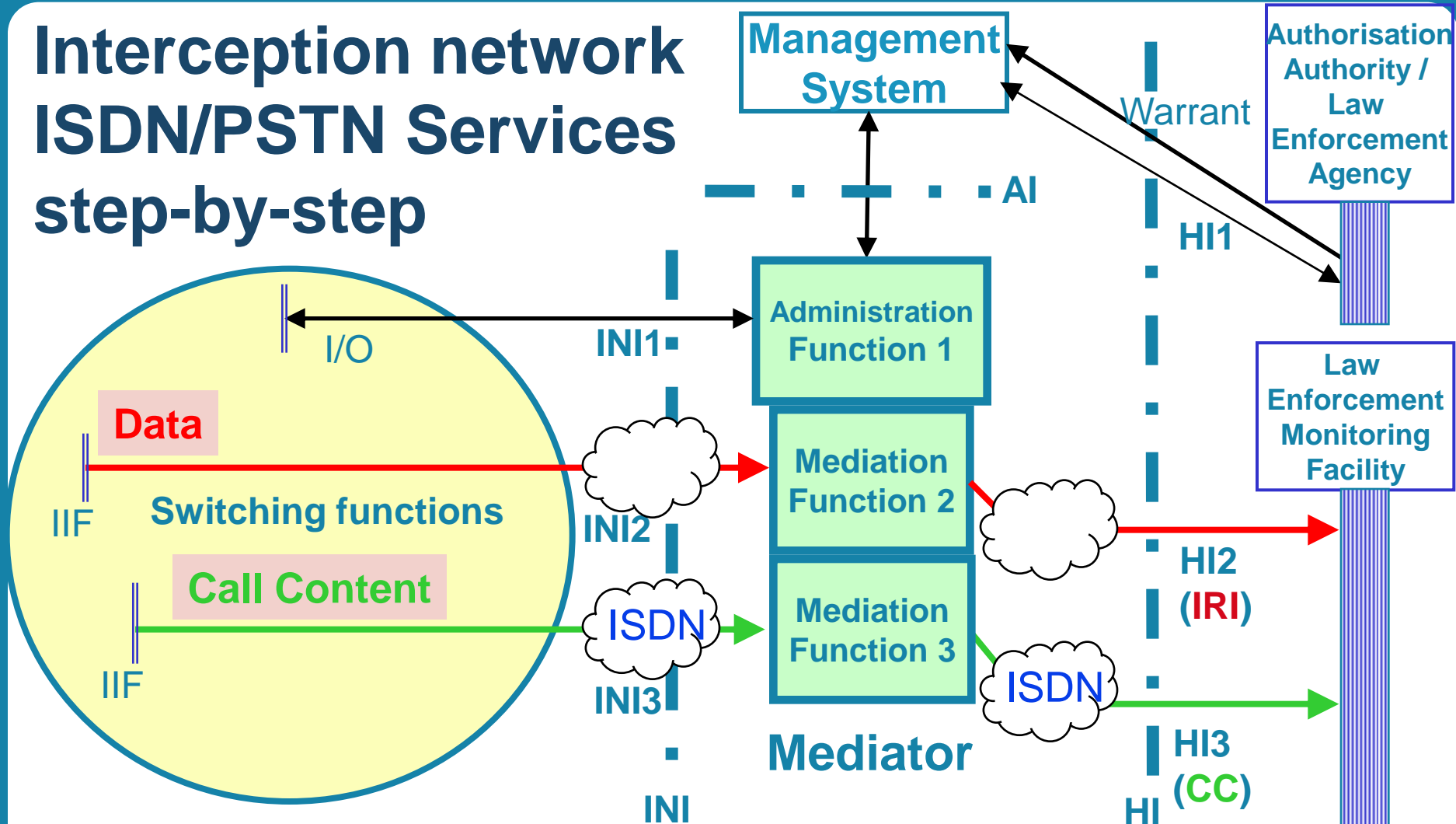
- ❑ IRI Service Associated Information
 - IRI-Report
 - For any non-communication related events



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



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
 (TS 101 671)



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**

Retained Data work in 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 data
- requirements to support the implementation of Directive 2006/24/EC

❑ **ETSI DTS/LI-00033**

(will become 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



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

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

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