

World Class Standards

ETSI's IP Handover Standards

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Handover specs [1]

- Interface between Communications Service Provider (CSP) and Law Enforcement Agency (LEA)
- Describes:
 - How to encapsulate intercepted packets
 - What additional information to add (headers)
 - (Optionally) how to encrypt the packets
- Does not describe how to obtain the intercepted packets





Handover specs [2]

- Specifications use ASN.1 (Abstract Syntax Notation 1) encoding
- ASN.1 makes it
 - easy to write a specification
 - easy to implement the specification



Example ASN.1 statement

```
EmailIRI
                          ::= SEQUENCE
    -- EmailIRI is the PDU sent for each "piece" of E-mail IRI.
    emailIRIObjId
                                            [0] RELATIVE-OID,
    eventType
                                            [1] E-mail-Event,
    client-Address
                                            [2] IPAddress OPTIONAL,
         -- Provided if available
    server-Address
                                            [3] IPAddress OPTIONAL,
        -- Provided if available
    client-Port
                                            [4] INTEGER OPTIONAL,
        -- Provided if available
    server-Port
                                            [5] INTEGER OPTIONAL,
         -- Provided if available
    server-Octets-Sent
                                            [6] INTEGER,
    client-Octets-Sent
                                            [7] INTEGER,
    protocol-ID
                                            [8] E-mail-Protocol,
    e-mail-Sender
                                            [9] UTF8String (SIZE (0..255)) OPTIONAL,
        -- Not available in some cases; if a value is available, it must be provided
    e-mail-Recipients
                                     [10] E-mail-Address-List OPTIONAL,
        -- Not available is some cases; if a value is available, it must be provided
    status
                                                   [11] E-mail-Status,
    total-Recipient-Count
                                  [12] INTEGER (0..4294967295) OPTIONAL,
                                            [13] OCTET STRING OPTIONAL,
    message-ID
        -- Network byte order
```





Old Document Numbering

TS 102 232

TS 102 815

TS 102 234

TS 102 233

Etc.

Etc.





New Document Numbering

(Since december 2006)

- Main document: TS 102 232 part 1
- 6 subdocuments: part 2 to 7
- Easy to remember!

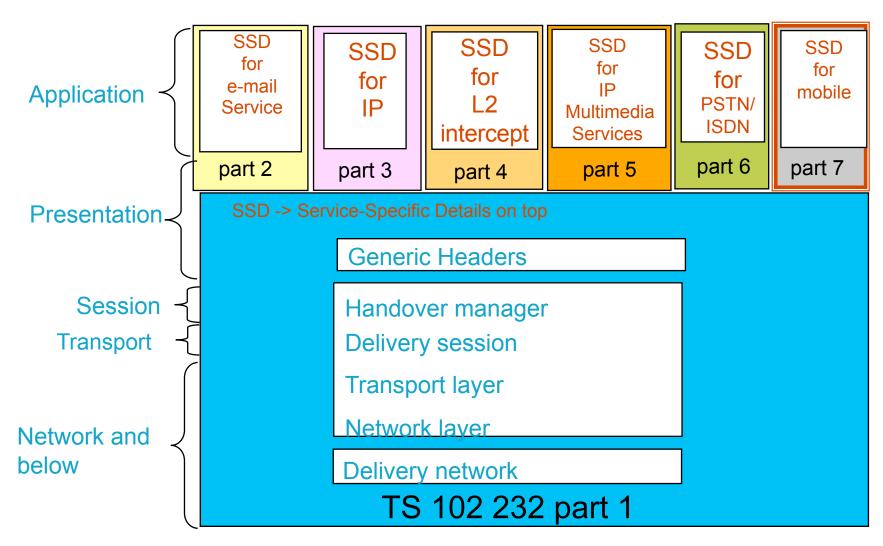


2 Oct 2008 Mark Lastdrager





The Big Picture







- Scope: General handover frar
- Covers:
 - Generic headers
 - Transport to LEA
 - HI2 or IRI: Interception Related
 CC: Content of Communication
- Rapporteur: Matthew Brown

LIID Authorization country code Communication Identifier Sequence number **Timestamp** Payload direction Payload type IRI record type (Begin, Continue, End, Report)





- Scope: Electronic mail
- Covers:
 - E-mail from and to the target (SMTP)
 - Mailbox retrieval by the target (POP3)
 - Mailbox manipulation by the target (IMAP)
- Rapporteur: Mark Lastdrager (Pine Digital Security)





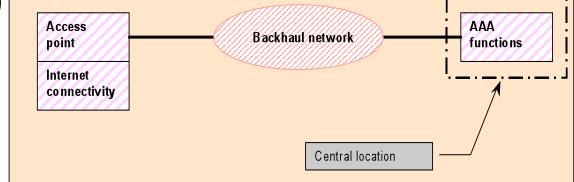
- Scope: internet access
- Covers:
 - xDSL
 - Dial-up
 - Cable
 - Fixed internet
- Rapporteur: Mark Lastdrager (Pine Digital Security)





TS 102 232 part 3 [wifi]

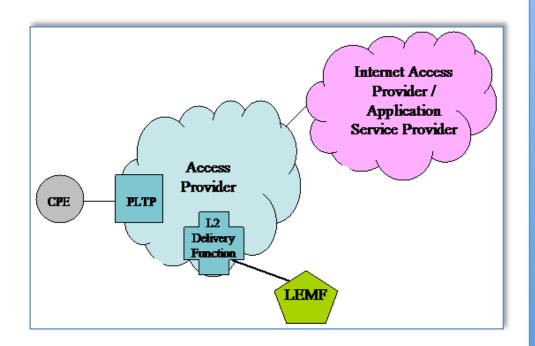
- TR 102 519 contains recommendations
 - Update part 3 to include geo location
- Two ways of interception:
 - From the air (not easy or even impossible)
 - On the wire (easy, but WLAN traffic may be masqueraded)







- Scope: layer 2 service
- Covers:
 - xDSL (on L2 level)
 - ATM
- Rapporteur:
 Wolfgang
 Schumacher (DT)







- Scope: IP Multimedia (Voice/Video over IP)
- Covers:
 - Signaling
 - Media
- Rapporteur: Mark Lastdrager (Pine Digital Security)





- Scope: PSTN/ISDN (including emulation)
- Covers:
 - delivery of "old world" telephony in "new world"
 IP handover standard
- Rapporteur: Mark Shepherd (Detica/Home Office)



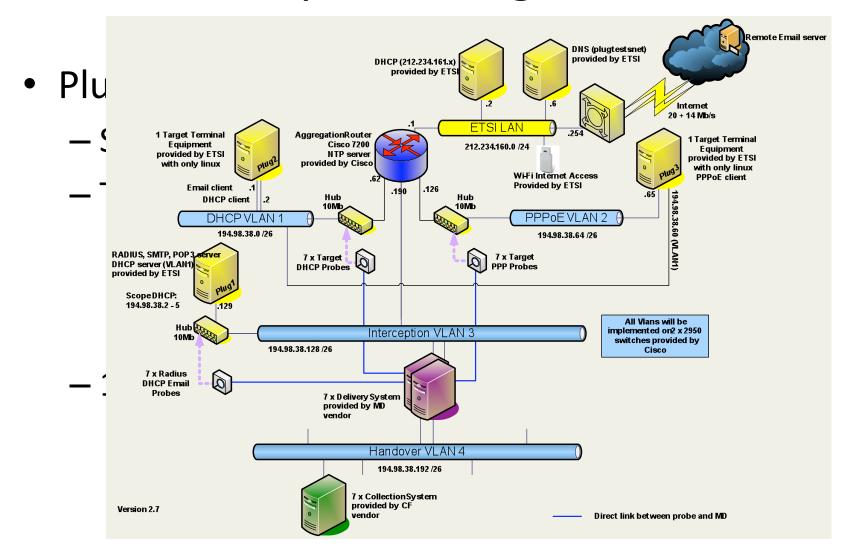


- Scope: mobile services
- Covers:
 - Handover of 3GPP data in 102 232 framework
 - Circuit switched IRI
 - Mobile packet IRI/CC
 - Mobile multimedia IRI/CC
- Rapporteur: Mark Shepherd (Detica/Home Office)





Spec testing [1]







Spec testing [2]

- Plugtest 2:
 - Lannion, France
 - Tested specs:
 - TS 102 671 (PSTN/ISDN)
 - Part 2
 - Part 5
 - Part 6
 - No official CRs were made





Thanks! mark@lawfulinterception.com

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