

# ESW – April 2011

UK Architecture for VoIP 999/112s

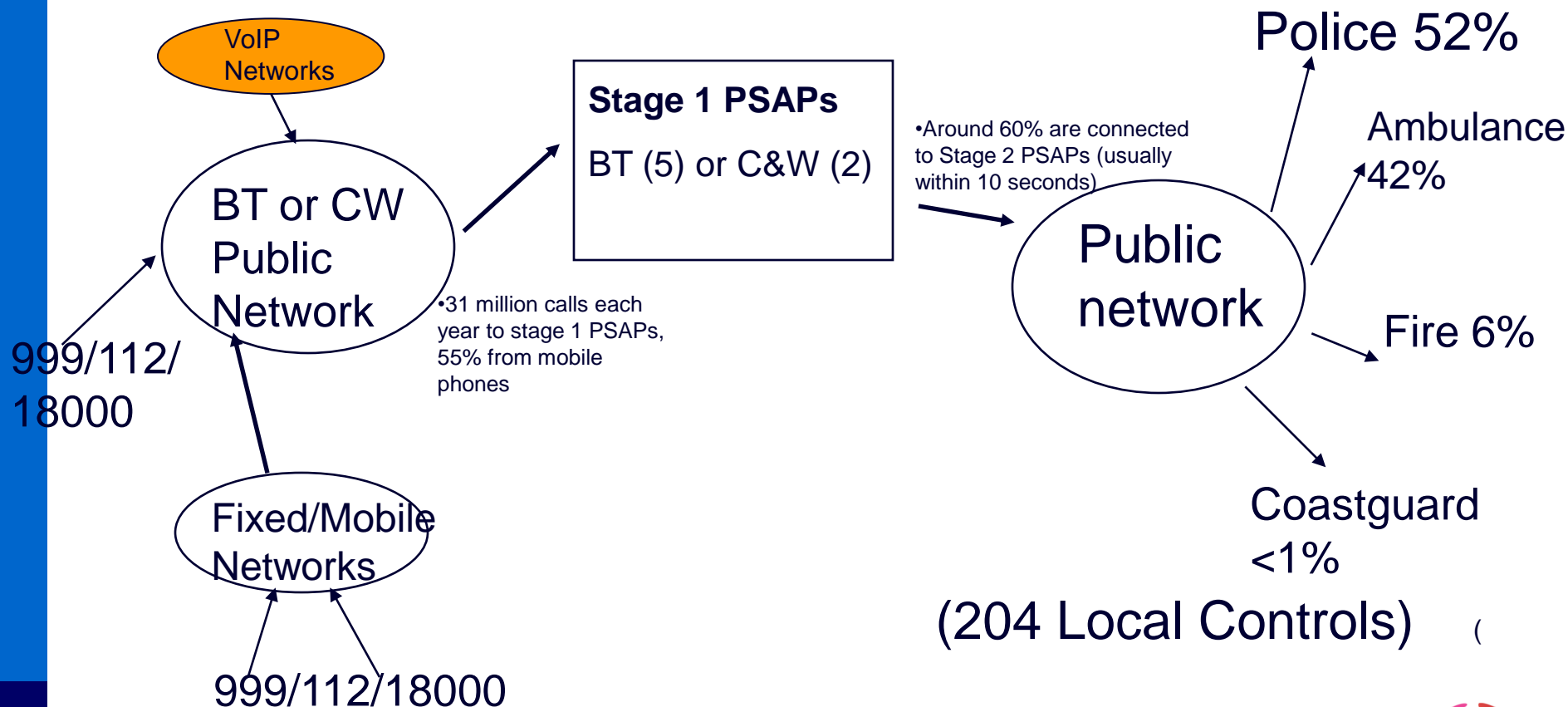
John Medland – BT 999/112 Policy Manager



# UK Emergency Service

## Public Emergency numbers

- 999/112,
- 18000 (ITU v21 text over voice, ie real time text using special terminals)



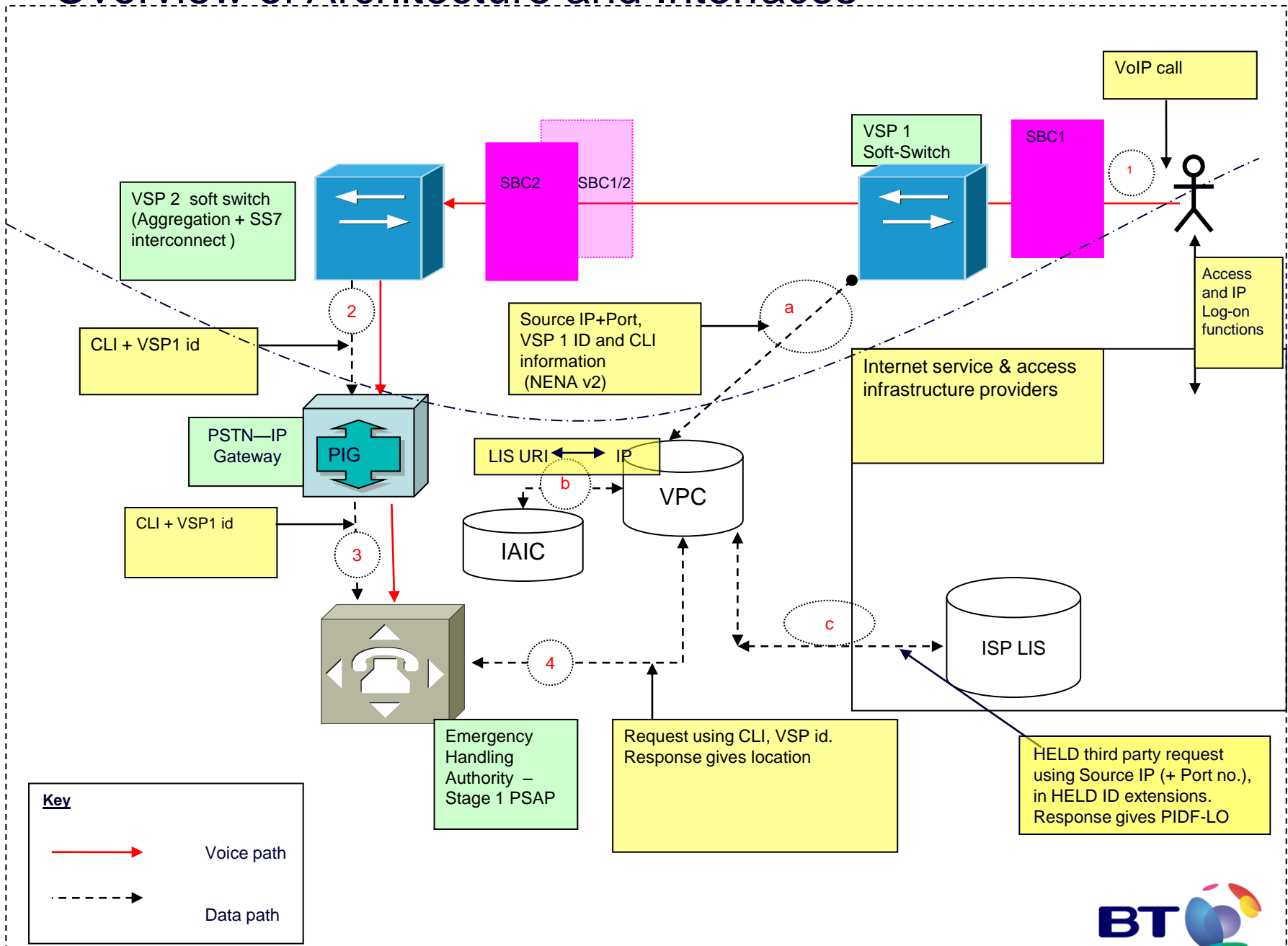
# Handling VoIP 112 now

- PSAPs still TDM based so VoIP goes through PSTN / IP Gateways
- Small number of VoIP 999s at present, mostly fixed users
- Regulation says if PSTN access, then must allow 112/999
- 112s identified as VoIP
- Registered “default” address accessed through E164 tel number (CLI) for “fixed” users....
- ....but default address marked as needing voice confirmation  
    →>> Verbal routing
- Key issues for VoIP 112 : -
  - only default name+address data from large number of VoIP SPs
  - challenge of 24 hour VSP contact point for PSAPs (tracing, alternative contact numbers)
  - lack of information to PSAP for nomadic users
- Need to Automate Location provision.....

# NICC Task Group

- *The Network Interoperability Consultative Committee : NICC is a UK telecommunications industry committee which acts as an industry consensus group in which specifications and technical issues associated with network competition and interconnection can be discussed. It also is a source of technical advice to the UK Regulator*
- Location Task Group : Routing 999/112 for VoIP to correct local EA supplying caller location information on all calls
- Membership : BT, C&W, Ericssons, Huawei, Commscope, Nominet, Magrathea, Aeonvista, Vodafone, VirginMedia, Orange, and Ofcom
- Approach :-
  - VSP, ISP and Access Provider(s) all different organisations
  - PSAPs are still TDM based
  - Start with UK only (all parties UK-based)
  - Cover DSL, Cable, Enterprise, WiFi and GSM scenarios
  - Use developing standards wherever possible, eg IETF, ETSI
  - Don't rely on user
  - Don't rely on device

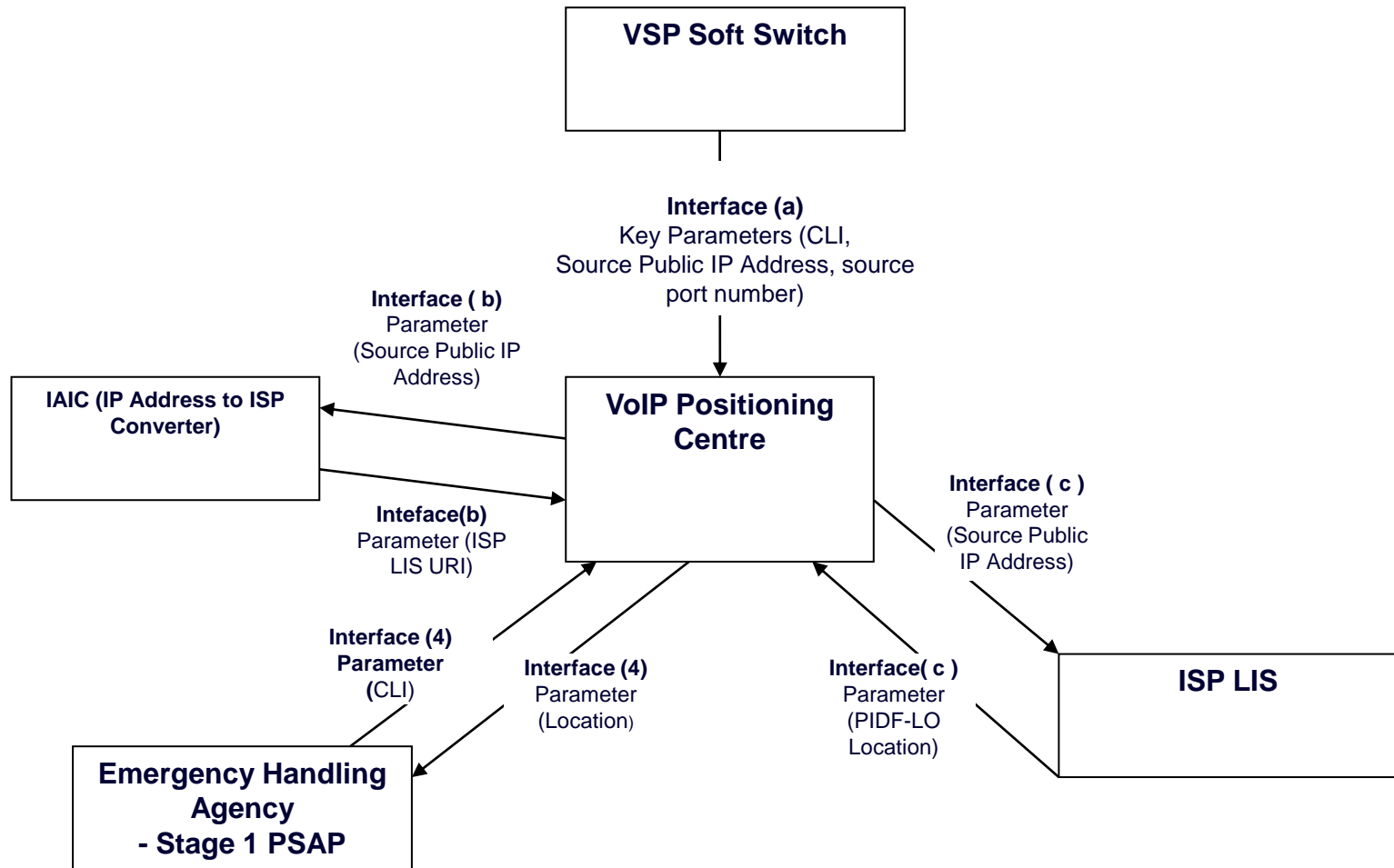
# Overview of Architecture and Interfaces



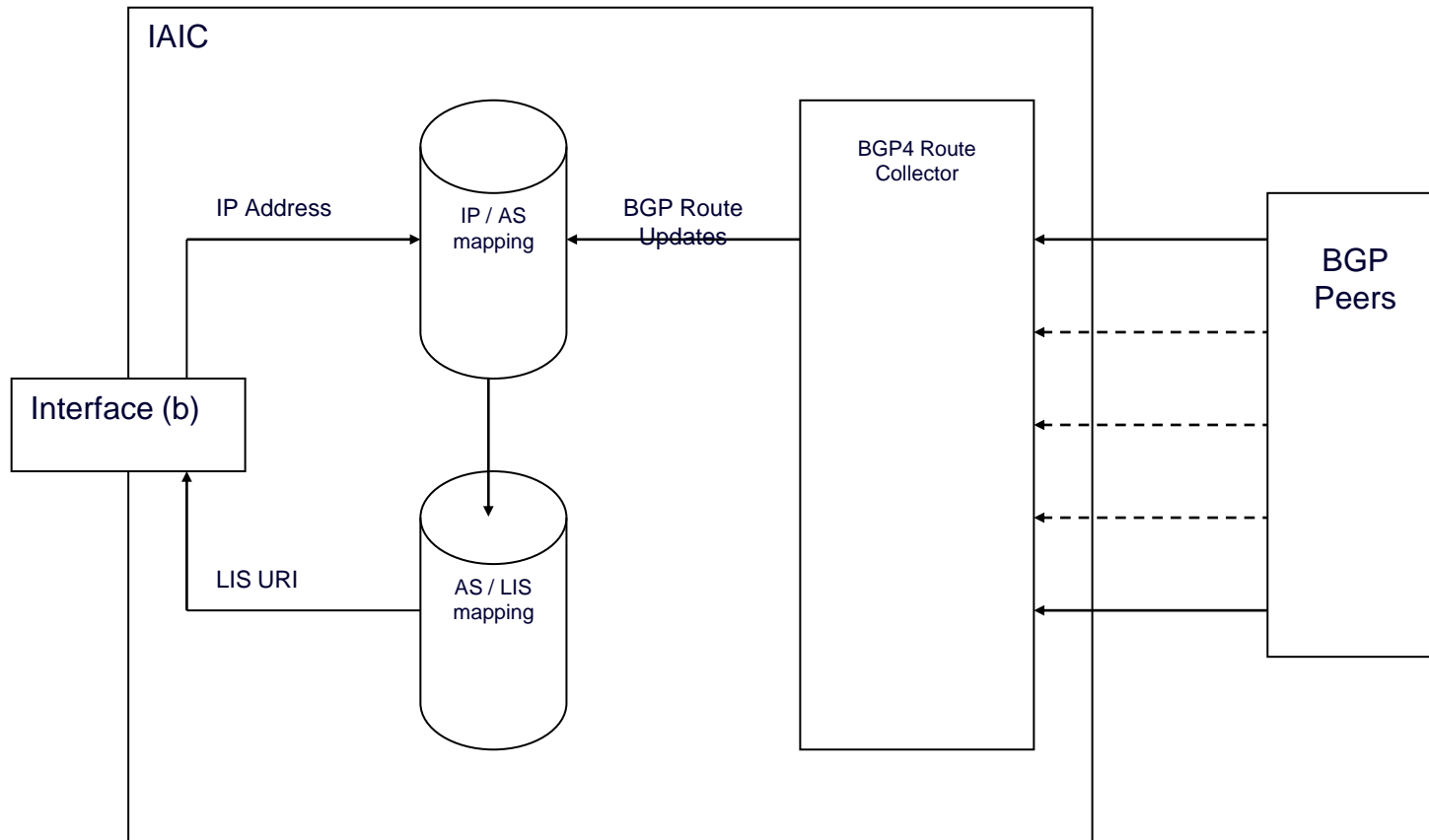
# Changes required

- VSP to develop new interface to PSAP
- ISP to develop LIS and new interface to PSAP, and in some cases to Access Network
- ISP and Access Network to ensure OSS/CRM systems kept updated and that real time systems (eg Radius Servers) exchange appropriate information
- 112 PSAP to develop VPC to bring together all information

# VPC Functions – operated by PSAP receiving 112 in UK

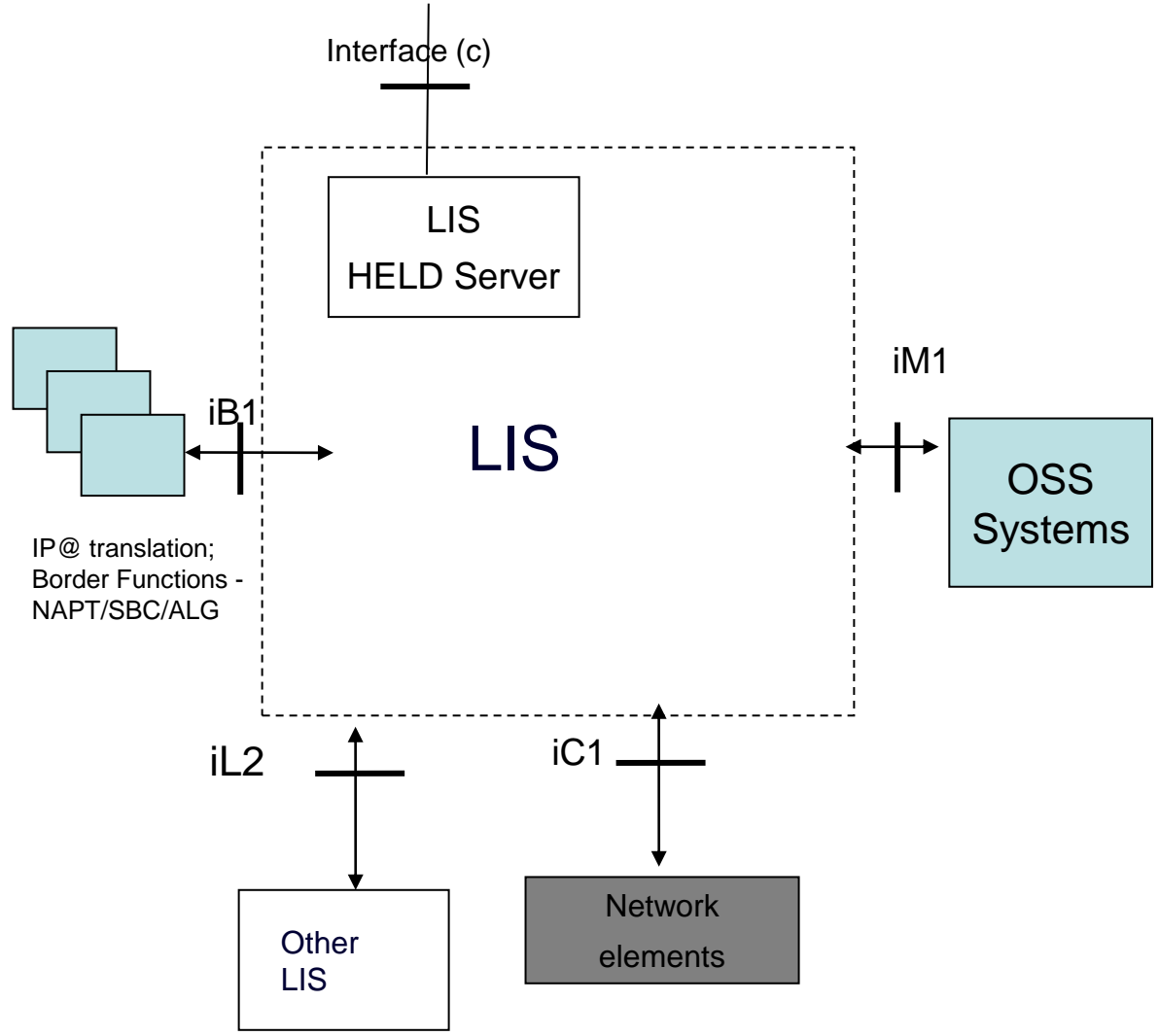


# VPC - Mapping Source IP address to ISP





# Generic LIS Functions – operated by ISP (and perhaps also by Broadband Provider)



# Broadband and ADSL Access

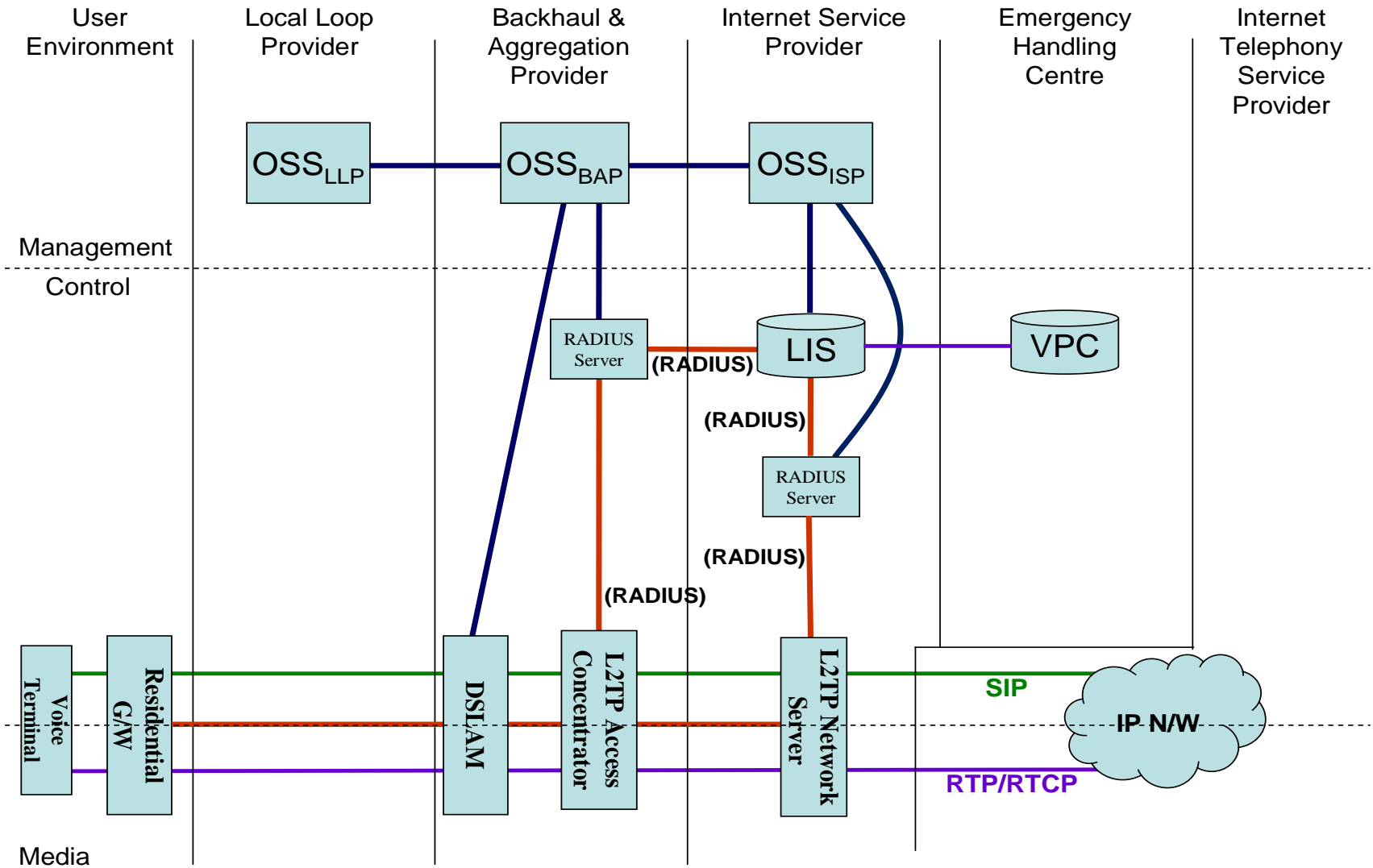


Figure E1: xDSL Architecture for PPP Tunnelled via L2TP to ISP

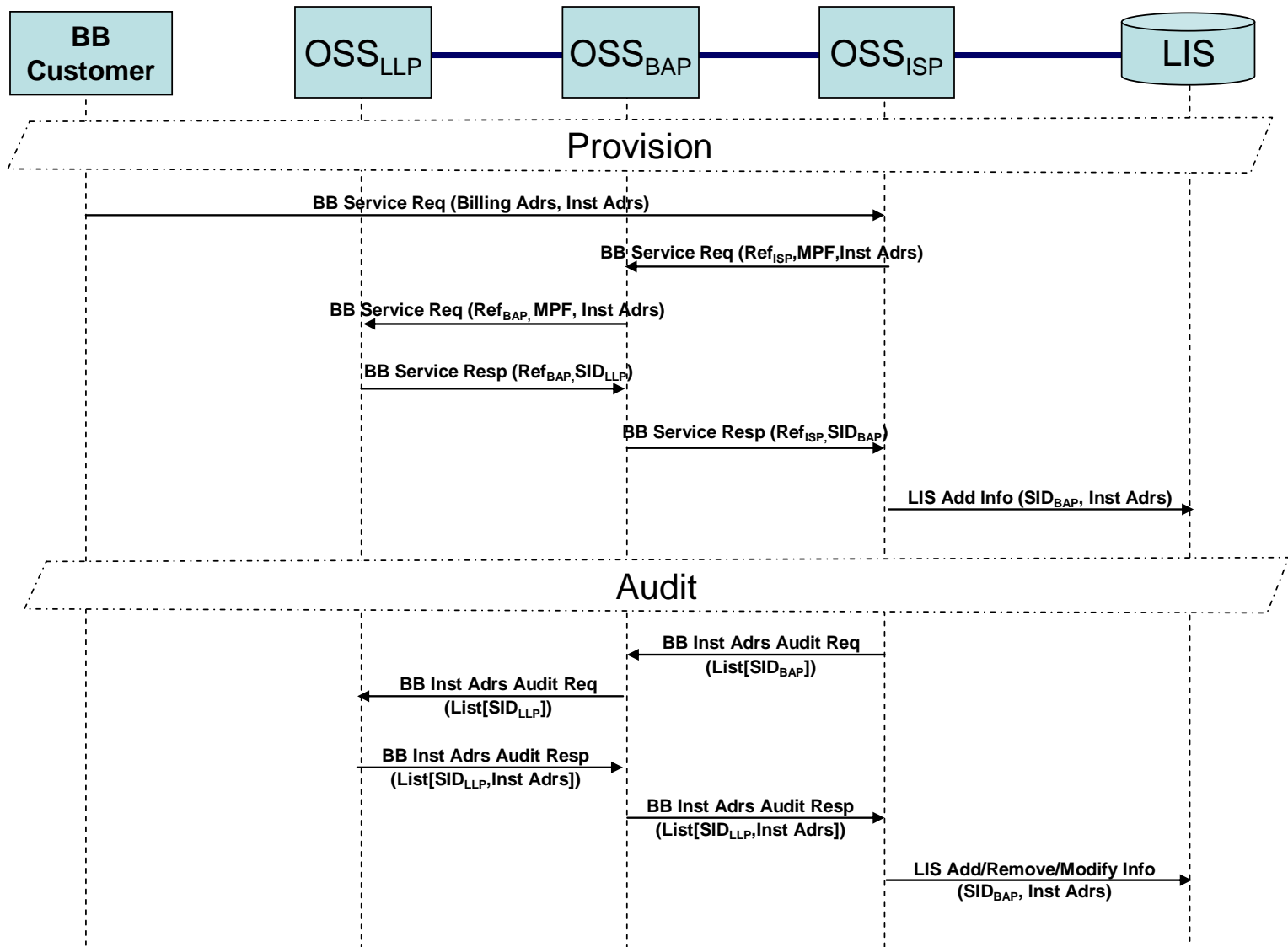


Figure E5: BB Provision and Audit on a MPF Line For Binding of Service Identifier (SID) to Installation Address (Inst Adrs)



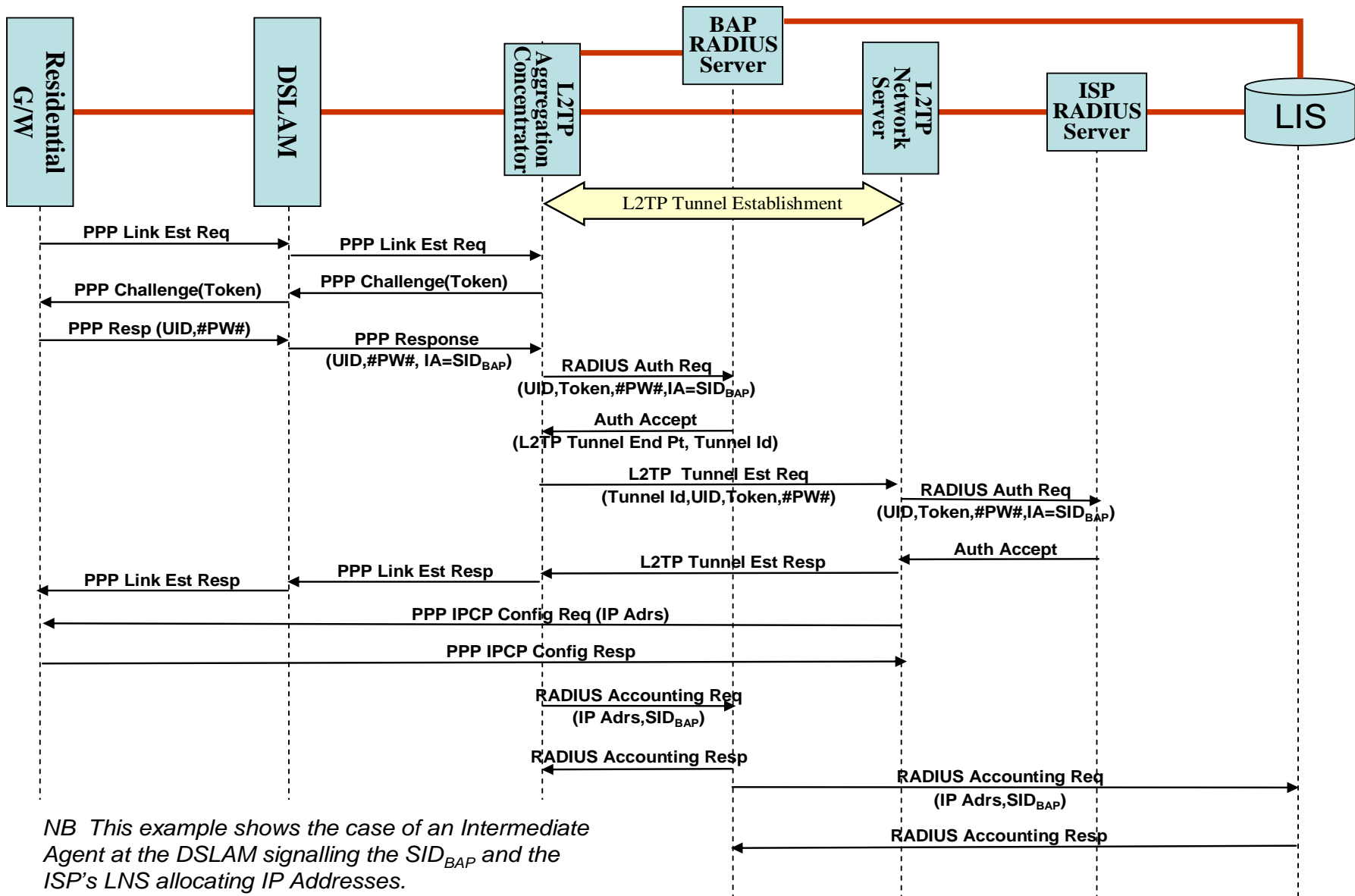


Figure E2: Network Attachment for PPP Tunnelled via L2TP to ISP

# Way Forward for UK

- NICC Standard published Jan 2010 – technically feasible  
<http://www.niccstandards.org.uk/files/current/ND1638%20V1.1.2.pdf?type=pdf>
- New requirements on all organisations (systems development)
- Many more organisations involved to deliver 112  
(not just traditional telcos providing physical access networks but VSPs and ISPs)
- New operational entities : LIS (ISP + Access Ntwk) and VPC (112 PSAP)
- New interfaces for all organisations : based on international standards as far as possible (eg IETF HELD).
- Increased co-op and trust relationships between PSAP/VSP, PSAP/ISP and ISP/Access networks
- Timescales to implement uncertain : technically feasible but money needs to be found.....
- NICC Work to continue : other use cases documented

Any Questions ??