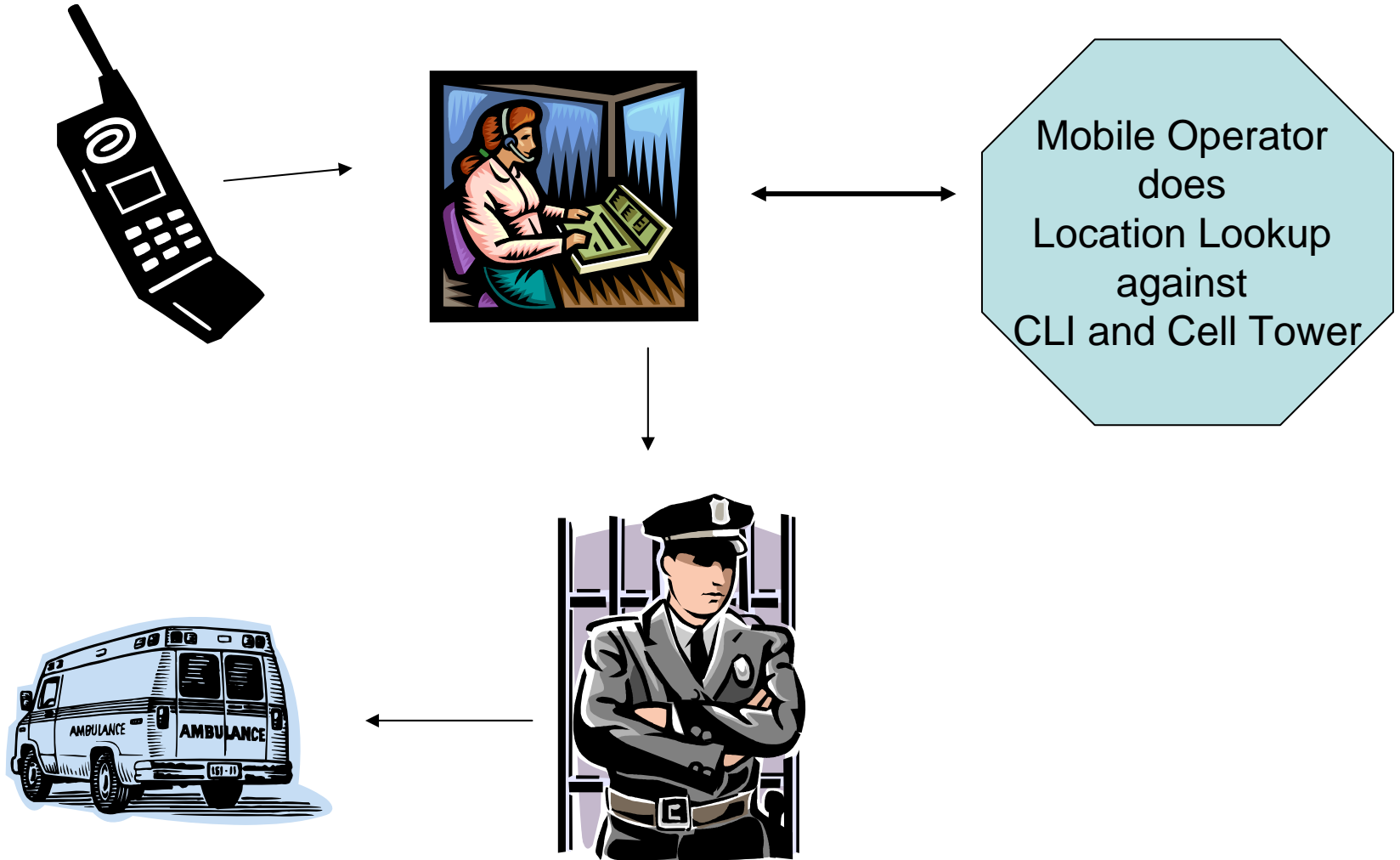


# 999 for “fixed line” VoIP

Peter Gradwell & Friends

ITSPA, 999 OFCOM/NICC W/G

# What happens with a mobile?



# Three Problems

- My mum at home with a secret ATA
- My office phone, which I move occasionally
- My mobile/wifi hybrid, which moves 24x7

# Mobile Users

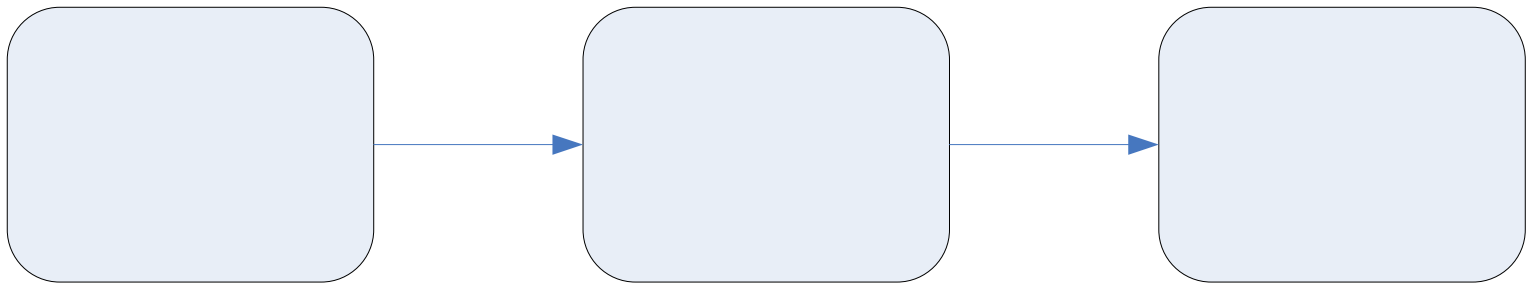
- Various work in IETF & ETSI Standards Bodies
- Enhancements to add location info to DHCP or SNMP or RADIUS
- Use of GPS
- The device must know it's position and then it registers with a central location server

# Fixed VoIP Users

- VoIP used in static situations, at home or in business
- The ATA is in the cupboard
- The phone is in the kitchen
- Customer is on a fixed DSL/Cable connection in the UK
  
- This model *seems* to work for leased lines, cable modems and Ilu

# 3 Points of Information

- VoIP Provider has *virtual phone number* and *IP address*
- ISP has *IP address* and *circuit reference*
- Circuit provider has *circuit reference* and *address* information



# How do ISPs find the circuit?

- ISPs **do not** currently have IP->Circuit Mappings
- Username/CBUK number is inappropriate as it changes
- **FTIP**/BBID Number is fixed
- BT Wholesale has a *proposal* to pass FTIP to ISP on subscriber login (at **radius authentication** time)

# Required Databases

- ISP to permit real time lookup on their radius database (!!)
- Mobile phone technique
- Perhaps a daily dump to call handling system as a backup?
- BT Wholesale to provide FTIP to Address Mapping
- Could provide daily dump to call handlers

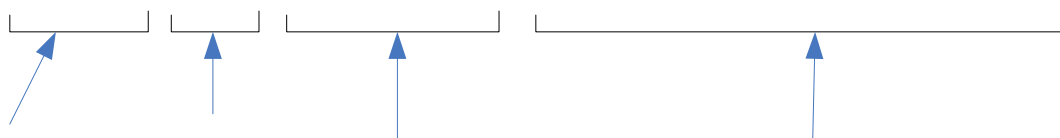


# Emergency Call Path

- VoIP Provider connects SS7 call:

From: 01225 800 810

To: 999 88 12345 217169023071



- EA Call Handler System does lookup:



# IP Address Issues

- Firewalls, VPNs, etc. all alter the IP address
- What if the IP address isn't in the database?
- Should we pass customer provided databases to 999 staff anyway?

# ISP Issues

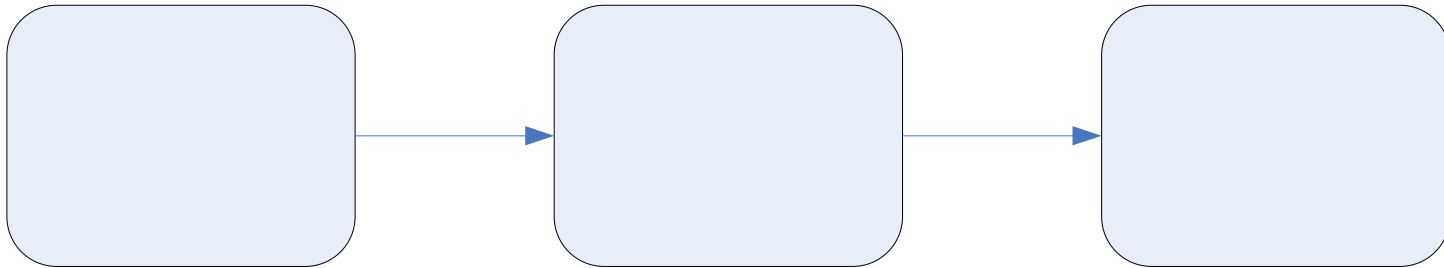
- 3000 ISPs currently in total disarray
- No incentive for an ISP to do this
- *Unless* they see the **marketing benefit**
- Potential for *best practice* with LINX/ISPA
- Big problems with ISP Liaison
- Likelihood is that 80/20 will apply (80% of subscribers on 20% of ISPs)

# BT Wholesale Issues

- BT Wholesale only knows the address is valid when they *install* the service
- They do not attempt to keep their database up to date
- Post code/Area Code changes
- Perhaps the FTIP number maps back to a BT circuit database which is well maintained?

# Other Providers Circuits

- The concept applies to LLU



- Do other LLU providers use similar circuit information (probably)
- Could they provide a similar Circuit->Location database to BT Whole Sale (probably)
- Again, administrative disarray...

VoIP Provider dials 999 +  
IP Address

ISP Looks  
to Circ

# Bulldog Telecoms Example

- Bulldog send out an all-in-one router
- 1 ethernet port (computer)
- 1 phone port (handset)
- Plugs into phone line on wall
  
- Calls actually use VoIP, across the bulldog ip network
- Bulldog knows:
  - Phone Number
  - IP Address
  - Circuit Number
  - Location of Circuit

# Philosophical points

- ISPs are moving from being a “bolt-on” service to being the underlying transmission network
- Phone numbers are not good identifiers of location any more
- How bad is a customer provided address?

# Questions (for you?)

- Is it realistic to support IP to Location lookups?
- How might your organisation improve it's internal databases?
- Is this useful for abuse handling too?
- Would anyone like to attend a 2 monthly meeting and join the NICC w/g?



# Next Steps

- Draft a “best current practice” document
- Submit to IETF/LINX/ISPA/ITSPA/OFCOM
- **Persuade** ISPs to support scheme
  
- Remove the PSTN phone number as the “key field” in the 999 system
- Worry about database accuracy

Questions for me?!