

# SIP-H.323 Interworking

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# SIP and H.323

- IETF SIP
- “Session Initiation Protocol”
- IETF proposed standard –RFC 2543
- March 1999
- Links:  
<http://www.ietf.org/html.charters/sip-charter.html>,  
<http://www.cs.columbia.edu/sip/>
- ITU H.323
- “Packet-based multimedia communications system”
- Ratified in 1996
- Version 4 ratified in November 2000
- Links:  
<http://www.packetizer.com>,  
<ftp://standard.pictel.com/avc-site/>

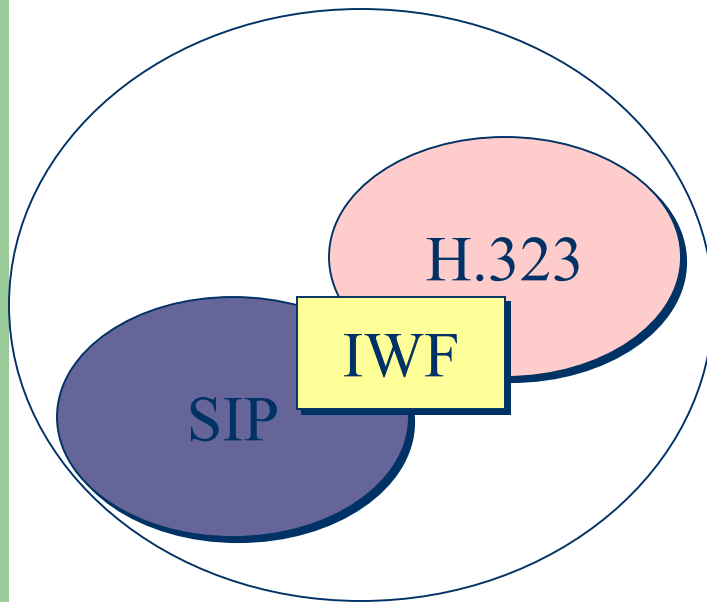
# Needs for SIP-H.323 Interworking

- There are many existing H.323 based solutions. SIP is gaining popularity, especially in VoIP
  - H.323 was defined with video conferencing in mind initially. Many VoIP products also use H.323
  - Most implementations based on SIP are audio only
- Interworking will become important
  - Companies with different protocols may merge
  - Transition from one protocol to another in the enterprise will create a mixed protocol environment
  - Service providers with different protocols have to interwork
  - Enterprises with different protocols have to communicate with each other via service providers

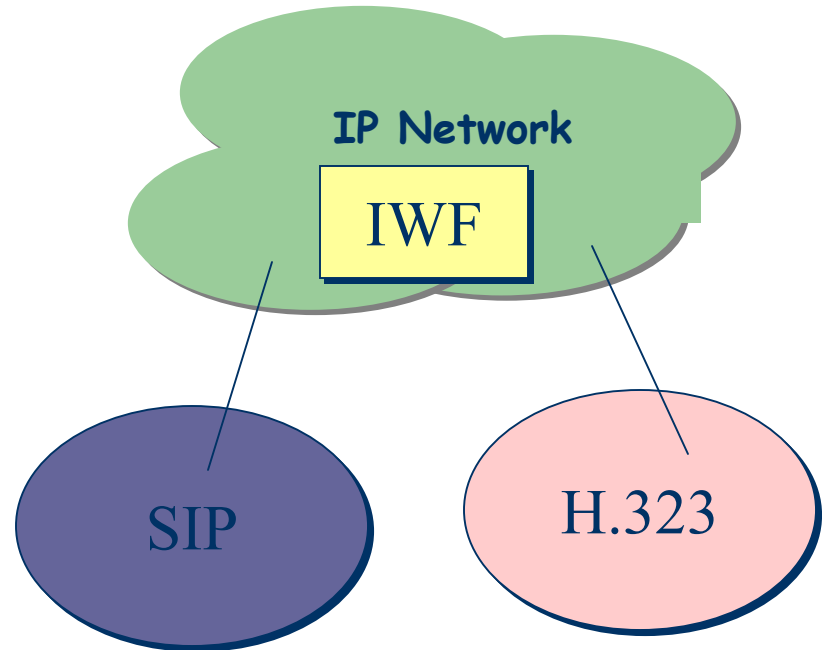
# SIP-H.323 Interworking Background

- SIP-H.323 IWF BOF at IETF-47 in March 2000
  - A consolidated effort after discussions with IETF, ITU, IMTC and ETSI participants
- IETF allowed a SIP-H.323 interworking subgroup under SIP WG
- SIP-H.323 IWF became a work item in Session Initiation Protocol INvestiGation (SIPPING) WG
  - <http://www.softarmor.com/sipping/>
- The team in IETF is defining SIP-H.323 interworking requirement draft and SIP-H.323 interworking draft to produce informational RFCs

# SIP-H.323 IWF Environment



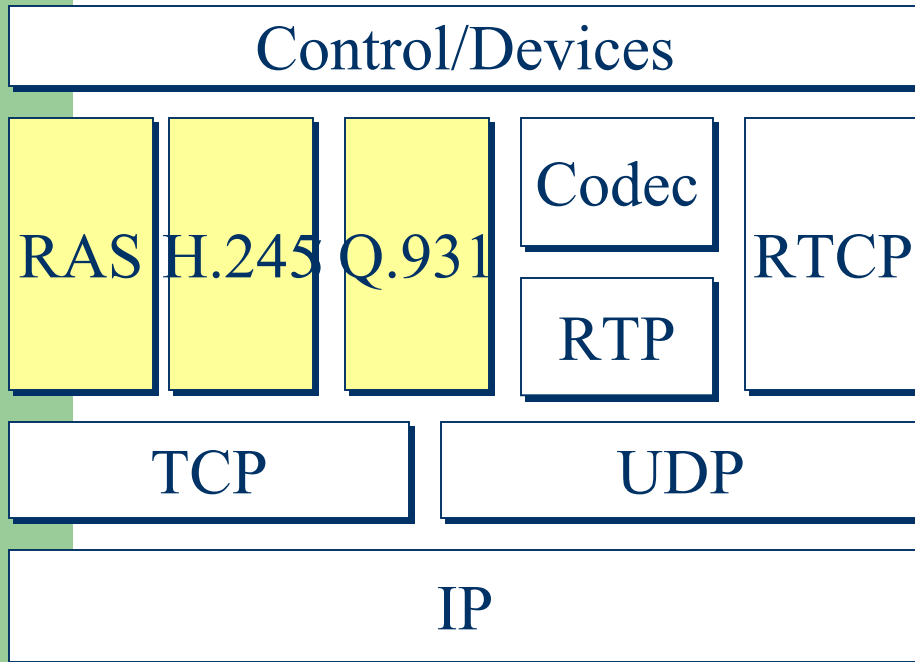
Same admin domain



Different admin domain

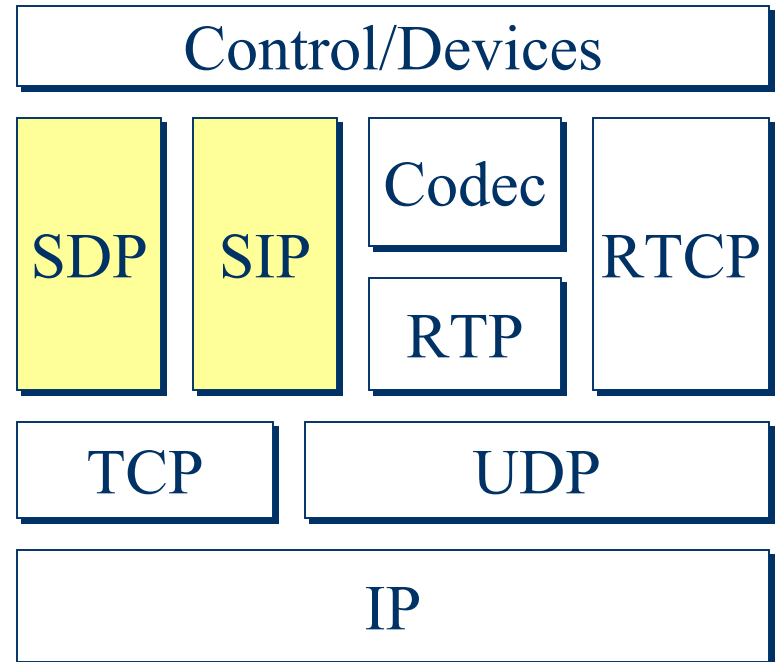
# Signaling Mapping Only

H.323



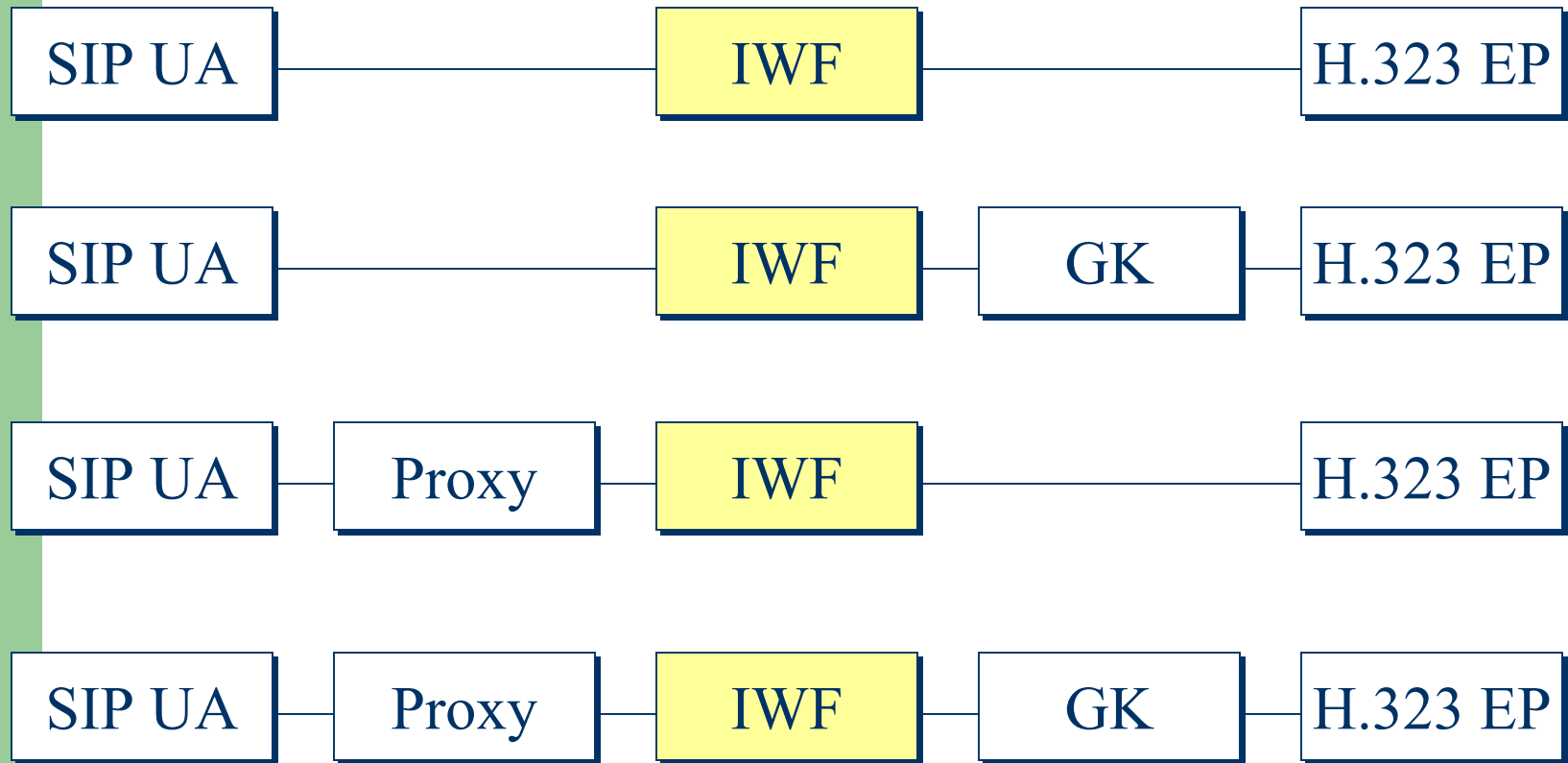
ASN.1 PER encoding

SIP



Text based encoding

# Registration Problems



# Call Setup Problems

- Mapping three piece of info for call establishment
  - Address, media type and port addresses
- SIP carries these in INVITE and its response
- H.323 spreads them across different stages
- Map multistage H.323 to single stage in SIP
- H.323 v2 fast-start supports single stage but is optional

# Media Description Mismatch

- SIP/SDP (dynamically choose from listed modes)
  - List of alternative set of algorithms
  - a= G.711 Mu law, G.723, G.729
  - v= H.261
- H.323/H.245 (choose from give set of modes)
  - Specify inter-media constraints
  - {[G.711 Mu law, G.723, G.729] [H.263]}  
  {[G.728] [H.261]}
- Algorithm selection by IWF or endpoints?

# Other Problems

- Registration: how to register users to foreign networks?
  - e.g., registering H.323 users to SIP registrar and vice versa
- Security: H.323 uses H.235 and SIP does Basic, Digest, PGP
- QoS

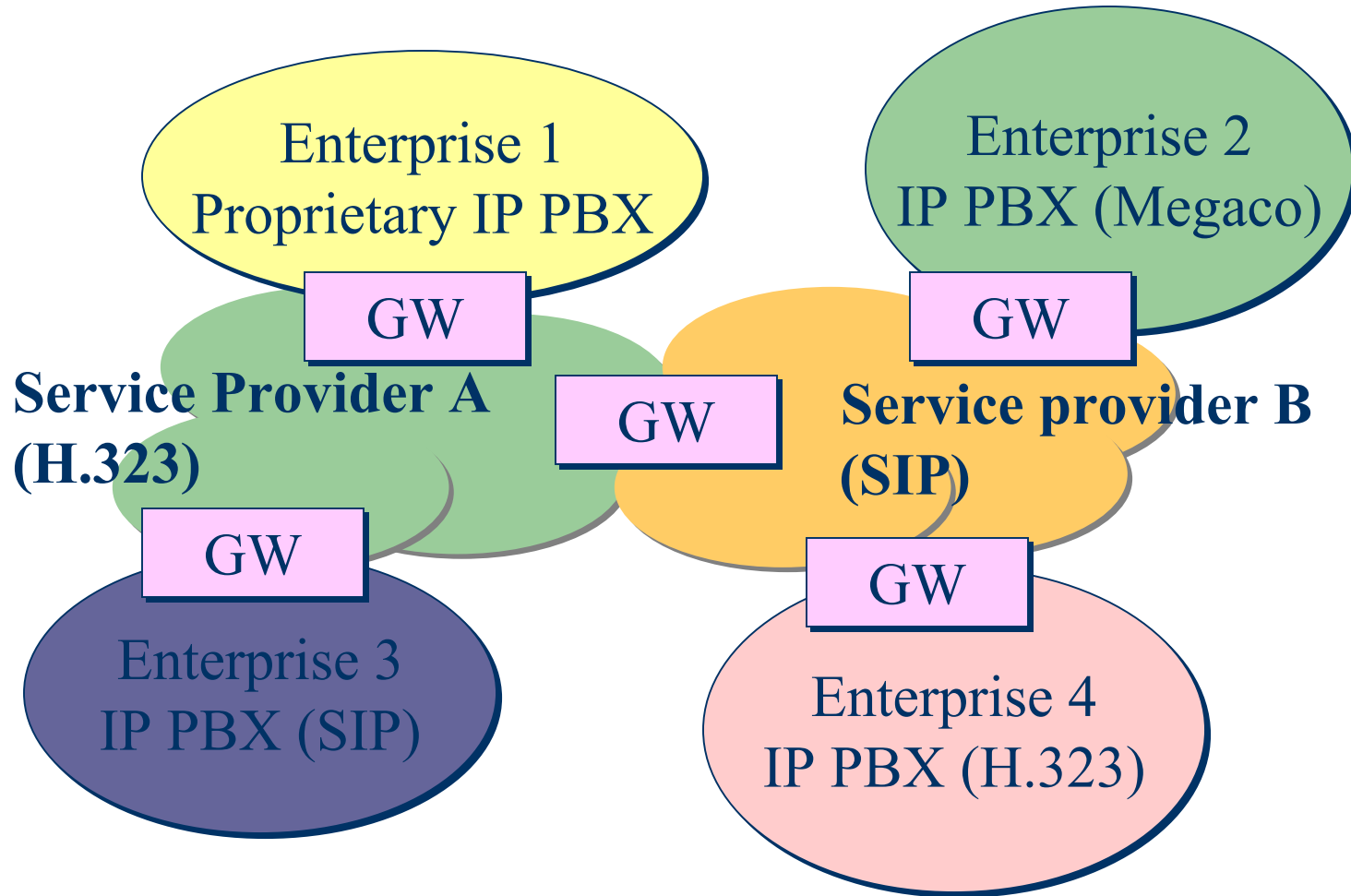
# SIP-H.323 IWF Requirements

- Mapping H.323 Version 2 and SIP Version 2
- Basic call establishment/termination only
- Mapping H.245 and SDP
- Address resolution
- No media processing will be done in IWF
- Neither SIP UA nor H.323 EP is aware of the IWF presence
- 2<sup>nd</sup> phase will include optional messaging, advanced features, and services

# Current Status

- Requirement draft: draft-agrawal-sip-h323-interworking-reqs-02.txt
- Interworking draft: draft-agrawal-sip-h323-interworking-01.txt
- The team mailing list is sip-h323@yahoogroups.com. You can sign up for yahoogroups mailing lists at [www.yahoogroups.com](http://www.yahoogroups.com)

# Islands of Protocols?



## Multiple Protocol Support

- Devices such as cell phones and IP telephones may have to support multiple protocols
- ipDialog has demonstrated call set up among multiple protocols in a simple SIP/Megaco phone
- ipDialog software stacks will support SIP, H.323, Megaco and MGCP with uniform APIs