Alternate Offers / Capabilities in SIP/SDP

draft-bhatia-mmusic-sdp-altcap-01.txt

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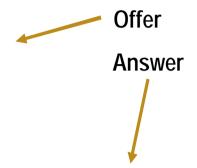
Problem: Three Categories

- Caller allocates separate DSPs for separate codecs
- Caller cannot switch codecs at runtime
- One of the offerred codecs needs to be transcoded on a separate IP host and must be sent directly to it.
- Media clipping is undesirable
- "FID" Semantics from RFC 3388 can be used with some extra SIP signaling.

- Newer versions of the same offer using encryption or SDPng

- Carrier architectures: SIP at Core. H.323/SIP/Megaco at access. H.323 messaging needs to be transparently passed through the core, especially when called party is H.323.

Proposed Solution: Use of MIME multipart entities

- Mandatory inclusion of Content-ID in each multipart entity
- Definition of a new MIME header: Content-Reference
- Allows answerer to indicate which MIME body in the offer is being responded to
- Answerer must include one MIME body with Content-Reference header when offerer uses MIME multipart/alternative body

How does it look like ?

```
Content-Type: multipart/alternative; boundary='xxx'

--xxx
Content-Type: application/sdp
Content-ID: <o100@spock.nextone.com>

v=0
o=- 25678 753849 IN IP4 128.96.41.1
s=
c=IN IP4 128.96.41.1
t=0 0
m=audio 3456 RTP/AVP 0
m=video 3458 RTP/AVP 31


--xxx
Content-Type: application/sdp
Content-ID: <o101@spock.nextone.com>

v=0
o=- 25678 753849 IN IP4 128.96.41.1
s=
c=IN IP4 128.96.41.1
t=0 0
m=audio 3456 RTP/AVP 18
m=video 3458 RTP/AVP 34


--xxx--
```

Offer

Answer

```
Content-Type: application/sdp
Content-Reference: <o100@spock.nextone.com>;answer

v=0
o=- 25678 753849 IN IP4 128.96.41.1
s=
c=IN IP4 128.96.41.1
t=0 0
m=audio 49000 RTP/AVP 0
m=video 59000 RTP/AVP 31
```

Proposed Solution: Use of MIME multipart entities

- Other MIME multipart bodies allowed
- Answer can include multiple bodies too (Negotiated bodies)
- Subsequent exchanges must follow modification protocols for individual bodies (like RFC 3264) and must have the same number of negotiated bodies.

- Discussed multiple approaches:
- "ALTS" semantics based on RFC 3388
- "ATLC" semantics based on RFC 3388
  - Very complex and does not extend easily
  - SDP based. Works for non MIME based protocols too
- MIME multipart/alternative w/o Content-Reference header
  - Answerer includes empty bodies to maintain positions of bodies.
  - Not elegant

- Current approach (-01) address a much wider domain of problems and is simpler as well as elegant.

Issues

- Changes to title / organization of draft ?
- Work Group ?
- SIP Require header
- Extension parameters in Content-Reference header

```
reference := "Content-Reference" ":" msg-id 1*(";" reference-parm)

reference-parm := "answer" | extension-token
```