SDP Offer/Answer mechanism to negotiate the usage of bundled media

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GOAL

• SELECT A MECHANISM TO MOVE FORWARD WITH

• IMPLEMENTATIONS EXPECTED TO SHIP SOON
ALTERNATIVES

• BUNDLE
  – draft-ietf-mmusic-sdp-bundle-negotiation
    • New SDP grouping framework extension, “BUNDLE”
    • Each m-line associated with a group shares the **same** port number
    • Multiplexed media described in each associated m-line.
• Cullen BUNDLE (TOGETHER)
  – draft-nandakumar-rtcweb-sdp, draft-alvestrand-one-rtp
    • Similar to BUNDLE
    • Difference: Each m-line associated with a group uses **different** port number
      – If multiplexing is used, the port of the top-most m-line is used
• MMT
  – draft-holmberg-mmusic-sdp-mmt-negotiation
    • New SDP grouping framework extension, “MMT”
    • New SDP media type, “anymedia”, used to describe the multiplexed media session
    • New SDP attribute, “mmttype”, used to map PT values to specific media types
EXAMPLE: BUNDLE

v=0
o=alice 2890844526 2890844526 IN IP4 host.atlanta.com
s=
c=IN IP4 host.atlanta.com
t=0 0
a=group:BUNDLE foo bar
m=audio 10000 RTP/AVP 0 8 97
a=mid:foo
b=AS:200
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:97 iLBC/8000
m=video 10000 RTP/AVP 31 32
a=mid:bar
b=AS:1000
a=rtpmap:31 H261/90000
a=rtpmap:32 MPV/90000
EXAMPLE: Cullen BUNDLE

v=0
o=alice 2890844526 2890844526 IN IP4 host.atlanta.com
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m=video 20000 RTP/AVP 31 32
a=mid:bar
b=AS:1000
a=rtpmap:31 H261/90000
a=rtpmap:32 MPV/90000
EXAMPLE: MMT

v=0
o=alice 2890844526 2890844526 IN IP4 host.atlanta.com
s=
c=IN IP4 host.atlanta.com
t=0 0
a=group:MMT foo bar zoe
m=audio 10000 RTP/AVP 0 8 97
a=mid:foo
b=AS:200
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:97 iLBC/8000
m=video 20000 RTP/AVP 31 32
a=mid:bar b=AS:1000
a=rtpmap:31 H261/90000
a=rtpmap:32 MPV/90000
m=anymedia 30000 RTP/AVP 0 8 97 31 32
a=mid:zoe
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:97 iLBC/8000
a=rtpmap:31 H261/90000
a=rtpmap:32 MPV/90000
a=mmtype: 0 audio
a=mmtype: 8 audio
a=mmtype: 97 audio
a=mmtype: 31 video
a=mmtype: 32 video
ISSUES: BUNDLE

• Usage of same port number
  – Offer might be rejected
• Need to describe how existing, and new, SDP parameters in each m-line affects the multiplexed media
  – E.g. bandwidth calculation based on the bandwidth given for each m-line
ISSUES: Cullen BUNDLE

- **Non-supporting intermediaries**
  - Will send media, and expect media to be received, on the different ports indicated in SDP
  - No knowledge that the port of the top-most m-line is to be used
- **Non-supporting endpoint copies grouping attribute into SDP answer**
  - Offerer will think that Cullen BUNDLE is used
- **Not possible to set top-most m-line to zero?**
- **ICE candidates for multiple ports**
- **Need to describe how existing, and new, SDP parameters in each m-line affects the multiplexed media**
  - E.g. bandwidth calculation based on the bandwidth given for each m-line
ISSUES: MMT

• Rejection of unknown media type
• Large SDP
  – Only if both individual media and anymedia are offered
  – Only initial offer
• ICE candidates for multiple ports
  – Only if both individual media and anymedia are offered
• RTP only?
  – Currently RTP/AVP is used as protocol
NEXT STEP

• WHICH APPROACH DO WE MOVE FORWARD WITH?
THANK YOU FOR LISTENING!