• Support of non-RTP/RTCP-mux (*non-mux*) optional for WebRTC endpoints

• Need to indicate if only non-RTP/RTCP mux (*exclusive mux*) is supported
  
  – Current SDP ‘rtcp-mux’ attribute indicates capability to fallback to non-mux
(3) WHY?

• Some networks define usage of non-mux
• If connected with endpoints that may use mux, network entry points need to know whether endpoints are able to fallback to non-mux
  – Otherwise network entry point need to insert ”mux transcoder” before forwarding offer
  – Needs to be done
  – Usage of RTP/RTCP mux mandated within BUNDLE groups
  – According to browser people browsers won’t implement non-mux
(4) CURRENT SOLUTION:
SDP ’rtcp-mux-exclusive’ attribute

• Not supported by currently deployed endpoints
• Will not be implemented by future non-mux endpoints
  – Will try to use non-mux
(5) ALTERNATIVE SOLUTION: SDP ‘rtcp-mux’ + RTP candidate

• NUTSHELL
  – Include SDP ‘rtcp-mux’ attribute
  – Provide RTP candidate **only** (no RTCP candidate)

• ISSUES
  – Works only with ICE
  – Assume RTCP candidate won’t be trickled later
    • Mandate mux for trickle?
    • Mandate RTP- and RTCP candidates to be provided at the same time (even if trickle is used)?
(6) ALTERNATIVE SOLUTION: ICE option

• NUTSHELL
  – Include ICE option tag indicating mux exclusive
  – Provide RTP candidate only (no RTCP candidate)

• ISSUES
  – Works only with ICE
  – What happens if remote endpoint does not support ICE option?
    • Reject media?
    • Discard ICE option tag?
      – Similar issues as with SDP ’rtcp-mux-exclusive’
(7) ALTERNATIVE SOLUTION: SDP ’rtcp’ attribute

• NUTSHELL
  – Include SDP ’rtcp’ attribute with RTP address:port;
    OR
  – Include SDP ’rtcp’ attribute with 0 port value

• ISSUES
  – Unclear how endpoints would handle case where attribute contains RTP address:port
  – Claims that ’rtcp’ attribute is broken, and we should not define new usage for it.
(8) ALTERNATIVE: DO MUX ONLY

• NUTSHELL
  – Mandate usage of mux for WebRTC entities
    • Decision by RTCWEB WG

• ISSUES
  – Works only with WebRTC endpoints
  – If there is no explicit indicator, endpoints need to know that peer is an WebRTC endpoint
    • Not an issue as long as you anyway are going to need a gateway between WebRTC and legacy
(9) NEXT STEPS

- Agree on way forward
- Submit new version of draft-ietf-mmusic-mux-exclusive
- New WGLC
(10) THE END