

RTP Media Stream Pause and Resume

Magnus Westerlund Bo Burman Daniel Gröndal Azam Akram

<u>draft-westerlund-avtext-rtp-stream-pause-00</u>



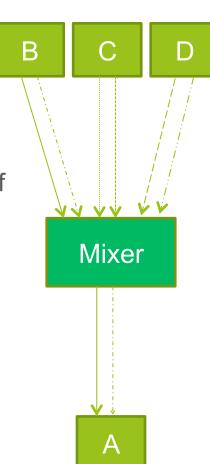
Introduction

- > Use Case
- > Requirements
- > Why not use TMMBR?
- > Proposal



Use Case

- > Point to Point
 - Receiver is currently not playing out the media stream due to minimized UI for example
- > RTP Mixer Topologies with a number of session participants
 - The RTP mixer selects, composes or mixes a number of participants into a outgoing media streams
 - Each participant may receive a different combination of incoming streams
 - In some cases one or more stream sent to the mixer is not used
 - Any unused stream wastes resources
 - Temporarily disable streams until need
 - Voice activity / automatic selection system
 - > User controlled selection
- Simulcast of multiple encoding alternatives results in more streams that may not be currently used





Requirements

- Allow an RTP Node to temporarily disable delivery of an identified media stream
- › Quickly resume media delivery to maintain real-time behavior
- A mistake in classifying the RTP topology should not cause impact on other session receivers
- Must handle joining receivers so that they are fooled to believe a media stream is silent on its own choice rather than being paused
- Ensure that basic RTP/RTCP mechanism don't get screwed up



Why not TMMBR

- > It has been raised that Temporary Maximum Media Bit-rate Request (TMMBR) [RF5104] with a value equal to 0 can be used for this mechanism
- > TMMBR Semantics has some issues
 - -If the media stream is shared between multiple receivers a TMMBR=0 will cut off the other that hasn't requested to pause the stream
 - A new session participant will not know that a paused SSRC even is paused, rather than not an active sender
 - When setting TMMBR > 0 the current semantics mandate a consideration time to allow others from preventing the value to increase
 - Causes significant delay to resume if honored



Proposal

- Define a new RTCP AVPF Transport Layer Feedback message that allows to
 - A requesting SSRC to request state at the media sender to pause
 - A requesting SSRC to request resume
 - An Acknowledgement message indicating
 - if pause will happen
 - if there additional receivers on the same media leg not having set state
 - > Resume indication
 - Pause happens when all known SSRC sending RTCP RR has established PAUSE state
 - The media will resume as soon as not all SSRC have established state
 - New receiver joins
 - Anyone sends a Resume request



Proposal

- > Pause and Resume requests are not allowed on CSRCs
- > The semantics of what that would mean
 - If RTP mixer delivers multiple streams, would a pauses CSRC exclude it from any stream, or just the currently used ones
 - Please compare with Media Stream Selection
 - > draft-westerlund-dispatch-stream-selection-00
 - > Have include, exclude and reset semantics
 - > Can scope requests to particular delivery media streams



Next Steps

- > What are the interest for the general problem?
- Additional related use-cases?
- Interest in the proposed solution?