



# RTP Media Stream Pause and Resume

Magnus Westerlund

Bo Burman

Daniel Gröndal

Azam Akram

[draft-westerlund-avtext-rtp-stream-pause-00](#)

# Introduction

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- › 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

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- › 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

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- › 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

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- › 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

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- › 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

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