

RTP Considerations for Endpoints sending Multiple Media Streams

draft-lennox-avtcore-rtp-multi-stream-02
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Changes from previous revision

- Merged with `draft-wu-avtcore-multisrc-endpoint-adver`
- New mechanism for describing reporting groups in RTCP

Reporting Group Concept

- A “Reporting Group” is a group of sources (SSRCs) that all originate at the same interface of an endpoint
 - MUST have the same view of an RTP session
- Having a SSRC (Reporting Source) report on remote some set of SSRCs being received
 - Reporting Source(s) will send feedback
 - Multiple SSRC allowed when hitting MTU
- The other SSRCs in a reporting group
 - Send regular SR/RR
 - No report blocks on remote SSRCs

New Reporting Group mechanism

- *Reporting sources* send report blocks on remote sources.
 - They send a new SDES item “RGRP” identifying the group on whose behalf they’re reporting.
 - Unique Random identifier with Session Scope
- *Other sources* include a new RTCP packet type “RGRR” listing the SSRCs of the reporting sources reporting on their behalf.
- If a source is in a reporting group, it includes exactly one of these two in every compound RTCP packet that has an SR/RR.

Why a new RTCP packet type for RGRR?

- Originally we thought of making it an SDES item.
- However: RTCP SDES items are defined as being UTF-8 strings; SSRC values are binary.
- Question: any problem with using a whole RTCP packet for this purpose?
 - In 20 years, so far we've used 15 of 32 RTCP packet types in the primary assignment range (assuming RTP/RTCP mux).

Remaining open issues

- RTCP scheduling issues when sending from multiple sources in one compound packet
 - How should you calculate your transmission timing?
- How should compound packets with multiple sources affect RTCP's `avg_rtcp_size` calculation?
 - Is this in fact a bug in RFC 3550?

Open issues

- How should we signal the use of reporting groups in SDP?
 - Probably will be straightforward, but needs to be defined.
- Does the “you can send RTCP immediately on joining” RTCP timing exception need to be weakened for sessions with lots of sources?

Path forward

- Does the WG want to adopt this work?
- What should the relationship be between this draft and `draft-ietf-avtc core-multi-media-rtp-session`?
 - Some text in that draft really about multiple sources, not multiple media types – e.g., guidance on choosing RTCP bandwidth with differing source bandwidths.