Non-compound RTCP

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draft-johansson-avt-non-compound-rtcp

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TAKING YOU FORWARD

Non-compound RTCP

- Happened since Prague
- Main issues
- Working group item

Happened since Prague

- Non-compound RTCP adopted by 3GPP
  - http://www.3gpp.org/ftp/Specs/archive/26_series/26.114/26114-710.zip (ch. 7.3.5)
  - Non-compound RTCP can be used with both Voice and video
  - Feedback purpose (RTCP_APP, Generic NACK, TMMBR, TMMBN).
  - AVPF early or immediate mode required.

Main issues

- Bandwidth computation
- allow_early flag

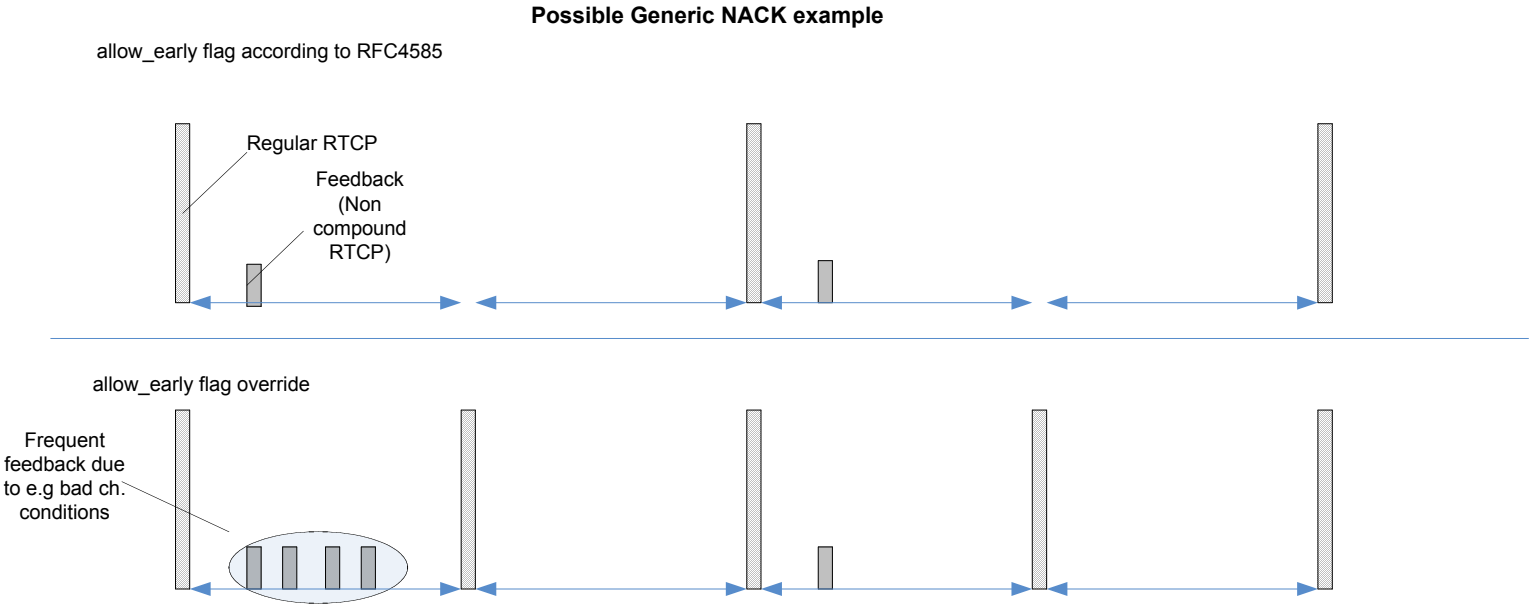
Bandwidth computation

- Two alternative
  - Let compond and non-compound RTCP update avg_rtcp_size
  - Only regular (compound) RTCP update avg_rtcp_size
- Simple to implement but some problems occur.
  - Some risk that Regular RTCP does not get a fair share of the bandwith (allow_early flag used as a remedy).
  - Large difference in size between large and small RTCP makes it necessary to modifiy the 1/16 averaging factor in RFC3550.
- Slightly more complex solution but gives the opportunity to guarantee that compound RTCP gets a fair share and still enable frequent feedback when needed.

allow_early flag

- Frequent feedback can be very useful eg. for Generic NACK purposes or fast adaptation of bitrate based on eg. experienced delay.
- allow_early flag specified in RFC4585 (subclause k in ch 3.4) limits the potential with non-compound RTCP as the flag puts a limit on the non-compound RTCP sending rate.

Override of allow_early



- allow_early flag override makes it possible to enable fast and timely feedback when actually needed.
- Needs to be combined with robust bandwidth computation to guarantee the Regular RTCP report interval.

Override of allow_early

- Seems to be considered already in RFC4585 (subclause m in ch 3.4), somewhat contradicts the intention of allow_early.

  "Note: Providing T_rr_interval as an independent variable is meant to minimize Regular RTCP feedback (and thus bandwidth consumption) as needed by the application while additionally allowing the use of more frequent Early RTCP packets to provide timely feedback. This goal could not be achieved by reducing the overall RTCP bandwidth as RTCP bandwidth reduction would also impact the frequency of Early feedback"

- Multiparty/multicast behavior must be handled

A proposed outline (option 1)

- Compute BW for compound and non-compound RTCP jointly (avg_rtcp_size)
  - Modification of equations needed.
  - No override of allow_early flag

A proposed outline (option 2)

- Compute bandwidths for Regular and Non-compound RTCP separately
  - Discrimination based on PT number(s)
- Override allow_early flag to value TRUE if bandwidth for Regular RTCP guaranteed.
    - Report interval trr_int specified in SDP achieved or..
    - Non-compound RTCP BW less than X% of total RTCP BW as specified in SDP
  - Some kind of ”soft override” may also be considered.
- Override behavior for multiparty/multicast needs to be specified.

Working group item

- The authors wish to have this adopted as a working group item.