Bandwidth metrics

draft-franceschini-avt-bwmetrics-00.txt
TIDC & MPO

- Per Packet Overhead (packet oriented layers)
TIDC & MPO

- Per Byte Overhead (stream oriented layers)
TIDC & MPO

DLInk bw

TIDC

A

V

A

MPO
Signaling of \(<\text{TIDC}, \text{MPO}>\) in P2P and P2MP

- **P2P can use:**
  - For initial values: SIP INVITE with SDP
  - For updates: SIP REINVITE with SDP, or
  - For updates: RTCP

- **P2MP can use:**
  - For initial values: -
  - For updates: RTCP

\textbf{RTCP support is highly desirable}
Session vs Media level TIDC metric

- A single point of decision is more effective than a shared algorithm.
  - Media level TIDC means the receiver decides how to partition the link capacity among the media; the sender decides how to encode/packetize each single media
  - Session level TIDC means the receiver provides the overall link characterization; the sender decides everything
  - Session level is preferable

- Media cross-relations are better managed when all decisions are centralized.
  - Induced audio jitter (and e2e delay) due to video packet serialization
  - Erosion in video bandwidth due to audio packet overhead
  - Session level is preferable
Session vs Media level TIDC metric

- Temporary variations in the media coding could be exploited if sender has global information:
  - Silence periods in audio could temporary release bandwidth that the video could exploit
  - Low complexity in video could temporary release bandwidth that other media could exploit
  - Session level is preferable

- RTCP normally carries media level parameters. What about carrying a session level parameter?
  - Probably feasible, but maybe requires more attention/work?
  - Media level is preferable
Conclusions

- `<TIDC, MPO>` metrics are a tool specifically designed to characterize a bottleneck
- Carriage of these metrics in SDP is welcome, for p2p initial negotiation
- Carriage of these metrics in RTCP is required, for updates and p2mp
  - draft-ccm-04 incorporates these metrics in TMMBR, at Media level
- TIDC at Session level has advantages over Media level definition, as it grants better user experience
  - Single point of decision
  - Cross-media relation management

WHAT ABOUT WORKING ON RTCP WITH SESSION LEVEL PARAMS?
WHAT ABOUT DEFINING SDP CODEPOINTS?