Bandwidth metrics

draft-franceschini-avt-bwmetrics-00.txt

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Bandwidth metrics

TIDC & MPO

▶ Per Packet Overhead (packet oriented layers)

| Codec |
| RTP |
| UDP |
| IP |
| PPP etc |

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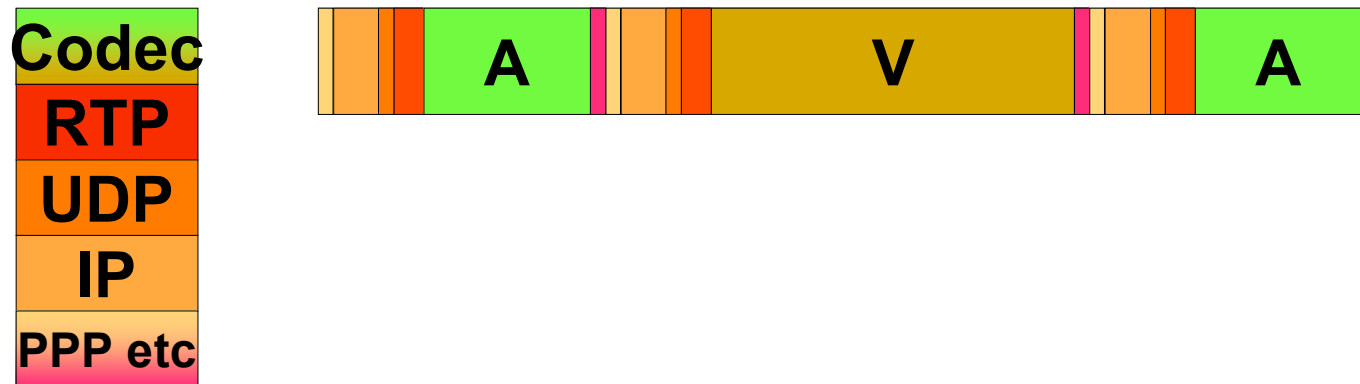
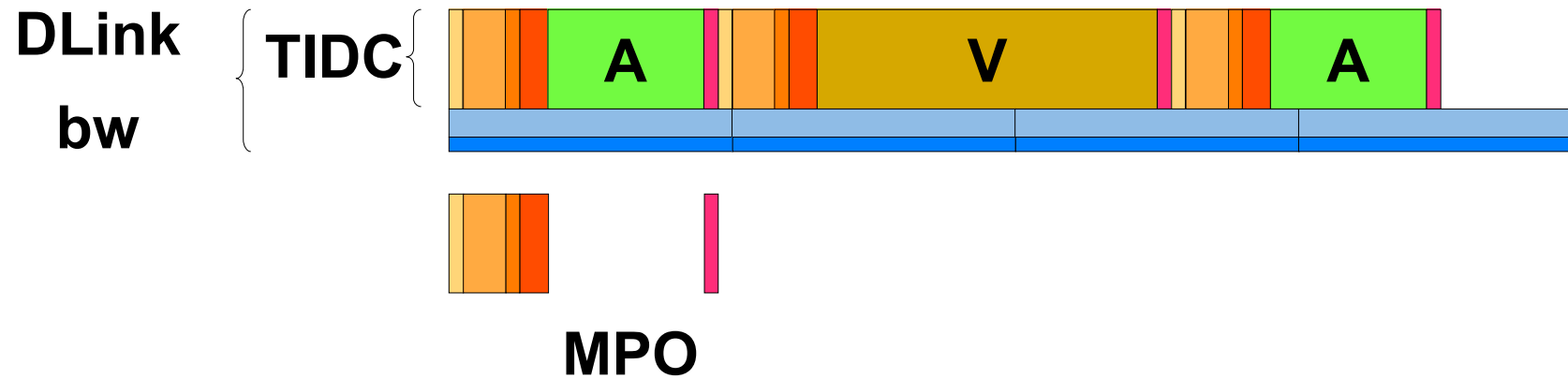# TIDC & MPO

▶ Per Byte Overhead (stream oriented layers)
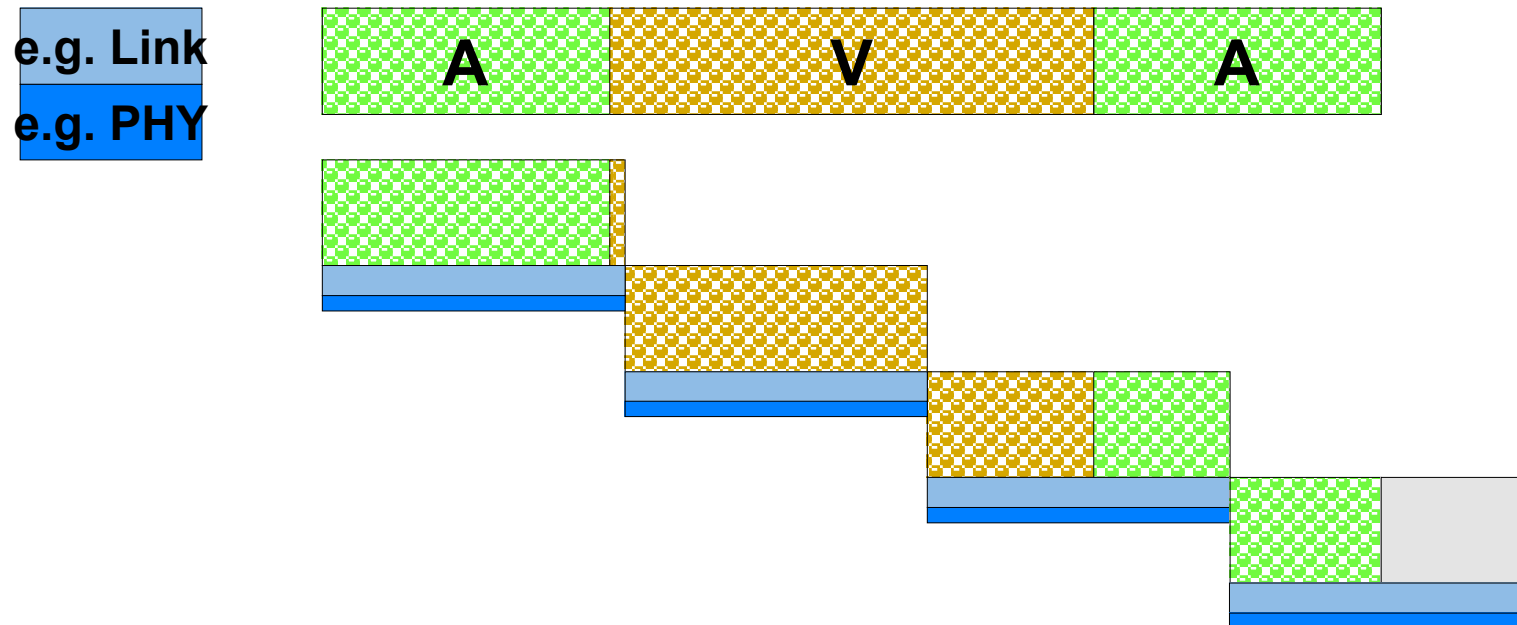
Bandwidth metrics

TIDC & MPO

Signaling of <TIDC, 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

➔ RTCP support is highly desirable

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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

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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

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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?

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