RMCAT XR Block for Congestion Control Feedback - A Proposal

(For potential use in draft-dt-rmcat-feedback-message)

RMCAT Design Team (Zahed Sarker, Randell Jesup, Colin Perkins, Stefan Holmer, Varun Singh, Xiaoqing Zhu, Mo Zanaty, David Hayes, Michael Ramalho – in no particular order)*
RMCAT XR Block for Congestion Control Feedback

Outline

• Format in draft-dt-rmcat-feedback-message-01 format
• Rationale for a different format
• A proposal for the new format
RMCAT XR Block for Congestion Control Feedback

draft-dt-rmcat-feedback-message-01 format

RTS = Report Timestamp (wall clock, TS unit granularity)

L = Packet Received (1 = received)

ECN = ECN Bits

ATO = Arrival Time Offset (in timestamp units, 13 bits)
RMCAT XR Block for Congestion Control Feedback

Rationale for a Different Format
(from Design Team meeting on September 28)

• A different design more amenable to “easier/trivial” compression.
  • Goal: Not mandating such compression for cases not needing it.
  • Defer decision on whether/if compression is ever needed.

• A desire to “separate out” the ECN component to a separate field.
  • Saving bits when ECN bits are identical.
  • ECN bits trivially compressible when different (via form of RLE).
  • Possibility for signaling to not request ECN bits.

• Potential for Arrival Time Offset range expansion (from 13 to 16 bits).
RMCAT XR Block for Congestion Control Feedback

A Proposal

- end_seq is a modulo $2^{16}$ offset from beg_seq (up to 8192 forward)

- E: Set to 1 when all received ECN bits are identical, 0 otherwise.

- ECN: The ECN bits when E bit is 1, “representative ECN” otherwise.

- ATO: Offset w/ following exceptions. $0xFFFF =$ Packet not received. $0xFFFE =$ Timestamp $> 0xFFFFD$. (note: allows for trivial compression)

- C Blocks: ECN bits for all packets when E = 0 (w/ option to not report)
RMCAT XR Block for Congestion Control Feedback

Questions?