802.1CB maintenance

"257" – FRER
Fixing recovery window

IEEE 802.1 Maintenance TG
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### 7.4.3.4 VectorRecoveryAlgorithm

- Actual text on recovery window
  - Last accepted ± frerSeqRcvyHistoryLength
  - Also in the C code

```c
} else if ((delta >= frerSeqRcvyHistoryLength ||
            delta <= -frerSeqRcvyHistoryLength )
{
  // Packet is out-of-range. Count and discard it.

} else if (delta > frerSeqRcvyHistoryLength ||
            delta <= -frerSeqRcvyHistoryLength )
{
  // Packet is out-of-range. Count and discard it.
```

- However, the correct reference would be
  - `{ RecovSeqNum + frerSeqRcvyHistoryLength ; ... ; RecovSeqNum - frerSeqRcvyHistoryLength(+ 1)`
  - And also in C code

```c
} else if (delta > frerSeqRcvyHistoryLength ||
            delta <= -frerSeqRcvyHistoryLength )
{
  // Packet is out-of-range. Count and discard it.
```

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Balázs Varga, János Farkas | 2020-03-20 | TSN - FRER recovery window | Page 2
Analysis of 802.1CB Recovery window ...  

- The SequenceHistory variable is a bit vector, with one bit for each value from 0 to (frerSeqRcvyHistoryLength – 1), corresponding to sequence_numbers in the range RecovSeqNum through \((\text{RecovSeqNum} - \text{frerSeqRcvyHistoryLength} + 1)\)

- In this example
  - “frerSeqRcvyHistoryLength” = 4
  - Packet sequence maximal using history length

- Scene1: no loss, what is in the variables at “T”
  - Slow path packets discarded as already received over fast-path
  - RecovSeqNum = 6
  - SequenceHistory = [1, 1, 1, 1] referring to “6”, “5”, “4”, “3”
  - Last packet “3” discarded as already in history (delta = -3)
  - Next packet “7” will be accepted (delta = 1)
Analysis of 802.1CB Recovery window ...

— Scene2: fast-path "3-4" lost due to e.g., BER
  — Slow path packets fill in what was not received over fast-path
  — RecovSeqNum = 6
  — SequenceHistory = [1, 1, 0, 1] referring to "6", "5", "4", "3"
  — Last packet "3" accepted as not in history (delta = -3)
  — Next packet "7" will be accepted (delta = 1)
Analysis of 802.1CB Recovery window ...

— Scene3: fast-path “6-5-4” lost due to e.g., link issue
  — RecovSeqNum = 3
  — SequenceHistory = [1, 1, 1, 1] referring to “3”, “2”, “1”, “0”
  — Last packet “3” discarded as already in history (delta = 0)
  — Next packet “7” will be DISCARDED (delta = 4)

— Fixing this: using the correct recovery window
  \{ RecovSeqNum + frerSeqRcvyHistoryLength ; ... ; RecovSeqNum - frerSeqRcvyHistoryLength + 1 \}

} else if (delta > frerSeqRcvyHistoryLength ||
  delta <= -frerSeqRcvyHistoryLength )
{
  // Packet is out-of-range. Count and discard it.

This is the issue. We cannot jump back to the fast path !!!
Questions ...