P802.1CBec

FRER Refinements Directions
Get rid of Contradicting Design Requirements

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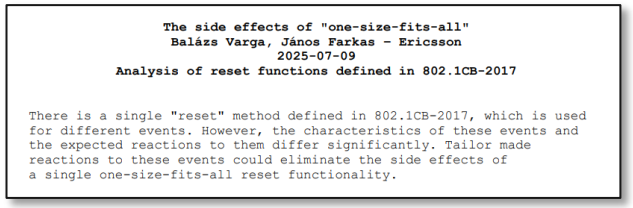
Recap

Reset functionality in current 802.1CB

- IEEE Std 802.1CB-2017 defines a single "reset" method, which is used for different events:
  1. BEGIN event related reset
  2. Management driven reset (frerSeqRcvyReset=True)
  3. RECOVERY_TIMEOUT related reset
- However, the characteristics of these events and the expected reactions to them differ significantly.
- Tailor-made handling of these events could eliminate the side effects of a single one-size-fits-all reset functionality.
- **Summary**:
  - The current single reset function is under-specified and sub-optimal
  - Tailor-made reset functions are needed for proper handling of the different events
  - Exclude the reaction to out-of-step situation from reset, and make it as an integral part of SeqRcvy

- Contribution link: The side effects of "one-size-fits-all"


The side effects of "one-size-fits-all"
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Analysis of reset functions defined in 802.1CB-2017

There is a single "reset" method defined in 802.1CB-2017, which is used for different events. However, the characteristics of these events and the expected reactions to them differ significantly. Tailor made reactions to these events could eliminate the side effects of a single one-size-fits-all reset functionality.

Root cause / Expectations / Directions

Root cause of issues

- Timer based reaction to “SeqNum out-of-step” situations is hard to achieve and has side effects

Expectations

- Make the handling of current “reset situations” more tailor-made for the operation of SeqRcvy
  - Fix the reaction to “SeqNum out-of-step” situations
- Simplify the design of FRER parameters related to reset
  - Eliminate contradicting requirements (e.g., value gets small vs. gets large)
- Adapt to virtualized environments
  - Much more dynamic setup of FRER components

Refinements directions

- Get rid of timer-based recognition of “SeqNum out-of-step” situations
- Need for explicit (e.g., in-band & unidirectional) signaling for SeqNum specific actions between SeqGen and SeqRcvy
- Keep timer for extreme failure scenarios (e.g., all paths fail)

Impacted parts of .1CB

Potential changes

- Reset functionality of
  - Sequence generation
  - Sequence recovery
- State machines
- R-Tag (e.g., reset related signaling)
- State variables, counters

Discussion