802.1CB improvements

FRER
Setting Stream ID for the output of Elimination (Sequence Recovery)

IEEE 802.1 TSN TG
Electronic Meeting
September 28, 2020

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Topics

— Scenarios

— Proposal

— Improvement of the Elimination function
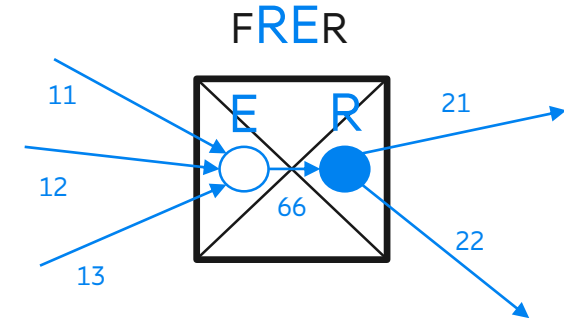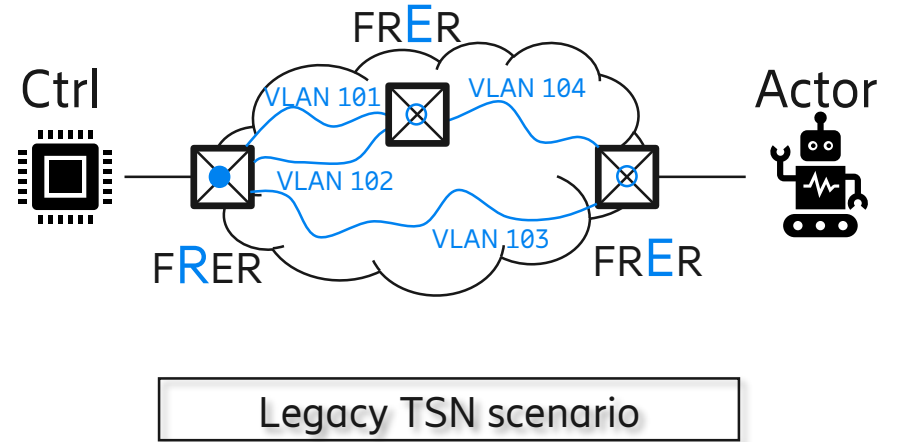
— Impact on 802.1CB-2017 and related docs ...

Scenarios
Using FRER

Scenario: Elimination inside the network
— Stream identification function
   — Uses "stream_handle"
— Output needs
   — Proper encapsulation i.e., Ethernet header fields

Legacy TSN scenario

Scenario: Multi-stage FRER
— Multiple FRER function within a node
   — Internal segment(s) for the TSN Stream
   — Packet pipeline may need unambiguous "stream_handle"

Multi-stage FRER scenario

802.1CB improvements
Overview

— **Target: setting the output stream_handle parameter for the E (elimination) function**

— How: via a new "frerSeqRcvyStreamOut" parameter

  — Elimination node

    — Extending the VectorRecoveryAlgorithm (subclause 7.4.3.4 of IEEE 802.1CB-2017) and the MatchRecoveryAlgorithm (subclause 7.4.3.5 of IEEE 802.1CB-2017). The extension is to change the stream_handle parameter of the processed packet before the PRESENT_DATA event, when the algorithms are used for a Sequence Recovery function.

    — Note: this may not affect the Individual Recovery function (subclause 7.5 of IEEE 802.1CB-2017)

— Note: R (replication) function has such parameter: "frerSplitOutputIdList"

802.1CB impact
What needs to be changed/added ...

— Elimination node

    — Define a new "frerSeqRcvyStreamOut" parameter

    — Use the new parameter

        — extending the VectorRecoveryAlgorithm (subclause 7.4.3.4 of IEEE 802.1CB-2017) and the MatchRecoveryAlgorithm (subclause 7.4.3.5 of IEEE 802.1CB-2017). Change the "stream_handle" parameter of the processed packet before the PRESENT_DATA event.

```
…
PRESENT_DATA

            …
            if (frerSeqRcvyIndividualRecovery = False) {
                stream_handle = frerSeqRcvyStreamOut
            }
            PRESENT_DATA
```

Questions ...