Support for PON Protection for Package A

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Supporters

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Redundancy and Failover

- For high-availability of services, MSOs need the option to have redundant hardware and hitless failover where appropriate.
  - The main focus is on intra-chassis protection at this time.
  - Inter-chassis protection will be addressed in the future.
- On PON line card failure, the services could be moved to the protecting redundant PON line card
  - 1+1 protection is required
  - N+1 protection would be welcome in the future
- Trunk protection is the primary focus at this time
- Support for tree protection will be added to specification as well
- Implementation demand is on trunk protection today, with tree protection likely becoming more important in residential FTTH in the future

SIEPON & support for PON Protection

- IEEE Std 1904.1-2013, subclause 9.3.4 and 9.3.3 define trunk and tree protection for EPON for Package C

- Table 4-1 lists optional support for trunk and tree protection for Package C, and optional support for trunk protection for Package B
  - Package B: Specifies eOAM messages for configuring keep-alive timers on the ONU and eOAM messages to manually enter or exit the holdover_start state
  - Package C: Specifies eOAM messages for configuring keep-alive timers on the ONU

- Package A does not specify support for PON protection at this time. There is also no support for PON protection in DPoE specifications (V1 and V2 alike)

Proposal for Package A PON Protection

- Use the trunk and tree protection mechanism specified already for Package C in 9.3.3 and 9.3.4 and extend its scope to Package A as well
  - Update to Table 4-1 will be needed
  - Update to subclause 9.3.3 and 9.3.4 to make the mechanism more package-independent
- Copy PON protection-specific attributes (Clause 14) from Package C eOAM to Package A eOAM with proper changes to branch/leaf
- Add switchover event to Clause 13 for Package A, mirroring Package C
- Add PON protection-specific PICS, mirroring PICS for Package C
- Detailed changes included in a Word document with changes tracked relative to IEEE Std 1904.1-2013