

# “End to Segmented” FEC

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# Supporters

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# “End to Segmented FEC”

- **Assumptions:**

- Segmented FEC may be required to allow for sufficient BER margin to C2M AUI specifications.
- C2M performance can vary considerably based on channel reach (loss), with the longest reach (highest loss) limiting factor for spec development.

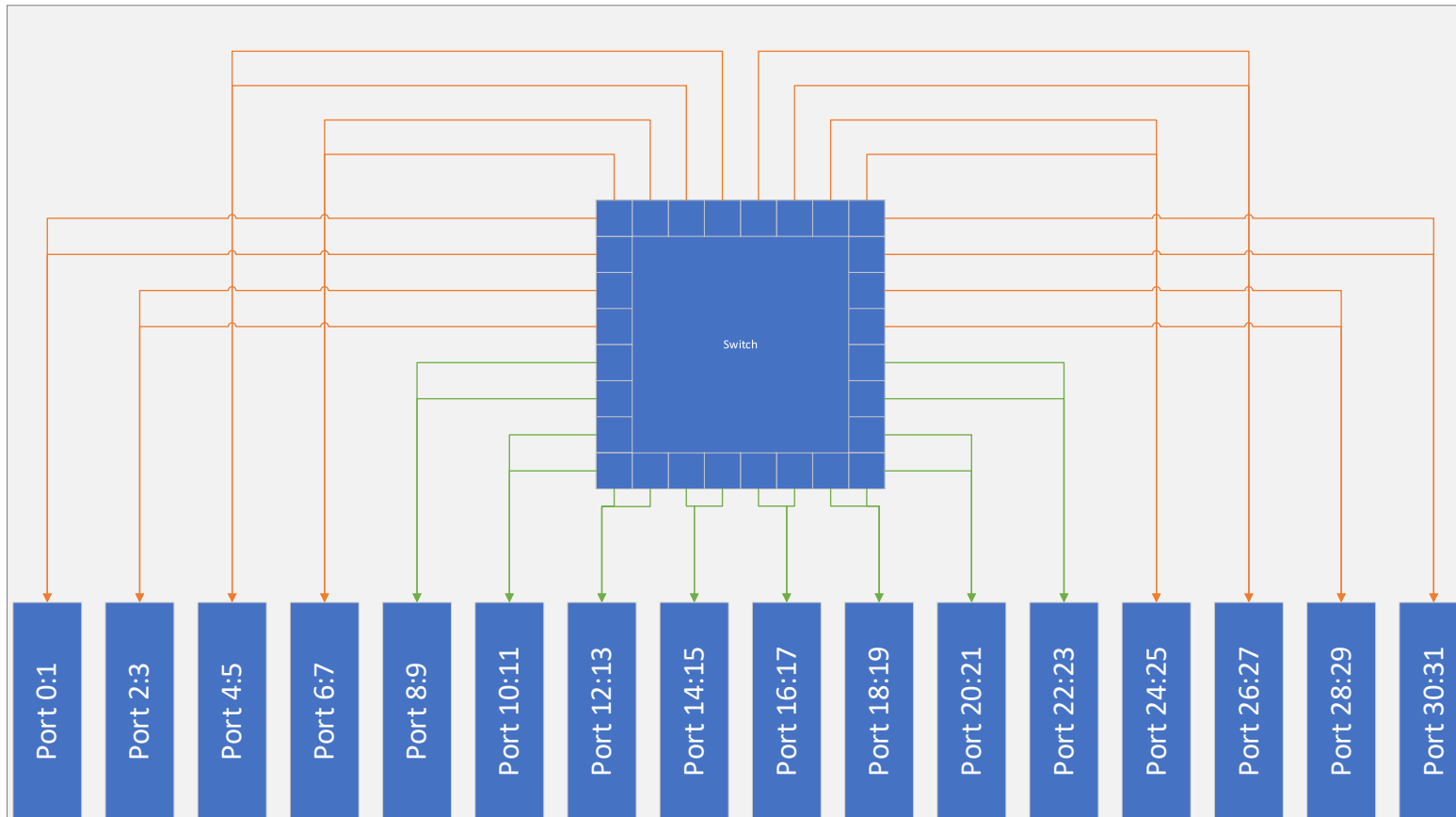
- **Idea:**

- If Segmented FEC is required, define such that FEC bypass (in optical modules) is possible for lower reach (loss) C2M cases.
  - Also advantageous for CPO/NPO cases (likely all low loss).
- Requires the same FEC to be used for AUI and PMD protection

- **Potential Benefit:**

- Improved system power through selective use of FEC. Likely > 1W per 800GE port

# High/Low Loss C2M AUI (Conceptual)



High Loss C2M: Segmented FEC Required

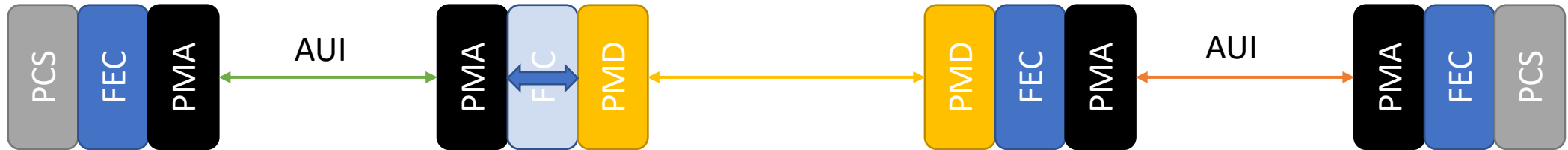
Low Loss C2M: Module FEC bypass allowed

# Link Configurations

Three Segment



Two Segment



One Segment



# Implications

- Same FEC layer (same error correction code) required for each segment (C2M PMA and Optics PMD).
  - Note: Additional benefit in maintaining common signaling rate on electrical and optical I/O → simplified clocking
- Bypass determination needs to be made:
  - Host controllable based on prior knowledge of channel loss
  - Link training
  - Other ?
- Most beneficial for shorter reach (higher volume) optics PMDs.
  - 2km and shorter?

Thank You