PCS Considerations

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From the P802.3cs Objectives

- Provide Physical Layer specifications that:
    - Support the MAC data rate of 10Gb/s downstream
    - Support the MAC data rates of 2.5Gb/s and 10Gb/s upstream
    - Leverage existing EPON PCS and PMA to support the above MAC data rates

Possible PCS Coding Options

- Leverage the current 10G-EPON PCS coding
  - Frame based with 64/66b encoding
  - Uses RS(255, 223) as FEC downstream and upstream
    - ~13% overhead
    - ~7.1 dB coding gain
  - Commercially available in current 10G-EPON solutions
- Leverage the P802.3ca 25G-EPON PCS coding
  - Envelope based with 256/257b encoding
  - Uses LDPC(16952,14392) as FEC downstream and upstream
    - ~15% overhead
    - >1dB coding gain over RS(255, 223)
  - Not yet available in commercial implementations
  - Supports channel bonding

Thoughts?

Thank you!