PMA/PCS Consensus Baseline Proposal

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Supporters

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- Jacky Chang   HP
- David Ofelt   Juniper
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PCS/PMA Base Coding

- Start from 10GBase-T
- Use PAM 16 signaling per symbol
  - PAM 16 = 4 bits per symbol
  - 8 bits per 2 symbols
  - All 8 bits over 2 symbols are used
  - 325 of additional bits are used for protecting previously un-coded bits
  - 97 bits are set to zero (known transmitted bits help LDPC gain)
- All bits are protected by LDPC
- Otherwise, a scaled version of 10GBase-T
- All other electrical specs are scaled versions of 10GBase-T
  - Minor enhancement is total transmit power: <u>1.0 to 3.0 dBm</u>
    - 2.2 dB below 10GBASE-T bounds to limit emission on CAT5e while still allows good SNR

Modulation and Encoding

- 5Gb/s via fully LDPC coded PAM 16 running at 400Ms/s

- 2.5Gb/s via fully LDPC coded PAM 16 running at 200Ms/s

- LDPC Frames
  - 5G = 320ns
  - 2.5G = 640ns

- Training is the same as 10GBASE-T training sequence at 400 MS/s and 200 MS/s

Frame structure

PCS Frame: [1 Aux channel bit , 25 x 65 bit blocks, 97 zero bits] + 325 parity bits = 2048 bits
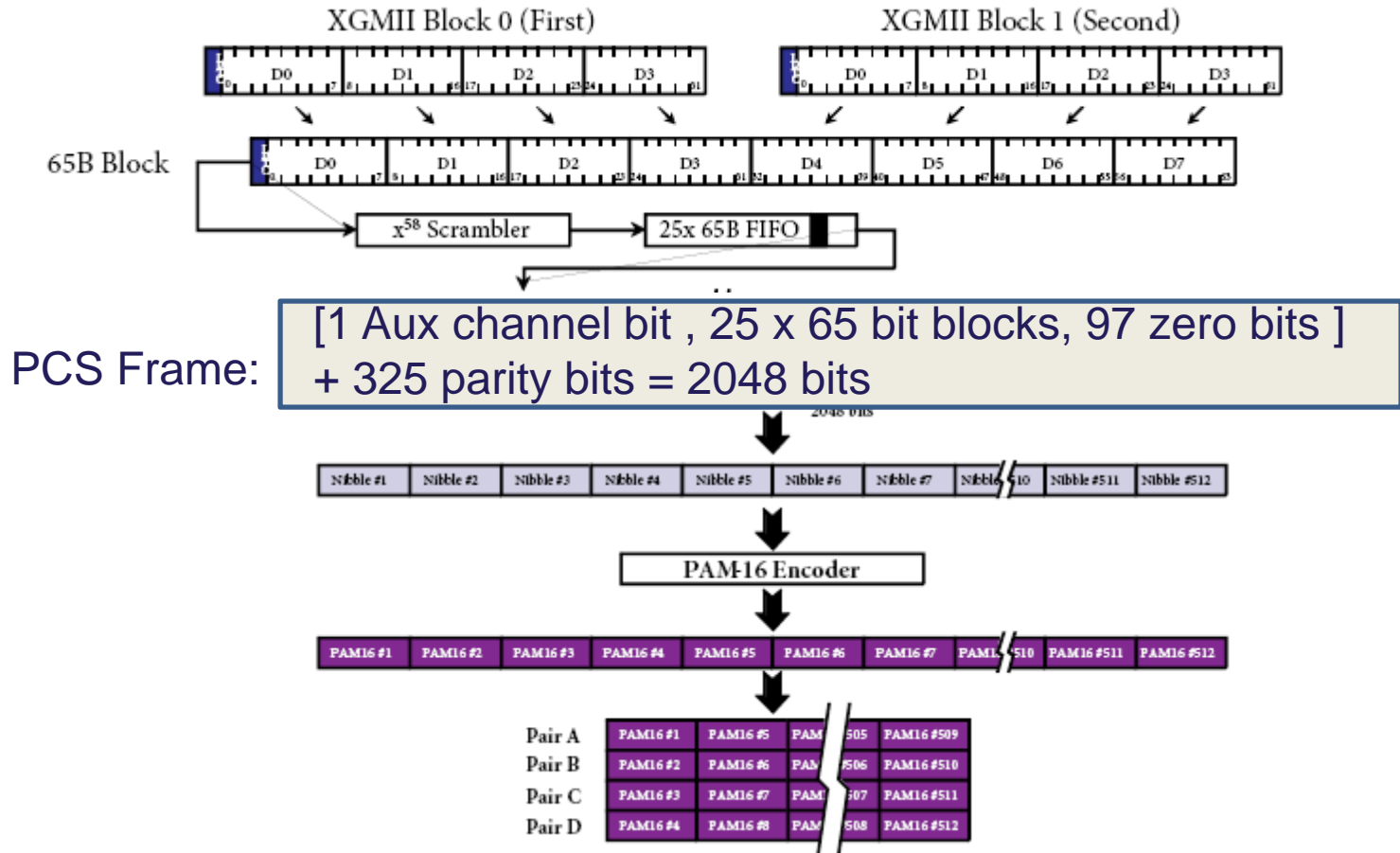
- Follows 10GBase-T XGMII → 64b/65b → Scrambling (master/slave)
- PCS frame adjusted to accommodate all bit encoding
  - 320ns @ 5Gb/s ; 640ns @ 2.5Gb/s
- PAM encoder(Grey Coded PAM-16) → THP → Lane Transmission

Motion

- Move to: adopt PMA/PCS Consensus Baseline Proposal as defined in Shirani_3bz_02_0515.pdf pages 3 to 5 as the basis of PMA / PCS for 802.3bz draft

- M:R. Shirani
- S: Ron Cates
- Technical (75%)
- Y: 49 N: 0 A: 1
- MOTION PASSES