10 Gigabit Ethernet WAN PHY Alternatives

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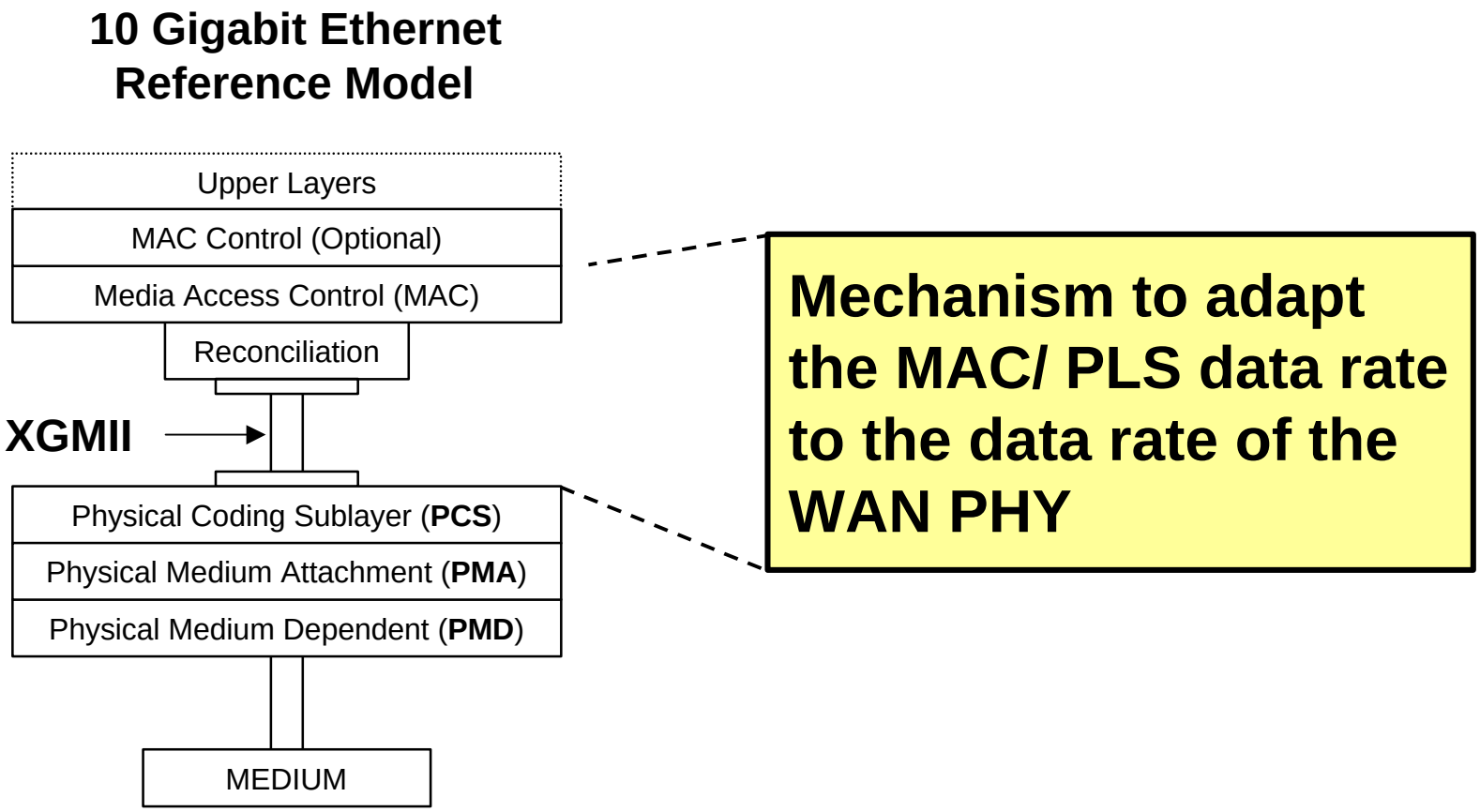
10GE WAN PHY Objectives

- **Support a speed of 10.0000 Gb/ s at the MAC/ PLS service interface**

- **Define two families of PHYs:**
  - A LAN PHY, operating at a data rate of 10.0000 Gb/ s
  - A WAN PHY, operating at a data rate compatible with the payload rate of OC-192c/ SDH VC- 4- 64c

- **Define a mechanism to adapt the MAC/ PLS data rate to the data rate of the WAN PHY**

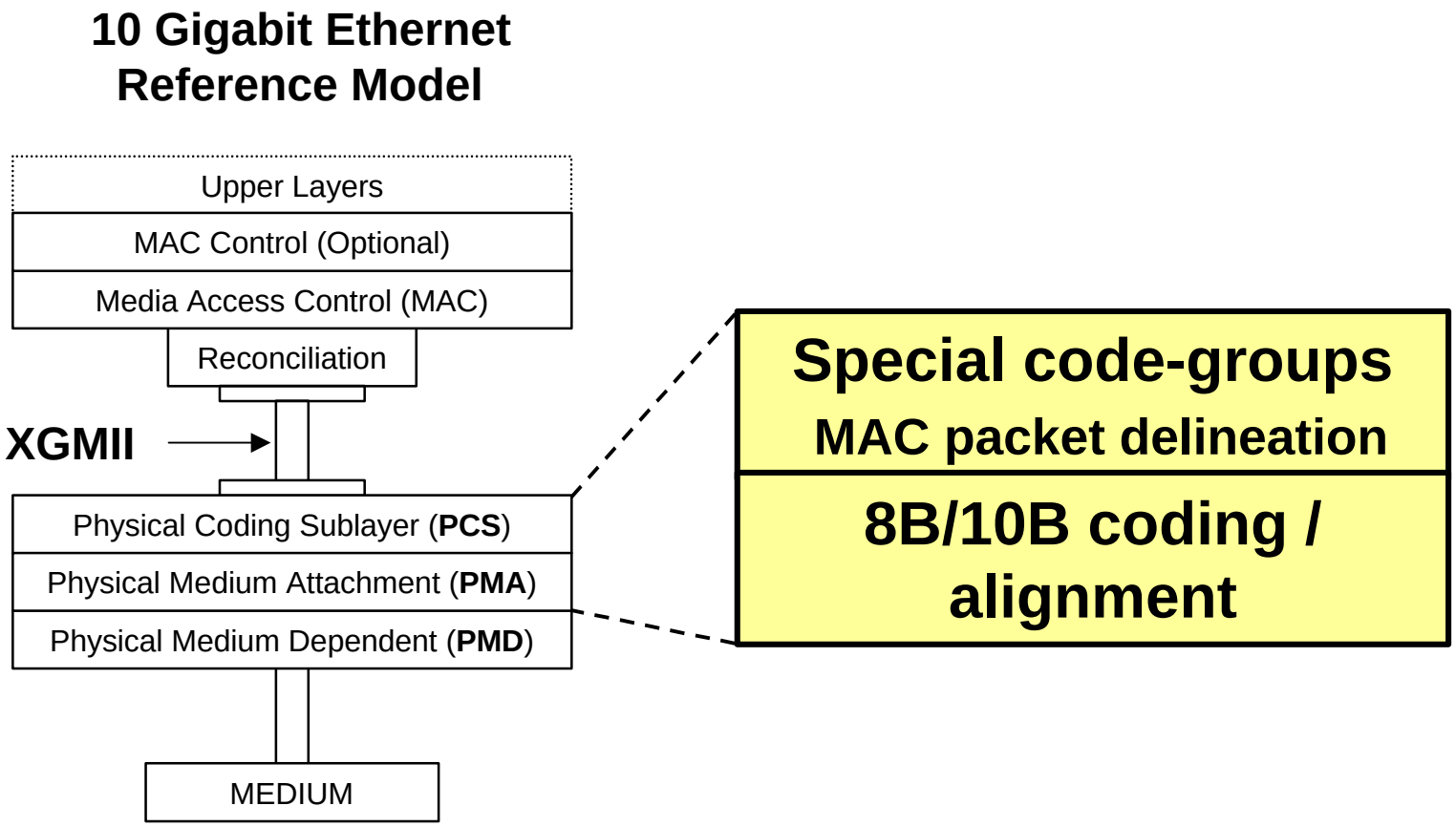
Common Requirement



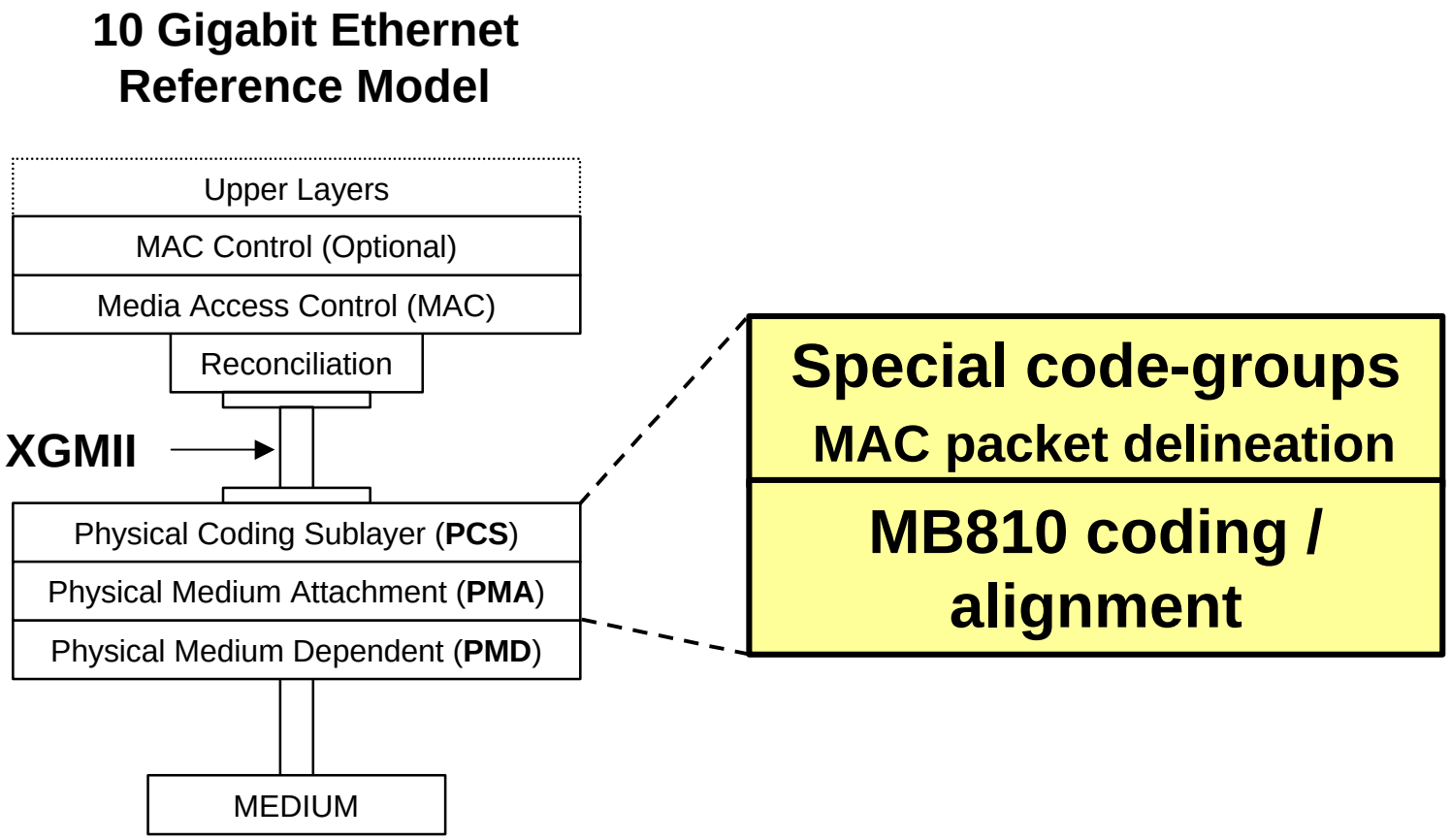
Some 10GE WAN PHY Alternatives

- **8B/10B**
- **MB810**
- **One polynomial scrambler**
- **Two polynomial scrambler**

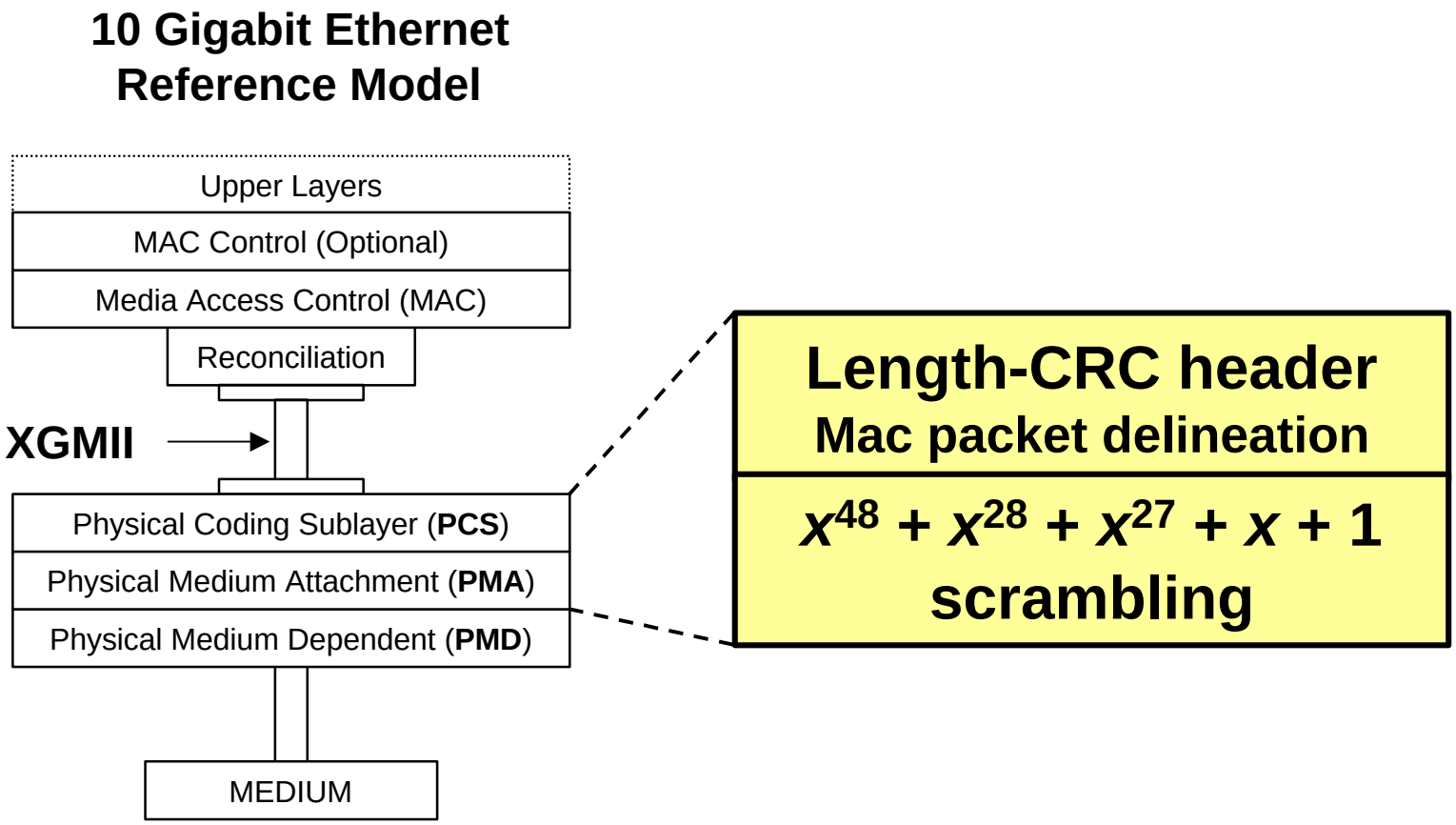
8B/10B: Possible Architecture



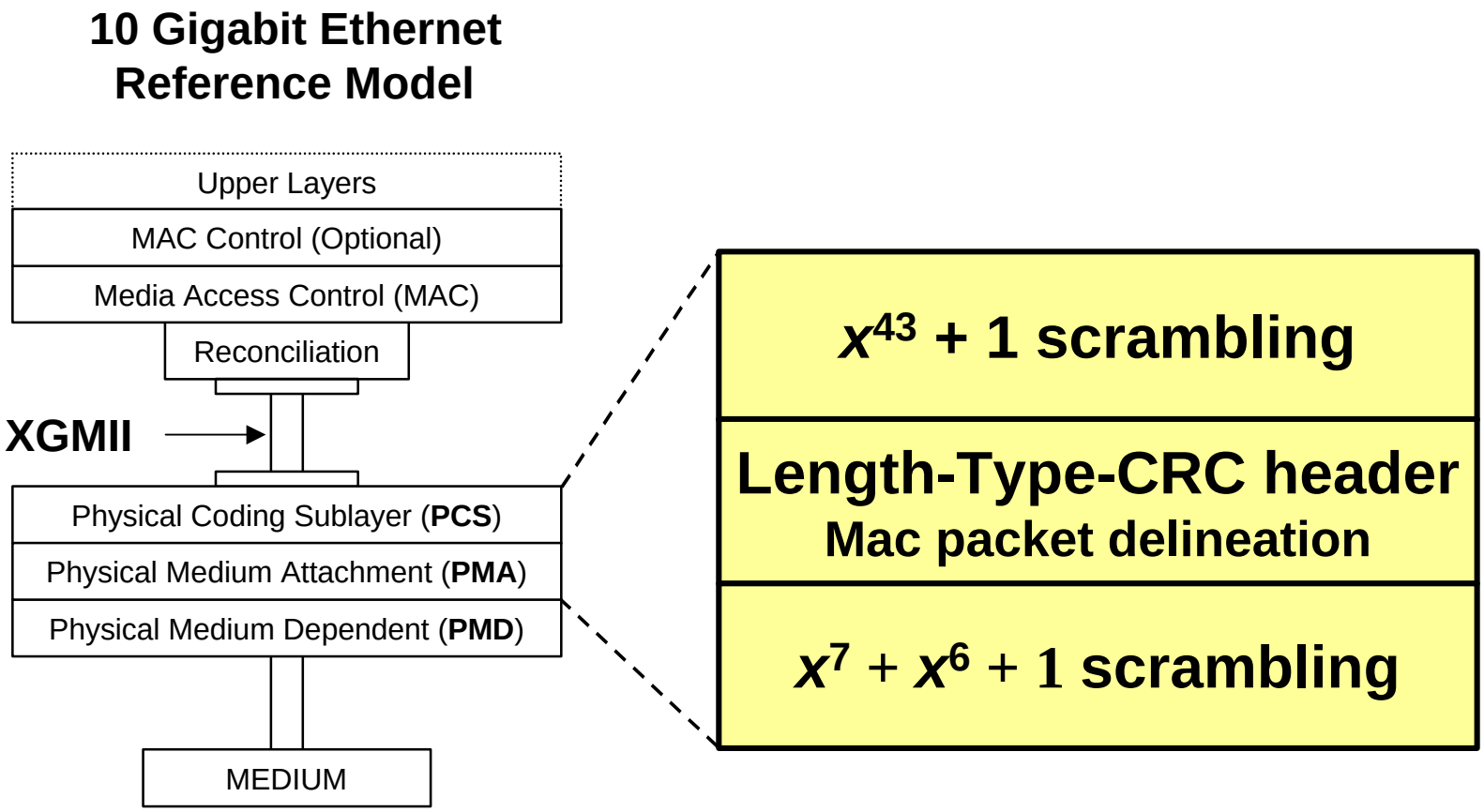
MB810: Possible Architecture



One Polynomial Scrambler: Possible Architecture



Two Polynomial Scrambler: Possible Architecture



Proposed Additional Objectives

- **Same OC-192 line frequency**
- **Same SONET/SDH frame format**
- **Minimum Line, Section, and Path overheads**
- **Operates without an isochronous clock**

White Paper Posted to the HSSG Web Site

- **“Proposal for a 10 Gigabit Ethernet WAN PHY”**
  Norival Figueira, Paul Bottorff - Nortel Networks
  Tom Palkert - AMCC

- **Proposes a 10 Gigabit Ethernet WAN PHY that supports the previous additional objectives using the two polynomial scrambler approach**