EPoC PMD Approach
## It's all about the sausage making!

Saifur Rahman

Comcast Corporation

Saifur_Rahman@cable.comcast.com

Summary

- To begin defining the PMD sub-layer, we need to agree on the functions in the PMD sub-layer and their order.

- Once that is done, dedicated teams work to develop subclauses on:
  - Each function within the PMD sub-layer
  - The interface from the PMA to PMD sub-layer
  - The interface from the PMD sub-layer to MDI

- Once the work has begun, individual teams can work largely in parallel.

- Ultimately, we need to define Tx/Rx PMD for CLT and Tx/Rx PMD for CNU.

PMD structure (graphical view)

MAC & MAC Clients

XGMII

PCS

PMA

FFT

Cyclic Prefix

Pulse Shaping

MDI

PMD
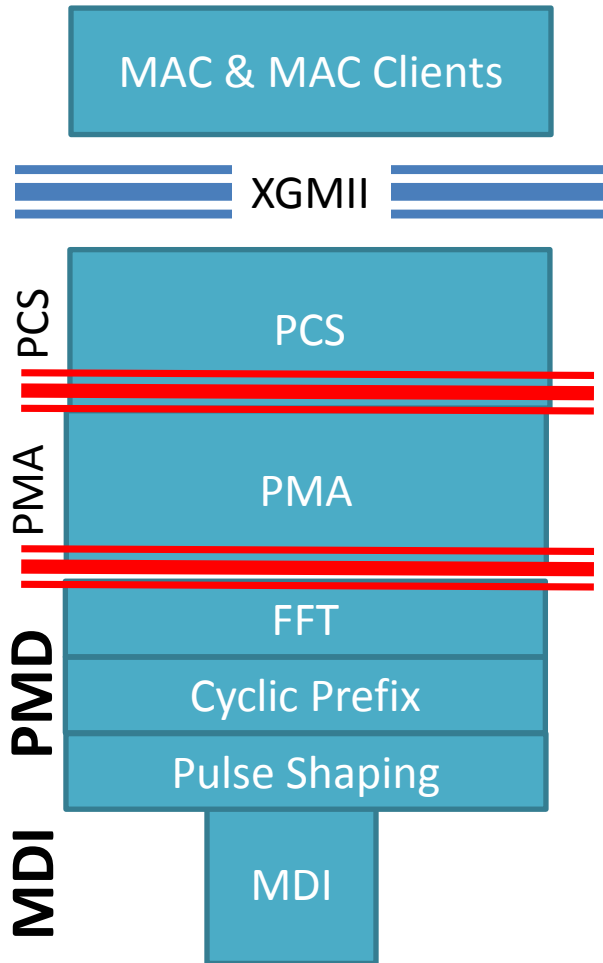
- PMD is located between PMA and MDI and is responsible for modulation/demodulation and Tx/Rx

- Primarily, PMD functions include: FFT/iFFT, Cyclic Prefix, Pulse Shaping, etc.

- We will have to define Tx and Rx for both the CLT and the CNU

Suggested CLT and CNU Tx Functions

- CLT Tx: continuous (FDD) and bursting signal (signal); CNU Tx: bursting (FDD/TDD)
- Regardless of the signal type, Tx has similar parameters and functions that have to be defined:
  - Symbol Size
  - FFT Size
  - Number of Useable Subcarriers
  - Signal Shaping (alpha)
  - Cyclic Prefix
  - Pilot Patterns
  - Transmit Power Requirements
  - Burst Timing(CNU/TDD)
  - Fidelity Requirements
  - Others, as the TF decides
- TDD may have additional requirements

Suggested CLT and CNU Rx Functions

- CLT Rx: bursting signal (FDD/TDD)
  CNU Rx: continuous (FDD) or bursting (TDD)
- Regardless of the signal type, Rx has similar functions and parameters that have to be defined:
  - Input Signal Level
  - FFT Size
  - Tuner Frequency Range
  - Input Return Loss
  - Image Rejection Performance
  - Multichannel Receiver Operation
  - Receiver Parameter Reconfiguration
  - Frame Error Rate
  - Others, as the TF decides
- TDD may have additional requirements

Next Steps

- Decide on the functions in the PMD and their order of execution
  - In Tx and Rx directions, list just the functions in logical order
  - Once the order of functions is settled, the Editor will create an outline based on these decisions for review.
- Then, we will need participants to volunteer to develop details that will complete each subclause in the outline.
- Suggestions for submissions:
  - Draft the subclause in Word (or some similar format); this allows it to be copied directly into draft.
  - Create drawings in Visio or similar tool so that they can be easily edited and manipulated.

Level of Detail

- We will need details to be able to create the appropriate subclauses.

- Marek's slides provide examples of proposals with a level of detail we should be shooting for.

THANKS, GANG!