Clause 100 (PMD): Proposed Outline

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Purpose of this Presentation

- Socialize the organization of the PMD clause

- Identify gaps or overreach

- Prepare for a motion in July to accept this outline as a starting point for the PMD clause

High Level Organization

100.1   Overview

100.2   PMD Functional Specification

100.3   Definitions of Parameters and Measurement Methods

100.4   Environmental, Safety, and Labeling

100.5   Channel Characteristics

100.6   EEE Capability

100.7   Time Synch Capability

100.8   Protocol implementation conformance statement (PICS) proforma for Clause 100, Physical Medium Dependent (PMD) sublayer and medium for coaxial distribution networks, type EPoc_PMD_Name

100.1 Overview

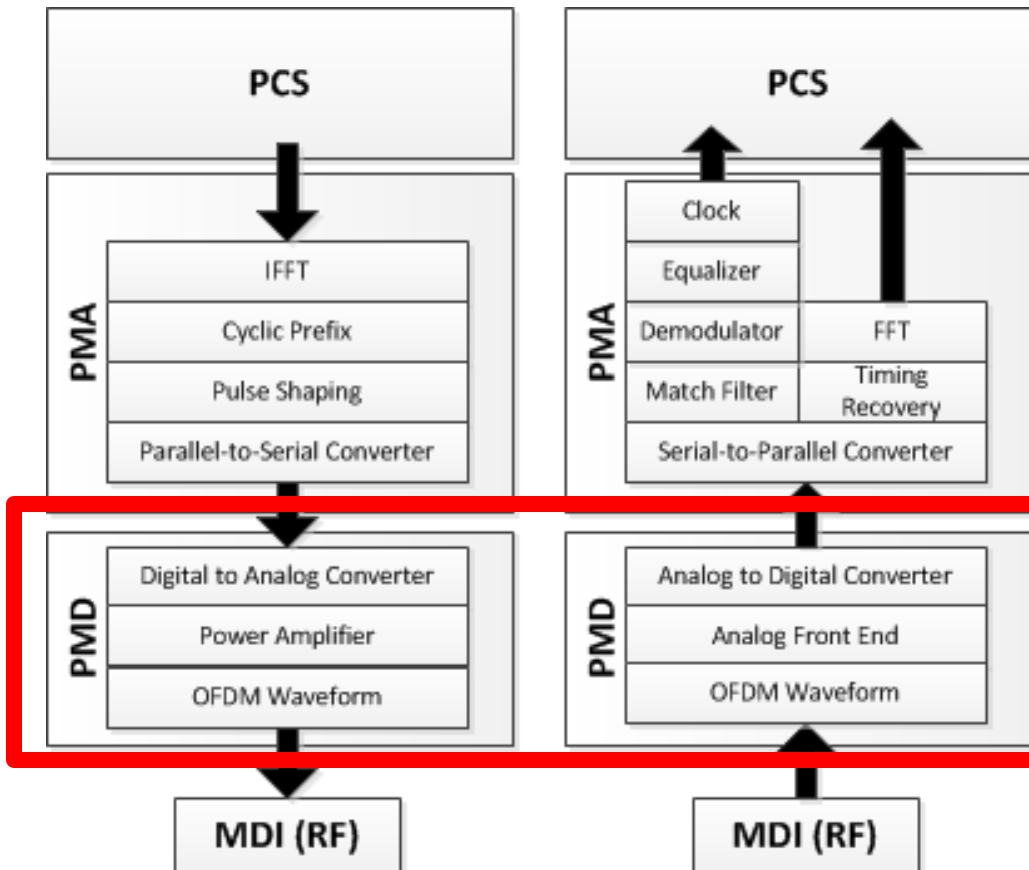100.1.1 Terminology and Conventions

100.1.2 Goals and Objectives

100.1.3 Positioning of the PMD Sublayer within the
IEEE 802.3 Architecture

100.1.4 PMD Block Diagram

100.2 PMD Functional Specification

This section covers the functions shown in the PMD diagram below.

We need to agree to the processing chain.

This diagram is certainly incomplete.

100.2 PMD Functional Specification

100.2.1   PMD Service Interface

    100.2.1.1   Delay Constraints

       100.2.1.1.1   Relative Processing Delays

    100.2.1.2   PMD_UNITDATA.request

    100.2.1.3   PMD_UNITDATA.indication

    100.2.1.4   PMD_SIGNAL.request

    100.2.1.5   PMD_SIGNAL.indication

    100.2.1.6   PMD Transmit Enable Function

<Need Transmit Receive Enable Function? TDD mode>

    100.2.1.7   PMD Signal Detect

100.2 PMD Functional Specification

100.2.2   PMD Transmit Function

  100.2.2.1 CLT and CNU Modulation Formats

    100.2.2.1.1 Total Information Data Rate for Downstream OFDM Channels

    100.2.2.1.2 Total Information Data Rate for Upstream OFDMA Channels

  100.2.2.2 Frequency Plan

    100.2.2.2.1   FDD/TDD Downstream Frequency Plan

    100.2.2.2.2   FDD Upstream Frequency Plan

  100.2.2.3 Carrier Muting

100.2 PMD Functional Specification

100.2.3 CLT Transmitter Requirements

    100.2.3.1 CLT Transmit Power Requirements

        100.2.3.1.1 PAPR

        100.2.3.1.2 Transmit Power Step Size

    100.2.3.2 CLT Transmit Fidelity Requirements

        100.2.3.2.1 Spectral Nulling

        100.2.3.2.2 Adjacent Channel Spurious Emissions

        100.2.3.2.3 Spurious Emissions in the Frequency Range

        100.2.3.2.4 Spurious Emissions During Burst On/Off Transients

        100.2.3.2.5 Modulation Error Ratio

        100.2.3.2.6 Filter Distortion

        100.2.3.2.7 Carrier Phase Noise

        100.2.3.2.8 Channel Frequency Accuracy

        100.2.3.2.9 Modulation Rate Accuracy

        100.2.3.2.10 Modulation Timing Jitter

    100.2.3.3 CLT TDD Transmitter Burst Timing Ramp Up/Down

100.2 PMD Functional Specification

100.2.4 CNU Transmitter Requirements

    100.2.4.1 CNU Transmitter Pre-Equalizer

    100.2.4.2 CNU Transmit Power Requirements

        100.2.4.2.1 PAPR

        100.2.4.2.2 Transmit Power Step Size

        100.2.4.2.3 Transmit Power Requirements with Multiple Transmitters

    100.2.4.3 CNU Transmitter Burst Timing Ramp Up/Down

    100.2.4.4 CNU Transmitter Frequency Agility and Range

    100.2.4.5 CNU Transmitter Fidelity Requirements

        100.2.4.5.1 Adjacent Channel Spurious Emissions

        100.2.4.5.2 Spurious Emissions in the Upstream Frequency Range

        100.2.4.5.3 Spurious Emissions During Burst On/Off Transients

        100.2.4.5.4 Modulation Error Ratio

        100.2.4.5.5 Carrier Phase Noise

        100.2.4.5.6 Channel Frequency Accuracy

        100.2.4.5.7 Modulation Rate Accuracy

        100.2.4.5.8 Modulation Timing Jitter

        100.2.4.5.9 Clock Recovery

    100.2.4.6 CNU Transmitter Capabilities

100.2 PMD Functional Specification

100.2.5 PMD Receive Function

    100.2.5.1 PMD Auto-Negotiation Function

100.2.6 CNU Receive Requirements

    100.2.6.1 Input Signal Characteristics at CNU Receiver

    100.2.6.2 ~~Frame~~ FEC Codeword Error Rate

    100.2.6.3 Input Return Loss

    100.2.6.4 Input Impedance

    100.2.6.5 Image Rejection Performance

    100.2.6.6 Multi-Channel Receiver Operation

    100.2.6.7 Reconfiguration of CNU Receiver

100.2 PMD Functional Specification

100.2.7 CLT Receive Requirements

    100.2.7.1 Input Signal Characteristics at CLT Receiver

    100.2.7.2 ~~Frame~~ FEC/LDPC? Codeword Error Rate

    100.2.7.3 Input Return Loss

    100.2.7.4 Input Impedance

    100.2.7.5 Image Rejection Performance

    100.2.7.6 Multi-Channel Receiver Operation

100.3 Definitions of Parameters and Measurement Methods

100.3.1 Insertion Loss

100.3.2 Test Patterns

100.3.3 Frequency and Frequency Range Measurement

100.3.4 RF Power Measurements

100.3.5 Transmit Waveform and MER

100.3.6 Transmit Penalty

100.3.7 Receive Sensitivity

100.3.8 Stressed Receiver Conformance Test

100.3.9 Jitter Measurements

100.3.10 Transmitter On/Off Timing Measurements

100.3.11 Receiver Settling Timing Measurement

100.4 Through 100.8

100.4 Environmental, Safety, and Labeling

    100.4.1 General Safety

    100.4.2 RF Safety

    100.4.3 Installation

    100.4.4 Environment

    100.4.5 PMD Labeling

100.5 Channel Characteristics

    100.5.1 Coaxial Cabling Model

    100.5.2 Coaxial Cable

    100.5.3 Coaxial Connectors

    100.5.4 Medium Dependent Interface (MDI)

100.6   EEE Capability

100.7   TimeSync Capability

100.8   Protocol implementation conformance statement (PICS) proforma for Clause 100, Physical Medium Dependent (PMD) sublayer and medium for coaxial distribution networks, type EPoc_PMD_Name

Straw Poll

- Should the outline presented here be accepted as a starting point for the PMD clause of the standard?

Yes   13

No   0

Abstain   0

Proposed Motion for Geneva

Adopt the PMD outline presented in <Geneva presentation> as a starting point for the PMD clause (100) of the standard?

Moved:

Seconded:

For:

Against:

Abstain: