Approved Project Objectives

IEEE P802.3bn EPON Protocol over Coax (EPoC) PHY Task Force

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Objectives (1/4)

- **Specify a PHY to support subscriber access networks capable of supporting burst mode and continuous mode operation using the EPON protocol and operating on point-to-multipoint RF distribution plants comprised of either amplified or passive coaxial media.**

- **Maintain compatibility with 1G-EPON and 10G-EPON, as currently defined in IEEE Std. 802.3 with minimal augmentation to MPCP and/or OAM if needed to support the new PHY.**

- **Define required plant configurations and conditions within an overall coaxial network operating model.**

Objectives (2/4)

- **Provide a physical layer specification that is capable of:**
  - A baseline data rate of 1 Gb/s at the MAC/PLS service interface when transmitting in 120 MHz, or less, of assigned spectrum under defined baseline plant conditions;
  - A data rate lower than the baseline data rate when transmitting in less than 120 MHz of assigned spectrum or under poorer than defined plant conditions;
  - A data rate higher than the 1Gb/s baseline data rate and up to 10 Gb/s when transmitting in assigned spectrum and in channel conditions that permit.
- **PHY to support symmetric and asymmetric data rate operation.**

Objectives (3/4)

- **PHY to support symmetric and asymmetric spectrum assignment for bidirectional transmission.**

- **PHY to support independent configuration of upstream and downstream transmission operating parameters.**

- **PHY to operate in the cable spectrum assigned for its operation without causing harmful interference to any signals or services carried in the remainder of the cable spectrum.**

- **PHY to have:**
  - a downstream frame loss ratio better than 10^{-6} at the MAC/PLS service interface; [1]
  - an upstream frame loss ratio better than 5×10^{-5} at the MAC/PLS service interface. [1]

Notes:

- [1] Updated 06 Nov 2014, 802.3 WG closing plenary, San Antonio, Texas

Objectives (4/4)

- **Define Energy Efficient Ethernet operation for EPON Protocol over Coax PHYs.** [2]

- **Mean Time To False Packet Acceptance at least equal to 1.4×10^{10} years.** [3]

Notes:

- [2] Approved 11 Nov 2012, 802.3 WG closing plenary, San Antonio, Texas
- [3] Approved 18 Jul 2013, 802.3 WG closing plenary, Geneva, Switzerland