

# **Draft Project Objectives**

**IEEE 802.3 EPON Protocol over Coax  
(EPoC) PHY Study Group**

Howard Frazier  
Broadcom

# Draft Objectives (1/3)

---

- **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.**

# Draft Objectives (2/3)

---

- **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.**

# Draft Objectives (3/3)

---

- **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 error ratio better than  $10^{-6}$  at the MAC/PLS service interface;
  - an upstream frame error ratio better than  $5 \times 10^{-5}$  at the MAC/PLS service interface.