

**bright
house**
NETWORKS



NG-EPON OBJECTIVES

Objectives (1)



- Support subscriber access networks using point to multipoint topologies on optical fiber
 - Verbatim from 10G-EPON
- PHY(s) to have a BER better than or equal to 10^{-12} at the MAC/PLS service interface (or the frame loss ratio equivalent)
 - Verbatim from 10G-EPON plus adaptations from recently approved projects (802.3bz, 802.3by, etc.)
 - The detailed explanation for using FLR for FEC enabled links is given in: http://www.ieee802.org/3/400GSG/public/13_09/anslow_400_01_0913.pdf particularly in the Annex from page 10 onwards.
 - In the 400G project, there was a lengthy debate about what format to use for the BER objective:
http://www.ieee802.org/3/400GSG/public/13_11/anslow_400_01_1113.pdf
http://www.ieee802.org/3/400GSG/public/13_11/anslow_400_02_1113.pdf
Many people wanted to keep the familiar BER number in the objective while also making the objective technically correct if FEC enabled PMDs were selected. A straw poll on the objective formats on slide 7 of [anslow_400_01_1113](#) chose the format: “Support a BER of better than or equal to 10^{-x} at the MAC/PLS service interface (or the frame loss ratio equivalent)”

Objectives (2)



- Provide physical layer specifications for:
 - An EPON PHY, operating over single SMF strand, at the symmetric data rate of at least 25 Gb/s in downstream and at least 25 Gb/s upstream
 - An EPON PHY, operating over single SMF strand, at the asymmetric data rate of at least 25 Gb/s in downstream and at least 10 Gb/s upstream
 - An EPON PHY, operating over single SMF strand, at the symmetric data rate of at least 40 Gb/s in downstream and at least 40 Gb/s upstream (this phrasing allows for flexibility – this could be achieved with multi wavelengths and channel bonding.)
 - Suggest 25/25, 25/10, and 40/40 options only. 40/25 and 40/10 make little sense, given the target market (business) which requires symmetric data rates. No wording on number of lanes to avoid jumping to implementation(s) choices right now.
 - If agreement is reached in SG on specific modulation format for 25/25, we may want to bake this into these objectives. If not, that would stay in for TF to decide.
- Define support for power budgets equivalent to power budgets supported by 10G-EPON in 802.3-2015
 - New, adapted from 10G-EPON to avoid references to specific distances and/or split ratios. We could add “(PR(X)10, PR(X)20, PR(X)30, and PR(X)40)” to make sure that it is explicit