

# Next Generation Enterprise Access BASE-T PHY Objectives

- Support full duplex operation only
- Preserve the 802.3 / Ethernet frame format utilizing the 802.3 MAC
- Preserve minimum and maximum Frame Size of current 802.3 standard
- Support Auto-Negotiation (Clause 28)
- Support optional Energy Efficient Ethernet (Clause 78)
- Support local area networks using point-to-point links over structured cabling topologies
- Do not preclude meeting FCC and CISPR EMC requirements
- Support PoE (Clause 33)
  - including amendments made by 802.3bt “DTE Power via MDI over 4-Pair Task Force”
- Support MAC data rates of 2.5 Gb/s and 5 Gb/s
- Support a BER better than or equal to  $10^{-12}$  at the MAC/PLS service interface (or the frame loss ratio equivalent)
- Select copper media from ISO/IEC 11801:2002, with any appropriate augmentation to be developed through work of 802.3 in conjunction with SC25/WG3 and TIA TR42
- Define a 2.5 Gb/s PHY for operation over
  - Up to at least 100m on four-pair Class D (Cat5e) balanced copper cabling on defined use cases and deployment configurations
- Define a 5 Gb/s PHY for operation over
  - Up to at least 100m on Class E (Cat6) balanced copper cabling on defined use cases and deployment configurations
  - Up to 100m on Class D (Cat5e) balanced copper cabling on defined use cases and deployment configurations