

**IEEE P802.3ah EFM Task Force Objectives**  
**15-November-2001**

- Support subscriber access network topologies:
  - Point to multipoint on optical fiber
  - Point to point on optical fiber
  - Point to point on copper
  
- Provide a family of physical layer specifications:
  - 1000BASE-X extended temperature range optics
  - 1000BASE-X  $\geq$  10km over single SM fiber
  - PHY for PON,  $\geq$  10km, 1000Mbps, **single** SM fiber,  $\geq$  1:16
  - PHY for single pair non-loaded voice grade copper distance  $\geq$  2500ft and speed  $\geq$  10Mbps aggregate
  - **PHY for single pair non-loaded voice grade copper, distance  $\geq$  4600m, 0.4mm  $\geq$  256kbps**
  - **PHY for single pair non-loaded voice grade copper, distance  $\geq$  3700m, 0.5mm  $\geq$  4mbps**
  
- **Optical EFM Phys to have a BER better than or equal to  $10^{-12}$  at the Phy service interface**
  
- **Include an optional specification for combined operation on multiple copper pairs**
  
- Support far-end OAM for subscriber access networks:
  - Remote Failure Indication
  - Remote Loopback
  - Link Monitoring
  
- The point-to-point copper PHY shall recognize spectrum management restrictions imposed by operation in public access networks, including:
  - Recommendations from NRIC-V (USA)
  - ANSI T1.417-2001 (for frequencies up to 1.1MHz)
  - Frequency plans approved by ITU-T SG15/Q4, T1E1.4 and ETSI/TM6

Items in **red font** have been approved by the 802.3ah EFM Task Force, but have not yet been approved by the 802.3 CSMA/CD Working Group.