

**IEEE P802.3ah EFM Task Force Objectives**  
**As Approved by IEEE 802.3 CSMA/CD WG**  
**14-March-2002**

- 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-LX extended temperature range optics
  - 1000BASE-X  $\geq$  10km over single SM fiber
  - 100BASE-X  $\geq$  10km over SM fiber
  - PHY for PON,  $\geq$  10km, 1000Mbps, single SM fiber,  $\geq$  1:16
  - PHY for PON,  $\geq$  20km, 1000Mbps, single SM fiber,  $\geq$  1:16
  - PHY for single pair non-loaded voice grade copper distance  $\geq$ 750m and speed  $\geq$ 10Mbps full-duplex
  
- 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