

# EFM Copper

---

## Objectives

**EFM May, 2003**

**Hugh Barrass (Cisco Systems),  
Vice Chair. IEEE 802.3ah EFM Task Force**

# Cu Objectives

- **Rate / Reach Objectives**

  - PHY for single pair non-loaded voice grade copper distance  $\geq 750\text{m}$  and speed  $\geq 10\text{Mbps}$  full-duplex

  - PHY for single pair non-loaded voice grade copper distance  $\geq 2700\text{m}$  and speed  $\geq 2\text{Mbps}$  full-duplex

- **PMI Aggregation**

  - Include an optional specification for combined operation on multiple copper pairs

# The Other Objective

- **Spectral Compatibility**

The point-to-point copper PHY shall recognize spectrum management restrictions imposed by operation in public access networks, including:

- o Recommendations from NRIC-V (USA)
- o ANSI T1.417-2001 (for frequencies up to 1.1MHz)
- o Frequency plans approved by ITU-T SG15/Q4, T1E1.4 and ETSI/TM6