Objectives as revised, November Plenary, 2015

2.5 Gb/s and 5 Gb/s Ethernet over Backplane and Copper Cable

CU4HDD Study Group
Objectives (1 of 2)

• Support MAC data rates of 2.5 Gb/s and 5 Gb/s
• 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 73)
• Support optional Energy-Efficient Ethernet operation.
• Support a BER better than or equal to $10^{-12}$ at the MAC/PLS service interface (or the frame loss ratio equivalent)
Objectives (2 of 2)

• Define a single lane 2.5 Gb/s PHY that supports operation over defined 2.5 Gb/s backplane and twinaxial copper cable channels.

• Define a single lane 5 Gb/s PHY that supports operation over defined 5 Gb/s backplane and twinaxial copper cable channels.

• Define a PHY for 2.5 Gb/s operation over a printed circuit board backplane and/or twinaxial copper cable with total channel insertion loss of <= 11 dB at 1.5 GHz

• Define a PHY for 5 Gb/s operation over a printed circuit board backplane and/or twinaxial copper cable with total channel insertion loss of <= 15 dB at 3 GHz