Potential Objectives for Next-Gen Enterprise Access BASE-T

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Proposed “noncontroversial” 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, “Data Terminal Equipment (DTE) Power via Media Dependent Interface)*
  - *including amendments made by 802.3bt “DTE Power via MDI over 4-Pair Task Force”*

11/20/14 - agree to strike this “including directly connected link segments”
11/25/14 – remove “including directly connected link segments”
Grab clause 33 title and list 802.3bt explicitly.
Preemption? (IEEE P802.3br Interspersing Express Traffic Task Force) – No need to add.

Proposed “meatier” Objectives

Need contributors/contributions to support!

- Support MAC data rates of 2.5 Gb/s and 5 Gb/s
  - *Discuss – Can we set these yet? Goals? Need contributions to support!*
- Support a BER better than or equal to 10^{-12} at the MAC/PLS service interface (or the frame loss ratio equivalent)
- Define a 2.5 Gb/s PHY for operation over
  - *Up to* at least 100m on four-pair Class D (Cat5e) balanced copper cabling
- Define a 5 Gb/s PHY for operation over
  - *Up to* at least 100m on four-pair Class E (Cat6) balanced copper cabling
- 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

11/20/14 – give up on the rewording in favor of the same text that worked before.
11/25 – BER 10-12 – YK not sure – will bring back additional material for pros/cons of -10 vs -12. Data rates, AP needs – PJ chasing wireless folks. Other option – simple implementation for clock rates to get 2.5/5. – contribution would be good.
MS – replace “augmentation” with “characterization”? Others disagree (yk, gz, bm, cd) – reuse the same language used for 10GBT, because we need the same process to be followed.

Elephant in the Room

- How should we progress on 5Gb/s on four-pair Class D (Cat5e) balanced copper cabling?
- Should we have an additional objective like
  - Define a 5 Gb/s PHY for operation over
    - Up to 100m on four-pair Class D (Cat5e) balanced copper cabling
- Contributions encouraged ☺
  - *(areas needed)?*
  - *Media bandwidth beyond media spec (like 10GBT over cat6)*
  - *AutoNeg*
  - *Channel characterization*
  - *Link Stability*
  - *PoE (do we need any?)*

11/25/14 – GZ to look at PoE, PJ – AP rates, CD – other classes inherited by default. Do we need a contribution for link segment definition (one or three)? CD/GZ/KD discussion.