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, ~~including directly connected link segments~~
  - *Should we strike the “directly connected link segments” language used in 40GBASE-T?*
- Do not preclude meeting FCC and CISPR EMC requirements
- *Support PoE (Clause 33, 802.3af, 802.3at and 802.3bt)*

11/20/14 - agree to strike this “including directly connected link segments”

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^{-10} at the MAC/PLS service interface (or the frame loss ratio equivalent)
  - *Discuss 10^{-10} vs 10^{-12} , what is the right objective for this rate at this time? GZ to start. Price/performance discussion.*
- 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
- ~~Develop any needed enhancements or additional *specifications characterization specific to the application* for ISO/IEC 11801:2002 Class D and Class E media in conjunction with SC25/WG3 and TIA TR42.~~
  - ~~*Discuss – maybe undo the rewording because that last set was agreed cross groups - delegate to those who now the landscape.*~~
- 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.

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?)*