System Vendors View on 100 Gb/s Backplane and Copper Study Group Issues

100 Gb/s Backplane and Cable Study Group
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Contributors and Supporters

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Twinax Interface Desired Properties

- We believe that 5m should be used as our initial minimum target length for a passive cable specification
- We support this objective with ‘Y” = 5 (from March’s motion #5):

  Define a 4-lane 100 Gb/s PHY for operation over links consistent with copper twin-axial cables with lengths up to at least **5**m
- Improved FR4 PCB material + 4” per side is a good starting point for the host channel
- A cable with a reasonable diameter and bend radius should be considered for the channel, for example, a twinax cable gauge of AWG24 might fulfill this requirement

BER

- For many applications, a BER of 10^{-12} is sufficient
- Some applications though, will require a better BER; a BER of 10^{-15} is reasonable for more demanding applications
  - For example some backplane applications will require a BER better than 10^{-12}
- For those applications that require it, we are requesting an optional feature to reach a BER of 10^{-15}
  - This is in addition to supporting a baseline BER of 10^{-12}
- We support putting only the 10^{-12} BER into the Task Force's objectives:

  Support a BER of better than or equal to $10^{-"12"}$ at the MAC/PLS service interface

Data Delay

- If FEC is used, it is preferable that the added data delay is kept as low as possible. We should target an added data delay of 100ns or less due to FEC.
  - For a 5m twin-ax cable the media latency is 25ns for comparison
- An objective is not necessary, but data delay will be used as a criteria to judge proposals

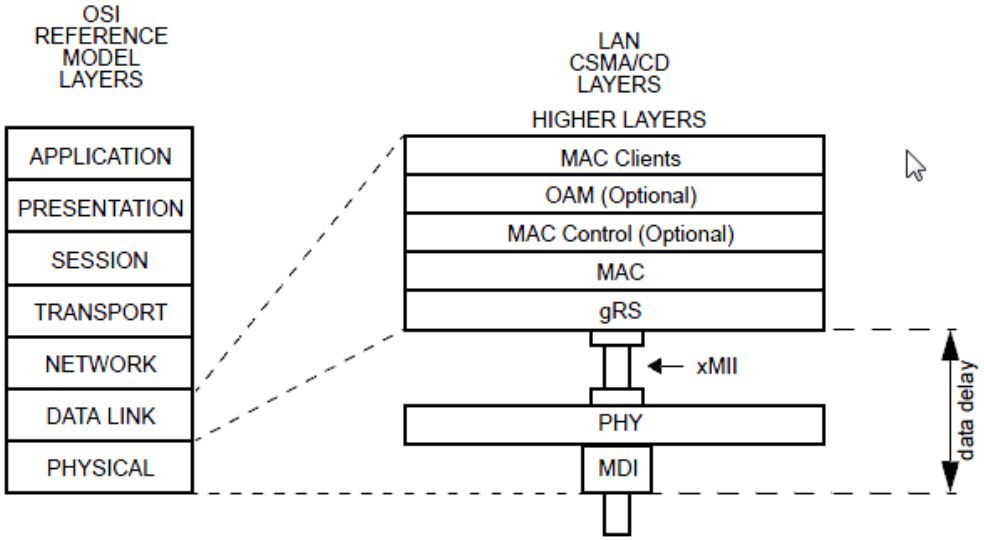

Figure 90–3—Data delay measurement

Backplane Length Objective

- We want the group to target a 1m backplane length, but:
  - We can consider higher performing backplane materials for this length
  - Use of FEC is acceptable
  - Pending technical/economic feasibility

Thanks!