802.3ba xr *ad hoc* status

Co-chairs:
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Outline

- Background
- Summary
- Activity
- Proposals
- Selection Criteria
- Next Steps
- Corning Customer Survey Summary

Background – *ad hoc* creation

- **“Straw Poll #15**: Should we continue to work on a proposal for an annex to extend the reach of a 40GBASE-SR4 and 100GBASE-SR10 in addition to the proposal (“pepeljugoski_01_0508.pdf”) as in “jewell_01_0508.pdf”.

Yes: 55

No: 3

Approximate Room Count: 108”

- “Petar Pepeljugoski suggested that an Ad-Hoc be formed to study an extended reach option over parallel multimode fiber. The Chair noted the interest from the straw poll the previous night, and asked the group if there were any objections to forming an Extended Reach Parallel MMF Ad-Hoc. There were no objections. The Chair appointed the Alessandro Barbieri and John Petrilla as Co-Chairs of the Extended Reach Parallel MMF Ad-Hoc. The Ad-Hoc’s mission is to formulate a technical proposal for extended reach over parallel multimode fiber.”
- http://www.ieee802.org/3/ba/public/may08/minutes_01_0508_unapproved.pdf

Summary

- There is no apparent consensus candidate.

Activity

- Five conference calls
- Four proposals delivered & split into 6 options
- 12 contributions including proposals
- Comparison matrix prepared
  - 32 attributes proposed for comparison matrix
  - matrix cell entries essentially completed
  - http://www.ieee802.org/3/ba/public/AdHoc/MMF-Reach/Comparisons_xr_01_0711.xls
- 7 selection criteria proposed

Proposals

- Enhance optical transmitter attributes of module
- Add CDR inside of module to improve input and output jitter performance
- Add CDR outside of module to improve input and output jitter performance
- Replace limiting optical receiver with linear receiver and use EDC in host IC
- Use FEC in host IC to compensate for higher link BER
- Use FEC in host IC to compensate for higher link BER with encoding always enabled

Selection Criteria - Proposed

http://www.ieee802.org/3/ba/public/AdHoc/MMF-Reach/gustlin_xr_01_0508.pdf

- Minimum reach for XR should be 200 m to 250 m.
  - Using OM4 for this reach is acceptable.
- Solutions where modules are different are more acceptable than solutions where line cards are different.
- An installer should be able to readily determine if the extended reach is supported by a particular port on a given device.

http://www.ieee802.org/3/ba/public/AdHoc/MMF-Reach/maki_xr_01_0708.pdf

- Support for any form of extended reach should be considered only if it does not compromise the primary goal, 'No cost increase for the baseline PMD (optic) in order to obtain greater than 100-meter reach'
- The following are not acceptable:
  - EDC on the system/host board in any case
  - CDR on the system/host board as part of the baseline solution
  - EDC in the baseline PMD (optic)
  - CDR in the baseline PMD (optic

Pulled from ongoing email traffic.

- One PMD is preferred but two are acceptable.
- Minimum reach for XR should be 150 m of OM3.

Next Steps

- Complete selection criteria
- Begin selection process at face-2-face ad hoc this week
  - Proposed method:
    - 1st round selection: all participants have three votes. After the vote the proposal with the least votes or less than10% of the votes is eliminated.
    - Repeat with each participant having N/2 votes until there is only a single option. N is number of options at the beginning of a round.
- Present selection candidate to 802.3ba
- Next phone call proposed for Thursday, July 24

Corning Customer Survey - Questions

Customers asked to consider three options:

– **Option 1:** Requires development of one optical module

  OM3 to 100 m (low cost solution)

– **Option 2:** Requires development of one optical module.

  OM3 to 150 m or 200 m

  OM4 to 250 m

– **Option 3:** Requires development of two optical modules.

  OM3 to 100 m from Proposal 1

  OM3 to 150 m or 200 m from Proposal 2

  OM4 to 250 m from Proposal 2

Corning Customer Survey - Respondents

20 customers responded:

- Not as good as we hoped but reasonable response rate
- Broad cross section of users
  - Corporate accounts
  - School districts
  - Banks
  - Military
  - Consultants
  - Network integrators
  - Government users

Corning Customer Survey - Results

20 customer responses

- **Option 1:** Requires development of one optical module
  - OM3 to 100m (low cost solution)
  - **0 responses**
- **Option 2:** Requires development of one optical module.
  - OM3 to 150m or 200m
  - OM4 to 250m
  - **16 responses**
- **Option 3:** Requires development of two optical modules.
  - OM3 to 100m from Proposal 1
  - OM3 to 150m or 200m from Proposal 2
  - OM4 to 250 m from Proposal 2
  - **4 responses**