Cl **68** *SC* **68-5** *P* **28** *L* **11,13** # 1

Mei , Richard

Comment Type **TR** *Comment Status* **R**

The optical transmitter is permitted to produce transmit waveforms with dispersion penalties (TWDPs) that are 0.5 dB worse than that to which the receiver is tested. It implies that transmitters are permitted to produce outputs from the end of the fiber channel that exceed the level of stress that the receivers are required to handle. In addition, the "comprehensive stressed receiver sensitivity" test is not comprehensive because it does not include jitter impairments and baseline wander. It is very likely to cause the power budget shortfall to widen further. Therefore, the combined specifications for the transmitter, fiber and receiver do not ensure a closed power budget. For both 1000BASE and 10GBASE optical PMDs such impairments were accounted for in the link budget analysis and representative jitter impairments were included in the receiver test. This draft does not address these issues.

SuggestedRemedy

Account for jitter impairment in the receiver comprehensive SRS test in a way similar to clause 52. Provide power budget closure by adjusting the test specifications to ensure closure with the added jitter impairment.

Proposed Response *Response Status* **U**

REJECT.
1) This power budget topic was discussed at length during the October meeting, following comment 14 on D2.3. The commenter withdrew his comment. See resolution of Draft 2.3, comment 14.
2) In D1.0 the comprehensive stressed rx test did include pattern jitter. It was removed as the ISI impairments introduce jitter, and it was agreed that this need not also be modelled by source pattern jitter. At the same time the, separate, receiver jitter tolerance test was added.
3) Presentation by Lindsay during this meeting indicates that power budget has 0.9dB margin - adequate to account for the impairments described by the commenter.
4) Noise added in comprehensive stressed rx test will result in jitter.
Yes: 26
No: 2
Abstain: 8

Cl **68** *SC* **68-5** *P* **26** *L* **14** # 2

Adriaenssens, Luc

Comment Type **TR** *Comment Status* **R**

It has become clear, based on information presented at the October 2005 interim, that the November 2004 task force motion requiring sufficient demonstration of interoperability was not fulfilled. This motion reads:

Move that IEEE 802.3aq demonstrate a 10-12 BER over the rated distance on a specified channel (TBD) and show interoperability between PhD's of at least three vendors for 10GBASE-LRM to support technical feasibility prior to sponsor ballot.
Approved by vote of 35/1/0.

A presentation made on this subject in an attempt to fulfill this motion at the October 2005 interim meeting of 802.3aq failed to get sufficient support for reasons that include failure to meet the requirements of the motion in the following ways:
- The channel was selected by the demonstrators rather than specified by the task force as required by the motion;
- Only two EDC chip vendors products were included within the modules;
- The demonstration failed to provide sufficient evidence of technical feasibility as defined by the five criteria as required by the motion.

Additionally, the center launch condition used in the demonstration did not represent the native center launch into a multimode cord, as it was filtered by the use of a singlemode patch cord, an unsupported patch cord for this application.
The technology is not proven, as only one vendor has shown sufficient data to demonstrate that the specifications can be met and this is the first application of EDC technology for MMF.

Confidence in reliability cannot be assured due, in part, to lack of sufficient numbers of channels reported in the demonstration. The presentation reported results on the equivalent of one duplex 62.5 um channel, one half duplex channel of 50 um (OM2), and one half channel of OM3 fiber.

SuggestedRemedy

Based on the results presented at the October Interim, it is clear that the task force has not yet achieved assurance of interoperability. The task force should not proceed to sponsor ballot until interoperability is demonstrated by at least three vendors over a specified duplex channel of each fiber type using only the specified launch conditions.

Proposed Response *Response Status* **U**

REJECT.

No change to document suggested.

Motion 1 of Task Force meeting of Novemeber 2005 accepted that interoperation has been demonstrated, as required. See mcvey_1_1105.pdf.

Passed without objection.

Cl **68** *SC* **68-5** *P* **24** *L* **50** # 5

Kolesar, Paul

Comment Type **TR** *Comment Status* **R**

Draft fails broad market potential criteria. In July 2004 and November 2004, representatives of systems vendors stated via the 10GBASE-LRM email reflector that providing 300 m capability on legacy fiber was a strong and clear requirement, and that providing anything less was a “non-starter". The task force has studied the technology and concluded that providing a robust 300 m solution is not feasible. The draft therefore misses customer expectations, placing it in jeopardy of failing the broad market potential criteria.

SuggestedRemedy

Halt development of the document unless and until representatives of those same system vendors state that 220 m, the present maximum, is now an acceptable supportable distance.

Proposed Response *Response Status* **U**

REJECT.

Project objectives changed in line with Draft 2.4 by Motion 2 of November 05 Task Force meeting.

Draft 2.4 has achieved about 86% acceptance of 802.3 voters, many of whom are systems experts with knowledge of broad market potential.

Passed without objection.

Cl **68** *SC* **68-5** *P* **24** *L* **50** # 6

Kolesar, Paul

Comment Type **TR** *Comment Status* **R**

Document fails to fulfill stated objective to support 300 m on multimode fiber.

SuggestedRemedy

SuggestedRemedy: Do not progress to Sponsor Ballot until the document provides a solution the meets all its stated objectives.

Proposed Response *Response Status* **U**

REJECT.

Comment resolution committee does not control the balloting process.

Task Force recommended change to project objectives in line with Draft 2.4 by Motion 2 of November 05 Task Force meeting.

Passed without objection.

Cl **44** *SC* **44.5** *P* **16** *L* **28** # 7

Abbott, John

Comment Type **TR** *Comment Status* **R**

Table 44-4. Max channel length for 50um was reduced from 300m to 220m. Modeling for OM3 fiber suggests that 220m is not rigorously supported, and because new OM2 fiber will be largely OM3 fall-out it is expected that there will be a problem with OM2 as well. The OM1 length needs to be re-checked as well. The length needs to be reduced. An alternative remedy is to increase PIE-D.

SuggestedRemedy

SuggestedRemedy: Change 220m to 200m for 50um fibre.

Proposed Response *Response Status* **U**

REJECT.
The committee has not been convinced, by the new modelling information shown, that the distance needs to be changed. The committee also refers to the results presented in ewen_1_0905, which is understood to support the distances in D2.4. Also to abbott_1_1105 which has more recent OM2 modelling results, and which the committee interprets to support the distances in D2.4.

Yes:16
No: 3
Abstain: 10

Cl **68** *SC* **68.5** *P* **24** *L* **50** # 19

Abbott, John

Comment Type **TR** *Comment Status* **R**

Table 68-2: OM3 length was changed from 300m to 220m at Oct LRM meeting. At that meeting in abbott_1_1005.pdf it was shown that for a 220m length and a PIE-D of 4-4.2dB, the EMB needs to be roughly 700MHz.km or there will start to be a significant number of fibers with higher PIE-D. Fibers can meet the OM3 spec without meeting a 700MHz.km center launch at 1300nm, and a review of the OM3 modeling confirms this. The length for OM3 needs to reduced. The lengths for OM2 (which is closely related to OM3) and OM1 need to checked rigorously before moving to sponsor ballot. As an alternate remedy, we can increase the PIE-D level of the stressors.

SuggestedRemedy

Reduce OM3 length to 200m.

Proposed Response *Response Status* **U**

REJECT.

The comment resolution committee has not, at this point, been convinced that this change is necessary.

See also response to comment 7.

Yes: 20
No: 2
Abstain: 7