IEEE P802.3ae – 10 Gigabit Ethernet Minutes
Task Force Interim Meeting
May 23rd – 25th, 2001
St. Louis, MO.

Prepared by: Jeff Warren

Administrative

The meeting convened at 8:33am, May 23rd, 2001. Jonathan Thatcher, the 10 GE Task Force chairman, opened the meeting with a discussion of the agenda. There was a request from the EFM Study Group to delay the start of this meeting until after lunch due to a significant overlap in membership. There were a number of concerns raised about this delay, mainly wrapping up all the various activities by Thursday evening. Jonathan requested a vote on the delay, the group voted in favor of the delay.

The agenda was reviewed and modified. A motion to approve the agenda passed by acclamation (Moved by Tom Dineen). Jonathan then reviewed all the administrative items such as reflector and web locations, membership, voting, future meeting locations, call for patents and sign-in rules.

The hot ticket items for this meeting are all the PMD's, loopback, signal detect, clause 45, power down, 20 'vs' 100 ppm, jitter test patterns and methodology, technical feasibility, and state machine clean up.

These D3.0 WG ballot responses were dealt with. Draft 3.1 shall be created and then a 10-day re-circulation ballot shall be conducted prior to the start of the July plenary meeting.

The chairman raise the level of concern for this group achieving technical feasibility prior to the end of Sponsor Balloting.

The IEEE802.3ae standards time line targets a 1Q02 completion date for the final standard. At this point in time the 10GbE standards effort is 75 % complete, i.e. 27 of 36 months has passed.

Some important links:
- Agenda =   http://grouper.ieee.org/groups/802/3/ae/public/jan01/index.html
- E-mail Reflector = http://grouper.ieee.org/groups/802/3/10G_study/email/thrd1.html
- Voting Rules = www.ieee802.org/3/rules/member.html
- Typical Plenary Meeting = www.ieee802.org/3/plenary.html
- 802.3ae 5 Criteria = www.ieee802.org/3/ae/criteria.pdf
- 802.3ae PAR = www.ieee802.org/3/rules/member.html
- 802.3 Presentation Policy = www.ieee802.org/3/public/presentproc.html
- Current 10GbE Draft Standard = http://www.ieee802.org/3/ae/private/index.html

❑ 802.3 Patent Policy www.ieee802.org/3/patent.html

The P802.3ae 10-Gigabit Ethernet Task Force meeting was adjourned on May 25th, 2001.

Goals & Accomplishments for this Meeting

This meeting was dedicated to the

Outline for these Minutes

Future IEEE Meetings

Month	Days	Year	Meeting Type	City	State/Country
July	9th – 13th	2001	Plenary	Portland	Oregon
September	1st half	2001	Interim	Copenhagen	Denmark
November	12th – 16th	2001	Plenary	Austin	Texas
January	TBD	2002	Interim	TBD	TBD

There's a link to the next meeting location: http://www.ieee802.org/3/interims/index.html
The July plenary meeting shall be held at the Portland, Oregon downtown Marriott
During the week of July 8th – 13th, 2001. Reference this URL
http://grouper.ieee.org/groups/802/meeting/meeting_files/MI-0701-05.pdf

IEEE P802.3ae Objectives

➢ Preserve the 802.3/Ethernet frame format at the MAC Client service interface.
➢ Meet 802 Functional Requirements, with the possible exception of Hamming Distance.
➢ Preserve minimum and maximum FrameSize of current 802.3 Std.
➢ Support full-duplex operation only.
➢ Support star-wired local area networks using point-to-point links and structured cabling topologies.

- ➢ Specify an optional Media Independent Interface (MII).
- ➢ Support proposed standard P802.3ad (Link Aggregation)
- ➢ Support a speed of 10.000 Gb/s at the MAC/PLS service interface
- ➢ Define two families of PHYs
  - A LAN PHY, operating at a data rate of 10.000 Gb/s
  - A WAN PHY, operating at a data rate compatible with the payload rate of OC-192c/SDH VC-4-64c
- ➢ Define a mechanism to adapt the MAC/PLS data rate to the data rate of the WAN PHY
- ➢ Provide Physical Layer specifications which support link distances of:
  - At least 65 meters over MMF**
  - At least 300 meters over installed MMF*
  - At least 2 km over SMF
  - At least 10 km over SMF
  - At least 40 km over SMF

> LEGEND:
> * Installed = all MMF specified in 802.3z (62.5 micron 160/500 MHz*km FDDI-grade is the worst case).
> ** Implies that the solution is cost optimized for this distance.

- ➢ Support fiber media selected from the second edition of ISO/IEC 11801 (802.3 to work with SC25/WG3 to develop appropriate specifications for any new fiber media).

P802.3ae Contacts

- ➢ For the latest list of key P802.3ae contacts please reference the IEEE P802.3ae 10Gb/s Ethernet Task Force Chairs and Editors web page located at http://grouper.ieee.org/groups/802/3/contacts.html this web page is maintained by David Law.

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Agenda

- ❑ 1:00 Welcome and Introductions, Jonathan Thatcher (15 min)
- ❑ 1:15 Review / Approve Agenda
- ❑ 1:20 Chairs Introductory Comments
  - o Call for Patents
  - o Schedule Review
  - o Sponsor Ballot
  - o Meeting Objectives
- ❑ 1:45 Editor's Report (distribute comment DB?)
- ❑ 2:00 Announcement of / update on September interim meeting, Mario Stoltz
- ❑ 2:05 Liaison Reports
  - o 10GFC Liaison Report, Rich Taborek (5 min)
  - o T1X1, Ken Biholar (30 min)
- ❑ 3:00 Ad Hoc Reports
  - o Piers Dawe: Serial PMD`
- ❑ 3:15 Presentations
  - o Summary of Serial Jitter Test Pattern Ad-Hoc, Ben Brown (60 minutes)
  - o WIS Jitter Test Pattern, Tom Alexander (20 min)
  - o Interworking issue between 10GBE WAN and existing transmission regarding 100 ppm clock, Jean Loup Ferrant (20 min)
  - o VCSEL Friendly 1550nm Specifications, Jim Tatum (20 min)
  - o Update on 1310 nm VCSEL, Mike Dudek
- ❑ 5:15 Motions
  - o Jitter Pattern?
  - o WAN PHY Clock Tolerence?
  - o 1550 nm VCSEL
  - o Variable Preamble

Thursday Track Break Outs

Clause 52 Presentations
  - o "Simplified temporal specification for 10GBASE-LR/LW (1310 nm serial)" Peirs Dawe (20 min)
  - o EVALUATION OF RANDOM JITTER DUE TO RIN, Juergen Rahn (25 min)
  - o MEASUREMENT OF RECEIVER SENSITIVITY LIMITS, Juergen Rahn (25 min)
  - o 10GBASE-L Jitter Specification, John Ewen (15 min)

Friday -- General Session 802.3ae

- ❑ Track/Clause Reports & Motion Madness
  - ❑ New Business / Other Motions
  - ❑ Approve Minutes Meeting

❑ Adjourn

Breakout Details			
Track #	**Room Location**	**Attendance Estimate**	**Clauses**
1	D	5	1++, 44 and 45
2		10	54
3		26	45, 30, 46 and 49
4		15	51, 53 and 50
5		37	47 and 48

The "official" minutes for the individual sub-clause breakout meeting above can be found in the comment database.

Closing Discussions

One of the most significant issues to be dealt with is Technical Feasibility. Mr. Thatcher described his reason for submitting multiple comments on technical feasibility. We committed in our PAR to demonstrate technical feasibility prior to close of Sponsor Ballot. He submitted the comments as chair to enforce that commitment. The concern is that implementation experience is valuable in verifying that the specifications are implementable.

Motions

Motion # 1   General Session Motion
Description: Move to postpone the meeting until 1pm.
Motion Type: Procedural 50 % required
Moved By: Jonathan Thatcher
Seconded By: Jeff Warren
Results: All Attendees   Y 30   N 19   A   **61 %**
Time: 8:30am   05/23/01
                              P/F: **Passes**

This motion deals with the delay in the start of our 802.3ae meeting due to the overlap between EFM & 10GbE committees. The biggest risk is all the work that needs to be done in the Clause 52 "Serial PMD"; David Kabal felt that if the entire 2nd day were devoted to Clause 52-comment resolution then he'd be in great shape. The XAUI meeting was held during the morning of the first day.

Motion # 2   General Session Motion
Description: Accept the proposals and straw poll results from brown_1_0501 to be used as guidance through comment resolution.

Motion Type: Technical > 75% required
Moved By: Ben Brown
Seconded By: Pat Thaler
Results: All Attendees   Y 85   N 1   A 9   **99 %**
                802.3 Voters   Y 56   N 1   A 7   **98 %**
Time: 4:20pm 05/23/01

<p style="text-align:center">P/F: Passed</p>

Motion # 3   General Session Motion

Description: Accept in principle Steve Haddock's comment # 661 – details to be worked out in the break out meeting.
Motion Type: Technical > 75% required
Moved By: Steve Haddock
Seconded By: not needed
Results: All Attendees   Y 65   N 6   A 29   **92 %**
                802.3 Voters   Y 45   N 5   A 17   **90 %**
Time: 5:10pm 05/23/01

<p style="text-align:center">P/F: Passed</p>

There was a concern that loop timing would be required on the 10GBE WAN PHY's. The reason why it's accepted in principle is because the break out group needs to deal with how this will impact the receiver specifications.

Motion # 4   General Session Motion

Description: Adopt 1550nm specification as presented by tatum_1_0501.pdf as the basis for inclusion into clause 52 for 10Gbase-LW/LR with the exception of no changes (except to add wavelengths) to the existing receiver specifications.
Motion Type: Technical > 75% required
Moved By: Bill Wiedeman
Seconded By: Fred Mohamadi
Results: All Attendees   Y   N   A   **%**
                802.3 Voters   Y   N   A   **%**
Time: 5:10pm 05/23/01

<p style="text-align:center">P/F:</p>

A number of people expressed concern with this motion coming in at a late date. The clause editor that would have to deal with this motion if it passes felt that it would cause some delays to the standard editing. It would add an additional cycle to the drafts. The chairman ruled this motion out of order pending the group's determination that this is an appropriate item to be discussed. The chairman ruled this out of order due to a ne feature at an inappropriate time

Motion # 5   General Session Motion

Description: To suspend our previous No new features deadline for the purpose of considering inclusion of 1550 nm for 10GBASE-LW/LR PMD.
Motion Type: Procedural > 50 % required

Moved By: Bill Wiedemann
Seconded By: Fred Mohamadi
Results: 802.3 Voters   Y 22   N 24   A 9   `48 %`
Time: 6:18pm 05/23/01

<div align="center">P/F: **Fails**</div>

Motion # 5   General Session Motion
Description: Accept comment #662 and accept in principle comments #542 and #673 (referencing comment #662).
Motion Type: Procedural > 75 % required
Moved By: Steve Haddock
Seconded By: Ben Brown
Results: 802.3 Voters   Y 24   N 6   A 12   `80 %`
                  All Attendees   Y 30   N 8   A 23   `79 %`
Time: 6:35pm 05/23/01

<div align="center">P/F:</div>

Shimon cleared up some confusion that he felt existed on this motion, that being that the SFD will always be in lane 3. Tom Dineen also spoke in favor of Shimon's views.

Please note that Bob Grow recorded additional 6 motions during the Friday May 25th session. Please refer to his minutes attached to the end of this document for those motion details. These motions dealt with:

1. Approval of March 2001 minutes, passed.
2. Removal of power bit from all applicable clauses, passed
3. Comment 743 reject, 729, 100 all passed
4. Jitter sensitivity passed
5. Addition of 10GBASE-SX4, failed.
6. Affirm responses to D3.0, passed.

<div align="center">*General Presentations & Minutes*</div>

1. **Opening Business (Jonathan Thatcher)**
    http://grouper.ieee.org/groups/802/3/ae/public/may01/intro_0900.pdf

Typical introductory material, please reference the presentation for details. Jonathan pointed out that there is a comment and presentation that appears to be out of order since new features have been cut off.

Jonathan brought up the subject of Technical Feasibility. He put the wording up that we all agreed upon last year, i.e. "10 Gb/s Ethernet technology will be demonstrated during the course of the project, prior to the completion of the sponsor ballot.". Jonathan submitted several comments to D3.0 on technical feasibility so that this committee must (some day) deal with the obligation of technical feasibility. To date we have not seen any concrete information on this subject, so come July we'll start the process to see if the committee agrees we've met this PAR requirement. If nothing else this is a wake up call

to the suppliers of 10 GbE technology that they need to address this topic and in the very near future. There were a number of comments from the floor about the vagueness of criteria to be used to prove technical feasibility.

2. P802.3ae Serial Jitter Test Pattern Ad- Hoc Summary (Ben Brown)

Ben's presentation was a summary of the latest work done for Serial Jitter Test Patterns. He reminded the group that this ad hoc effort was only applicable to the Serial LAN solutions. However several (i.e. 3 options) possibilities were discussed for the WIS clause, such as, using a LAN pattern as payload (no scramble), or using a LAN pattern along with A1/ A2 only, or using a pattern specified in ITU- T G.957. Ben described the motivations for what they did, this included using the existing logic, focus on reoccuring patterns that stresses the PLL designs. The types of tests they will support were described as well as the functional blocks each test type would provide coverage on. The ideal jitter pattern fits in a BERT tester as well as having the ability to generate and check the pattern FDX. The function needs a set of error counters. Also if the error rate is in the range of 10EE-3 this function still needs to work. Need to be able to calculate the error rate. All proposals have a common scrambler, this scrambler shall be seeded with starting values. A fixed pattern value (33792 bits) = (4)*(128)*(66). The seeds are 58 bits long. The seeds used consider running disparity. These seeds are programmable. The values of the patterns have not been nailed down yet, however since they are programmable we can be flexible. Once patterns are set the ad hoc will need help testing them. Clarification was requested as to testing level, they can be system level (used to verify links) or board level. The place where this function is implemented is the PCS. The hits to the standard for adding the function to the standard will impact clauses 45, 49, and 52.

Strawpoll(s) on each item:
- Is it mandatory for a transmitter to support this testing mode?
  - Yes = 54   No = 3   Abstain = 14
- Is it mandatory for a receiver to support the random portion of the testing modes?
  - Yes = 47   No = 2   Abstain = 23
- Is it mandatory to support both simultaneously?
  - Yes = 35   No = 4   Abstain = 30


3. Working GroupBallot Summary (Brad Booth)

Brad reported there are 306 voters in the pool and 238 submitted a ballot. A total of 164 approved 17 disapproval and 47 abstained. The return rates were 77 %, approval rate 91 % and abstain rate was 20 %. These were all acceptable levels. A total of 992 comments were made with 101 Technical Required and 375 Technical that leaves 516 Editorial comments. So there are a total of 476 comments that MUST be resolved this week. The distribution of comments shows that Clause 52 and Clause 45 have the lions share of comments. Brad reviewed some of the rules for proper ballot voting. The hot ticket items are PMD's, loopback, signal detect, clause 45, power down, 20 'vs' 100 ppm, jitter test patterns and methodology, technical feasibility, and state machine clean up. There were a

few TR's against Clause 00 (i.e.general issues) dealing with XSBI 'vs' SFI-4, Signal Detect, Power Down, Clause 53 PMD loopback. With regards to the XSBI 'vs' SPI-4 the concern was if this committee intends to follow the SPI-4 explicitly, because right now there is a bit ordering problem. The SPI-4 orders bits as 1 – 16 with 16 being transmitted first after serialization and in IEEE we transmit bit 0 or 0 – 15 first after serialization. The work to do this week is close TR's followed by T's and then E's in that order. June we'll do a D3.1 recirculation with commenting only against the changes (so D3.1 will have change bars). Here you'll only need to submit a ballot to change your vote. In July's plenary we'll resolve D3.1 comments and build a D3.2 draft for recirculation as well. The difference between a TR and a T is as follows. A TR must be signed off on, meaning once a breakout clause has developed a response the commented must sign-off, you can say NO I don't approve with the resolution and this TR will not go away.

Technical Comments
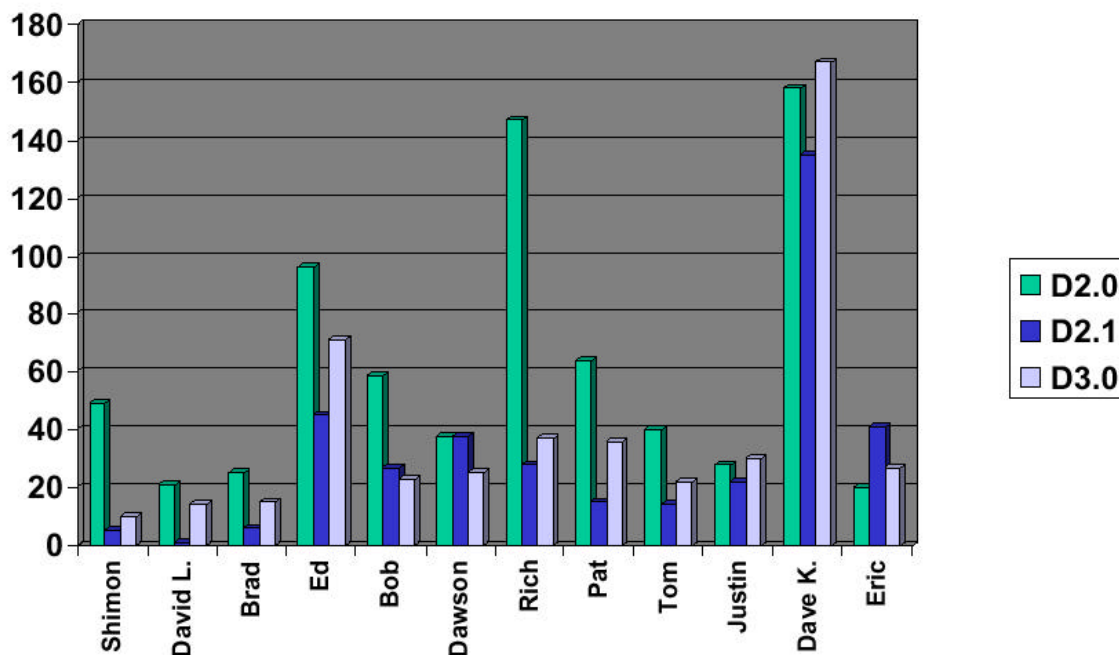
4. Copenhagen, Denmark ( )

This was a very brief presentation to assure the group that the September 2001 Interim is still going to happen in Copenhagen. There is going to be a pointer on the IEEE802 website very soon that helps us with making room reservations. The Hilton will host all the meetings, the overflow hotels are 10 minutes away by train. All the downtown hotels are very close to each other.

5. 10GFC Update (Rich Taborek)

Rich said draft 1.1 is in letter ballot. www.t11.org The comment period ends in June 2001. There are no major technical changes. This group is adding FC specific requirements to

the 10 GbE standard. There is strong support in FC that if and when they move forward with new higher speed products they will go from 2 Gbps products to 10 Gbps products. The most likely hood for implementations of this technology in FC is switch to switch port (i.e. E_Ports).

6. T1X1 Pitch (Albert White)

Committee T1X1 is aware that the IEEE 802.3ae Task Force is standardizing a 10 Gbit/s Ethernet (10 GbE) WAN interface, referred to as 10GBASE-W. We fully support this initiative. The carrier community represented in T1X1 sees a significant business opportunity in the transport of 10 GbE in their metropolitan and long-haul networks. To make this service possible in existing and future transport network infrastructures, we request that IEEE Working Group 802.3 reconsider the following points:
- ❑ The network impact of the +/- 100 ppm clock tolerance specified for 10 GBASE-W
- ❑ The impact of ELTE on network management for 10 GbE transported over the Optical Transport Network (OTN, as specified in ITU-T Rec. G.709)

We believe that the cost impact of using a 20 ppm oscillator (relative to your target cost of 10 GbE equipment) is less than 1% over the cost for a 100 ppm implementation. The graceful accommodation of a 20 ppm 10GBASE-W signal into the extensive SONET/SDH network infrastructure and the next generation OTN core network will facilitate the widespread availability of 10 GbE service over great distances.

A +/- 20 ppm tolerance will allow the transport of 10 GbE over the OTN without the use of an ELTE. This will allow for end-to-end network management, which is otherwise precluded by the termination of the 10GBASE-W signal at OTN boundaries. The cost of accommodating a +/-100 ppm tolerance with stand-alone ELTE in existing SONET/SDH networks will be reflected in the higher cost of the 10 GbE service to the end-user.

We therefore request that the line-rate tolerance for the 10 GbE be changed to +/- 20 ppm. The Annex contains a more detailed discussion of the rationale for our request.

7. Report from Serial ad hoc (Piers Dawes)

This group has been dealing mainly with test patterns. However another issue has been raised dealing with how power is spec'd and measured. Another issue deals with risetime requirement removal and little progress on signal detect. The jitter numbers need to be refined. A breakout session will deal with the previously identified problem with SPI-4 vs SPI-4 bit ordering. Piers also raised the concern that this standard seems to be writing component level specifications, but the chairman quickly pointed out we are writing equipment level specifications. In particular we specify interfaces and what goes on between these interfaces.

8. WIS Jitter Patterns (Tom Alexander)

Tom also is interested in minimizing the impacts to the jitter test pattern generator and checker. Two recommendations have surfaced, ITU-T Recommendation G.957 and ITU-T Recommendation O.181. The G.957 recommendation does not specify some of the details needed. The total pattern lengths for the O.181 recommendation are very large. One option has a fixed repeat interval and pattern structure whereas the other option is fully programmable. A compelling reason for going with option 2 is the reuse of existing WIS logic.

9. Interworking issues between 10GBE WAN and existing transmission network (Jean Loup)

This is a continuation of 20 'vs' 100 ppm that took place at the last standards meeting. The existing transmission networks are based on SONET/SDH and DWDM. It's impossible to map 10GEB WAN into G.709 OTN equipment. There are two solutions
❑ Adapt 10GBE WAN to SONET/SDH
  This is the easiest, just change an oscillator.
❑ Adapt SONET/SDH to 10 GBE WAN
  More complex – clock interfaces on OC-192c need to be redesigned, implying replacement of equipment that is already in the field. This option was discussed in more detail, however the bottom line is this option is highly unlikely to happen. An estimate of 400k gates to change the design.
The request came again to change the 100 ppm clock to 20 ppm to minimize the impacts to existing networks that is sure to happen when adapting the two different systems.

10. WIS Jitter Patterns (Brad Booth)

Comment # 661 – Suggested a change of the 622.08 +/- 100ppm to 20ppm. The clause editor has this comment as a proposed accept. This boils down to a 20ppm requirement for the WIS implementation only.
Straw poll Y = 53   N = 3   A = 38

11. VCSEL Friendly 1550nm Specifications (Jim Tatum)

This deals with 1550nm solutions at 10km. Jim went through the standard and pointed out the items that need to be changed to accommodate this proposal. These lasers running at 1550nm are interoperable with 1310nm VCSEL/FP/DFB solutions. More specifically the committee would need to add 1550nm specifications for 10km, 10GBd to Clause 52. The committee has already considered the intermixing of transceiver types in the past and decided not to allow it.

Straw poll: Add 1550nm Specification for 10km, 10GBd to clause 52 (10Gbase-LR & 10Gbase-LW).

Everyone Voting   Y: 28   N: 17   A: 49   62 %   **Fails**

12. Start Sequence Options (Bob Grow)

The current draft specifies several start sequence option, there is a suggestion to tighten this up. See comment # 662. Steve is trying to eliminate unnecessary complications in the standard. The suggested text is "A 10 Gb/s MAC/RS implementation is not required to process the packet that has an SFD in a lane other than lane 3 of the column following the column containing the Start control character.".

Additional Items:

During the XAUI comment resolution meeting comment 853 from Jonathan Thatcher stressed the need for verification that the XAUI spec is realizable. The 10 GEA has a group that is going to sponsor some XAUI Interoperability. The person heading this up is from Tyco Electronics. The method for demonstrating interoperability is to use a test card and run a frame test using XAUI CRPAT (48A.4) and optionally CJPAT (annex 48A.5) as well as a payload verification (allowing for ????). A test system diagram was developed. ……. Get these charts from John DeAmbrosa (sp?). There are 13 companies involved in this effort and 5 have so far committed to participate in this technical demonstration effort. He back plane board the various XAUI vendors will plug into to verify interoperability was passed around.

There is some contact information stamped on this Tyco Electronics back plane board:
Communications Circuits and Designs
HM-Zd XAUI Test Backplane
www.amp.com/simulation
email – simulation@amp.com

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The minutes below were provided by Bob Grow, these are the minutes from the 3rd day, Friday May 25th, 2001.

802.3ae Task Force Closing Plenary
25 May 2001
St. Louis, MO

Mr. Stephen Haddock, Vice Chair 802.3ae opened the meeting at 1015. He indicated that Mr. Jonathan Thatcher Chair 802.3ae had asked him to conduct. He presented an agenda for the day.

Mr. Haddock asked if there were any other items for inclusion in the day's business. He asked if there were any corrections to the minutes.

Motion to approve the minutes of the Task Force March meeting.
B. Brown, E. Turner

By voice with out opposition

Brad's Big Ticket

Mr. Brad Booth reviewed the status of the weeks work, highlighting the big ticket items (Technical Required comments). He indicated that some responses were unsatisfactory to the commenter, so a recirculation package will include at least some TR comments in the package. Some of the voters were not at the meeting and haven't been contacted to see if the response would be acceptable.

We need to close out the TR comments at this meeting, in anticipation of a June 11 opening of a two week recirculation ballot. A second recirculation if necessary will be done after the July meeting.

Mr. Haddock reminded the group that the subject of a recirculation ballot is the changes resulting from the Draft 3.0 Working Group ballot. If a commenter finds a clear error, editor will be likely to accept the comment anyway in the Draft 3.1 recirculation.

Technical Motion
Remove power down bit from all applicable clauses (Comment #698)
B. Booth, B. Brown
Approved by voice.

Some discussion followed. It was pointed out that if this was inconsistent with previous PHYs it would be noticed. Explanation followed of this being part of the MII architecture where multiple PHYs could be present on the interface.

Clause Editor Reports

The detail on responses to comments is included in the comment data base for D3.0. The editors summarized the responses for the Task Force.

Mr. Muller reported on modifications to all of the IEEE Std 802.3-2000 clauses except 30. All comment were closed unanimously. [1 page report]

Mr. Law reported on clause 30. All comments are closed. One attribute was removed.

Mr. Turner reported on clause 45. The attached presentation includes a summary of the changes. All are closed.

Mr. Grow reviewed the status of clause 46. All comments are closed, and integrated into the clause. Some additional editorial changes will be made in response to moving information from clause 44 to 46.

Mr. Kessling reported on clause 47. Jitter, eye template and other technical comments were closed. Editorial comments were minor and closed. Comments have already been integrated into the draft.

Mr. Taborek reported on clause 48. The most major technical change was in the conversion of code groups. Some code groups were converted to errors, now they are passed through. All TR and Ts were reviewed, in the meeting and the editor was given authorization to close the editorials with the proposed responses. The clause is mostly ready for recirculation.

Mr. Ben Brown reviewed the status of clause 49 for Ms. Thaler who was unable to attend the closing plenary. Her group closed the TR and T comments. Two were rejected. The editor had authorization to include text for the jitter test methodology adopted by 802.3ae.

Mr. Tom Alexander reported on clause 50. All comments resolved. The work included some cross clause decisions (also affecting MDIO registers). All comments were resolved.

Mr. Justin Pineda reported on clause 51. One comment (#743) was appropriate for 803.3ae vote. He reviewed the comment, and the floor was opened for discussion. The comment addressed status signals from the PMD. The editor proposed a Reject to the comment, but no vote on the proposed response was taken in subtask force.

Technical Motion
Approve the proposed Reject and response to comment 743.
Mr. Pineda on behalf of the subtask force
802.3 Voters Y: 27, N: 5, A: 15

[PROPSED REJECT. Previous ballot cycle had a comment to put an interface type on the PMA LOS and Sync_Err signals. LVCMOS was selected as the best choice going forward. It is compatible with the LVTTL as defined in SFI-4.]

Discussion followed with comments on both sides. The current draft does not have signal specifications, and the comment would remove even the reference to LVCMOS for the signals. Many comments indicated that either it should be left totally open or better specified. It became clear that more thought was appropriate. Mr. Haddock proposed elevating the comment to a TR so it would be included in the recirculation package. The motion passed to reject the comment as recorded above.

Mr. Kabal reported on clause 52. As reported on Wednesday, they had the bulk of the comments. The group had a marathon session to close the comments, but a few remain for resolution by the Task Force.

Comment #729 was presented and the proposed response was revised. Questions of clarification were answered. 802.3ae approved the test methodology and the committee resolved the test pattern.

Technical Motion
Approve the response to comment #729 as recorded in the comment database.
Mr. Kabal on behalf of the subtask force.
Y: 16, N: 2, A: 18

Comment 100 was upgraded from E to T. Mr. Kabal asked if anyone in the room disagreed with the proposed Accept response. No one did.

All comments are now closed. He listed the major issues addressed in the comments and resolutions

Technical Motion
In 52.7 and 52.8.9-11, 13 use language representing the following:
- The [jitter] stressed sensitivity |PD&|S|} test pattern shall be stressful test pattern defined in 528.xxx or 50.xxx for LAN and WAN PHY PMDs respectively
- Create [more from David's bits]

802.3 Voters
Y: 27, N: 0 A; 10
All Voters
Y: 42, N: 1, A: 19

Mr. Eric Grann summarized comment resolution on clause 53. All comments were resolved but one TR commenter hasn't been contacted about the response.

Procedural Motion
Motion to suspend the timeline to enable discussion on 10 GBASE-SX4, to allow discussion of a new feature.
B. Weidemann, K. Harrity
802.3 voters, Y: 25, N: 14, A: 12

Discussion on what is really being proposed is to allow the editor to develop a parallel clause that would include the –SX4 PHY. Another motion was presented to do this.

Technical Motion
Authorize editor of Clause 53 to a parallel effort to add 10GBASE-SX-4. and to include this parallel effort in the recirculation of Draft 3.1.
B. Weidemann, R. Taborek
Vote by 802.3 members, Y: 13, N: 18, A: 16

Questions were raised on what this meant, including was the intent to include the alternate clause in the recirculation. Concern was expressed that this was subverting

decisions of 802.3. It was pointed out that this is in response to a TR comment on technical feasibility. The response to the comment was to Reject, but it did not suggest that –SX4 was a response to the comment. Concern was expressed that the proper process should be followed because it was designed for convergence, else we risk a bad precedent. The motion failed as discussed above.

Technical Feasibility Discussion

Mr. Thatcher described his reason for submitting multiple comments on technical feasibility. We committed in our PAR to demonstrate technical feasibility prior to close of Sponsor Ballot. He submitted the comments as chair to enforce that commitment. The concern is that implementation experience is valuable in verifying that the specifications are implementable.

Working Group Ballot Status

Technical Motion
Move that P802.3ae Task Force affirms the responses to Draft 3.0 Working Group ballot comments, and authorize the editors to create Draft 3.1 incorporating the responses and editorial changes, and conduct a 10 day re-circulation ballot.
B. Brown, B. Booth
Vote by 802.3 members, Y: 39, N: 0, A: 2
Vote by TF, Y: 70, N: 0, A: 2

Schedule and Plans for next meeting
The Task Force will meet in Portland during the IEEE 802 plenary week. Task Force meetings will be held Tuesday, Wednesday and Thursday morning, with the 802.3 closing plenary moved to Thursday afternoon.