Unconfirmed Minutes

IEEE 802.3 CSMA/CD PLENARY

Portland, OR

July 9-12, 2001

MONDAY, 9 JULY

ADMINISTRATIVE MATTERS

Mr. Geoff Thompson, Chair 802.3 CSMA/CD, opened the Working Group plenary at 1315, by welcoming meeting attendees and introducing Mr. David Law, Vice-Chair 802.3, Mr. Robert Grow, Secretary 802.3 who recorded these minutes, and the Task Force and Study Group Chairs: Mr. Jonathan Thatcher (802.3ae), Mr. Steve Carlson (802.3af), and Mr. Howard Frazier (EFM).

Mr. Thompson explained attendance rules, the email reflectors maintained by the committee, and described information available on the web site. The Working Group web pages contain a wealth of information about 802.3. This includes the 802.3 Operating Rules, descriptions of how to subscribe to the various email reflectors, meeting minutes and an archive of presentations to the Working Group and its subgroups. The 802.3 home page is: http://www.ieee802.org/3. Mr. Thompson stressed the importance of keeping contact information current, especially anticipating a request this week to forward a draft to Working Group ballot this week.

The meeting agenda was distributed, and corrected. Mr. Thompson reviewed the voting members of the Working Group <Voters> and the requirements to qualify for voting membership. The voters in peril list was presented <Voters in Peril>. He presented the potential voter list. The following indicated by • on <Potential Voters> requested to become voting members: Barrass, Hugh; Brand, Richard; D'Ambrosia, John; Ferrant, Jean-Loup; Fujimoto, Yukihiro; Gentry, Denton; Goldman, Matthew; Goodman, Timothy; Jaffa, Brent; Jetzt, John; Kenny, John; Kuyt, Gerard; Lamers, Lawrence; Lee, Eugene; Liu, Fengkun; Mashiko, Koichiro; Matni, Ziad; Metzger, JoBeth; Michalowski, Richard; Moriwaki, Shohei; Murray, Brian; Orlik, Philip; Quilici, Jim; Quinn, Patrick; Rahn, Jurgen; Raman, Naresh; Ryu, Hyunsurk; Sasaki, Akira; Selee, Steve; Shergill, Robbie; Stanley, Patrick; Stoddart, Dean; Tusiray, Bulent; Vepa, Ramakrishna; Won, Shin-Hee.

The attendance lists were explained and circulated. All attendees were told of the obligation to register for the meeting and pay the $300 meeting fee. A discounted pre-registration rate of $250 was available for this meeting and will be available for the November Austin meeting. A list of future meetings and registration instructions are available through the IEEE 802 web site home page, http://www.ieee802.org.

Agenda (Monday)

MOTION:

Approve the agenda as amended <Opening Agenda>.

Approved without objection.

Approve the March 2001 Hilton Head meeting minutes.

M: Dineen
S: Quackenbush
Approved without objection.

Working Group Activities Since Tampa

Between the March Hilton Head meeting and this meeting, 1802.3Rev Sponsor Ballot was subject to a 2nd recirculation. 802.3ag Maintenance #6 has been submitted to balloting service for Sponsor Ballot. The 802.3ae Working Group Ballot closed prior to the May interim meeting, and the 1st recirculation closed prior to this meeting.

Interim meetings were held in St. Louis, MO in May for 802.3ae, 802.3af and EFM.

Standards Board Report

. The Standards Association requested changes to the document after approval and prior to publication to include trademarks and notifications about their use. Of specific focus are IEEE® and 802® and licensing requirements for their use, and issues related to compliance.

Executive Committee Report

The free IEEE 802 standards program has been launched as Get IEEE 802 <Get IEEE 802>. 130,000 documents have been downloaded. The program is sponsored by individuals, corporations and through a portion of the IEEE 802 plenary meeting fee.

The large surplus from the LMSC Treasury sponsored Orlando interim (primarily the wireless groups) will likely be used to fund wireless networking at future IEEE 802 meetings.

The Standards Board has gone ahead with placing documents in password protected web pages. If any 802.3 participants want access to this information and cannot get access through the Standards Association, Mr. Thompson will provide the means to get access upon email request.

The closing Executive Committee meeting is scheduled for 3:00-7:00 p.m. on Friday this week. While the time of the meeting might be adjusted, it is expected that it will remain on Friday (instead of its former Thursday night time) to enable more Task Force meeting time.

An Executive Committee Study Group on wireless co-existence in unlicensed bands is looking for long term recognition within the 802 umbrella, perhaps as a TAG or TAG with modifications to LMSC rules. A regulatory group under 802.11 has similar intent to move up to the 802 level.

Mr. Carlo has indicated his intention to resign as chair of 802 LMSC effective after the November plenary meeting. Anyone interested can learn of the requirements and process by speaking to Mr. Carlo or Mr. Thompson or another Executive Committee member (e.g., Mr. Grow). The process is outlined in the Monday, July 9 Executive

Committee minutes. The election for working group chairs will take place in March per the 802 LMSC rules.

Future meeting sites were reviewed as recorded at the end of these minutes.

The only tutorial scheduled for this week is on Ethernet in the First Mile, given by Mr. Howard Frazier and other EFM Study Group participants. The tutorial information will be posted on the IEEE 802 site.

The CD ROM of 802 standards was last pressed in November 2000. New voters should be able to get a copy by contacting the meeting planners. This CD ROM includes the current edition of 802.3 standards.

External Liaison Report – FO2.2

External Liaison Report – TIA TR-42

Mr. Chris Diminico reported on TR-42 <TR-42 Report>. **External Liaison Report – SC25/WG3**

Mr. Alan Flatman reviewed the work on structured cabling standards within ISO and CENELEC <SC25/WG3 Report>.

External Liaison Report – IETF

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External Liaison Report – RAC

The RAC will have its annual meeting on Thursday evening (not an 802 meeting).

PARs for Executive Committee Action

Three PARs will be considered by the Executive Committee this week and Working Group questions are due by 5:00 p.m. Tuesday. The first is Ethernet in the First Mile. This will be covered in detail during the tutorial. The second 802.16.2a is on co-existence. The third, an 802.11 PAR may be withdrawn depending on the results of another set of meeting currently running. No one requested additional detail in response to Mr. Thompson's offer to provide or solicit more.

Call for Patents

Mr. Thompson reviewed the IEEE patent policy. The IEEE requests release letters from holders of patents that may apply to standards in development. These letters state the patent holder's willingness to comply with the IEEE patent policy. 802.3 also solicits information on patents that have been filed but not yet issued, since it is easier to get release letters while company representatives are active in the working group <Patent Policy>. A new form letter is available on the SA web site, for those that want the simple way to submit a letter, or submittal in other form will also be considered.

The current patent policy as well as an example response letter can be found in the IEEE Standards Companion, or on the web at http://www.ieee802.org/3/patent.html. No

patent letters were presented, nor was there any expression from those attending of intent to submit a letter, in response to his request.

Schedule for the Week

The Task Forces will meet as normal on Tuesday and Wednesday. The new schedule for the Executive Committee allows additional Task Force meeting time. 802.3 Task Forces can meet Thursday morning. The closing 802.3 plenary will begin at 1:00 p.m. on Thursday. The Wednesday night social was announced.

State of the Standards

Mr. David Law, Vice Chair of 802.3, presented the IEEE Project 802.3 Working Group Standards Status <Standards Status> that includes the development status of published standards and both approved and proposed 802.3 projects. The clause change matrix <Clause Matrix> shows how proposed and approved supplements affect the base document. No supplements have been approved since publication of IEEE 802.3, 2000 Edition. It was suggested that the matrix might be improved with indication of relevant errata and interpretations requests.

Operating Rules of 802.3

Mr. Law reviewed the state of the 802.3 rules <Opening Rules Report>. No change requests have been received. An editorial change was made to reflect the meeting week decisions of the Executive Committee.

CONFORMANCE (1802.3rRev)

Mr. Law reviewed the status of 1802.3rev <Opening 1802.3Rev Report>. The document is at Sponsor Ballot. Mr. Law has produced D3.1, updating references and the scope text. Sponsor Ballot will close prior to the interim meeting, and with conditional approvals, the document will likely be submitted to RevCom prior to our November meeting.

MAINTENANCE (802.3ag)

Mr. Law reported on the current maintenance status <Opening 802.3ag Report>. The maintenance ballot is currently open, and will close in August. A maintenance meeting will be scheduled for this week to discuss the 100BASE-FX connector comment that has fallen out of the changes in Maintenance #6 and to process other maintenance requests.

INTERPRETATIONS

Mr. Law summarized the outstanding interpretation requests <Opening Interpretations Report>. One request pointed out a conflict in the standard. Because interpretation requests can only illuminate what the standard says and not what it should say, a change request needs to be processed through the maintenance process. This topic will covered in the maintenance meeting.

TRADEMARKS

Mr. Thompson gave additional information on the IEEE and 802 trademark actions being taken by IEEE staff. The guidelines being developed for use of these trademarks are preliminary and will be refined. Permission would be required to use the trademarks with the possibility of a fee. The rationale supplied by IEEE staff is related to potential liabilities associated with vendor claims of compliance. Executive committee members have asked a number of questions of IEEE staff, and they have committed to supply additional information on the motivations and goals of the project.

CABLE DISCHARGE AD HOC

Mr. Dan Dove described some of the problems that have been observed in the field. Some cables build up a charge which when plugged into a port causes failure because of the energy discharged. The ad hoc will meet this week to discuss the problem and progress made in understanding the causes and characteristics.

10 GIGABIT ETHERNET (802.3ae)

Mr. Jonathan Thatcher presented the status of the Task Force <Opening 802.3ae Report>. The project is in Working Group ballot. The ballot passed, with comments from the initial ballot resolved in St. Louis. The resulting draft 3.1 was the subject of a recirculation ballot that closed prior to this meeting. Comments from recirculation will be addressed this week. It is anticipated that conditional approval for going forward to Sponsor Ballot will be requested on Thursday. The major areas of change in the draft are highlighted in his presentation. Five unresolved technical comments from the initial WG ballot were included in the recirculation package.

A request has been received from ITU for changes in optical specification method to better harmonize with their documents. This will also be addressed in the Task Force meetings.

DTE POWER VIA THE MDI (802.3af)

Mr. Steve Carlson reviewed the progress of the Task Force <Opening 802.3af Report>. The current draft is 802.3af/D1.2. A major item for work is to refine some of the parameters. Progress indicates that Working Group Ballot will be requested in November following additional Task Force review.

ETHERNET IN THE FIRST MILE STUDY GROUP (EFM)

Mr. Howard Frazier reviewed the progress of the Study Group <Opening EFM SG Report>. The group met for two and a half days in St. Louis in May, with more than 200 attendees and 27 technical presentations. A major focus was to refine the PAR, Five Criteria and Objectives for consideration at this meeting by 802. Some of the objectives were refined, as well as the criteria. He stressed that there are multiple proposals for how compatibility with the peer-to-peer concept of 802 Overview and Architecture can be achieved, so the exception in the compatibility criteria may not need to be used.

He presented a strawman project schedule that the Study Group will be considering. In addition, liaison letters have been received for consideration by the group. The number of presentations is large and substantive. In addition to technical progress, the major focus is to get the PAR approved.

Other Business

Room assignments were made for the Task Forces, and Ad Hoc meetings. The opening 802.3 plenary was adjourned.

THURSDAY, 12 JULY

ADMINISTRATIVE MATTERS

Mr. Geoff Thompson, Chair 802.3, opened the Working Group closing plenary at 1300 and welcomed those attending the meeting. The attendance lists were circulated.

Mr. Thompson presented the potential voter list, and the following requested to become voters (indicated by - on <Potential Voters>: Adams, Martin; Brooks, Rick; Caldwell, Donald; Drever Brian; Dwelley, David; Effenberger, Frank; Ghiasi, Ali; Hirth, Ryan; Le, Quang; Romascanu, Dan; Sala, Dolors, Venkatavaraton, Vinod Kumar.

MOTION:

Approve the agenda as revised. <Closing Agenda>

M: Quackenbush
S: McCormick
Approved without objection.

Mr. Thompson reminded participants that only the 802.3 member (voter) list that was posted outside the meeting rooms all week plus the potential voters who requested to become voting members are allowed to vote at this meeting.

Mr. Carlson in his item will cover a liaison item to TR-42. Mr. Romanacsu reported that IETF will be considering DTE Power MIB requirements in the hub MIB in November.

Mr. Thompson discussed a letter received from Mr. Scott Bradner inviting individuals interested in Giant frames IS-IS project in IETF to join the reflector as described in <Bradner Letter>

Mr. Thompson reminded participants of the opportunity to join the sponsor ballot pool for our standards. The 8023ae pool is being formed.

Cable Discharge Ad Hoc/Liaison Matters

- Mr. Dan Dove briefly reviewed the discussions of the Monday evening cable discharge ad hoc which 16 people attended. Minutes will be posted. The group is investigating how cables are charged, characteristics of how it is held and dissipates from the cable, the power threshold where damage occurs and cumulative effects of lower power discharges. The group will continue progress on the reflector and not meet in September.

MAINTENANCE (802.3ag)

Mr. Law reported on the Maintenance meeting, and the 80 maintenance requests received. 21 of the comments are in ballot, 26 processed as errata, with others closed, withdrawn or in process. The Sponsor ballot will close August 1, and the Maintenance Task Force will meet in September in Copenhagen.

TECHNICAL MOTION:

IEEE P802.3 authorises the IEEE P802.3ag Task Force to conduct meetings and recirculation ballots as necessary to resolve comments received during the Sponsor Ballot.

IEEE P802.3 requests that the P802 LMSC Executive Committee give permission for the IEEE P802.3ag draft to REVCOM for the December 2001 Standards Board meeting. The Sponsor ballot results will be reviewed at the November IEEE P802 plenary meeting.

M: Mr. D. Law
S: Pat Thaler

Y: 74, N: 0, A: 0, Passed

INTERPRETATION REQUESTS

The <Closing Interpretations Report> discussed 1-03/01, which points out a defect in the standard. Mr. Noseworthy reported on this request. This one is a difficult problem in that it appears that implementations are about equally split in how Auto-Negotiation is implemented. The problem is with storage of next page where the standard didn't clearly specify the intent in defining a new register (8) for storage of next page. The standard has conflicting text describing use of register 8, but mandatory text still references register 5.

He reviewed possible remedies that have been investigated at UNH. He recommends that the option 4 in his presentation is the best for resolving this conflict. This option will be submitted as a maintenance request for inclusion in the next maintenance project. Because the process on this interpretation request was not completed to provide required notice for this meeting, the following motion was offered.

TECHNICAL MOTION:

IEEE 802.3 submits the proposed Interpretation response to the Interpretation request 1-03/01 for a 30 day Working Group letter ballot

M: Mr. D. Law
S: Ms: P. Thaler

Y: 79, N: 0, A: 1, Passes

CONFORMANCE (1802.3rev)

Mr. Law presented the status of P1802.3Rev. The document is in Sponsor recirculation. If required a meeting will be held in September to resolve comments.

TECHNICAL MOTION:

IEEE 802.3 authorises the IEEE P1802.3Rev Task Force to conduct meetings and recirculation ballots as necessary to resolve the comments received during the Sponsor recirculation ballot process

IEEE 802.3 requests that the P802 LMSC Executive Committee grant conditional approval to forward P1802.3Rev to REVCOM based on successful Sponsor recirculation ballot satisfying the conditions of LMSC Rules Procedure 10.

M: Mr. D. Law
S: Ms: P. Thaler

Y: 86, N: 0, A: 9, Passes

DTE POWER VIA THE MDI (802.3af)

Mr. Steve Carlson reported on the progress of the DTE Power TF meeting <Closing 802.3af Report>. The group has a list of "Big Ticket" work items. These cover issues like inrush current, detection slopes, stability of power, power removal and supply transients. "Little Ticket" items include over subscription, leakage current and port detection timing.

Less then 30% of 802.3af attendees would be able to attend an interim meeting in Copenhagen, but almost 100% attendance would result from a meeting in North America. So 802.3af is requesting authorization to hold a separate interim meeting. Mr. McCormick displayed the project timeline with the forecast ballot schedule. The editor and Task Force chair will review critical dates with the Chair of 802.3.

TIA TR-42 was supplied a copy of draft 1.2 as well as additional information for proposed DC operational parameters. TR-42 will receive future copies of the draft to evaluate impacts on their cabling standards.

The Energy Star program of the EPA was reviewed. There is a draft for Energy Star certification for telephony devices. Participants should be aware of this new draft and its possible impact on DTE Powered telephony devices.

Nortel proposed an Environment C isolation specification addition to IEEE 802.3af <Environment C>. This proposal is a change to the scope of the 802.3af draft. The proposal is oriented to +48v positive grounded systems. This proposal if accepted would have impact outside the new 802.3af clause and require work on other clauses (e.g., repeater). The specifications are applicable to telephone system power and grounding systems.

There was significant discussion for clarification on the scope of the proposal, its interaction with existing equipment and specifications, and schedule. The proponents believe that this additional work could be done within the schedule, but there is concern from others that pragmatically it would effect the completion of 802.3af. It is unlikely that the proposal will be ready for inclusion in the initial Working Group ballot package for 802.3af.

ADMINISTRATIVE MATTERS (continued)

The schedule for the closing Executive Committee meeting has changed allowing our closing plenary to be held Friday morning. After discussion, a straw poll indicated 93 in favor of Thursday afternoon with only 7 preferring Friday morning.

The September meeting schedule will be EFM on Monday through Wednesday, 802.3ae on Thursday and Friday. Mr. Frazier indicated that multiple hosts had volunteered for hosing a west coast January interim, and Tality has volunteered to host the May interim in Edinburgh.

Mr. Thompson showed information on the trademark enforcement activity of IEEE. Hard copies were made available and Mr. Thompson reiterated that the activity is still under refinement and additional information has been requested for evaluation by participant's corporate legal departments.

10 GIGABIT ETHERNET (802.3ae)

Mr. Brad Booth reviewed the status of the Working Group ballot recirculation on 802.3af <Editor Report>. Most of the comments are focused on the PMDs with the remainder of the document at stability. The current plan is to review 802.3ae/D3.2 recirculation ballot comments in September.

Mr. Thatcher reported that the <ITU Liaison letter> could not be addressed because of the comment resolution work load at this meeting. A reply will be generated indicating that a committee response is a future item of work.

The Equalization Ad Hoc will not be meeting any more, nor holding any teleconferences. 802.3ae also performed a straw poll for what the next generation in speed might be as input to FO2.2 (Hackert). The structure of the poll left assumptions about serial or parallel to the voter, and therefore, it will be repeated at the next meeting.

The TF accepted criteria that would satisfy an ample majority of participants as proof of technical feasibility for the PMDs. Reports on activities for testing of XAUI were received and the committee voted by acclimation that technical feasibility had been demonstrated on XAUI.

A motion to request conditional approval for Sponsor ballot failed narrowly in the Task Force. The TF did pass a motion to conduct further recirculation ballots.

TECHNICAL MOTION:

IEEE 802.3 affirms changes to draft 3.1 and authorizes the IEEE P802.3ae Task Force to create drafts and to conduct recirculation ballots as necessary to resolve the comments received during the Working Group ballot process.

M: Mr. Thatcher on behalf of 802.3ae

Y: 86, N: 0, A: 0, passes

TECHNICAL MOTION:

IEEE 802.3 to request the P802 LMSC Executive Committee grant conditional approval to forward P802.3ae to Sponsor ballot upon completion of recirculation and satisfying the conditions of LMSC Rules Procedure 10 and subject to the successful completion of PMD (PMA) interoperability demonstrations per the criteria specified by and subject to approval by the 802.3ae Task Force.

M: D. Kabal, S: M. Dudek

Y: 34, N: 29, A: 21, Failed

Discussion followed for clarification. The point was made that failure to progress to Sponsor ballot does not necessarily delay the ratification of the standard. It was promised that the presentation on technical feasibility testing results would address all

points of the adopted definition of proof of technical feasibility. Many pointed out that this motion only allows the standard to progress at the maximum rate, while the lack of conditional approval could cause participants to relax their efforts. The question was called by vote of 53 to 12, and the motion failed as recorded above.

ETHERNET IN THE FIRST MILE STUDY GROUP (EFM)

Mr. Frazier reviewed the progress of the Study Group. There were two full days of presentations. Comments were received from 802.17 and 802.16 made comments on the draft PAR and responses were generated that were unanimously adopted. Liaison letters were drafted in response to letters from ITU-T SG 15, NRIC V FG3, and committee T1.

He proceeded to review changes to the PAR, criteria and objectives as detailed in the presentation.

TECHNICAL MOTIONS:

Adopt the broad market potential criteria as presented <EFM Criteria>.

Mr. Frazier on behalf of the Study Group
Y: 62, N: 0, A: 1, Passes at 1706

Adopt the compatibility criteria as presented <EFM Criteria>

Mr. Frazier on behalf of the Study Group
Y: 57, N: 0, A: 5, Passes at 1709

Adopt the distinct identity criteria as presented <EFM Criteria>

Mr. Frazier on behalf of the Study Group
Y: 61, N: 0, A: 4, Passes at 1713

Adopt the technical feasibility criteria as presented <EFM Criteria>

Mr. Frazier on behalf of the Study Group
Y: 64, N: 0, A: 1, Passes at 1719

Adopt the economic feasibility criteria as presented <EFM Criteria>

Mr. Frazier on behalf of the Study Group
Y: 59, N: 0, A: 3, Passes at 1722

Discussion was offered for each of the above criteria, and after brief discussion each passed as above. Mr. Frazier then proceeded to presentation of the PAR. The PAR was reviewed in detail. The Study Group approve the par 84, 0, 0.

TECHNICAL MOTION:

Approve 802.3ah PAR as presented and forward to SEC. Authorize formation of 802.3ah EFM task force.

Mr. Frazier on behalf of the Study Group
Y: 56, N: 0, A: 1, Passes at 1735

TECHNICAL MOTION:

Approve the responses to ITU-T SG 15, NRIC V FG3, and committee T1.

Mr. Frazier on behalf of the Study Group
Approved by voice in the presence of the 802 chair without opposition.

Mr. Frazier then read a press release <EFM Press Release>

MOTION:

Approve the press release and forward to the SEC.

Mr. Frazier on behalf of the Study Group
Approved by voice in the presence of the 802 chair without opposition.

Mr. Frazier displayed the proposed timeline, which will be considered by the Task Force for adoption. The group will meet in September in Copenhagen. No host is committed for January, and the group will meet during 802 plenary week meeting.

Adjourn

Mr. Thompson thanked all for their participation and with no further business to conduct, a motion to adjourn was entertained and passed without objection at 1751.

Future Meetings

Interim meetings will be held in Copenhagen in September. Detailed meeting information is posted on the 802.3 web site. 802.3ae ad hoc meetings will also be announced via the task force reflector.

Ethernet in the First Mile SG	Copenhagen, Denmark	17-19 Sep 2001
10 Gigabit Ethernet (802.3ae)	Copenhagen, Denmark	20-21 Sep 2001
DTE Power via the MDI (802.3af)	West Coast US?	TBD Sep 2001
Future Interim meetings	TBD	January 2002
802.3 Working Group Plenary	Austin, TX	12-15 Nov 2001
	St. Louis, MO	11-15 Mar 2002
	Vancouver, BC	7-12 July 2002
	Kauai, HI	11-15 Nov 2002

Respectfully submitted 15 March 2000

Robert Grow

IEEE 802.3 Secretary

bob.grow@intel.com

IEEE 802.3 CSMA/CD WORKING GROUP Draft AGENDA

See our web site: http://www.ieee802.org/3/index.html

July 9, 2001, Portland, Oregon

Start at 1:00 PM

MONDAY, 9 July

1300- Administrative Matters ..... Geoff Thompson

- Welcome, Introductions and General Announcements
- Introduce Secretary for the meeting: Bob Grow
- Attendance, address list/e-mail list maintenance
- Review of Voting Membership
  - Additions to voting membership list
- Agenda, review and revise as needed
- Approval of Minutes: 3/01
- Announce WG activities since Hilton Head
- Standards Board Report
- Executive Committee Report & Action Items

- PARs for approval this week (from other groups. Comments by 5PM Tuesday)

- Call for Patents
- Schedule for the Week
- 802.3 continues through for remainder of Monday afternoon
- Schedule & venue of Sub-Group Meetings: **Continues until Thursday noon**
- Social as usual on Wednesday
- Schedule for closing 802.3 Plenary: **Thursday AFTERNOON, not AM**
- Any Other business
- Regarding Sponsor Ballot Pool

- State of the Standard and the Operating Rules of 802.3 ..... David Law
- Maintenance/Reaffirmations ..... David Law
  - Update/Status of P1802.3Rev Sponsor Ballot
  - Update/Status of maintenance requests
  - Update/Status of P802.3ag Maintenance #6 Ballot
- Interpretation requests ..... David Law
  - Update/Status
- Ad Hoc reports

- **Task Force and Study Group Reports**

P802.3ae, Task Force (10 Gig Ethernet) ..... Jonathan Thatcher

- Update/Status of the project
- Plans for this week

1500-1520 BREAK

P802.3af, DTE Power via MDI ..... Steve Carlson

- Update/Status of the project
- Plans for this week

Ethernet in the Last Mile Study Group ..... Howard Frazier

- Update/Status of the project, PAR & 5 Criteria
- Plans for this week

Room Assignments and Task Force Schedules ..... Geoff Thompson

IEEE 802.3 CSMA/CD WORKING GROUP Draft AGENDA

See our web site: http://www.ieee802.org/3/index.html

July 12, 2001, Portland, Oregon

CLOSING PLENARY: Start at 1:00 PM

THURSDAY, 12 July

1300-1400 Administrative Matters ..... Geoff Thompson

- Welcome, Introductions and General Announcements
- Review of Voting Membership
  - Additions to voting membership list
- Agenda, review and revise as needed
- Approval of Minutes: 11/00
- Executive Committee Report & Action Items
  - Rules change
  - Networking 802 Meetings:
- Venue of future 802 meetings
  - November 12-16 - Hyatt Regency Town Lake, Austin, TX
  - Mar 11-15 2002 - Hyatt Regency, St Louis, MO
  - July 7-12 - Hyatt Vancouver, BC, Canada
  - Nov 11-15 - Hyatt Regency, Kauai
- Liaisons to External Groups:
- Liaisons to Internal Groups:
- PARs for approval this week
- Any Other business

1400-1415 Ad Hoc on Cat 6 Cable Discharge ..... Dan Dove

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1415-1425 Maintenance/Interpretations/Rules ..... David Law

- Update/Status of P1802.3Rev Sponsor Ballot
- Update/Status of P802.3ag Maintenance #6 Ballot
- Update/Status of Interpretation Requests
- Update/Status of Rules changes

Task Force and Study Group Reports

1425-1440 P802.3af, DTE Power via MDI ..... Steve Carlson

- Progress this week, motions for 802.3
- Plans for the future

1440-1510 P802.3ae, Task Force (10 Gig Ethernet) ..... Jonathan Thatcher

- Progress this week, motions for 802.3
- Plans for the future

1510-1530 BREAK

1530-1600 Study Group: Ethernet in the First Mile ..... Howard Frazier

- Progress this week, motions for 802.3
- Plans for the future

Comments on Extended Frame Ethernet RFC to IETF ..... Geoff Thompson

- Review & approval of proposed comments

Comments on X.86 to ITU-T ..... Roy Bynum

- Review & approval of proposed comments

Wrap Up ..... Geoff Thompson

Agazzi, Oscar
Alderrou, Don
Alexander, Thomas
Amer, Khaled
Amundsen, Keith
Andersen, Ole Christian
Anderson , Arlan J.
Anderson, Eric
Andersson, Ralph
Andresen, Jack
Ataee, Mehran
Auld, Phil
Azadet, Kameran
Babanezhad, Joseph N
Bachand, Gerard E
Baldman, Andy
Baumer, Howard
Beaudoin, Denis
Bennett, Mike
Berglund, Sidney
Bestel, John L.
Bhatt, Vipul
Bohbot, Michel
Booth, Brad
Bottorff, Paul
Bourque, Gary
Bovill, Kirk
Brierley-Green, Andrew
Brikovskis, Rhett
Brown, Benjamin
Brown, Dave
Brown, Kevin
Buck, Steve F.
Buckman, Lisa
Burgess, James
Burton, Scott
Busse, Robert
Bynum, Roy
Cam, Richard
Campbell, Bob
Carlson, Steve
Chang, Edward G.
Chang, Edward S.
Chang, Justin
Chen, Xiaopeng
Chen, Zinan
Chin, Hon Wah
Chow, Kuen
Claseman, George
Cobb, Terry
Coleman, Doug
Colla, Régis
Congdon, Herb
Cornejo, Edward
Cross, Richard
Cruikshank, Brian
Cullin, Chris
Cunningham, David
Dahlgren, Robert
Daines, Kevin
Dallesasse, John
Dance, Rupert S
Darshan, Yair
Dartnell, Peter
Dawe, Piers
de la Garrigue, Michael
Debiec, Tom
Dedrick, Joel
Di Minico, Chris
Diab, Wael
Dineen, Thomas
Dobson, Hamish
Dolfi, David W.
Donhowe, Mark
Dove, Dan
Draper, Daniel S
Dudek, Mike
Dugan, Richard
Dupuis, Marc R
Eddings, Clay
Eisler, George
Elhøj, Martin
Ewen , John F.
Feuerstraeter, Mark
Fiedler, Jens
Figueira, Norival
Firoozmand, Farzin
Flatman, Alan
Frazier, Howard
Freitag, Ladd
Frojdh, Krister
Furlong, Darrell
Gaither, Justin
George, John
Gilliland, Pat
Goergen, Joel
Goldis, Moty
Graham, Rich
Grann, Eric B.
Gray, C. Thomas
Greenlaw, Jonathan E.
Grow, Robert M.
Hackert, Michael
Haddock, Stephen
Hakimi, Sharam
Hamidy, Farid
Hansen, Johannes
Hanson, Del
Hassoun, Marwan
Hatley, Tom
Healey, Adam
Heldman, Ronen
Hendel, Itzik
Herrity , Ken
Hesson, James H
Hinrichs, Henry
Hinzel, David
Hoge, Jay
Hyer, David W.
Ichino, Haruhiko
Ishida, Osamu
Jackson, Steve
Jacobson, Michael R.
Jang, Eric
Jang, Woo-Hyuk
Jensen, Ernie
Jewell, Jack L
Jiang, Wenbin
Joh, Clarence
Jørgensen, Thomas K.
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Kim, Yongbum
Kohl, David E
Kolesar, Paul
Kooistra, David
Krolner, Lars Paul
Kumar, Pankaj
Lackner, Hans
Lane, William
Langston, Daun
Larson, Donald C.
Latchman, Ryan
Law, David
Lee, Changoo
Lee, Hyeong Ho
Lee, Wesley
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Lemoff , Brian E.
Leo, Lisa
Leonowich, Robert H.
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Lucas, Fred A.
Lum, Meilissa R.
Lynch, Jeffrey
Lynskey, Eric R.
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Milbury, Martin R
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Mohamadi, Fred
Mohl, Dirk S.
Montstream, Cindy
Moore, Paul B.

Moore, Robert
Muir, Robert
Muller, Shimon
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Nadeau, Gerard
Naganuma, Ken
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Nakamura, Karl
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Nelson, Kristian
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Ohlén, Peter
Oughton, George
Pace, Robert R.
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Pannell, Don
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Parsons, Elwood T
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Patel, Bhavesh
Patel, Dipak M.
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Payne, John
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Pitzer, Armin
Plunkett, Timothy R.
Pondillo, Peter
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Prediger, Bernd
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Rabinovich, Rick
Rao, Sailesh K.
Rasimas, Jennifer G.
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Rautenberg, Peter
Reintjes, Maurice
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Robinson, Stuart
Rogers, Shawn
Römer, Tume
Ross, Floyd
Rubin, Larry
Sanders, Anthony
Savara, Raj
Schramm, Thomas
Schultz, Benjamin
Schulz, Klaus
Schwartz, Peter
Sendelbach, Lee
Seto, Koichiro
Shain, Vadim
Simmons, Tim
Sorensen, David
Stapleton, Nick
Stetter, Claus
Stewart, Donald S
Stoltz, Mario
Suzaki, Tetsuyuki
Suzuki, Hiroshi
Svensson, Daniel
Swanson, Steve
Szostak, Tad
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Tailor, Bharat
Tajima, Akio
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Thatcher, R. Jonathan
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Thomson, Douglas
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Twu, Bor-long
Vaden, Sterling A.
van Doorn, Schelto
van Oosten, Erik
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Vijeh, Nader
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Warland, Tim
Warren, Jeff
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Watanabe, Yuji
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Whitlow, Tony
Wiedemann, Bill
Williamson, Robert S
Witkowski, Mike
Wolcott, John
Won, Jonghwa
Won, King
Wong, Edward
Wong, Leo
Wurster, Stefan M.
Yorks, Jason
Yoshikawa, Dr. Takashi
Young, Leonard
Yousefi, Nariman
Zannini, Hank

802.3 POTENTIAL VOTERS JULY 2001 154 Qualify

7/5/2001

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This will be done early in the meeting Monday PM and Thursday AM. You must be an 802 Voter to get a CD-ROM.

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Finch, Robert G
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*Lamers, Lawrence J.
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-Le, Quang
*Lee, Eugene
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*Quinn, Patrick W.
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*Raman, Naresh
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-Romascanu, Dan
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Rudberg, Björn
*Ryu, Hyunsurk
-Sala, Dolors
*Sasaki, Akira
Saunders, Jeffrey H.
Schaefer, John
*Selee, Steve
Shahar, Boaz
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Sherry, William M
Simmons, Dave
Skirmont, David
Sørensen, Søren Friis
Speers, Ted
Stack, Jared
*Stanley, Patrick H.
Staszak, Marty
*Stoddart, Dean M
Ta, John
Tang, Thomas
Thakkar, Hemant
Thorne, David
Townsend, Rick
*Tusiray, Bulent
van Scherrenburg, Mike
-Venkatavaraton, Vinod Kumar
*Vepa, Ramakrishna
Wachsman, John
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Wong, David
Wong, Percy
Worsham, A Hodge
Yasuda, Susumu
Yokouchi, Jim (Jungo)
Zona, Bob

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"Voter in Peril" means that the persons listed will not be voters after this meeting unless they meet the "full attendance" requirement for this meeting. That is, they sign-in at least 3 of the 4 days.

Andersen, Ole Christian
Azadet, Kameran
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de la Garrigue, Michael
Donhowe, Mark
Dupuis, Marc R
Hoge, Jay
Kardontchik, Jaime
Kato, Toyoyuki
Kayser, Kevin
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Kumar, Pankaj
Lee, Hyeong Ho
Lewing, Van
Milbury, Martin R
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Rao, Sailesh K.
Richkas, Dave
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Vilozny, Ron
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Williamson, Robert S
Witkowski, Mike
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standards.ieee.org/getieee802

IEEE

IEEE Project 802.3 Working Group Standards Status July 9th, 2001

ISO/IEC approved

ANSI/IEEE approved

ISO/IEC 8802-3:2000
ANSI/IEEE Std. 802.3-2000

- ***CSMA/CD Overview**
- ***MAC**
- ***Repeater**
- ***PLS/AUI**
- ***MAUs (B5,B2,BT,BrB)**
- ***Mgmt**
- ***1BASE5 Specifications**
- ***10BASE5 PICS**
- ***Full Duplex**
- ***100BASE-T2**
- ***Changes for VLANs**
- ***Link Aggregation**
- ***10BASE-T PICs**
- ***MAU Mgmt.**
- ***Rptr. Mgmt.**
- ***GDMO of LM**
- ***FO & Sys. Cons.**
- ***120 Ohm annex**
- ***150 Ohm annex**
- ***Maint. 2, 3, 4 & 5**
- ***100BASE-T**
- ***Gigabit Ethernet**
- ***1000BASE-T**

Clauses 1-32, 34-43

Published 10/00

Correction Sheet
Published 1st May 01

1802.3 Document Set

IEEE Std. 1802.3-1991
Conformance Test
***AUI Cable**
Section 1 through 4
Up for re-affirmation

IEEE Std. 1802.3d-1993
Conformance Test
***10BASE-T**
Section 6

Network Systems Tutorial
published
June 95

.3
Policy and Procedures
Approved
11/97

802.3 WG in process

.3ae
10Gb/s Ethernet Task Force
(J. Thatcher)
Working Group
Recirc Ballot closed
04-Jul-01

.3af
DTE Power via MDI Task Force
(S. Carlson)
PAR approved
01/00

.3ag
Maintenance #6
(D. Law)
Working Group
Sponsor Ballot closes
01-Aug-01

1802.3Rev
Conformance Test Revision
(D. Law)
Sponsor Recirc Ballot
closed ??-Aug-01

Liaison
802.1

802.3 WG new work items

Ethernet in the First Mile Study Group
(H. Frazier)

Clause	Description	IEEE Std 802.3-2000	These drafts are currently under development within 802.3, contents are subject to change	
			IEEE P802.3ae 10Gb/sEthernet	IEEE P802.3af DTE Power via MDI
Clause 1	Introduction	B	U	U
Clause 2	Media Access Control (MAC) service specification	B	U	
Clause 3	MAC frame structure	B		
Clause 4	Media Access Control	B	U	
Clause 5	Layer Management	B		
Clause 6	Physical Signalling (PLS) service specifications	B	U	
Clause 7	Physical Signalling (PLS) and Attachment Unit Interface (AUI)	B		
Clause 8	10BASE5	B		
Clause 9	Repeater unit for 10 Mb/s baseband networks	B		
Clause 10	10BASE2	B		
Clause 11	10BROAD36	B		
Clause 12	1BASE5	B		
Clause 13	System considerations for multi-segment 10Mb/s networks	B		
Clause 14	10BASE-T	B		
Clause 15	Common elements of MAUs and star, Type 10BASE-F	B		
Clause 16	10BASE-FP	B		
Clause 17	10BASE-FB	B		
Clause 18	10BASE-FL	B		
Clause 19	Layer Management for 10 Mb/s baseband repeaters	D		
Clause 20	Layer Management for 10 Mb/s baseband MAUs	D		
Clause 21	Introduction to 100BASE-T	B		
Clause 22	Reconciliation sublayer and Media Independent Interface	B	U	
Clause 23	100BASE-T4	B		
Clause 24	100BASE-X PCS and PMA	B		
Clause 25	100BASE-TX	B		
Clause 26	100BASE-FX	B		
Clause 27	Repeater for 100Mb/s baseband networks	B		
Clause 28	10Mb/s and 100Mb/s Auto-Negotiation on twisted pair	B		
Clause 29	Systems considerations for 100BASE-T networks	B		
Clause 30	10Mb/s, 100Mb/s and 100Mb/s management	B	U	U
Clause 31	MAC Control	B	U	
Clause 32	100BASE-T2	B		
Clause 33	Not used			B
Clause 34	Introduction to 1000 Mb/s baseband networks	B		
Clause 35	Reconciliation Sublayer and Gigabit Media Independent Interface (GMII)	B	U	
Clause 36	1000BASE-X PCS and PMA	B		
Clause 37	Auto-Negotiation for 1000BASE-X	B		
Clause 38	1000BASE-SX and 1000BASE-LX	B		
Clause 39	1000BASE-CX	B		
Clause 40	1000BASE-T	B		
Clause 41	Repeater for 1000 Mb/s baseband networks	B		
Clause 42	System considerations for 1000 Mb/s networks	B		
Clause 43	Link Aggregation	B		
Clause 44	Introduction to 10Gb/s baseband network		B	
Clause 45	Management Data Input/Output (MDIO) Interface		B	
Clause 46	Reconciliation Sublayer (RS) and 10 Gigabit Media Independent Interface (XGMII)		B	
Clause 47	XGMII Extender Sublayer (XGXS) and 10 Gigabit Attachment Unit Interface (XAUI)		B	
Clause 48	Physical Coding Sublayer (PCS) and Physical Medium Attachment (PMA) sublayer, type 10GBASE-X		B	
Clause 49	Physical Coding Sublayer (PCS) sublayer for 64B/66B, type 10GBASE-R		B	
Clause 50	WAN Interface Sublayer (WIS), type 10GBASE-W		B	
Clause 51	Physical Medium Attachment (PMA) sublayer, type Serial		B	
Clause 52	Physical Medium Dependent (PMD) sublayer and baseband medium, type 10GBASE-S (Short Wavelength Serial), 10GBASE-L (Long Wavelength Serial), and 10GBASE-E (Extra Long Wavelength Serial)		B	
Clause 53	Physical Medium Attachment (PMA) sublayer, type 10GBASE-LW4		B	
Clause 54	Physical Medium Dependent (PMD) sublayer and baseband medium for WWDM PHY, type 10GBASE-LX4 and 10GBASE-LW4		B	

Key:

B: The base version of the clause is provided in this publication

D: The clause is now deprecated

U: The clause is updated by this document

Patent policy of IEEE P802.3

In support of the patent policy of the IEEE the chairman of each WG is required to solicit submissions from those parties who hold patents (U.S. or foreign) that have been granted or are under application and who feel that such patents cover technology described in a standard that is under development or has been approved.

The request is that any such party submit a letter which will be kept on file at the IEEE Standards office. These letters will be made available to any party upon request. We ask assurance that any granted patent will follow the IEEE patent policy.

a) A general disclaimer to the effect that the patentee will not enforce any of its present or future patent(s) whose use would be required to implement the proposed IEEE standard against any person or entity using the patent(s) to comply with the standard or

b) A statement that a license will be made available to all applicants without compensation or under reasonable rates, with reasonable terms and conditions that are demonstrably free of any unfair discrimination

The submitter should feel free to include any other information that they wish to communicate in such a letter that will be available on a long term basis.

The letter should be addressed and submitted to the Working Group Chair and signed by a responsible party that holds or will hold assignment rights to the patent.

Additional Patent information:

- The IEEE Patent Policy set forth in Clause 6 of the IEEE Standards Board Bylaws.
- Procedures relating to the Patent Policy in Clause 6.3 of the IEEE Standards Operations Manual.
- Sample Patent Request letter located in Annex A of the Standards Companion.
- Sample Patent Response letter located in Annex A of the Standards Companion.

Return to IEEE 802.3 Home Page
Last Update: 04 Jan 01

State of 802.3 Operating Rules

Editorial update to Plenary week meeting plan

No Rules Revision request have been received

802.3 Operating Rules URL:

http://www.ieee802.org/3/rules/index.html

Web site Provides

802.3 Operating Rules in HTML and pdf

Revision history

IEEE 802.3
Interpretations Report

July 9th, 2001
Portland, OR

David Law

IEEE Standards Companion Interpretations

"Interpretations are a unique form of commentary on the standard. They are not explanations of what the standard should have done or meant to say. Interpretations cannot ch
E
interpretation cannot fix that error. The interpretation can suggest that this will be brought up for consideration in a revision or supplement (or, depending on the nature of the error, an errata sheet might be issued). However, an interpretation has no authority to do any of this."

We can only interpret what the standard does say, not what it should say.

http://standards.ieee.org/guides/companion/part6.html#interpret

Interpretation Number: 1-03/01 - Item2
Topic: Auto-Negotiation register 6 and 8
Relevant Clause: 28 and 32
Classification: Defect

This represents a conflict within the standard. Change requests have been generated by Bob Noesworth of the Interoperability Lab at the University of New Hampshire available at the URL: http://www.ieee802.org/3/3/maint/requests/all.html which relate to the conflict. These change requests will be included in the next maintenance ballot.

IEEE 802.3 Motion

IEEE 802.3 submits the proposed Interpretation response to the Interpretation request 1-03/01 for a 30 day Working Group letter ballot.

M: David Law S: Pat Thaler Tech 75%/Proc 50%

PASSED/~~FAILED~~ Date: 15th Mar 2001

Y: 95 N: 0 A: 3

Interpretations Status

- Interpretation 1-03/01 Working Group Ballot
  - Ballot has yet to Open
    - Still awaiting proposed Change Requests
      - Understand that poll of industry has taken place
- No new Interpretation Requests
- Plans for the week
  - Review status of 1-03/01 related change requests
  - Report on Thursday on how to progress Interpretation Response 1-03/01

IEEE 802.3
Interpretations Report

July 12th, 2001
Portland, OR

David Law

Interpretations Status

- No new Interpretation Requests
- Interpretation 1-03/01 Working Group Ballot
  - Ballot has yet to Open
    - Was awaiting proposed Change Requests

Interpretation Number: 1-03/01 - Item2

Topic: Auto-Negotiation register 5 and 8

Relevant Clause: 28 and 32

Classification: Defect

This represents a conflict within the standard. Change requests have been generated by Bob Noseworthy of the Interoperability Lab at the University of New Hampshire available at the URL: http://www.ieee802.org/3/maint/requests/all.html which relate to the conflict. These change requests will be included in the next maintenance ballot.

IEEE 802.3 Motion

IEEE 802.3 submits the proposed Interpretation response to the Interpretation request 1-03/01 for a 30 day Working Group letter ballot.

M: David Law S: Pat Thaler Tech 75%/~~Proc 50%~~

PASSED/~~FAILED~~ Date: 12th July 2001

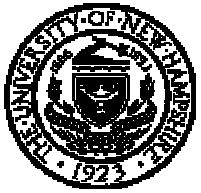
Y: 79 N: 0 A: 1 Time:

Interpretations Web Information

http://www.ieee802.org/3/interp/index.html

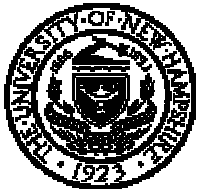
Issues raised in Interpretation request #1 item 2

Presented to: Eye-3xE (401x2) + 0.3
July 2001 Plenary



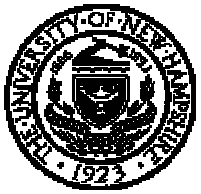
Background

- Clause 28 defined Register 5 (AN link partner ability register) to store the received Link Code Word following each page exchange (Base Page and Next Pages)
- Clause 32 and 40 later defined Register 8 (AN link partner next page ability register) to store only those Link Code Words from Next Pages.



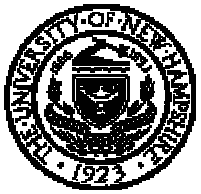
The Problem

- Received Link Code Words may be stored in two locations.
- 1st word received (base page) is stored in Register 5 (AN link partner ability)
- Subsequent words (next pages) may be stored in Register 5, or in Register 8 (AN link partner next page ability) or possibly both.



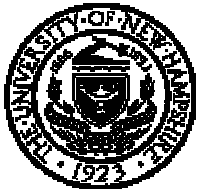
Problem continued…

- When mr_page_rx is indicated during reception of next pages, which register is to be checked by management?
- External MII transceiver problem
  - Typically users of an implementation would have a priori knowledge of how the implementation works, but this cannot be the case for external MII transceivers



The Standards Problem

- 28.3: “In the case of any ambiguity between stated requirements and the state diagrams,the state diagrams shall take precedence.”
- Register 8 (AN link partner next page ability) is never used by the state diagrams:
  - The mr_page_rx variable defines that the received Link Code Word is written to mr_lp_adv_ability[16:1]
  - Table 28-8 “State diagram variable to MII register mapping” states that mr_lp_adv_ability[16:1] maps to MII Register 5 (Auto-Negotiation link partner ability register)

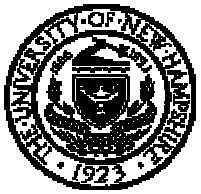


The Standards Problem cont…

- Textual definition of Register 8 (28.2.4.1.7)
  - "Support for 100BASE-T2 and 1000BASE-T requires support for Next Page and the provision of an Auto-Negotiation Link Partner Next Page Ability register (register 8) to store Link Partner Next Pages"
- Is the intent of this text to use register 8 only for next pages used for 100-T2 or 1000-T PHYs, or for the receipt of all next pages in all PHYs?

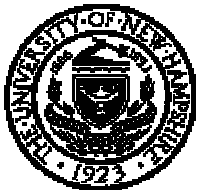
Existing Phys

- Of 11Phys Manufactures from the past 4 years
  - 6 Use Register 5 for received Next Page storage
  - 5 Use Register 8 for received Next Pages (nearly all are 1000BASE-T phys)



Possible Remedies: Option 1

- Writing to neither Register 5 or 8.
- Advantage:
  - Does not use up Register space.
- Disadvantage:
  - STUPID- A device will not resolve a proper link configuration because it did not accurately receive its partner's Next Page abilities and could not relate them to management.



Possible Remedies: Option 2

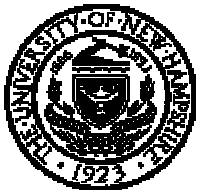
- Writing to Register 5 ONLY.
- Advantage:
  - Only need to worry about looking at one register.
  - Not using up Register space.
  - Vendors that already implement this way are happy.
- Disadvantage:
  - Need to store the Advertised Ability of the Link Partner's PHY
  - If storing multiple Next Pages, the previous value of the register has to be stored by a management entity that needs the information overwritten by subsequent Link Partner Next Pages.
  - Vendors that write to Register 8 must change.

Possible Remedies: Option 3

- Writing to Register 8 ONLY.
- Advantage:
  - Only need to worry about reading one register.
  - Vendors that already implement this way are happy.
  - Do not have to worry about overwriting Register 5.
- Disadvantage:
  - Need to implement Register if not done already.
  - Need more resources
  - If Register 8 is used to store multiple Link Partner Next Pages, the previous value of the register is assumed to be stored by a management entity that needs the information overwritten by subsequent Link Partner Next Pages.

Possible Remedies: Option 4

- Write to Register 5 or Register 8 and setting bit in Reg 6
- Advantage:
  - Less overhead than writing to both registers
  - Might be able to keep the Link Partner's Abilities if write to Reg 8
  - Only need to implement the bit in Register 6.
- Disadvantage:
  - Uses another bit in Register 6
  - An extra bit needs to be checked before checking Registers.

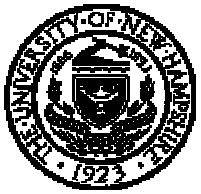


Possible Remedies: Option 5

- Writing to both Register 5 and Register 8
- Advantage:
  - Don't have to use a bit in Register 6.
- Disadvantage:
  - Overwrites Link Partner's ablities in Register 5.
  - More implementation

Proposed Revisions

- Allow all received Next Pages to be stored in either Register 5 or Register 8
- Define new MII register bit 6.5 in Register 6 (AN expansion register) to indicate which register is used to store received next pages.



Proposed revision cont…

- Modify mapping of mr_lp_adv_ability in Table 28-8 *State Diagram variable to MII register mapping* to:

  For received Base Page:

  5.15:0 Auto Negotiation link partner ability register

  For received Next Pages

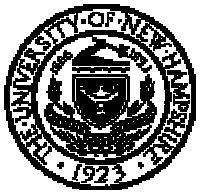
  If 6.5=1 then

  8.15:0 Auto Negotiation link partner next page ability register

  else 5.15:0 Auto Negotiation link partner ability register

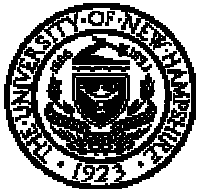
Acknowledgements:

- My thanks to:
  - David Law for his patience on this topic
  - Eric Lynskey (UNH IOL) for his Aneg assistance/insight
  - Erica Williamson (UNH IOL) for pulling together the 5 options presented (she's looking for a job too if anyone's interested…)



Contact me for more info on:

- Contact Info: Bob Noseworthy - UNH IOL
  ren@iol.unh.edu
- Re:
  - Register 5 / Register 8 Aneg Issue
  - 1000Base-T PCS Testing
  - 1000Base-T Rx Equalization Testing
  - 1000Base-T Plugfest in Aug/Sept (?)
  - 10Gigabit Ethernet Consortium (10GEC)
    (www.iol.unh.edu/consortiums/10gec)



IEEE Marks Use

IEEE 802® Opening Plenary SEC

9 July 2001

Background

- IEEE 802-1990 and other standards are used in industry to specify compatibility or compliance
- IEEE® and 802®and others (e.g. POSIX®, NESC®) are registered trademarks
  - 5/11/1993 - IEEE
  - 4/18/2000 - 802
- IEEE requires permission to use its mark
- IEEE-SA needs policy for industry use of marks
- Current practice represents liability exposure for IEEE

Result

- IEEE-SA recommending initial permission "monitoring" activity
- IEEE-SA will develop appropriate program(s) to be approved by IEEE-SA Board of Governors (and IEEE Board of Directors)
- Appropriate fees

Initial Permission Activity

- To protect marks and to reduce liability to IEEE (accounting for its tax status)
- Appropriate language in all standards
- Require permission for companies to use marks in products and packaging
- Require indemnification for IEEE
- No fees

Next Steps

- Form volunteer advisory group of affected standards to work with staff
- Develop more encompassing program

For further information contact:

Claudio Stanziola

Mgr, Licensing and Contracts

c.stanziola@ieee.org

TIA FO-2.2.1
July 9, 2001 Update

Michael J. Hackert
Chair, TIA FO-2.2.1
Task Group on Modal Dependence of Bandwidth
HACKERTMJ@CORNING.COM

CORNING

Why Multimode?

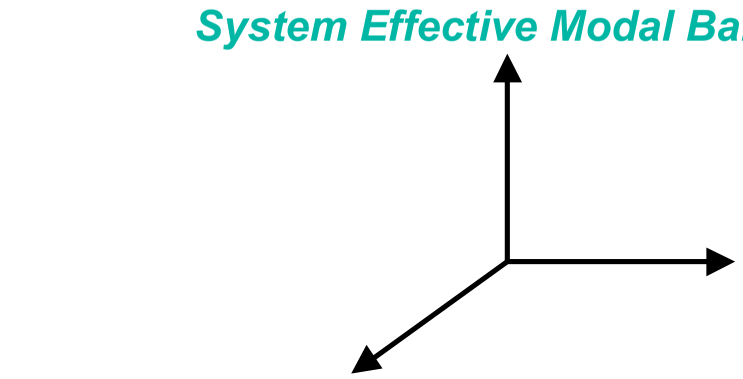
- Low cost short wavelength technology
  - VCSELs promising costs comparable to LEDs
  - VCSELs speeds well in excess of 1 Gb
  - Silicon detectors fast and inexpensive
  - Short wavelength technology mature
- Ideal marriage between multimode fiber and short wavelength
  - Single-mode fiber is bi-moded at 850 nm - performance killed by jitter and bandwidth
  - Multimode can be optimized for short wavelength performance
- Low cost multimode connectors and multimode fiber

CORNING

2.2.1 TG Scope
Two Part Objective

1) Devise a test method for MMF fiber which is representative of the actual system performance
   - Standard overfilled bandwidth does not correlate to laser bandwidth
2) Develop transceiver launch distribution test to ensure restricted launch (e.g. encircled flux).
   - "Typical"transceivers range from overfilled to single-mode

- RESULT: Deliver improved system performance using MMF



CORNING

1 Gigabit Ethernet Development

LATE!

62.5 μm Recommendation

- Experimentation has confirmed that combining
  - Transmitters which have encircled flux
    - ≥75% within 30 μm diameter and
    - ≤25% within 9 μm diameter and
  - Fiber which has RML bandwidth ≥385 MHz-km
  - Produce EMB ≥385 MHz-km
- Equivalent system performance
  - 1 Gigabit Ethernet operation
  - 62.5 μm fiber
  - 500 m

CORNING

10 Gigabit Ethernet Development

ON TIME!

CORNING

50 μm Recommendation

- Technical work completed on schedule
- Target - 2000 MHz-km effective modal bandwidth (EMB)
  - Input into the IEEE system model
- Reliably deliver 10 Gb performance at
  - 300 meters over 50 μm fiber
    - Meeting six DMD masks
  - Using 850 nm VCSELs meeting encircled flux requirement
    - ≥ 86% at 19 μm radius
      - Eliminates too large
    - ≤ 30% at 4.5μm radius
      - Eliminates too small

CORNING

XXX Gigabit Ethernet Development

What's NEXT!

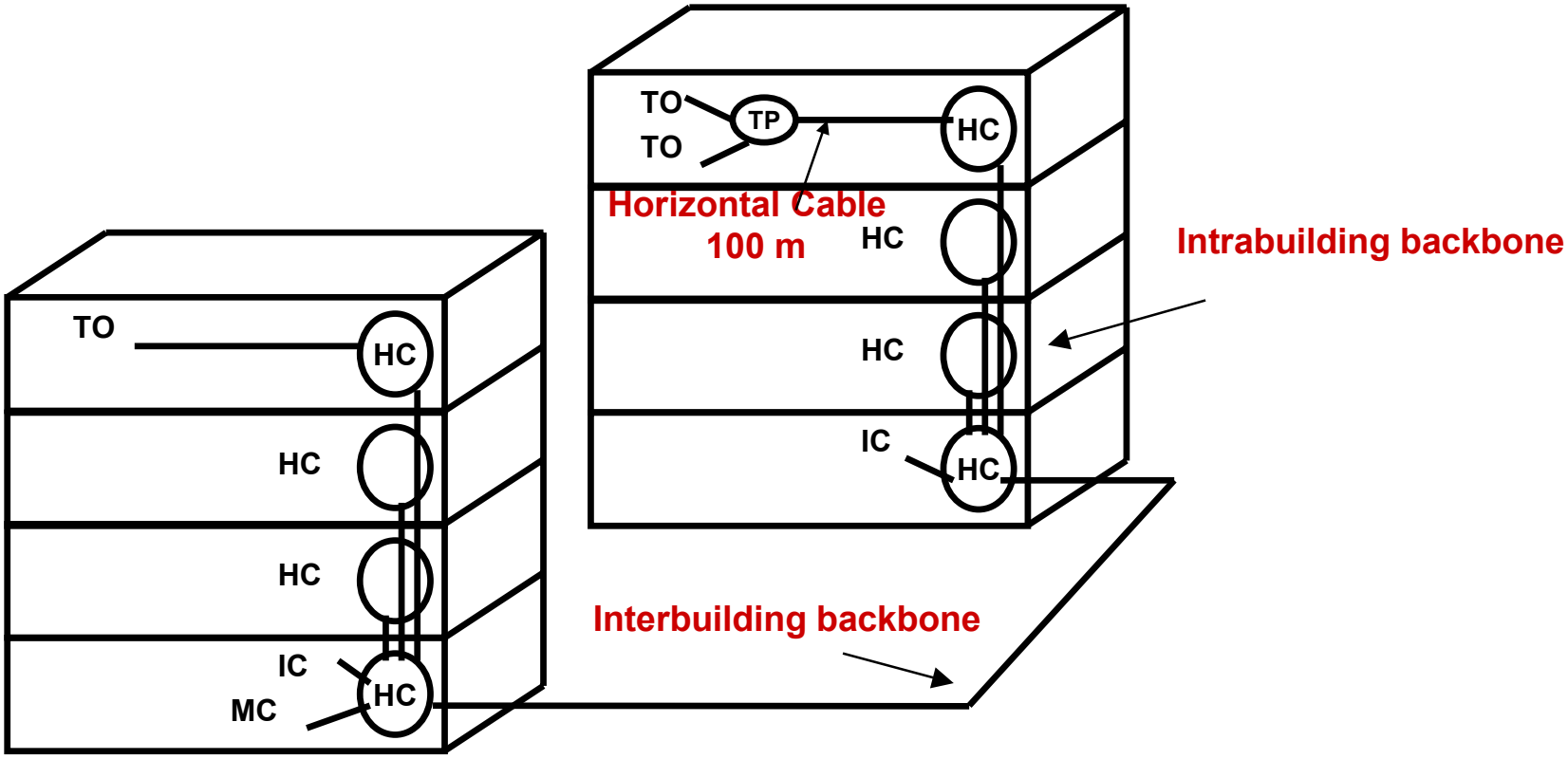
TIA-TR42 Liaison

Engineering Committee on User Premises Telecommunications Cabling Infrastructure

Chris Di Minico
CDT Corporation

CDT
CABLE DESIGN TECHNOLOGIES

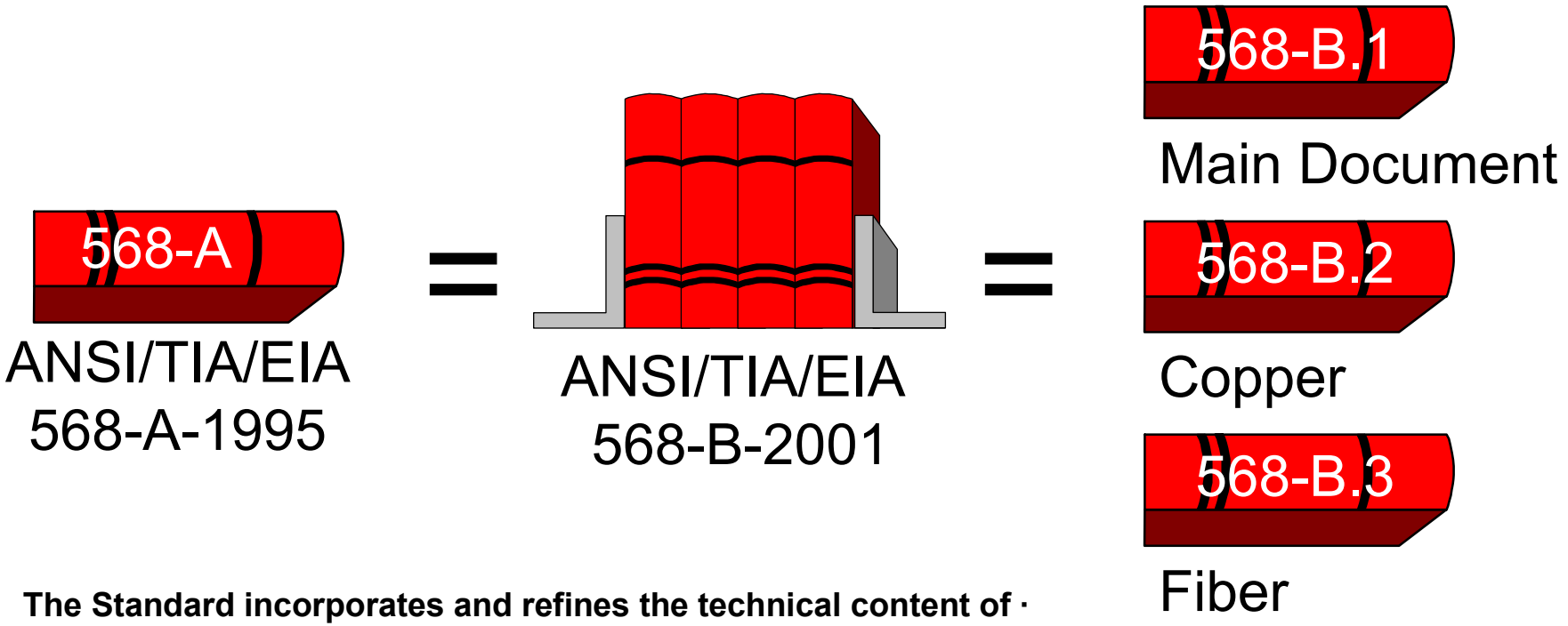
Commercial Building Telecommunications Cabling Standard -TIA/EIA-568-A ------> TIA/EIA-568-B



Performance and technical criteria for a telecommunication cabling system

- Topology, and Components

ANSI/TIA/EIA-568-A-1995 Revisions



The Standard incorporates and refines the technical content of ·

· TIA/EIA TSB72, Centralized Optical Fiber Cabling

· TIA/EIA TSB75, Additional Horizontal Cabling Practices for Open Offices

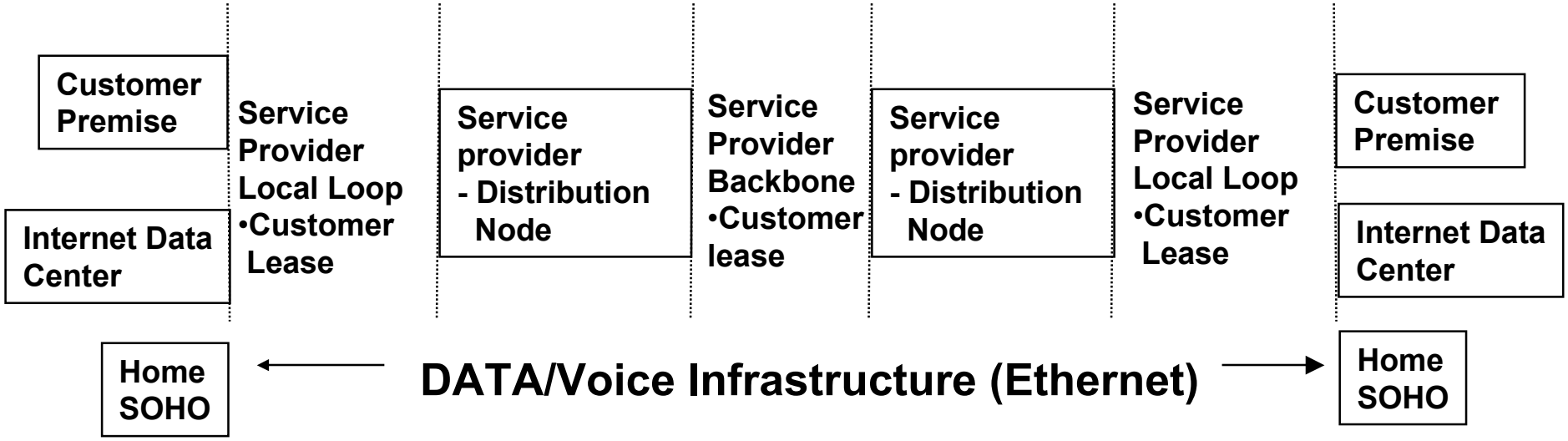
CDT
CABLE DESIGN TECHNOLOGIES

Status: Additional Transmission Performance Specifications for Optical Fiber Cabling Systems (Addendum to TIA/EIA-568-B.3)

- PN-3894-AD1, Additional Transmission Performance Specifications for 50/125 μm Optical Fiber Cables
  - Status: Industry ballot -complete. Approval pending release of detailed specification (Addition to -ANSI/EIA/TIA-492)

- PN-3894-AD1 -The addendum is intended to provide additional specifications for multimode optical fiber cabling optimized for laser operation at 850 nm in support of serial transmission at 10 Gb/s data rates for distances up to 300 m.

IEEE 802.3 Infrastructure



Target Application Spaces

- Internet Data Centers
- Service Distribution nodes
- Storage Area Networks
- Scope:
  - Develop cabling topology, recognized media types, cabling requirements, and requirements for pathways & spaces for the above application spaces and inter/intra-node connections.

Status: Telecommunication cabling infrastructure for network distribution nodes.

- TR42.1 Task Group Initiated March 2001
- First Meeting - June 2001
  - ~30 attendees
  - Call for Interest
    - +Gauge the level of interest in the project through presentations and discussion
  - Agreement to move forward - Press release

CDT
CABLE DESIGN TECHNOLOGIES

IEEE Liaison letter sent to TIA in regards to ESD

- IEEE - ESD ADHOC Group established
- IEEE Liaison letter sent to TIA in regards to ESD
- In response, TR-42.7.2 copper cable working group initiated work item.

International Cabling Standards

Status Report for IEEE 802.3
July 2001 Plenary: Portland,OR

Alan Flatman

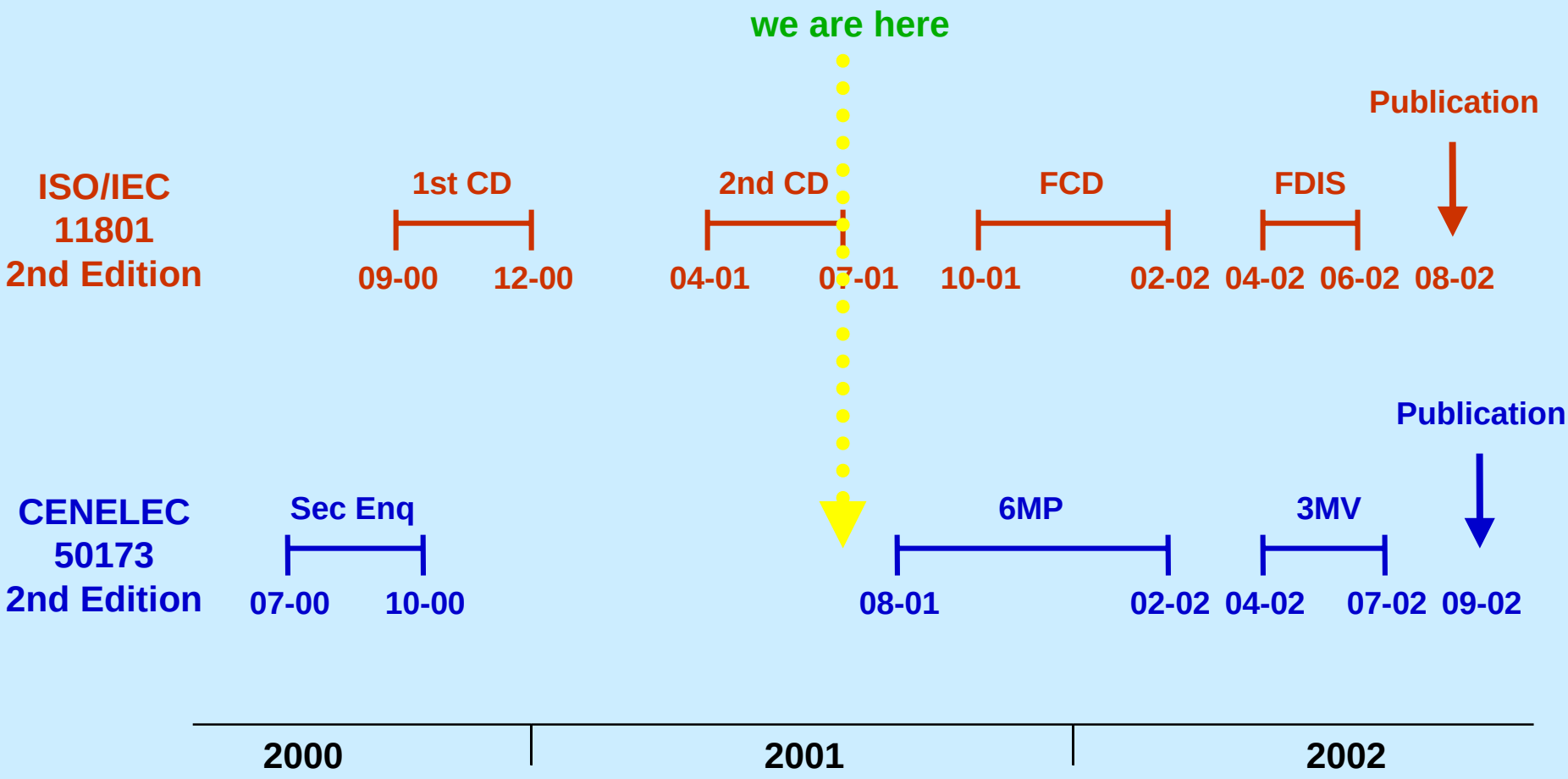
ISO/IEC 11801 2nd Edition

- development cycle longer than planned
- 20 nations and 50+ experts contributed
- very significant increase in complexity
- close harmony with TIA and CENELEC
- requests from IEEE 802 incorporated
- document now in national review stage

ISO/IEC 11801 2nd Edition Key Changes

- Cat 3, Cat 4, 150 ohm cabling deleted
- Class D aligned with TIA Cat 5e NEXT
- 200 MHz Class E/Cat 6 cabling added and specified up to 250 MHz
- 600 MHz Class F/Cat 7 cabling added
- 2000/500 MHz.km NG-MMF introduced
- remote powering supported by Class D
- SFF connectors allowed for patching but only duplex SC connector at outlet

Development of 2nd Edition Cabling Standards



ISO/IEC 15018 SOHO Cabling

- generic infrastructure for home, SOHO, commercial
- for building controls, telecoms, IT & entertainment
  - Control/Command Communications for Buildings (CCCB)
  - Information and Communications Technologies (ICT)
  - Home Entertainment & other broadband Multimedia (HEM)
- structure, configuration, interfaces & performance
- optical fibre plus Class A thro F cabling a la 11801
- CD expected to be approved soon, standard in 2002

Meeting Plan

ISO/IEC SC25 WG3
27 - 31 Aug 2001
25 Feb - 01 Mar 2002

CENELEC TC215 WG1
01 - 03 Oct 2001
15 - 17 Apr 2002

Date: Thu, 5 Jul 2001 08:34:11 -0400 (EDT)
From: Scott Bradner <sob@harvard.edu>
To: "Thompson, Geoff [SC5:321:EXCH]" <gthompso@americasm06.nt.com>
Subject: jumbo frames
Cc: jcarlo@ti.com

Geoff,
The IS-IS working group has produced another Internet Draft that incluides your commets and their response - they will be discussing it on the ISIS WG mailing list (subscription info below). You, or somone else from IEEE 802.3 might want to subscribe and take part in the discussion.

Scott

Title	:	Extended Ethernet Frame Size Support
Author(s)	:	J. Kaplan et al.
Filename	:	**draft-ietf-isis-ext-eth-01.txt**
Pages	:	
Date	:	03-Jul-01

General Discussion:**isis-wg@juniper.net**
To Subscribe: **isis-wg-request@juniper.net**
Archive: **ftp://ftp.ietf.org/ietf-mail-archive/isis**

July 12, 2001

Mr. Ed Eckert, Chairman NRIC V, Focus Group 3

VIA EMAIL: eeckert@catena.com

Reply: Liaison from NRIC V, Focus Group 3

Mr. Eckert,

On July 10, 2001, the liaison letter and attached material, were presented to the 802.3 Ethernet in the First Mile study group. Thank you for providing this information. The recommendations that Focus Group 3 has made to NRIC V, as well as work conducted in standards development organizations, is being seriously considered as 802.3 develops standards for copper based Ethernet in the First Mile. On July 12, 2001, the EFM study group approved the following objective:

The point-to-point copper PHY will recognize the spectrum management restrictions imposed by operation in public access networks, including:

- Recommendations from NRIC V (USA)
- T1.417-2001 Spectrum Management Standard (For frequencies up to 1.1MHz)
- Frequency plans approved by ITU-T SG-15/Q4, T1E1.4, and ETSI/TM6

Cc: Geoff Thompson(gthompso@nortelnetworks.com), Chairman 802.3
Cc: Howard Frazier(millardo@dominet.com), 802.3 EFM Study Group Chair

Best Regards,
Jim Carlo (j.carlo@ieee.com)
Chairman, IEEE 802 – www.ieee802.org

July 12, 2001

Mr. Ed Eckert, Chairman T1E1

VIA EMAIL: eeckert@catena.com

Reply: T1E1/2001-037 R1, “Ethernet over VDSL”

Mr. Eckert,

On July 10, 2001, the liaison letter was presented to the 802.3 Ethernet in the First Mile study group. Thank you for providing this information. The Draft Trial Use VDSL standard currently in the letter ballot comment resolution period in T1E1.4, T1.417-2001 Spectrum Management standard, and work being conducted in other standards development organizations, are being seriously considered as 802.3 develops standards for copper based Ethernet in the First Mile.

On the subject of spectrum management, on July 12, 2001, the EFM study group approved the following objective:

The point-to-point copper PHY will recognize the spectrum management restrictions imposed by operation in public access networks, including:

- Recommendations from NRIC V (USA)
- T1.417-2001 Spectrum Management Standard (For frequencies up to 1.1MHz)
- Frequency plans approved by ITU-T SG-15/Q4, T1E1.4, and ETSI/TM6

Cc: Geoff Thompson(gthompso@nortelnetworks.com), Chairman 802.3
Cc: Howard Frazier(millardo@dominet.com), 802.3 EFM Study Group Chair

Best Regards,
Jim Carlo (j.carlo@ieee.com)
Chairman, IEEE 802 – www.ieee802.org

Portland, Oregon, 9-13 July 2001

SOURCE: IEEE EFM study group
TITLE: Communication to ITU-T Q2/15 from IEEE P802.3 Ethernet in the First Mile Study Group

---

COMMUNICATION STATEMENT

TO: ITU-T Q2/15 (Peter Wery, Chairman ITU-T Study Group 15,
Tel: +1 613 763 7603, Fax: +1 613 763 2697, E-mail: wery@nortelnetworks.com)
COPY: David Faulkner (Q2/15 rapporteur; david.faulkner@ties.itu.int)
Frank Effenberger (feffenberger@quantumbridge.com)

APPROVAL: Agreed to at IEEE 802.3 plenary meeting, Portland, Oregon 9-13 July 2001
FOR: Information / Action
DEADLINE: 10 September 2001

CONTACT: Jim Carlo IEEE 802 chair; j.carlo@ieee.org
Howard Frazier, IEEE 802.3 EFM chair; millardo@dominetsystems.com

The Ethernet in the First Mile (EFM) study group appreciates the communication sent from study group 15 concerning its work in the area of fibre access networks.

The EFM study group is in the final stages of obtaining its project authorization request, and expects to have its first formal meeting as an IEEE 802.3 task force in September 17-19, 2001, in Copenhagen, Denmark. The EFM project's scope includes subscriber access networks that use point-to-point fibre, PON, and copper physical layers, and also management and environmental requirements. The ITU-T standards referenced refer mainly to the PON and management topics.

The EFM task force will consider these standards, and will use and / or reference whatever material it finds suitable. Given the early stage of the work, it is unclear to what degree this is feasible. However, the advantages of commonality are acknowledged.

The call for ongoing information exchange is also welcomed. All of the materials used at the task force meetings are available to the public on the Internet at http://www.ieee802.org/3/efm. All interested parties are encouraged to review and comment on this material. Likewise, any contributions that the ITU-T study group members wish to submit will be accepted through the usual channels described on the website.

IEEE 802 would also like to formalize a common liaison role between the EFM task force and the Q.2/15 working group to share schedules, contributions, and works in progress on a reciprocal basis. Access to these materials via the Internet would be most helpful. The liaison could serve to report these documents into each group. Dr. Frank Effenberger is nominated to serve in this role.

The EFM task force looks forward to a continuing dialog with the participants of the Q.2/15 effort, and we welcome your attendance and participation at our upcoming meetings.

_____

IEEE-SA Standards Board Project Authorization Request (PAR) Form (2001-Rev 1)

Note: After completing and saving this form, please send the form as an e-mail attachment to the NesCom Administrator. Please don't forget to fax the signature page.

If the Working Group is new to the process or if you are a new Working Group Chair/Sponsor Chair/Society Liaison and you feel it would be beneficial for staff to give a brief presentation on the process of developing a standard, please check here [ ]

1. Sponsor Date of Request [**2001 Jul 16**]

2. Assigned Project Number [**P802.3ah**]

3. PAR Approval DATE [ ] {to be completed by staff}
{Copyright release must be received with appropriate signatures by FAX (1-732-562-1571)}

4. Project Title, Recorder and Working Group/Sponsor for this Project
Document type and title: {Place an X in only one option below}
[**X**] Standard for {document stressing the verb "shall"}
[ ] Recommended Practice for {document stressing the verb "should"}
[ ] Guide for {document in which good practices are suggested, stressing the verb "may"}

TITLE: [Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements - Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications - **Media Access Control Parameters, Physical Layers and Management Parameters for subscriber access networks**]

Name of Working Group(WG) : [**802.3 Carrier Sense Multiple Access with Collision Detection**]

Name of Official Reporter (usually the WG Chair) who MUST be an SA member as well as an IEEE and/or Affiliate Member: [**Howard M. Frazier**]
IEEE Standards Staff has verified that the Official Reporter (or Working Group Chair) is an IEEE and an IEEE-SA Member: [ ] (Staff to check box}
Contact Information:
Telephone: [**+1 408 436 6663**] FAX: [**+1 408 437 9556**]
EMAIL: [**millardo@dominetsystems.com**]

Name of Working Group Chair (if different than Reporter): [**Geoffrey O. Thompson**]
IEEE-Standards Staff has verified that the Working Group Chair is an IEEE and an IEEE-SA Member: [ ] (Staff to check box}
Contact Information:
Telephone: [**+1 408 495 1339**] FAX: [**+1 408 495 5615**]
EMAIL: [**thompsom@ieee.org**]

Name of Sponsoring Society and Committee: [**CS/LMSC**]
Name of Committee Sponsor Chair: [**James T. Carlo**]
IEEE Standards Staff has verified that the Sponsor is an IEEE and an IEEE-SA Member: [ ] (Staff to check box}
Contact Information:

Telephone: [**+1 214 693-1776**] FAX: [**+1 214 853-5274**]
EMAIL: [**j.carlo@ieee.org**]

5. Type of Project:

5a. Is this an update to an existing PAR? {Yes/No} [**No**]
If YES: indicate PAR Number/Approval Date [P####-YEAR]
If YES: is this project in ballot now? [ ] {yes/no}
[Indicate changes/rationale for revised PAR in Item #16. This should be no more than 5 lines.]

5b. Choose from one of the following:
[ ] New standard
[ ] Revision of existing standard {number and year} [ ]
[**X**] Amendment to an existing standard {number and year} [**802.3 2000 Edition, approved amendments and revisions**]
[ ] Corrigendum to an existing standard {number and year} [ ]

6. Life Cycle
[**X**] Full Use (5-year life cycle)
[ ] Trial Use (2-year life cycle)

7. Balloting Information
Choose one from the following:
[**X**] Individual Sponsor Balloting
[ ] Entity Sponsor Balloting
[ ] Mixed Balloting (combination of Individual and Entity Sponsor Balloting)

Expected Date of Submission for Initial Sponsor Ballot: [**Jan 2003**]

8. Fill in Projected Completion Date for Submittal to RevCom [**Aug 2003**]

9. Scope of Proposed Project
[**Define 802.3 Media Access Control (MAC) parameters and minimal augmentation of the MAC operation, physical layer specifications, and management parameters for the transfer of 802.3 format frames in subscriber access networks at operating speeds within the scope of the current IEEE Std 802.3 and approved new projects.**]

10. Purpose of Proposed Project:
[**To expand the application of Ethernet to include subscriber access networks in order to provide a significant increase in performance while minimizing equipment, operation, and maintenance costs.**]

11. Intellectual Property {Answer each of the questions below}

Has the sponsor reviewed the IEEE patent policy with the group?
[**Yes**] {Yes/No}

Are you aware of the possibility of any copyrights relevant to this project?
[**No**] {Yes/No}

Are you aware of the possibility of any trademarks relevant to this project?
[**No**] {Yes/No}

Are you aware of possible registration of objects or numbers due to this project?
[**No**] {Yes/No}

12. Are you aware of other standards or projects with a similar scope?
[**Yes**] {Yes, with explanation below/ No}
[**There are other standards activities with related scope, including T1E1.4, ETSI TM6, DOCSIS, and ITU-T SG 15.**]

13. International Harmonization
Will this standard (in part or in whole) be submitted to an international organization for consideration/adoption?
[**Yes**]

It is the current policy of 802.3 to submit their standards to ISO/IEC JTC1 via fast track after IEEE approval

If Yes, please answer the following questions:
Which International Organization/Committee [**ISO/IEC JTC1**]
International Contact Information:
Name: [ ]
Address: [ ]
Phone: [ ]
FAX: [ ]
Email: [ ]

14. Is this project intended to focus on health, safety or environmental issues?
[**No**]
If Yes: Explanation? [ ]

15. Mandatory Coordination

SCC 10 (IEEE Dictionary) by DR
IEEE Staff Editorial Review by DR
SCC 14 (Quantities, Units and Letter symbols) by DR

Additional communication and input from other organizations or other IEEE Standards Sponsors should be encouraged through participation in the working group or the balloting pool.

16. Additional Explanatory Notes: {Item Number and Explanation}
[ ]{If necessary, these can be continued on additional pages}

The PAR Copyright Release and Signature Page must be submitted by FAX to 732-562-1571 before this PAR will be sent on for NesCom and Standards Board approval.

IEEE P1802.3Rev
Conformance Test Revision Task Force

July 9th, 2001
Portland, OR

David Law

Overview

- IEEE P1802.3Rev PAR approved by NesCom
  - Approved 30th January 2000
    - **Scope:** Editorial merge of existing material
    - **Purpose:** To editorially merge the front matter from 1802.3 with the technical matter from 1802.3d (10BASE-T Conformance Test) whilst removing obsolete material (AUI Conformance Test).
  - Extensions granted by RevCom for existing 1802.3
    - 1802.3-1991 - extended to 30-Jan-2004
      - Clauses 1 to 3 - Conformance Test boilerplate
      - Clause 4 - AUI Cable Conformance Test
    - 1802.3d-1993 - extended to 30-Jan-2004
      - Clause 6 - 10BASE-T MAU Conformance Test

Status

- Currently in Sponsor Ballot
  - Completed Draft D3.1 Generation
    - Update to external references
    - Update subclause ‘1.2 Scope’ statement
      - Conformance test only supports half-duplex
        - » Value is MDI testing
  - About to enter Sponsor Re-circulation Ballot
    - Awaiting IEEE to Open Ballot
- Plan for the week
  - No meeting planned
  - Request conditional approval on Thursday

IEEE P1802.3Rev Conformance Test Revision Task Force Information

- There is a reflector for this Task Force:

  stds-1802-3-ctrev@ieee.org

  To be added to the reflector, send an E- mail containing:

  subscribe stds-1802-3-ctrev <your email address>

  to:

  majordomo@ majordomo. ieee. org

- There is also a web site for our use at:

  http://www.ieee802.org/3/1802rev/index.html

- To access drafts:

  http://www.ieee802.org/3/1802rev/private/index.html

  Username: **1802.3Rev**

  Password: **conforM**

  Password **is** case sensitive

IEEE P1802.3Rev Conformance Test Revision Task Force

July 12th, 2001
Portland, OR

David Law

Overview

- Scope
  - Editorial merge of existing material
- Purpose
  - To editorially merge the front matter from 1802.3 with the technical matter from 1802.3d (10BASE-T Conformance Test) whilst removing obsolete material (AUI Conformance Test).
- Timeline

  Currently in Sponsor recirculation Ballot

  Standards board approval September 2001

IEEE P1802.3Rev
Plans for Completion

- Sponsor Recirculation Ballot
- Request conditional approval for RevCom submittal at the September Standards Board meeting
- Meet at September Interim meeting in Copenhagen to resolve Recirculation Sponsor Ballot comments (if required) and submittal to the December Standards Board meeting.

IEEE 802.3 Motion

IEEE 802.3 authorises the IEEE P1802.3Rev Task Force to conduct meetings and recirculation ballots as necessary to resolve the comments received during the Sponsor recirculation ballot process.

IEEE 802.3 requests that the P802 LMSC Executive Committee grant conditional approval to forward P1802.3Rev to REVCOM based on successful Sponsor recirculation ballot satisfying the conditions of LMSC Rules Procedure 10.

M: David Law S: Pat Thaler Tech 75%/~~Proc 50%~~

PASSED/~~FAILED~~ Date:

Y: 86 N: 0 A: 9 Time:

IEEE P1802.3Rev Conformance Test Revision Task Force Information

- There is a reflector for this Task Force:

  stds-1802-3-ctrev@ieee.org

  To be added to the reflector, send an E- mail containing:

  subscribe stds-1802-3-ctrev <your email address>

  to:

  majordomo@ majordomo. ieee. org

- There is also a web site for our use at:

  http://www.ieee802.org/3/1802rev/index.html

- To access drafts:

  http://www.ieee802.org/3/1802rev/private/index.html

  Username: **1802.3Rev**

  Password: **conforM**

  Password **is** case sensitive

802.3ae Report

Portland, OR

Jonathan Thatcher

Jonathan.thatcher@worldwidepackets.com

Sept Meeting Announcement

Date: Sept 17 - 21

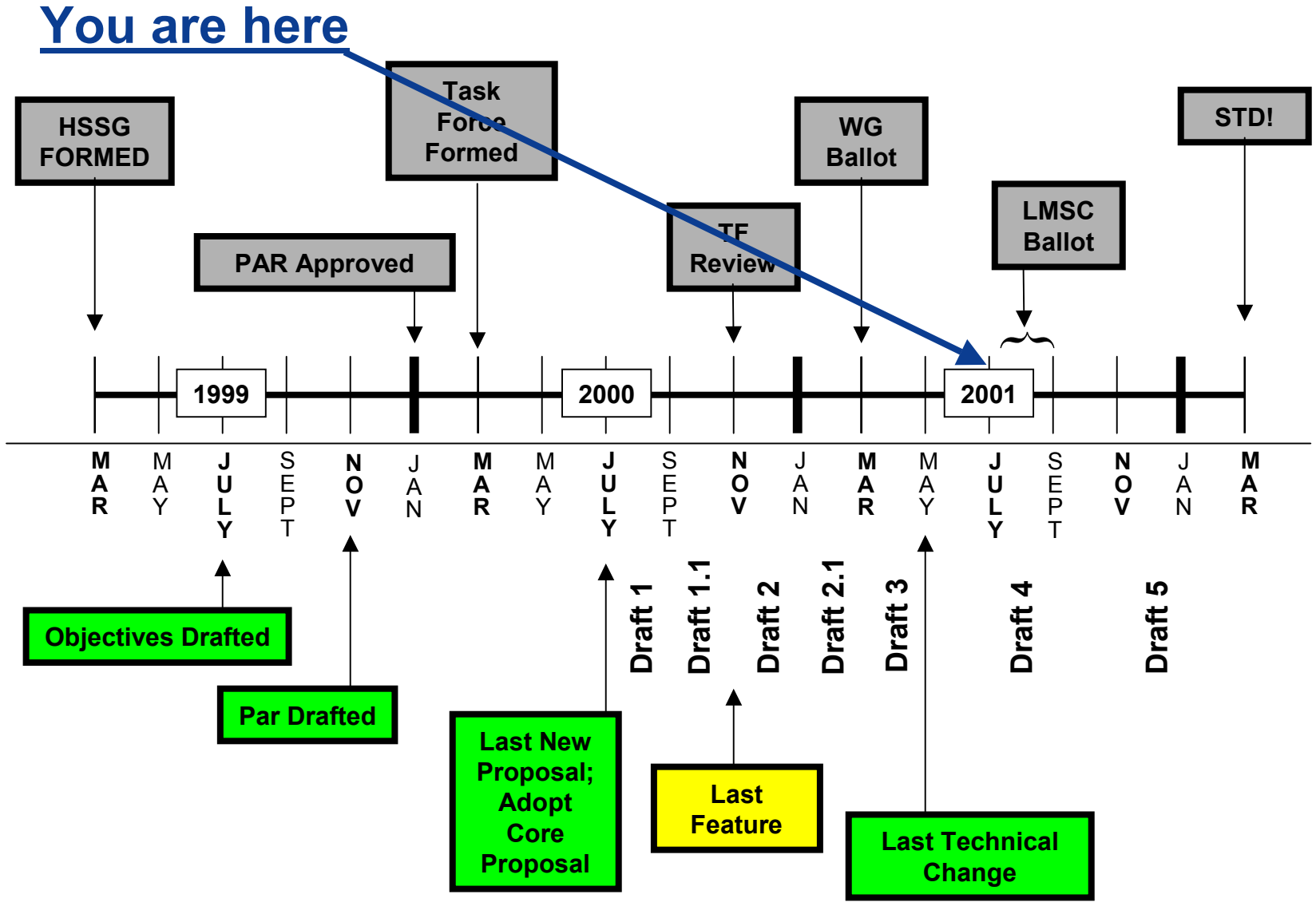
Location: Copenhagen

http://www.ieee802.org/3/interims/copenhagen.html

Meeting Days:

- **EFM: Sept 17 – 19 noon**
- **10GbE: Sept 19 noon - 21**
- **DTE: ?**
- **802.1: ?**

Long Term Schedule



May Synopsis

Ballot Results

- WG Voting Pool: 306 voters; 238 submitted ballots
- 164 approved; 17 disapproval and 47 abstained.
- Approval rate: 91%; return rate: 77%;
- and abstain rate was 20%.

Worked through 922 comments

- 101 Technical Required
- 375 Technical
- 516 Editorial

Draft 3.1 Comments

363 Comments to be resolved

- 44 Technical Required
- 158 Technical
- 151 Editorial

May Synopsis

Big Stuff

- **Modified 10GBASE-W to 20 ppm clock**
- **Added initial Test Pattern function**
  - Ad Hoc reports this meeting on seeds and 10GBASE-W test pattern work
  - Voted to require pattern checker on:
    - Tx; Rx; Both simultaneously
- **Completed OMA/Jitter/RIN work for C52**
- **Declined opportunity to include 1550 nm VCSEL technology for 10GBASE-L**
- **Resolved Signal Detect (Signal_OK) issues**
- **Decided not to draft and circulate a 10GBASE-SX4 PMD solution**
- **Authorized editorial staff to create and circulate Draft 3.1**

5 Unresolved TR's forwarded

Jonathan Thatcher (850, 851, 852, 853)

- Serial PMDs; LX4; XAUI; Serial PMA
- "10 Gb/s Ethernet technology will be demonstrated during the course of the project, prior to the completion of the sponsor ballot.".

Piers Dawe (743)

- PMA_LOS<P> "is a LVCMOS output…"
- *SuggestedRemedy:* Delete BOTH sentences "This signal is a LVCMOS output."

‘Tween Meeting “Meetings”

- **Jitter Ad Hoc completed its work**
- **PMD_Serial Ad Hoc regular teleconferences**
  - Picked up a number of issues to resolve from D3.0.
  - Chair: Piers Dawe (PMD Serial)
- **XAUI meetings and teleconferences**
  - Chair: Anthony Sanders

ACCESS TO 802.3ae DRAFTS

See:

www.ieee802.org/3/ae/private

UserID: 802.3ae

Password: way_fastR

Case matters

Agenda for the week

Monday pm (all in Columbia)

- PMD Technical Feasibility Prep (4:00p – 5:30p)
- Serial PMD Ad Hoc (5:30p – 7:00p)
- Equalization Ad Hoc (7:00p – 8:30p)

Tuesday

- Editor's Meeting (7:00a -- 8:00a; Medford)
- General Session: (8:30a-10:00a Salon G/H/I)
- Breakouts (10a till…): Details at Gen. Session

Wednesday

- Breakouts (8:30a – 1 a; Details at Gen. Session)

Thursday

- Closing Session (8:30a – 12:00 noon; TBD)

Goals For This Week (1/2)

BIG TICKET ITEMS

- Resolve 363 comments
- Planning for technical feasibility
- 10GBASE-SX4 decision

Lil' TICKET ITEMS

- Letter from ITU

Goals For The Week (2 of 2)

Prepare For

And Request

Sponsor Ballot

(contingent upon successful completion of recirculation)

802.3ae Closing Report

Portland, OR

12 July 2001

Jonathan Thatcher

Jonathan.thatcher@worldwidepackets.com

Editors Report

GO BRAD!

ITU Liaison Letter

- **PMD Technical team had no time to draft a response**
- **Plan:**
  - Technical team to research and draft response for review at September Mtg.
  - Review and approve response in Sept.
  - Jonathan to draft a courtesy letter to inform ITU of plan (for Jim Carlo; cc: Geoff; Jonathan)

Equalization Ad Hoc in Hibernation

Equalization Ad Hoc has decided to conduct no more meetings or teleconferences.

There is NO plan regarding a possible, future PAR

Some companies will probably continue to work independently on optical equalization technology

Straw Polls on Next Speed

1. **Next calendar year 2002**
   - 50 %
2. **The speeds to consider next are 40G, 100G, or 160G**
   - 40 count = 53
   - 100 count = 18
   - 160 count = 4
3. **This calendar year start working on higher speed Ethernet**
   - None

Technical Feasibility Demonstration - definition

To demonstrate a BER of 10^-12 over the rated distance; shown to be interoperable between PMD of at least two vendors for each PMD type.

Path to full compliance is explained credibly.

PMA feasibility demo is implicit here.

By September 17, 2001.

XAUI Tech Feasibility Motion

The 803.3ae Task Force agrees that XAUI is technically feasible. We have used the following criteria in this determination:

- **Demonstrated interoperability between multiple vendors with BER < 10 -12 and PCB length > 20".**
- **A credible path to full compliance has been shown.**

Jonathan Thatcher withdrew his TR on Technical Feasibility for XAUI

Passed by acclamation.

Sponsor Ballot Motion Fails

802.3ae TECHNICAL MOTION:

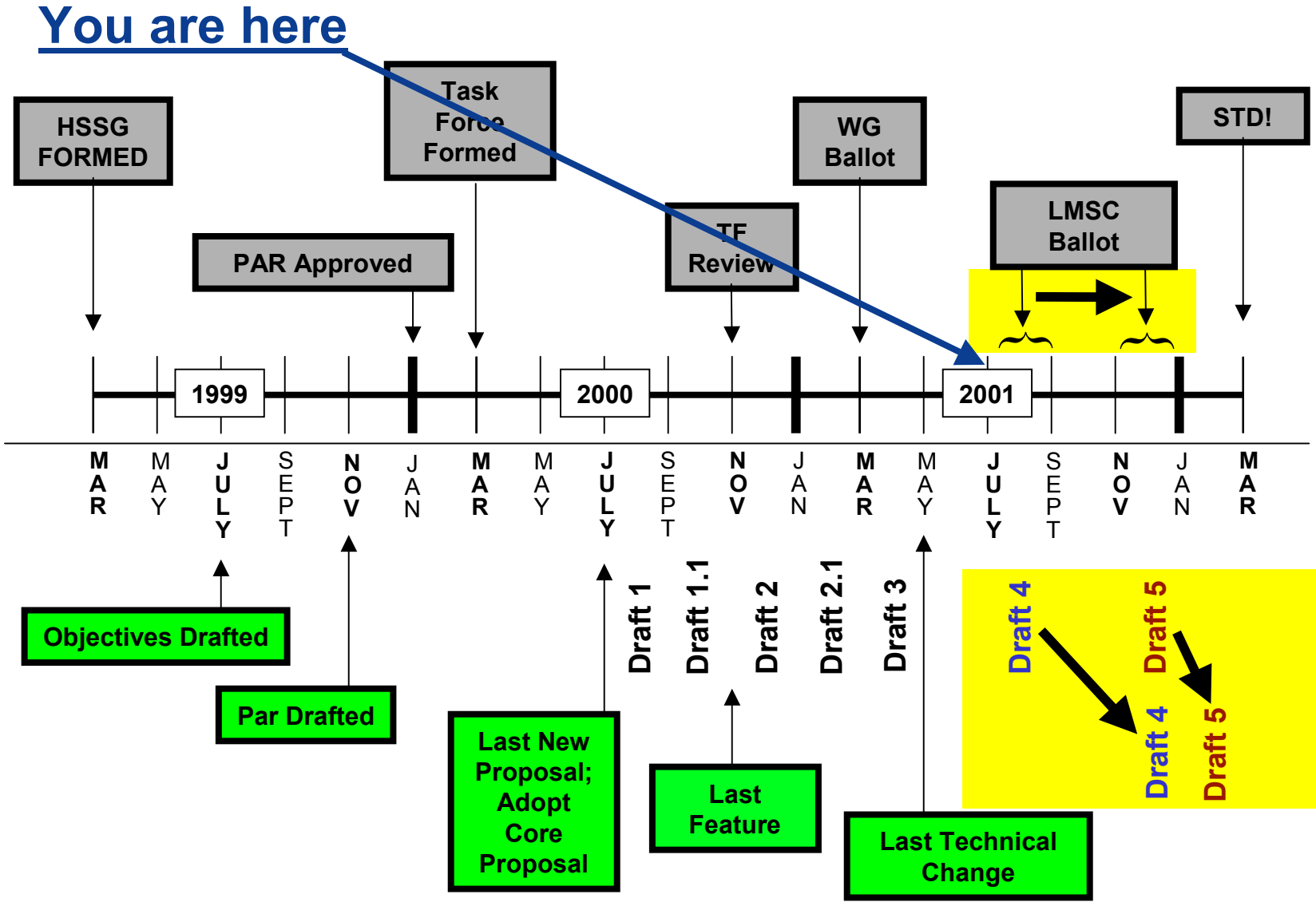
The IEEE P802.3ae Task Force requests authorization from IEEE 802.3 to conduct recirculation ballots as necessary to resolve the comments received during the Working Group ballot process.

The Task Force further requests IEEE 802.3 to request that the P802 LMSC Executive Committee grant conditional approval to forward P802.3ae to Sponsor ballot upon recirculation and satisfying the conditions of LMSC Rules Procedure 10.

M: Stephen Haddock S: Ben Brown

802.3 voters: Y: 46 , N: 17 , A: 14 **Fails (73%)**
All attending: Y: 52 , N: 20 , A: 22

Long Term Schedule



Request Recirc. Authorization

802.3ae TECHNICAL MOTION:

The IEEE P802.3ae Task Force requests authorization from IEEE 802.3 to conduct recirculation ballots as necessary to resolve the comments received during the Working Group ballot process.

M: Stephen Haddock

S: Ben Brown

802.3 voters: Y: 74, N: 0, A: 4 Passes

All attending: Y: 90, N: 0, A: 5

Motion

802.3 TECHNICAL MOTION:

IEEE 802.3 affirms changes to draft 3.1 and authorizes the IEEE P802.3ae Task Force to create drafts and to conduct recirculation ballots as necessary to resolve the comments received during the Working Group ballot process.

M: Jonathan Thatcher on behalf of 802.3ae

802.3 voters: Y: 86, N: 0, A: 0
Technical pass.

Sponsor Ballot Motion

802.3 TECHNICAL MOTION:

IEEE 802.3 to request the P802 LMSC Executive Committee grant conditional approval to forward P802.3ae to Sponsor ballot upon completion of recirculation and satisfying the conditions of LMSC Rules Procedure 10 and subject to the successful completion of PMD (PMA) interoperability demonstrations per the criteria specified by and subject to approval by the 802.3ae Task Force.

M: David Kabal S: Mike Dudek

802.3 voters: Y: 34, N:, 29 A: 21 Motion Fails

ITU - Telecommunication Standardization Sector

July 2001

QUESTIONS: 16/15
SOURCE: ITU-T SG15
TITLE: Communication Statement to IEEE P802.3 10 Gigabit Ethernet Study Group

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COMMUNICATION STATEMENT

TO: IEEE P802 (Jim Carlo IEEE 802 chair; j.carlo@ieee.org)
COPY: Geoff Thompson (IEEE 802.3 Chair; gthompson@nortelnetworks.com)
Jonathan Thatcher (IEEE P802.3ae Task Force chair, jonathan@wwp.com)

APPROVAL: Agreed via correspondence of Q.16/15
FOR: Information / Action
DEADLINE:

CONTACT: Peter Wery
Chairman ITU-T Study Group 15
Tel: +1 613 763 7603
Fax: +1 613 763 2697
E-mail: wery@nortelnetworks.com

Summary
The ITU-T Q16/15, which has written Recommendations on 10 Gbit/s transport optical interfaces for the SDH, notes the progress of the IEEE 802.3ae in developing a 10 Gbit/s Ethernet Standard. Two technical aspects, one related to the use of OMA vs. Extinction Ratio (ER) and power, and the other related to the spectral width and its relationship to path penalty, appear to be treated differently in the two Standards. This document outlines some of the consideration of the Q16/15 experts on these differences and invites the IEEE experts to work together toward technical solutions that are cost effective and in the best interests of the market as a whole.

Study Group 15, Working Party 4 has a Question (Q.16/15) to study Characteristics of optical systems for terrestrial transport networks.
As a result of this ongoing work, there are several ITU-T Recommendations that describe the area of optical transport networks and in particular also transport network interfaces for 10 Gbit/s rate signals. The current approved Recommendations are:

[1] ITU-T Recommendation G.691 “Optical interfaces for single channel STM-64, STM-256 systems and other SDH systems with optical amplifiers ”
[2] ITU-T Recommendation G.959.1 “Optical transport network physical layer interfaces

Furthermore there is a draft Recommendation in preparation dealing with very short reach intraoffice interfaces for SDH and OTN rates for planned consent in October this year. The working title of this recommendation is Draft G.vsr, "Optical interfaces for intra-office systems".

These specifications describe the physical layer characteristics of such systems that have been deployed throughout the world. The specifications are written in a way to enable transverse

compatibility between operators and equipment of different manufacturers and aiming at an implementation independent specification (not forcing particular testing access to both sides of a link for verification of transmitter or receiving equipment).

Objectives of these specification methods are:
The interface specification shall

- Ensure interworking on the basis of transverse compatibility
- Focus on interface specifications, with equipment as black-boxes
- Be implementation and technology independent
- Require easy and simple verification
- Require no manipulation of equipment on the other side of the interface for verification
- Require no management actions across interfaces
- Require no special test modes
- Require no training mode
- Require no definitions of test points within equipment
- Ensure interworking under all circumstances (use worst-case rather than typical specification)

Another objective is economic and technical feasibility. Here it should be noted that complicated testing and verification presents a significant cost factor since a main factor of networking cost is the operational cost, in addition to the cost of equipment.

'We note that in the definition of the 10 GbE interfaces different methods of specifying optical parameters have been developed by IEEE. Instead of average power and extinction ratio (ER) the parameter OMA (optical modulation amplitude) has been defined. Furthermore a trade-off between transmitter power (or signal amplitude) and spectral characteristic is defined. This has several implications:

- **Definition of OMA versus ER and average power:**
  The objective of this specification method is to widen the allowed range of transmitter-specifications. OMA is a direct mathematical translation from average power and ER. This means, that everything that is possible with OMA is also possible with ER and average power. The OMA method allows tradeoff between extinction ratio and power. This specification method allows very high power sources to be driven at very low ER or low power sources at high ER. However, to avoid high penalties (due to reflections) there is a minimum ER defined so the complete freedom at the high power side is not available.
  On the low power side the whole advantage may not be realizable because this would require sources with unrealistically high extinction ratios (which will probably not be low cost devices). The impacts of this are:
  - The verification on the receiver side is not possible by simple power measurement, but the OMA or ER has to be measured.
  - ER measurement at receiver side in accordance to ITU definitions may present a severe problem as this is at the noisiest place in the system, and an eye related measurement is much less accurate than an optical power measurement. This means that verification is more difficult and less accurate than a power measurement.
  - OMA measurement at the receiver side requires the transmitter to be switched to a test mode. This would require management across management domains if this is, for instance, used between operators or at a User-Network InterfaceI. Furthermore the test mode response (a lower frequency repetitive pattern) may have no relation to the eye mask under

normal operation, so it is possible to have a compliant OMA but the eye under normal operation could be out of spec.
- Complicated measurement is a severe cost driver as a large part of networking cost is operations cost, and in this respect it has been decided in the ITU to specify the interface in a way that allows easy compliance verification as this reduces an important cost factor.
- One of the major drawbacks of a large widening of the transmitter power setting levels is the increased need for tight outside plant engineering due to the reduced available attenuation range. A very wide transmitter output power window increases the minimum attenuation that has to be present in the link, thus increasing the need for attenuators to avoid receiver overload. As an example the ITU 40km 1550 nm spec requires attenuators for outside plant losses below 3 dB, whereas the IEEE spec requires attenuators in cases where the outside plant loss is below 7 dB. This thus requires a substantial effort for link engineering, whereas it seemed one of the IEEE objectives to minimize this as much as possible.

- **Tradeoff between spectral characteristic and optical transmitter power / OMA.**
This tradeoff is based on the spreadsheet calculation model as originally developed for multimode implementations, enhanced to also cover single-mode applications. The RMS spectral width and epsilon model has its limits.

(G.957 reads: “The interaction between the transmitter and the fibre is accounted for by a parameter epsilon. It is defined as the product of 10^{-6} times the bit rate (in Mbit/s) times the path dispersion (in ps/nm) times the RMS spectral width (in nm). For a 1-dB power penalty due to dispersion, epsilon has a maximum value. For intersymbol interference alone, the value 0.306 is applied to LEDs and SLM lasers. The 20 dB width for SLM lasers is taken as 6.07 times the RMS width. (For L-16.2 only, it is necessary to increase epsilon to 0.491, corresponding to a 2 dB power penalty.) For intersymbol interference plus mode partition noise, the maximum value 0.115 is applied to MLM lasers. (For I-1 and I-4, the large spectral widths may not often occur, but they are retained here for possible cost savings.) For wavelength chirp, no known value is applied to SLM lasers.”)

This means ,that while the epsilon model may reasonably be used for MLM (multi-longitudinal mode) sources, for SLM (single-longitudinal mode) lasers (where it may be valid in the case of negligible wavelength chirp and side-mode suppression ratio) a severe limitation is present. This limitation arises from the fact that when calculating RMS out of the -20dB width, as given for SLM sources, the influence of chirp and SSR for the dispersion penalty is not considered. This means for real operating scenarios this method is not confirmed to deal with spectral characteristics of inexpensive directly modulated single-mode sources This has the following implications:
- The Triple Tradeoff at 1310 nm, based on the MLM parameter RMS width, needs to be verified by measurements for the single-mode sources.
- The tradeoff at 1550 nm is not specified and is left to the manufacturer of the transmitter. This, in principle, would allow a high penalty source to be compensated by high optical output power. This, however, makes the performance dependent on the receiver implementation. (In the ITU, standardisation of implementation is avoided to allow a variety of solutions. In our view; this concept provides values to all concerned parties and should be kept).
- The verification of an interface where this tradeoff is used (between power and spectral characteristics) requires the measurement of the spectral behavior of a source before the power requirement is known. This means for 1310nm the measurement of the spectral

width is required to know if the power is in range. This is significantly more difficult (costly) than a simple power measurement.

- For the 1550-nm case either the path penalty has to be known (the only way is to connect the transmitter to a reference path) or two measurements (transmitter side and receiver side have to be made). In the case of an interface between operators this may not be possible. All this is a significant effort and complication.
- It should be noted that the 1550 nm intra-office 40 km WAN interface (Sonet framed) is an application covered in G.691 already.

Conclusion:
To allow a less stringent specification of the transmitter signal, (some areas of which are still excluded: very low ER at high power or very high ER at low power, which are not usable by practical components) much more complicated measurements for verification are required. In addition, as OMA is measured with a specific test pattern, no direct conclusion for a system under operation can be drawn.

A trade-off of spectral characteristics with transmitter power that may result in the gain of fractions of a dB (that may be impossible to be verified) would have a significant increase in verification effort. Currently the given specifications are based on a simplified calculation model, the applicability of which is not proven in practical experiments. While the intention of this kind of specification is to reduce the cost of the interface components as much as possible, it will be a cost driver for verification and operation of such interfaces, so as a consequence should be avoided.

It should be noted that the ITU is quite interested to consider proposals from IEEE to increase device yields by relaxation of certain parameter values within the existing specification methodology.

Given the similarity of the interfaces specified we would be happy if a coordination is possible that leads to the use of similar and comparable methods. While the current method of specification in ITU Q.16/15 has proven its applicability and usability over years of operation (ensuring proper and cost effective verification in network operations) we suggest that we work together when developing new methods that may be required in light of new developments. This is particularly true in the case of possible parameter tradeoffs.

We would be pleased to receive your comments on this communication and and plan to keep you up-to-date as we progress this activity in order to avoid any potential duplication of efforts in this area.
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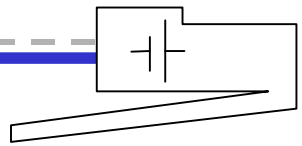
_____

DTE Power via MDI

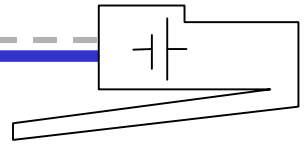
802.3af Task Force
Opening Plenary Meeting Report
July 9, 2001
Portland, OR

Steve Carlson, TF Chair
scarlson@esta.org



July Plenary Meeting

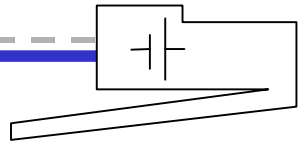
- Interim meeting in St. Louis, MO
- Hosted by Agilent
- 34 people from 18 companies
  - 5% new people
- Proposals/Reports
  - Discovery ad-hoc
  - Power supply ad hoc
  - Management (IETF)



July Plenary Meeting

- Results from St. Louis Interim
  - Reports from discovery ad hoc to create additional draft input
  - Reports from power supply ad hoc to create additional draft input
  - 802.3af Management Objects

    IETF Draft
  - **http://www.ietf.org/internet-drafts/draft-romascanu-hubmib-power-ethernet-mib-00.txt**
  - Draft reviewed, ballot tool distributed
  - Charter for Draft 1.2
  - Poll on possible attendance at September Interim in Copenhagen, only 25% indicated attendance
  - Possibly hold 802.3af Interim in North America

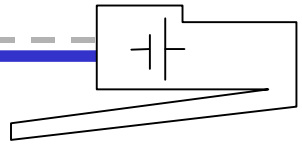


Plans for the Week

The DTE Power via MDI TF will meet on Tuesday and Wednesday from 8:30AM to 5:30PM, and Thursday 8:30AM to noon.

Goals for the week:

- Presentations/Comment Resolution Clause 33
  - Reports from ad hoc's (input to draft)
    - Discovery tolerance table
    - High-level state machine table
    - Power supply spec tables
    - Management update from IETF
- Review latest draft of standard-make up for delay in D1.2
- Create revised timeline
- Charter for D2.0 -prepare for TF recirculation;WG ballot in November



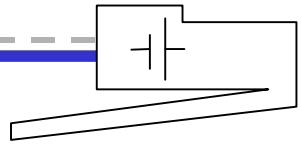
Task Force Info

The DTE Power via MDI Task Force maintains up-to-date information at:

http://www.ieee802.org/3/af/index.html

All archive information from earlier minutes is available. Information on subscribing to the e-mail reflector, proper usage thereof, and presentation guidelines are here. Drafts may be found in the private area.

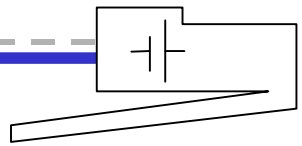
login: 802.3af password: no_warT



Entertainment Ethernet News

- Network traffic per day over Gigabit Ethernet in the ILM render farm during final rendering of “The Mummy Returns” :

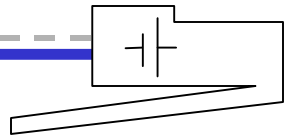
18TB



DTE Power via MDI

802.3af Task Force
Closing Plenary Meeting Report
July 12, 2001
Portland, OR

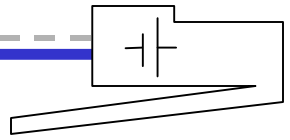
Steve Carlson, TF Chair



General Report

Goals for the week:

- Address Draft 1.2 Open Items
  - "Homework" from May Interim
  - "BIG TICKET/LITTLE TICKET" List
- Charter for Draft 2.0-prepare for TF ballot in Sept; WG ballot in Nov. 2001
- Decide on location for September Interim
- Affirm votes at 802.3 WG Closing Plenary



Presentations

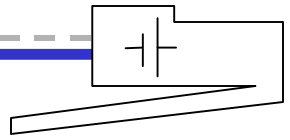
“Derivation of Start-up Mode Parameters,” Yair Darshan, PowerDsine

“ Port-to-Port Cross Regulation,” Yair Darshan, PowerDsine

“Noise Specification Proposal,” Roger Karam, Cisco

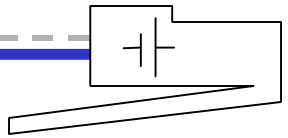
“Proposed Isolation Environment C Addition to IEEE 802.3,” Jennifer Rasimas, Steve Jackson, Nortel Networks

“IETF Power Ethernet MIB,” Dan Romascanu, Avaya; Avi Berger, PowerDsine



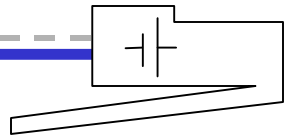
“BIG Ticket”

- Inrush current in PD
  - Resolved from homework
- Consistent detection slopes in PSE and PD
  - Resolved from homework
- Reverse polarity protection in PD
  - Oversight, resolved by discussion
- Stable operation of power subsystem
  - Homework from PowerDsine by 8/30/2001
- Power removal signature
  - Update PD capacitances to ease power removal
- Power supply transient specification
  - Resolved from homework;work within group



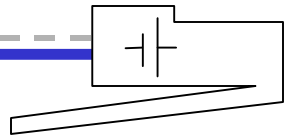
“LITTLE Ticket”

- Oversubscribed PSE and mid-span
  - Change cadence to 3X to insure timeout
- Maximum leakage current specification during detection
  - 10uA maximum
- Single port detection detection Tmax
  - 1.0S time period test criteria



September Interim Meeting

- Straw poll at May Interim indicated less than 30% attendance at September Interim in Copenhagen
  - International travel restrictions
  - Cost
- Straw poll in July showed similar results
- Straw poll in May and July showed almost 100% participation if the meeting was in North America



Motions to Affirm

Motion 1:

Move that the P802.3af task force chair request from the P802.3 Working Group permission to hold an interim meeting during September at a location other than Copenhagen, city (in North America) to be determined.

Moved by: Mike McCormack

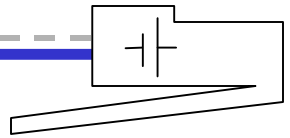
Seconded by: Peter Schwartz

Procedural 50% Required

Y:30 N:1 A:1

Date: July 12, 2001

Motion Passes



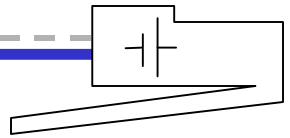
Motions to Affirm

Motion 2

Move that the P802.3af task force charter the editor to create a draft 2.0 of the 802.3af specification.

Moved: Steve Jackson
Second: Peter Schwartz
Technical 75% Y: 33 N: 0 A: 0
Date: July 12, 2001

Motion Passes

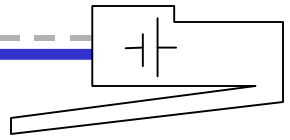


IEEE P802.3 Motion

IEEE P802.3 affirm Motions 1 and 2.

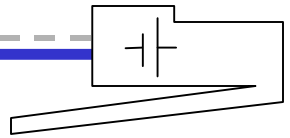
Moved: Steve Carlson on behalf of P802.3af
Second:
Technical 75% Y: N: A:
Date: July 12, 2001

Motion



Future Timeline

Mike McCormack, Editor



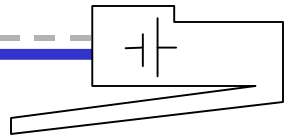
Other Work

TIA-TR42 Liaison: Request for access to 802.3af drafts for review and comment

- -Chris DiMinico supplied Draft 1.2
- -TF supplied TIA with additional information requests and proposed values for DC operation

EPA Energy Star® Program for Telephony

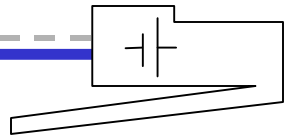
- -Applies to consumer phones, not IP, but it's a good idea



Other Work

Proposed Isolation Environment C Addition to IEEE 802.3

Steve Jackson
Jennifer Rasimas
Nortel



Proposed Isolation Environment C Addition to IEEE 802.3

Jennifer Rasimas / Steve Jackson
July 10, 2001

Basic Isolation Environment Definitions

- **Environment A: When a LAN or LAN segment, with all its associated interconnected equipment, is entirely contained within a single low-voltage power distribution system and within a single building.**
- **Environment B: When a LAN crosses the boundary between separate power distribution systems or the boundaries of a single building.**
- **Environment C: When a LAN segment is configured to carry power in accordance with Section 33.yyy <IEEE 802.3af specifications> and provided that such segment does not cross the boundary between separate power distribution systems or the boundaries of a single building, such segment shall maintain compliance with IEC 60950 [1999] section 3.5.1.**

Environment C Requirements

- **LOOP RESISTANCE AND GROUNDING**

  - The attachment of network segments, compliant with Environment C definitions, are required to exhibit a maximum of ten (10) ohms resistance from either polarity terminal of the conductors powering the attached PD (as defined in Section 33.yyy) to the protective ground of the repeater unit (PSE) (as defined in Section 33.zzz) sourcing the DC power, so as to be compliant with IEC 60950 [1999] section 5.1.1. Such PSE ground shall be assumed to be directly connected to the positive or negative terminal of the PSE DC source supply, with a connection exhibiting no more than 0.05 ohms resistance. A repeater unit (PSE) of this variety requires professional installation.

Environment C Requirements...continued

- **INSULATION**

  - If external MAUs are used for PD attachment to media segments, then the segments shall be installed such that it is not possible for an equipment user to touch the trunk cable screen or signal conductor. A PD shall employ a nonconductive cabinet or housing, of a design such that no conductive LAN segment elements are accessible by the user, in compliance with IEC 60950 [1999] section 2.2.3.1.

Environment C Requirements...continued

- **INTER-, INTRA-BUILDING SEGMENTS**
  - Interconnected electrically conducting LAN segments that are partially or fully external to a single building environment shall be prohibited under this specification. It is mandatory that LAN segments that are partially or fully external to a single building environment (including those which cross an intrabuilding boundary between separate power distribution systems) be handled by the use of a nonelectrically conducting LAN segment (see 9.9 or Clause 15) and by the use of a separate PSE in the external target environment.

IEEE P802.3
Maintenance

July 9th, 2001
Portland, OR

David Law

Maintenance Requests Status

- 77 Maintenance requests

In Ballot (IEEE P802.3ag)	21
Awaiting clarification	6
Errata	18
To be categorised	10
Review by Technical experts	10
Withdrawn	2
Published	10

- Meet this week
  - Review status of existing revision requests
  - Classify new revision requests

IEEE P802.3ag Maintenance #6

- IEEE P802.3ag PAR approved by NesCom
  - Approved 21st September 2000
- Working Group Recirculation ballot #2 Closed March 24th
- Remove Change Request # 1037.
  - The change as proposed is technically flawed (as expressed in a technical comment) and is being removed from the package for rework. It or its successor will be added back into the next maintenance ballot package.

IEEE P802.3ag Maintenance #6

- Vote count at the close of the 2nd recirculation (not counting CR# 1037)

241	Voters
147	Ballots returned
61.0%	**Return rate**
106	Approval
0	Approve with comments
0	Disapprove
41	Abstain
100%	**Approval rate**
27.9%	**Abstain rate**

IEEE P802.3ag Maintenance #6

- Moved to Sponsor Ballot under Conditional Approval given in March (except CR# 1037)
- Now in Sponsor Ballot
  - Sponsor Ballot Group approved 14th May
  - Sponsor Ballot Opened 3rd July
  - Sponsor Ballot Closes 1st August
- Don’t plan to meet this week
  - CR # 1037 will be covered in the Maintenance meeting

IEEE Std-802.3:2000 Errata sheet

- Errata sheet issued for IEEE Std-802.3:2000 on 1st May.
  - Major Item, correction to equation in subclause 36.2.5.1.4

    If [TX_EN=FALSE * TX_ER=TRUE * TXD ≠ (0000 1111)]

    (the ≠ was published as a = in IEEE Std-802.3:2000)

  - Available on the web at the URL: **http://www.ieee802.org/3/corrections/802.3-2000.pdf**

Maintenance Web Information

- The Maintenance web site is at:

  http://www.ieee802.org/3/maint/index.html

- The IEEE P802.3ag web site is at:

  http://www.ieee802.org/3/ag/index.html

- The Maintenance request form is available at:

  http://www.ieee802.org/3 /private/maint/revision_request.html

  Username: ******

  Password: ******

  Password **is** case sensitive

IEEE P802.3 Maintenance

July 12th, 2001
Portland, OR

David Law

Maintenance Requests Status

- 80 Maintenance requests
- Current status:

In Ballot (IEEE P802.3ag)	21
Awaiting Ballot	2
Awaiting clarification	4
Errata	26
To be categorised	0
Review by Technical experts	4
Total Open	**57**
Withdrawn	3
Published	20
Total Closed	**23**

IEEE P802.3ag Rev Maintenance Revision #6

- Scope

  Maintenance changes and current 802.3 Standard

- Purpose

  Add accumulated maintenance changes and provide general review of entire 802.3 standard

- Timeline

Working Group Ballot	July 2000	✓
Sponsor Ballot	July 2001	✓
Standards board approval	December 2001	

IEEE P802.3ag Rev Plans for Completion

- In Sponsor Ballot
  - Sponsor Ballot group Closes 1st August
- Meet at September Interim meeting in Copenhagen
  - Review and resolve Sponsor Ballot comments.
- Recirculation Sponsor Ballot (if required).
- Pre-submittal of draft to REVCOM for December Standards Board meeting
  - Sponsor ballot results reviewed by IEEE 802.3 at November IEEE P802 plenary meeting

IEEE P802.3 Motion

IEEE P802.3 authorises the IEEE P802.3ag Task Force to conduct meetings and recirculation ballots as necessary to resolve comments received during the Sponsor Ballot.

IEEE P802.3 requests that the P802 LMSC Executive Committee give permission for the IEEE P802.3 Working Group Chair to presubmit IEEE P802.3ag draft to REVCOM for the December 2001 Standards Board meeting. The Sponsor ballot results will be reviewed at the November IEEE P802 plenary meeting.

M: David Law S: Pat Thaler Tech 75%/~~Proc 50%~~

PASSED~~/FAIL~~ Date: 12th July 2001

Y: 74 N: 0 A: 0 Time: 13:37

Maintenance Web Information

- The Maintenance web site is at:

  http://www.ieee802.org/3/maint/index.html

- The IEEE P802.3ag web site is at:

  http://www.ieee802.org/3/ag/index.html

- The Maintenance request form is available at:

  http://www.ieee802.org/3 /private/maint/revision_request.html

  Username: ********

  Password: *****

  Password **is** case sensitive

Ethernet in the First Mile Study Group

Interim Meeting Report

IEEE 802.3 CSMA/CD Working Group

Marriot Downtown, Portland, OR

9-July-2001

Reflector and web

- To subscribe to our reflector, send email to:

  majordomo@ieee.org

  and include this line in the ***body of the message:***

  subscribe stds-802-3-efm <*your email address*>

- Our web site is located at:

  http://www.ieee802.org/3/efm

Interim Meeting

- 2-1/2 day meeting - May 21-23, 2001
- Adams Mark Hotel, St. Louis, MO
  - Hosted by Agilent
- 200+ attendees
- 27 technical presentations covering
  - OAM, P2P Fibre, EPON, P2P Copper

Objectives for interim

- **Hear presentations concerning:**
  - **The need for an EFM project in IEEE 802.3**
  - **Justification in terms of the 5 Criteria**
  - **Goals and Objectives for a project**
- **Refine as necessary:**
  - **Project Authorization Request (PAR)**
  - **5 Criteria responses**
  - **Goals and Objectives**

Presentations at interim

IEEE 802.3 Ethernet in the First Mile Study Group - May, 2001 Presentation Materials

#	Name	Company/Organization	Presentation Title	File	email
	ALL FILES		Compressed in zip format	all_files.zip	
	MEETING MINUTES			minutes_05_2001.pdf	
1	**Howard Frazier**	Dominet Systems	Agenda and General Information	agenda_1_0501.pdf	millardo@dominetsystems.com
2			T1E1.4 Liaison Letter	t1e1_4_liaison.pdf	millardo@dominetsystems.com
3	**Howard Frazier**	Dominet Systems	PAR and 5 Criteria	par_1_0301.pdf	millardo@dominetsystems.com
4	**Howard Frazier**	Dominet Systems	EFM SG Objectives	objectives.pdf	millardo@dominetsystems.com
			Presentations Related to OAM&P		
5	**Jim Diestel**	Salira	Call for clarification	diestel_1_0501.pdf	jdiestel@salira.com
6	**Roy Bynum**	Worldcom	Common Infrastructure Requirements…	bynum_1_0501.pdf	rabynum@mindspring.com
7	**Osamu Ishida**	NTT	First Mile OAM&P Objective	ishida_1_0501.pdf	ishida@exa.onlab.ntt.co.jp
8	**Hiroshi Suzuki**	Cisco Systems	Why OAM for Ethernet	suzuki_1_0501.pdf	hsuzuki@cisco.com
9	**Robert Muir**	Intel	OAM&P EFM	muir_1_0501.pdf	robert.muir@intel.com
			Presentations Related to EPON		
10	**Gerry Pesavento**	Alloptic	EPON PAR and the 5 Criteria	pesavento_1_0501.pdf	gerry_pesavento@alloptic.com
11	**Bruce Tolley**	Cisco Systems	An Ethernet PON Using Existing 802.3 MAC	tolley_1_0501.pdf	btolley@cisco.com
12	**Brian Unitt**	Nortel Networks	Technical Feasibility of Gigabit Ethernet PONs	unitt_1_0501.pdf	bmu@nortelnetworks.com
13	**Onn Haran**	Passave Networks	Ethernet PON: Security Considerations	haran_1_0501.pdf	onn.haran@passave.com
14	**Lior Khermosh**	Passave Networks	EPON Timing Considerations	khermosh_1_0501.pdf	lior.khermosh@passave.com
15	**Ariel Maislos**	Passave Networks	Voice Services over PON	maislos_1_0501.pdf	ariel. maislos@ passave. com
16	**Jonathan Thatcher**	World Wide Packets	Optical Point to Multi-point - Objectives	thatcher_1_0501.pdf	jonathan.thatcher@worldwidepackets.com
			Presentations Related to P2P Fiber		
17	**Wael Diab**	Cisco Systems	1000BASE-X Extended Temperature Optics	diab_1_0501.pdf	wdiab@cisco.com
18	**Pat Kelly**	Intel	Point to Point Fiber - Five Criteria	kelly_1_0501.pdf	pat.kelly@intel.com
19	**Jim Tatum**	Honeywell	VCSEL Friendly 1550nm Specifications	tatum_1_0501.pdf	jim.tatum@honeywell.com
			Presentations Related to Copper		
20	**Nersi Nazari**	Marvell Semiconductor	100 Mb/s Ethernet over UTP Cat-5 @ 800m	nazari_1_0501.pdf	nersi@marvell.com
21	**Patrick Stanley**	Elastic Networks	Carrier Grade Ethernet	stanley_1_0501.pdf	pstanley@elastic.com
22	**Brian Murray**	Massana	100 Mb/s EFM over Copper	murray_1_0501.pdf	brian.murray@massana.com
23	**Kobi Mizrahi**	Infineon Technologies	EFM Copper	mizrahi_1_0501.pdf	kobi.mizrahi@savan.com
24	**Craig Easley**	Extreme Networks	Ethernet over First Mile Copper	easley_1_0501.pdf	ceasley@extremenetworks.com
			Presentations of General Interest		
25	**Martin Adams**	3Com	Economic Feasibility of several EFM Options	adams_1_0501.pdf	Martin_Adams@eur.3com.com
			Action Items		
26	**Hiroshi Suzuki**	Cisco Systems	EPON Compatibility with 802.1D Bridging	suzuki_2_0501.pdf	hsuzuki@cisco.com
27	**Larry Golob**	Agilent	EPON Power Budgets	golob_1_0501.pdf	larry_golob@agilent.com

Study Group Objectives

- Support subscriber access network topologies:
  - Point to multipoint on optical fiber
  - Point to point on optical fiber
  - Point to point on copper
- Provide a family of physical layer specifications:
  - 1000BASE-X extended temperature range optics
  - 1000BASE-X >= 10km over single SM fiber
  - PHY for PON, >= 10km, 1000Mbps, SM fiber, >= 1:16
  - PHY for single pair non-loaded voice grade copper distance >=2500ft and speed >=10Mbps aggregate
- Support far-end OAM for subscriber access networks:
  - Remote Failure Indication
  - Remote Loopback
  - Link Monitoring

Title

Standard for - Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements - Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications - **Media Access Control Parameters, Physical Layers and Management Parameters for subscriber access networks**

Scope

Define 802.3 Media Access Control (MAC) parameters and minimal augmentation of the MAC operation, physical layer specifications, and management parameters for the transfer of 802.3 format frames in subscriber access networks at operating speeds within the scope of the current IEEE Std 802.3 and approved new projects

Purpose

To expand the application of Ethernet to include subscriber access networks in order to provide a significant increase in performance while minimizing equipment, operation, and maintenance costs

Broad Market Potential

a) Broad sets of applicability

b) Multiple vendors and numerous users

c) Balanced costs (LAN versus attached stations)

Residential and business subscriber access networks represent a new and very broad application space for Ethernet. The available market is estimated by third party analysts at greater than 40 million subscribers in the US and 150 million subscribers worldwide by 2005. The technology developed for access networks will have applications in other markets as well.

At the second EFM study group meeting, 121 individuals from 77 companies representing both vendors and users expressed their support for the project.

Ethernet equipment vendors and customers are able to achieve an optimal cost balance between the network infrastructure components and the attached stations.

Compatibility

a) Conformance with 802 Overview and Architecture

b) Conformance with 802.1D, 802.1Q, 802.1f

c) Compatible managed object definitions

As a supplement to IEEE Std 802.3, the proposed project will remain in conformance with the 802 Overview and Architecture with the possible exception of the peer to peer key concept for Ethernet over PON.

As a supplement to IEEE Std 802.3, the proposed project will remain in conformance with 802.1D, 802.1Q and 802.1f, though extensions to these standards may be proposed as additional work items.

As a supplement to IEEE Std 802.3, the proposed project will follow the existing format and structure of 802.3 MIB definitions.

Distinct Identity

a) Substantially different from other IEEE 802 standards.

b) One unique solution per problem (not two solutions to a problem).

c) Easy for the document reader to select the relevant specification.

There is no existing 802 standard or approved project appropriate for wire line access using the Ethernet access protocol and frame format, with the exception of certain combinations of operating speed and media defined in various supplements to IEEE Std 802.3. This project will expand that set to include new media.

While the proposed project includes a choice of physical media and operating speeds, it will specify only one solution for each media at a given operating speed range.

The proposed project will be formatted as a supplement to IEEE Std 802.3, making it easy for the document reader to select the EFM specification.

Technical Feasibility

a) Demonstrated system feasibility.

b) Proven technology, reasonable testing.

c) Confidence in reliability.

Ethernet systems (comprising interface controllers, bridges, routers, management systems, and other devices) represent the most widely deployed networking technology in history. The proposed project will build on the vast array of Ethernet component and system design experience, and the broad knowledge base of Ethernet network operation.

The proposed project will, to the extent possible, re-use specifications developed by other standards bodies and develop new specifications in accordance with the rigorous standards of proof applied to 802.3 projects.

The reliability of Ethernet components and systems can be extrapolated in the target environments with a high degree of confidence.

Economic Feasibility

a) Known cost factors, reliable data.

b) Reasonable cost for performance.

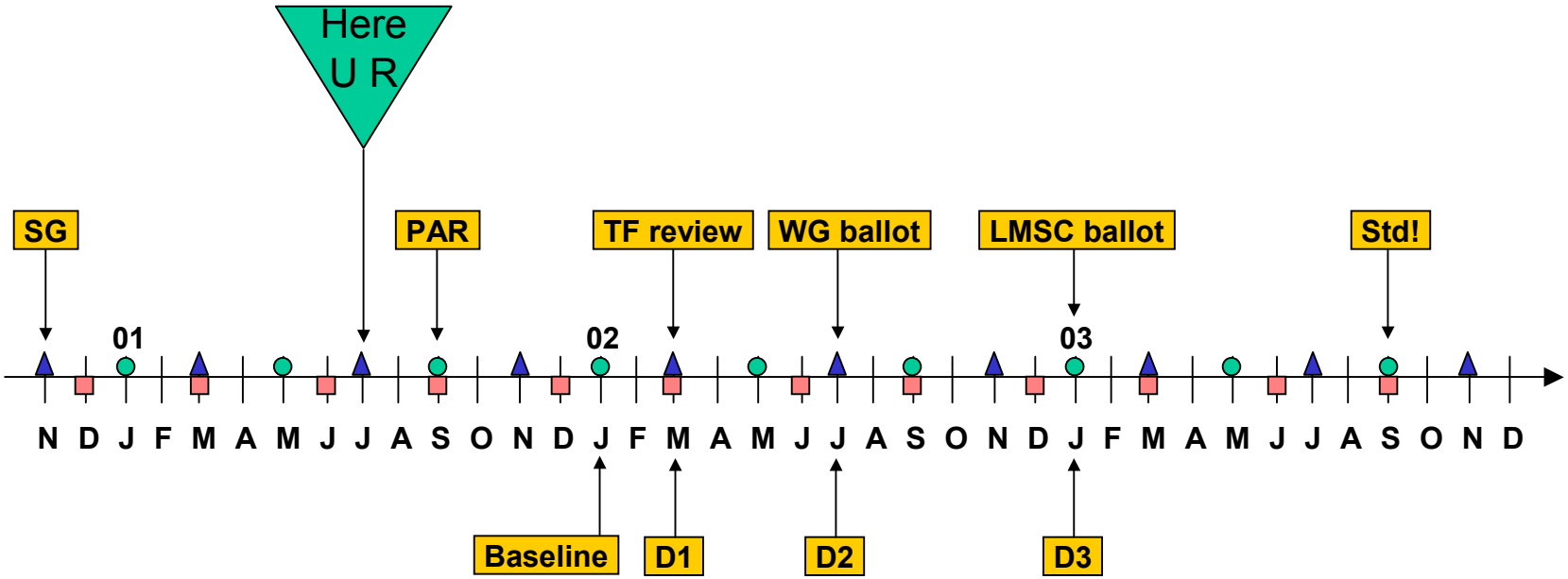
c) Consideration of installation costs.

The cost factors for Ethernet components and systems are well known. The proposed project may introduce new cost factors which can be quantified.

Ethernet consistently demonstrates the most attractive cost/performance ratio of any networking technology, at any operating speed. This fact is well established in the enterprise networking application space, and the goal of this project is to extend the same cost/performance advantage to the access application space.

Installation costs, as well as maintenance and operations costs, should be reduced when compared to competing technologies through a combination of higher manufacturing volume, broader competition, a broader labor pool, simpler configurations and a more optimal system architecture.

Proposed (SWAG) Timeline



802 Plenary
802.3 Interim
IEEE-SA Standards Board

Presentations This Week

IEEE 802.3 Ethernet in the First Mile Study Group - July, 2001 Presentation Materials

#	Name	Company/Organization	Presentation Title	File	email
	ALL FILES		Compressed in zip format	all_files.zip	
	MEETING MINUTES			minutes_05_2001.pdf	
1	**Howard Frazier**	Dominet Systems	Agenda and General Information	agenda_1_0701.pdf	millardo@dominetsystems.com
2	**Howard Frazier**	Dominet Systems	PAR and 5 Criteria	par_1_0701.pdf	millardo@dominetsystems.com
3	**Howard Frazier**	Dominet Systems	EFM SG Objectives	objectives_1_0701.pdf	millardo@dominetsystems.com
4			ITU-T SG 15 Liaison Letter	ITU-T_SG15_0701.pdf	
5			NRIC V FG 3 Liaison Letter	NRIC5FG3_0701.pdf	
6			T1E1.4 Liaison Letter	t1e14_0701.pdf	
	Presentations Related to OAM				
7	**Dan Romascanu**	Avaya	IETF Ethernet Interfaces & Hub MIB Update	romascanu_1_0701.pdf	dromasca@avaya.com
8	**Dan Romascanu**	Avaya	Plans to Re-org Sub-IP Technologies in IETF	romascanu_2_0701.pdf	dromasca@avaya.com
9	**Faye Ly**	Salira	OAM in EFM	ly_1_0701.pdf	faye@salira.com
10	**Hiroshi Suzuki**	Cisco Systems	OAM for Copper, P2P GbE and EPON	suzuki_1_0701.pdf	hsuzuki@cisco.com
11	**Denny Gentry**	Dominet Systems	A MAC Control Solution for OAM	gentry_1_0701.pdf	gentry_1_0701.pdf
12	**Ariel Maislos**	Passave	EFM Fault Detection and Isolation	maislos_1_0701.pdf	ariel.maislos@passave.com
	Presentations Related to EPON				
13	**Robert Carlisle**	Corning	Ethernet PON Fiber Considerations	carlisle_1_0701.pdf	CarlisleRS@corning.com
14	**Frank Effenberger**	Quantum Bridge	ITU-T Q.2/15 Physical Layer	effenberger_1_0701.pdf	FEffenberger@quantumbridge.com
15	**Ken Murakami**	Mitsubishi Electric Corp	Summary of EPON TC and MAC Approaches	murakami_1_0701.pdf	murakami@isl.melco.co.jp
16	**Ajay Gummalla**	Broadcom	DOCSIS Overview	gummalla_1_0701.pdf	ajay@broadcom.com
17	**Hiroshi Suzuki**	Cisco Systems	EPON Compatibility with 802.1D Bridging	suzuki_2_0701.pdf	hsuzuki@cisco.com
18	**Glen Kramer**	Alloptic	EPON TDMA in PHY	kramer_1_0701.pdf	glen.kramer@alloptic.com
19	**Deepak Ayyagari**	ADC	Access Control in Ethernet PON	ayyagari_1_0701.pdf	Deepak_Ayyagari@adc.com
20	**Onn Haran**	Passave	Ethernet PON Protocol Suggestion	haran_1_0701.pdf	onn.haran@passave.com
21	**Dolors Sala**	Broadcom	PON Functional Requirements	sala_1_0701.pdf	dolors@broadcom.com
22	**Hal Roberts**	ADC	Cost Effective High Split Ratios for EPON	roberts_1_0701.pdf	Hal_Roberts@adc.com
23	**Thomas Murphy**	Infineon	Laser Considerations for Link Budget	murphy_1_0701.pdf	Thomas.Murphy@infineon.com
24	**Wael Diab**	Cisco Systems	Technical and Economic Feasibility of EPON	diab_1_0701.pdf	wdiab@cisco.com
	Presentations Related to P2P Fiber				
25	**Thomas Murphy**	Infineon	Bi-Directional Integrated Optics for EFM	murphy_2_0701.pdf	Thomas.Murphy@infineon.com
26	**Vipul Bhatt**	Finisar	Paper- Cross talk…in Gigabit Ethernet links	bhatt_1_0701.pdf	vipul.bhatt@finisar.com
27	**Vipul Bhatt**	Finisar	Two New Power Penalties for Single Fiber	bhatt_2_0701.pdf	vipul.bhatt@finisar.com
28	**Larry Golob**	Agilent	Power Budgets and Optics Considerations	golob_1_0701.pdf	larry_golob@agilent.com
29	**Bob Barrett**	Fiberintheloop	Fiberintheloop	barrett_1_0701.pdf	bob.barrett@fourthtrack.com
	Presentations Related to Copper				
30	**Steven McLaughlin**	Calimetrics	Error Control Coding and Ethernet	mclaughlin_1_0701.pdf	smclaughlin@calimetrics.cm
31	**Frank Miller**	Oregon Trail Internet	Long Reach Requirements 4 Service Providers	miller_1_0701.pdf	frank@oregontrail.net
32	**Hugh Barrass**	Cisco Systems	Voice Grade Copper	barrass_2_0701.pdf	hbarrass@cisco.com
33	**Brian Murray**	Massana	100 Mb/s EFM over Copper	murray_1_0701.pdf	brian.murray@massana.com
34	**Patrick Stanley**	Elastic Networks	100BASE-Cu Details	stanley_1_0701.pdf	pstanley@elastic.com
35	**Vladimir Oksman**	Broadcom	Standard VDSL Technology	oksman_1_0701.pdf	oksman@broadcom.com
36	**Behrooz Rezvani**	Ikanos	EFM - Data Rate Analysis	rezvani_1_0701.pdf	behrooz@ikanos.com
37	**Kobi Mizrahi**	Infineon Technologies	EoVDSL	mizrahi_1_0701.pdf	kobi.mizrahi@infineon.com
38	**Raffaele Penazzi**	ST Microelectronics	Standard DMT VDSL for EFM	penazzi_1_0701.pdf	raffaele.penazzi@st.com
	Presentations of General Interest				
39	**Keith Shaneman**	Corning	Deploying All Optical Access Networks	shaneman_1_0701.pdf	Keith.Shaneman@corning.com

Liaison Letters

- Liaison letters received from
  - ITU-T SG 15:
  - NRIC V FG3:
  - Committee T1

Plan for the Week

	Mon	Tue	Wed	Thu	Fri
8:00 AM	SEC		EFM EPON	EFM Motion Madness	
8:30 AM		EFM Opening			
9:00 AM					
9:30 AM		EFM OAM	EFM P2P		
10:00 AM					
10:30 AM	Break				
11:00 AM	802 Plenary				
11:30 AM					
12:00 PM	Lunch	Lunch	Lunch	Lunch	
12:30 PM					
1:00 PM	802.3 Plenary	EFM EPON	EFM Copper	802.3 Plenary	
1:30 PM					
2:00 PM					
2:30 PM					
3:00 PM					SEC
3:30 PM					
4:00 PM			EFM Q&A		
4:30 PM		EFM General			
5:00 PM			EFM Copper		
5:30 PM	Dinner	Dinner			
6:00 PM			Dinner	Dinner	
6:30 PM	Tutorial #1	Tutorial #3			
7:00 PM			Social Reception		
7:30 PM					
8:00 PM	EFM Tutorial	Tutorial #4			
8:30 PM					
9:00 PM					

Ethernet in the First Mile Study Group

Plenary Meeting Report

IEEE 802.3 CSMA/CD Working Group

Marriot Downtown, Portland, OR

12-July-2001

Presentations This Week

IEEE 802.3 Ethernet in the First Mile Study Group - July, 2001 Presentation Materials

#	Name	Company/Organization	Presentation Title	File	email
	ALL FILES		Compressed in zip format	all_files.zip	
	MEETING MINUTES			minutes_05_2001.pdf	
1	**Howard Frazier**	Dominet Systems	Agenda and General Information	agenda_1_0701.pdf	millardo@dominetsystems.com
2	**Howard Frazier**	Dominet Systems	PAR and 5 Criteria	par_1_0701.pdf	millardo@dominetsystems.com
3	**Howard Frazier**	Dominet Systems	EFM SG Objectives	objectives_1_0701.pdf	millardo@dominetsystems.com
4			ITU-T SG 15 Liaison Letter	ITU-T_SG15_0701.pdf	
5			NRIC V FG 3 Liaison Letter	NRIC5FG3_0701.pdf	
6			T1E1.4 Liaison Letter	t1e14_0701.pdf	
	Presentations Related to OAM				
7	**Dan Romascanu**	Avaya	IETF Ethernet Interfaces & Hub MIB Update	romascanu_1_0701.pdf	dromasca@avaya.com
8	**Dan Romascanu**	Avaya	Plans to Re-org Sub-IP Technologies in IETF	romascanu_2_0701.pdf	dromasca@avaya.com
9	**Faye Ly**	Salira	OAM in EFM	ly_1_0701.pdf	faye@salira.com
10	**Hiroshi Suzuki**	Cisco Systems	OAM for Copper, P2P GbE and EPON	suzuki_1_0701.pdf	hsuzuki@cisco.com
11	**Denny Gentry**	Dominet Systems	A MAC Control Solution for OAM	gentry_1_0701.pdf	gentry_1_0701.pdf
12	**Ariel Maislos**	Passave	EFM Fault Detection and Isolation	maislos_1_0701.pdf	ariel.maislos@passave.com
	Presentations Related to EPON				
13	**Robert Carlisle**	Corning	Ethernet PON Fiber Considerations	carlisle_1_0701.pdf	CarlisleRS@corning.com
14	**Frank Effenberger**	Quantum Bridge	ITU-T Q.2/15 Physical Layer	effenberger_1_0701.pdf	FEffenberger@quantumbridge.com
15	**Ken Murakami**	Mitsubishi Electric Corp	Summary of EPON TC and MAC Approaches	murakami_1_0701.pdf	murakami@isl.melco.co.jp
16	**Ajay Gummalla**	Broadcom	DOCSIS Overview	gummalla_1_0701.pdf	ajay@broadcom.com
17	**Hiroshi Suzuki**	Cisco Systems	EPON Compatibility with 802.1D Bridging	suzuki_2_0701.pdf	hsuzuki@cisco.com
18	**Glen Kramer**	Alloptic	EPON TDMA in PHY	kramer_1_0701.pdf	glen.kramer@alloptic.com
19	**Deepak Ayyagari**	ADC	Access Control in Ethernet PON	ayyagari_1_0701.pdf	Deepak_Ayyagari@adc.com
20	**Onn Haran**	Passave	Ethernet PON Protocol Suggestion	haran_1_0701.pdf	onn.haran@passave.com
21	**Dolors Sala**	Broadcom	PON Functional Requirements	sala_1_0701.pdf	dolors@broadcom.com
22	**Hal Roberts**	ADC	Cost Effective High Split Ratios for EPON	roberts_1_0701.pdf	Hal_Roberts@adc.com
23	**Thomas Murphy**	Infineon	Laser Considerations for Link Budget	murphy_1_0701.pdf	Thomas.Murphy@infineon.com
24	**Wael Diab**	Cisco Systems	Technical and Economic Feasibility of EPON	diab_1_0701.pdf	wdiab@cisco.com
	Presentations Related to P2P Fiber				
25	**Thomas Murphy**	Infineon	Bi-Directional Integrated Optics for EFM	murphy_2_0701.pdf	Thomas.Murphy@infineon.com
26	**Vipul Bhatt**	Finisar	Paper- Cross talk…in Gigabit Ethernet links	bhatt_1_0701.pdf	vipul.bhatt@finisar.com
27	**Vipul Bhatt**	Finisar	Two New Power Penalties for Single Fiber	bhatt_2_0701.pdf	vipul.bhatt@finisar.com
28	**Larry Golob**	Agilent	Power Budgets and Optics Considerations	golob_1_0701.pdf	larry_golob@agilent.com
29	**Bob Barrett**	Fiberintheloop	Fiberintheloop	barrett_1_0701.pdf	bob.barrett@fourthtrack.com
	Presentations Related to Copper				
30	**Steven McLaughlin**	Calimetrics	Error Control Coding and Ethernet	mclaughlin_1_0701.pdf	smclaughlin@calimetrics.cm
31	**Frank Miller**	Oregon Trail Internet	Long Reach Requirements 4 Service Providers	miller_1_0701.pdf	frank@oregontrail.net
32	**Hugh Barrass**	Cisco Systems	Voice Grade Copper	barrass_2_0701.pdf	hbarrass@cisco.com
33	**Brian Murray**	Massana	100 Mb/s EFM over Copper	murray_1_0701.pdf	brian.murray@massana.com
34	**Patrick Stanley**	Elastic Networks	100BASE-Cu Details	stanley_1_0701.pdf	pstanley@elastic.com
35	**Vladimir Oksman**	Broadcom	Standard VDSL Technology	oksman_1_0701.pdf	oksman@broadcom.com
36	**Behrooz Rezvani**	Ikanos	EFM - Data Rate Analysis	rezvani_1_0701.pdf	behrooz@ikanos.com
37	**Kobi Mizrahi**	Infineon Technologies	EoVDSL	mizrahi_1_0701.pdf	kobi.mizrahi@infineon.com
38	**Raffaele Penazzi**	ST Microelectronics	Standard DMT VDSL for EFM	penazzi_1_0701.pdf	raffaele.penazzi@st.com
	Presentations of General Interest				
39	**Keith Shaneman**	Corning	Deploying All Optical Access Networks	shaneman_1_0701.pdf	Keith.Shaneman@corning.com

Comments and Responses

- Comments received from 802.16 and 802.17 WGs
- Produced responses by unanimous agreement
- No changes to PAR or 5 Criteria

Liaison Letters

- Liaison letters drafted to:
  - ITU-T SG 15: (79-0-2)
  - NRIC V FG3: (80-0-6)
  - Committee T1 (74-0-9)

Study Group Objectives (1)

- Support subscriber access network topologies:
  - Point to multipoint on optical fiber
  - Point to point on optical fiber
  - Point to point on copper
- Provide a family of physical layer specifications:
  - 1000BASE-X extended temperature range optics
  - 1000BASE-X >= 10km over single SM fiber
  - PHY for PON, >= 10km, 1000Mbps, SM fiber, >= 1:16
  - PHY for single pair non-loaded voice grade copper distance >=2500ft and speed >=10Mbps aggregate
- Support far-end OAM for subscriber access networks:
  - Remote Failure Indication
  - Remote Loopback
  - Link Monitoring

Study Group Objectives (2)

The point-to-point copper PHY shall recognize spectrum management restrictions imposed by operation in public access networks, including:

- Recommendations from NRIC-V (USA)
- ANSI T1.417-2001 (for frequencies up to 1.1MHz)
- Frequency plans approved by ITU-T SG15/Q4, T1E1.4 and ETSI/TM6

- Technical >= 75% Y:72 N:0 A:17 PASS

Broad Market Potential

a) Broad sets of applicability

b) Multiple vendors and numerous users

c) Balanced costs (LAN versus attached stations)

Residential and business subscriber access networks represent a new and very broad application space for Ethernet. The available market is estimated by third party analysts at greater than 40 million subscribers in the US and 150 million subscribers worldwide by 2005. The technology developed for access networks will have applications in other markets as well.

At the second EFM study group meeting, 121 individuals from 77 companies representing both vendors and users expressed their support for the project.

Ethernet equipment vendors and customers are able to achieve an optimal cost balance between the network infrastructure components and the attached stations.

Compatibility

a) Conformance with 802 Overview and Architecture

b) Conformance with 802.1D, 802.1Q, 802.1f

c) Compatible managed object definitions

As a supplement to IEEE Std 802.3, the proposed project will remain in conformance with the 802 Overview and Architecture with the possible exception of the peer to peer key concept for Ethernet over PON.

As a supplement to IEEE Std 802.3, the proposed project will remain in conformance with 802.1D, 802.1Q and 802.1f, though extensions to these standards may be proposed as additional work items.

As a supplement to IEEE Std 802.3, the proposed project will follow the existing format and structure of 802.3 MIB definitions.

Distinct Identity

a) Substantially different from other IEEE 802 standards.

b) One unique solution per problem (not two solutions to a problem).

c) Easy for the document reader to select the relevant specification.

There is no existing 802 standard or approved project appropriate for wire line access using the Ethernet access protocol and frame format, with the exception of certain combinations of operating speed and media defined in various supplements to IEEE Std 802.3. This project will expand that set to include new media.

While the proposed project includes a choice of physical media and operating speeds, it will specify only one solution for each media at a given operating speed range.

The proposed project will be formatted as a supplement to IEEE Std 802.3, making it easy for the document reader to select the EFM specification.

Technical Feasibility

a) Demonstrated system feasibility.

b) Proven technology, reasonable testing.

c) Confidence in reliability.

Ethernet systems (comprising interface controllers, bridges, routers, management systems, and other devices) represent the most widely deployed networking technology in history. The proposed project will build on the vast array of Ethernet component and system design experience, and the broad knowledge base of Ethernet network operation.

The proposed project will, to the extent possible, re-use specifications developed by other standards bodies and develop new specifications in accordance with the rigorous standards of proof applied to 802.3 projects.

The reliability of Ethernet components and systems can be extrapolated in the target environments with a high degree of confidence.

Economic Feasibility

a) Known cost factors, reliable data.

b) Reasonable cost for performance.

c) Consideration of installation costs.

The cost factors for Ethernet components and systems are well known. The proposed project may introduce new cost factors which can be quantified.

Ethernet consistently demonstrates the most attractive cost/performance ratio of any networking technology, at any operating speed. This fact is well established in the enterprise networking application space, and the goal of this project is to extend the same cost/performance advantage to the access application space.

Installation costs, as well as maintenance and operations costs, should be reduced when compared to competing technologies through a combination of higher manufacturing volume, broader competition, a broader labor pool, simpler configurations and a more optimal system architecture.

802.3ah PAR

EFM SG Motion:

Approve 802.3ah PAR as modified and forward to 802.3 WG

Tech >= 75% Y:84 N:0 A:0

802.3 WG Motion:

Approve 802.3ah PAR as presented and forward to SEC.
Authorize formation of 802.3ah EFM task force

M: EFM SG

Tech >= 75% Y: N: A:

802.3ah Press Release

EFM SG Motion:

Approve 802.3ah PR as modified and forward to 802.3 WG

Tech >= 75% Y:79 N:0 A:0

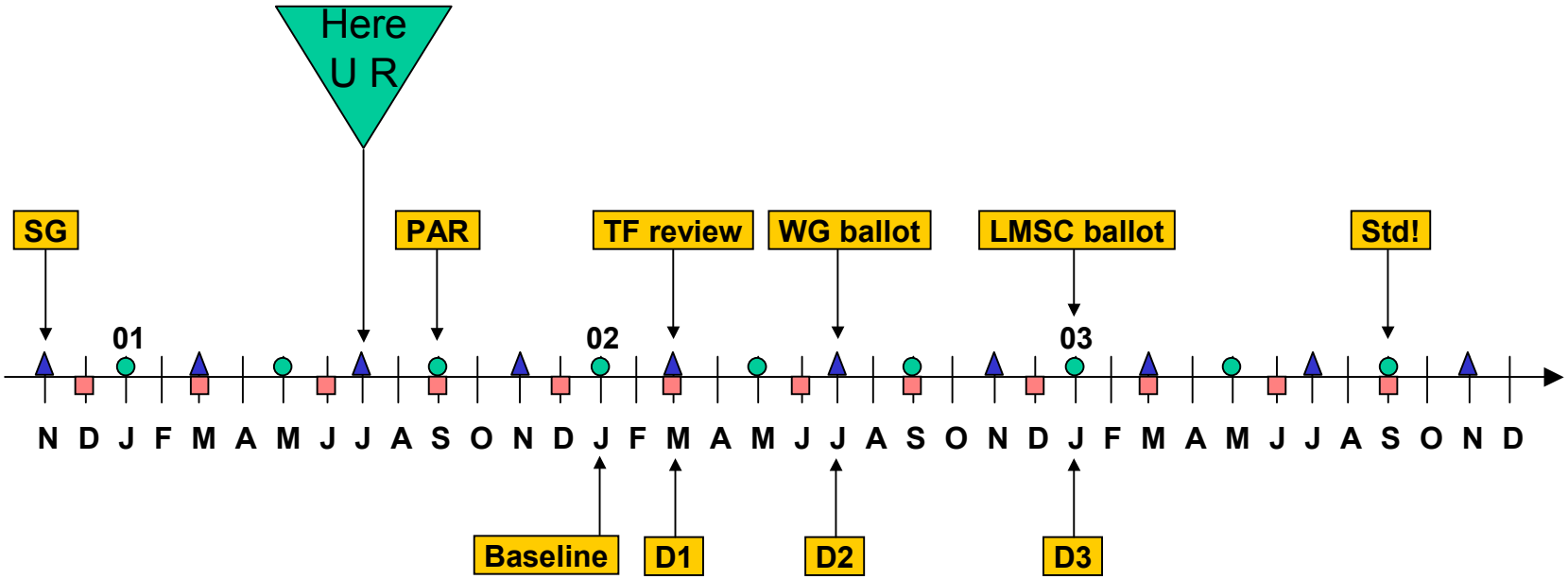
802.3 WG Motion:

Approve 802.3ah PR as presented and forward to SEC.

M: EFM SG

Tech >= 75% Y: N: A:

Proposed (SWAG) Timeline



802 Plenary
802.3 Interim
IEEE-SA Standards Board

Future meetings

- **17-19 Sep, 2001, Copenhagen, Denmark** - Hosted by Intel
  First IEEE 802.3ah Task Force meeting
- **11-16 Nov, 2001, Austin, TX** - IEEE 802 Plenary meeting
- Jan, 2002 meeting: Need host and proposal!
- **10-15 Mar, 2002, St. Louis, MO** - IEEE 802 Plenary meeting:
- 20-22 May, Edinburgh, UK - Hosted by Tality
  Proposal for May, 2002 meeting

Ethernet Poised to Become Ubiquitous Standard for Wireline Subscriber Access Networks

IEEE 802.3 Working Group Approves Ethernet in the First Mile Project

Contact:
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For Release: Embargo until July 16, 2001

(PISCATAWAY, NJ, 16 July 2001) The Institute of Electrical and Electronics Engineers, Inc., (IEEE) 802 LAN/MAN Standards Committee (LMSC) today announced it has approved a Project Authorization Request (PAR) for Ethernet in the First Mile (EFM). The IEEE 802.3 Working Group has authorized the 802.3ah EFM Task Force to carry out the work of drafting the standard pending approval by the IEEE Standards Association Standards Board. Ethernet in the subscriber access network will offer several advantages over traditional first mile technologies in terms of cost, network simplicity, packet-based efficiency, bandwidth, scaling, and provisioning.

The EFM Study Group has identified several key objectives that will be used to evaluate technical proposals brought before the 802.3ah Task Force. They include support of three subscriber access network topologies and physical layers: point to point copper over the existing copper plant at speeds of at least 10 Mbps up to at least 750 m; point to point optical fiber over a single fiber at a speed of 1000 Mbps up to at least 10 km; and point to multipoint fiber at a speed of 1000 Mbps up to at least 10 km. The project will also define operations, administration, and maintenance (OAM) for EFM which includes remote failure indication, remote loopback, and link monitoring.

Since its formation last November, the IEEE EFM Study Group has continued to build momentum with widespread industry participation from component, system, and service providers who are enthusiastic about bringing users the benefits of Ethernet. “With over 200 individuals from over 80 companies collaborating on this effort, the best solution for both users and providers is assured,” said Yukihiro Fujimoto, Senior Research Engineer of NTT. “We are encouraged by the broad industry interest in Ethernet in the first mile,” said Dr. Kamran Sistanizadeh, Chief Technology Officer of Yipes Communications, a pioneer in the optical Ethernet services market. “We support the IEEE's efforts towards standards for Ethernet in First Mile” said Tony Baird, Director of Network Technology for Telestra-Saturn, a provider of Ethernet voice and data services.

Also in support of the project, representatives from these companies delivered technical presentations to the IEEE 802.3 EFM Study Group at the July 802 Plenary meeting: ADC Telecommunications (ADCT), Agere Systems (AGR.A), Agilent (A), Alcatel (ALA), Alloptic, Avaya (AV), Broadcom (BRCM), BroadLight, Calimetrics, Cisco Systems (CSCO), Com21 (CMTO), Corning (GLW), Dominet Systems, Elastic Networks (ELAS), Extreme Networks (EXTR), Fiberintheloop, Finisar (FNSR), Ikanos Communications, Infineon Technologies (IFX), Intel (INTC), Marvell (MRVL), Massana, Mitsubishi Electric, Nortel Networks (NT), Oregon Trail Internet, Passave Networks, PicoLight, Quantum Bridge Communications, Salira Optical Network Systems, ST Microelectronics (STM), World Wide Packets, and Zonu. See http://grouper.ieee.org/groups/802/3/efm/public/jul01/presentations/index.html

Network operators will have the freedom to choose among these topologies and physical layers based on their business models and network architecture plans. Many network operators will build or upgrade their access networks with products based on multiple EFM technologies that are managed with common tools and OAM procedures. Ethernet on point to point copper is ideally suited to exploit the existing voice-grade copper infrastructure, as well as fiber to the curb/neighborhood deployments. Ethernet on point to point copper is also ideal for buildings with voice grade wiring. When new media is to be installed in a greenfield, overbuild, or rehabilitation application, single mode fiber is the optimal choice. The selection between point-to-point or point-to-multipoint topologies is driven by business and technical factors: distance between facilities, network architecture, existing investment models, revenue generation potential, cost of capital, financial plans, and assumptions about future applications, just to name a few.

Howard Frazier, chairman of the EFM Study Group, said that he expects the IEEE-Standards Association Standards Board to approve the PAR at their meeting September 11-13, 2001 in Piscataway, NJ. This will be the formal authorization to draft and conduct ballots on the draft specification. The first meeting of the 802.3ah Task Force is expected to follow a week later in Copenhagen, Denmark. At this meeting, the group will formally adopt the proposed objectives and timeline, and begin evaluating technical proposals. The EFM study group meeting presentations and minutes can be found at http://grouper.ieee.org/groups/802/3/efm/index.html.

The IEEE 802.3 Working Group is responsible for the development of Ethernet standards, such as 10BASE-T, Fast Ethernet, Gigabit Ethernet, and the forthcoming 10 Gigabit Ethernet standard. The IEEE 802 LMSC is sponsored by the IEEE Computer Society and develops IEEE Networking Standards that are recognized worldwide. For more information on the IEEE 802.3 Working Group, visit: http://www.ieee802.org/3/index.html.

The IEEE Standards Association (IEEE-SA) is an international membership organization serving today's industries with a complete portfolio of standards programs. The IEEE-SA is a major contributor to the IEEE, which is the world's largest technical professional society. IEEE-SA membership, through its IEEE association, promotes the engineering process by creating, developing, integrating, sharing and applying knowledge about electro- and information technologies and sciences for the benefit of humanity and the profession. More information is found at http://standards.ieee.org/sa-mem/index.html.

Attachment is not yet available for web posting.