

**Unconfirmed Minutes**  
**IEEE 802.3 CSMA/CD PLENARY**  
**Montreal, PQ**  
**July 5-8, 1999**

**MONDAY, 5 JULY**

**ADMINISTRATIVE MATTERS**

Mr. Geoff Thompson, Chair 802.3 CSMA/CD, opened the Working Group plenary at 1545, 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, Mr. Stephen Haddock, and Mr. George Eisler.

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 Task Forces. The 802.3 home page is: <http://grouper.ieee.org/groups/802/3/index.html>.

The meeting agenda was distributed, and the meeting attendees were asked to introduce themselves. Mr. Thompson reviewed the voting members of the Working Group ([Attachment A2](#)) and the requirements to qualify for voting membership. He presented the voters in peril ([Attachment A3](#)), and the potential voter list. The following individuals asked to become voting members of 802.3 (indicated by \* on [Attachment A4](#)): Azadef, Kameran; Busse, Robert; Chang, Edward S.; Chin, Hon Wah; Ewen, John F.; Feidler, Jens; Giaretta, Giorgio; Haile-Mariam, Aitkem; Herrity, Ken; Kardontchik, Jaime; Lackner, Hans; Langston, Dawn; Noseworthy, Bob; Roers, Shawn; Sarles, Bill; Sorenson, Michel; Sikdar, Som; Turner, Edward; Vijeh, Nader and Yoon, Chong Ho.

The attendance lists were explained and circulated, the meeting attendance for the week is [Attachment A5](#). 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 Kauai meeting. A list of future meetings and registration instructions are available through the IEEE 802 web site home page, <http://grouper.ieee.org/groups/802>.

**Document Distribution**

Since the March Austin meeting, 802.3ab draft 5.0 was submitted to and approved by the Standards Board as IEEE Std 802.3ab. Submission was approved by electronic 802.3 letter ballot. The standard will be available for purchase from IEEE later this month.

802.3ad was the subject of a Task Force ballot prior to the Coeur d'Alene interim meeting and the current draft was available to 802.3 on the web site prior to the meeting.

802.3 minutes and the minutes of its Task Forces and Study Groups are published on the 802.3 web pages as are the working drafts of 802.3 standards. (The web access for drafts is restricted to Working Group participants, others may purchase documents from IEEE.) 802.3 voting members qualified to receive a copy of IEEE Std. 802.3, 1998 edition and 802.3ac should have received them by now from IEEE.

### **Agenda (Monday-Tuesday)**

#### ***MOTION:***

Approve the agenda ([Attachment A1](#)).

M: Dineen, S: Booth. Approved without objection.

### **Executive Committee Items**

Mr. Thompson described some changes to the formation of the Sponsor Ballot pools discussed at the Executive Committee. The changes include requalification of pool members Standards Association membership annually, rather than verifying at the formation of each ballot group.

The formation of Working Groups 802.15 and 802.16 was announced. The policy for distribution of CD-ROM versions of 802 standards at this meeting was also presented.

### **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 ([Attachment A8](#)). 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://grouper.ieee.org/groups/802/3/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.

### **State of Standards and Operating Rules of 802.3**

Mr. David Law, Vice Chair of 802.3, reviewed IEEE Project 802.3 Working Group Standards Status ([Attachment A6](#)). He also showed a copy of the matrix showing which clauses are changed by subsequent supplements ([Attachment A7](#)). This matrix represents the current publication status of the full 802.3 standard IEEE 802.3, 1998 (the consolidated edition) and its supplements. Current versions of these summaries are available on the 802.3 web site, and the standards may be purchased from IEEE Standards.

### **March Minutes Approval**

The minutes of the March meeting in Austin, Texas and attachments were posted to the web site prior to this meeting. Mr. Grow announced their availability on the 802.3 reflector.

The minutes of the March 1999 Austin, Texas meeting were approved without objection.

### **External Liaison Report – FO2.2.1**

Mr. Michael Hackert ([Attachment B1](#)) presented on current work items. They are working on fiber bandwidth and differences between overfilled launch and single mode launch. Test data indicates a better performance can be achieved if launch conditions are specified.

Allen Dixon reported that SP-4360 underwent a complete rewrite and the San Juan meeting included resolution of comments. SP-4360 is currently at FO2.2 letter ballot.

### **External Liaison Report – TR 42**

Mr. Diminico introduced Mr. Paul Kish the chair of TR 42 who presented on changes in TIA ([Attachment B2](#)). TR 42 is a new group taking responsibility for Telecommunications Infrastructure. This includes commercial, residential cabling, pathways and spaces, administration and copper and optical fiber cabling systems. He briefly introduced proposed additions to standards both as Technical Service Bulletins and Addenda, most in the ballot process.

The committee has spent considerable time in producing specifications for those components most likely to prevent a Cat 5 installation from passing Cat 5e tests. Patch cords are particularly likely to be the cause of problems.

Cat 6 cable is the next step in bandwidth performance for copper cables, but the draft is still being worked on. TR 42.1 submitted a liaison letter requesting that 802.3 consider Cat 6 cabling in its future projects

There is a tight loss budget in 1000BASE-SX and 1000BASE-LX. Within that budget is unallocated margin that TIA would like to use for additional connectors. A liaison letter was submitted ([Attachment B3](#)).

### **External Liaison Report – TR 41**

TR 41 submitted a liaison letter requesting that 802.3 develop a PHY for 1000 Mb/s operation on Cat 6 cable ([Attachment B4](#)). This letter represents that a less expensive PHY could be developed using the higher grade cable. If 802.3 does not undertake the work, they will consider initiating the project within TR 41.

TR 41.3.4 is working on IP telephone sets. They are concerned with a number of issues, including power distribution for an Ethernet interface (DTE interface). They have placed in their draft a preclusion of power distribution until we can complete the work.

### **External Liaison Report — SC25/WG3**

Mr. Alan Flatman reported on the Berlin meeting of last week ([Attachment B5](#)). 11801 Am1,2,3 is to be published. The second edition of 11801 is not expected until next year. In this edition, Class D is based on Cat 5E, Class E & F channel spec are firm, and two Cat 7 connectors have been selected.

Cat 6/Class E cable specifications are stable with the working specification based on formulae for 250 MHz. The RJ-45 connector validation continues, and IEC has been asked to produce connector standards.

Cat 7/Class F targets up to 600 MHz with a 2-connector channel. The preferred connector is based on an RJ-45 form factor proposal, that would preserve compatibility with its predecessors.

Two liaison letters on cabling have been generated by SC25/WG3. The first ([Attachment B6](#)) requests our consideration of Cat 6/Class E cable in our future work, and the second ([Attachment B7](#)) consideration of high performance multimode fiber for 10 Gb/s operation.

Mr. Steve Swanson pointed out that the group had also considered our recommendation to reconcile fiber specifications between 802.3z and 11801. That has been done.

### **External Liaison Report — SC25**

Mr. Thompson reported on our coordination with ISO for our standards. With our fast track development, and broadening of the opportunity for them to comment during our development process, we have streamlined the ISO standardization process. The 802.3 web site will publish the current ISO approval status for our standard.

### **Internal Liaison Reports**

Both 802.1 and 801.16 will have PARs for approval this week. More detail will be provided in the Tuesday session.

### **Other Business**

Ad Hoc meetings for Monday and Tuesday night were announced.  
The meeting was adjourned at 1745.

## **TUESDAY, 6 JULY**

### **ADMINISTRATIVE MATTERS**

Mr. Geoff Thompson re-convened the 802.3 plenary at 0830. The attendance lists were circulated. The potential voter list was reviewed, and the following requested voter status: Buckman, Lisa; Harshbarger, Doug; Lemoff, Brian E.; Marsland, Robert A.; Montstream, Cindy; Nootbaar, Michael; Pieters, Robert; Schroeder, Ted; Wils, Joris; Yu, Ben.

### **PARs from other Groups**

A PAR for the new 802.16 Broadband Wireless Access Systems was presented for review by the WG. The PAR calls for development of a recommended practice. Mr. Thompson focused on the Scope and Purpose of the PAR. The WG had no comments on the proposed PAR for Mr. Thompson to convey to 802.16 or the Executive Committee.

## **Maintenance/Reaffirmation/Interpretation Requests**

Mr. David Law described two proposed revision requests, and the method for making a request. The maintenance requests are on the topic of VLAN tagged frames and MAC Control Frames.

There is also a need to conduct reaffirmation ballots on portions of the big book, and 1802.3. Mr. Law also stated that Mr. Colin Mick is prepared to continue as chair for maintenance projects.

## **LINK AGGREGATION TASK FORCE (802.3ad)**

Mr. Stephen Haddock, Chair 802.3ad, reported on the progress of the Task Force. The group held an interim meeting in June in Coeur d'Alene Idaho. They reviewed a task force ballot on Draft 1.1 and produced draft 1.9 which was distributed electronically to the WG prior to this meeting. The Task Force will ask the WG to approve the forwarding of D2.0 (only minor editorial changes from D1.9) to Working Group ballot.

## **1000BASE-T (802.3ab)**

Mr. George Eisler, Chair 802.3ab, reported on the progress of the Task Force. The document was accepted unanimously by the Standards Board at its June meeting, with submission being approved by an electronic Working Group Ballot. The official publication date is 26 July 1999, and it will be available to electronic document subscribers two weeks earlier. The supplement will be published as 802.3ab, 1999. Mr. Thompson reviewed the decision taken over the reflector to dedicate the standard to Valerie E. Zelenty, IEEE Standards Editor who died during the development of the standard. Affirmation of the dedication was asked for and given by the Working Group by acclamation.

Mr. Eisler and Mr. Colin Mick were thanked for their effort in leading the Task Force, and editing the document respectively. They in turn expressed thanks to all those who had contributed to the document.

## **HIGHER SPEED STUDY GROUP (HSSG)**

ITU SG7 sent a liaison request to review text on mapping of Ethernet frames to SONET. Mr. Thompson requested that the HSSG undertake this review because of the SONET expertise within the group

Mr. Jonathan Thatcher reviewed the accomplishments of the Coeur d'Alene interim meeting held in early June ([Attachment E1](#)). At that meeting, almost half the participants were new to 802.3. He reviewed the presentations that covered Requirements and Objectives, Architecture, a New MII, Coding and the PHY. Minutes of the meeting and copies of the presentation are available on the 802.3 web site. The Study Group has a reflector and subscription information is available on the 802.3 web site.

The reflector has been very active with over 1100 messages to date. Mr. Thompson encouraged participants to be aware of the human and download time required to read

this volume of messages, and to be succinct and to make sure the content is worth the effort required of those reading the posting.

Mr. Thatcher reviewed the objectives adopted by the Study Group, one objective that failed to get approval and two that were tabled for further consideration at this meeting.

Some Ad Hoc groups were created at the Coeur d'Alene meeting to expedite the work of the Study Group. These Ad Hocs were on cabling, speed, distance and copper interface. They held teleconferences, extensive discussion on the reflectors, as well as some of them meeting this plenary week. The work and recommendations of these groups will be presented to the Study Group.

Mr. Thompson reviewed 802.3 procedures for those that are new to the WG. The HSSG reflector is not the place where decisions are made. All Study Group or Task Force decisions, however made, must be endorsed by 802.3. He encourages Study Group and Task Force decisions to be made during meetings. The required ratification of decisions by 802.3 is the reason why HSSG participants should seek to gain 802.3 voter status.

The Study Group will spend the bulk of its time meeting as a whole, but its Ad Hocs will also have some evening meetings.

## **CALLS FOR INTEREST**

### **DTE Power via MDI**

Mr. David Law presented on the DTE Call for Interest ([Attachment F1](#)). The group that met in March assumed that they could meet this meeting as an Ad Hoc, this is not the correct process. Mr. Thompson indicated the Call for Interest only enables Ad Hoc meetings for that plenary meeting. Because of the misunderstanding, he is not counting the March meeting as the one opportunity for an Ad Hoc to meet. The market potential for power distribution ranges from Ethernet phones to powering of wireless access points. The scope of work would include how much power, which pairs of wire to use, interoperability with 10, 100 and 1000 Mb/s, how this would affect other standards using RJ-45 connectors, and how power distribution would affect noise immunity.

Approximately 40 people expressed interest in attending with approximately 7 presentations (the meeting will be scheduled in parallel with HSSG).

### **Gigabit Ethernet on Cat 6 UTP**

Mr. Terry Cobb presented a Call for Interest in developing a 1 Gb/s PHY for operation on Cat 6 UTP ([Attachment G1](#)). The installed base of Cat 6 cable is growing quickly. Because it has higher bandwidth, it can simplify the functions of the PHY. One Cat 6 solution does not require echo, NEXT or FEXT cancellation and other functions required by 1000BASE-T. He also pointed out the variability of return loss within Cat 5E installations, where movement of the patch cable can significantly change the return loss.

Four presentations are planned for an Ad Hoc on the call for interest, and about 35 people expressed interesting in attending (the meeting will be scheduled in parallel with HSSG).

### **Breakout meeting schedule**

The schedule for Task Force and Ad Hoc meetings was established and rooms assigned. Meetings were scheduled for HSSG, Maintenance, 802.3ad, DTE power over the MDI Ad-Hoc and Cat 6 1Gb/s.

802.3 was recessed at 1025.

## **THURSDAY, 8 JULY**

### **ADMINISTRATIVE MATERS**

Mr. Geoff Thompson, Chair 802.3, opened the Working Group closing plenary at 0830 and welcomed those attending the meeting. The attendance lists were circulated.

#### **Working Group Positions on Executive Matters:**

Mr. Thompson reviewed some matters raised by the Executive Committee. He expressed reservations about a declaration that a Working Group could support multiple MACs. He also relayed proposed changes in document numbering and identification (Supplements are to now to be referred to as Revisions.) There are also proposals for expediting committee processes. There was little discussion (none on some issues) and no directed position was given on any of these issues.

Mr. Thompson also announced the change in time of the Plenary Meeting and opening 802.3 plenary at the November Kauai meeting. The 802 Plenary will be from 11:00am to noon on Monday, and the 802.3 opening plenary will begin at 1:00 pm. (indicated by > on [Attachment A4](#)). The potential voter list was reviewed, and the following requested voter status: Cornejo, Edward; Nowell, Mark and Sorensen, David.

Concern has been expressed over the Working Group votes. It is believed that the deciding votes on narrowly divided motions could be cast by attendees that are not voting members of 802.3. As a consequence, a request for roll call votes will be recognized when votes by raise of hands are close.

#### ***MOTION:***

Approve the agenda. ([Attachment A9](#))

The agenda was approved without objection.

#### **External Liaison**

We will probably need to prepare a response to TR41 and TR42 regarding Category 6 cabling, but the response will be determined by actions of the Working Group. We will also need to respond to SC25/WG3, but they do not meet prior to our next plenary meeting.

#### ***MOTION:***

Establish an Ad Hoc to develop a draft response to SC25/WG3 RE cabling issues for Nov. plenary.

M: Mr. C. DiMinico, S: Mr. C. Mick  
Approved by voice vote

Mr. Thompson took the action item to develop a response on Category 6, and regarding the request to support DTE power.

### **LINK AGGREGATION (802.3ad)**

Mr. Stephen Haddock reported on the 802.3ad Task Force meeting. It lasted about 15 minutes and the only item of business was to pass a motion requesting 802.3 to approve a Working Group Ballot and to authorize meetings and response to comments ([Attachment D](#)). The Working Group Ballot will be expanded to include 802.1 voting members that have been participating in Task Force Meetings.

#### ***TECHNICAL MOTION:***

The IEEE 802.3 Working Group requests;

- That its Chair issue a working group ballot with IEEE 802.3ad/D2.0.
- That the IEEE 802.3ad Link Aggregation Task Force be authorized to conduct meetings and administer recirculation ballots as necessary to resolve comments received during the working group ballot
- And that the process of forming a sponsor ballot pool is initiated in anticipation of issuing a 802.3ad sponsor ballot for following the November meeting.

M: Mr. T. Dineen, S: Mr. W. Quackenbush  
Y: 53 N: 0 A: 0 Passed.

Mr. Haddock recommended that reviewers start with Clause 43 and then go back to the management additions as the best way to understand the document when reviewing.

### **MAINTENANCE**

Mr. Mick reported on the Maintenance Committee meeting. The requests will be posted on the web site and segregated between approved and proposed. There will be a form on the site for submittal of changes.

Mr. Thompson pointed out that we need to reaffirm the conformance test documents (AUI cables and 10BASE-T). The plan is to hand the task to the IEEE Editor for a revision to be balloted by the group.

### **DTE POWER VIA THE MDI (Ad Hoc on Call for Interest)**

Mr. Law reported on the meeting held to further discuss the call for interest ([Attachment F2](#)). Mr. Thompson introduced Mr. Steve Carlson who has been watching and using the output of this group and been a participant in ESTA, who as DTE Power Ad Hoc chair, reported on the meeting. There were seven presentations. The market includes IP telephones and wireless LAN base stations, and emerging applications for PDAs, cameras, building management (lighting, security, HVAC) home automation and industrial instrumentation and process control. Most of these markets will not develop for ethernet unless power is available over the cable.



There are potential problems with equipment operation and damage because of power being received on data pins (e.g., 802.3ab) but mitigating those problems is an action for the group to solve.

The Ad Hoc requests the creation of a Study Group that will produce either a recommendation for a standard or a technical report detailing why such a standard is not possible.

***MOTION:***

In response to the DTE Power via MDI call for interest, that 802.3 approve the creation of a DTE Power via MDI Study Group and authorize an interim meeting.

M: Mr. D. Law, S: Mr. W. Quackenbush  
Y: 69 N: 0 A: 0 Passed.

Mr. Law indicated that the Study Group will be meeting in York England on Thursday 30 Sept and Friday 1 Oct. The timeline for the Study Group is to Target PAR submission to the December Standards Board meeting if appropriate approvals are received.

**1 Gb/s PHY ON CATEGORY 6 CABLE**

Mr. Terry Cobb presented on the work of the Ad Hoc held to discuss the development of a 1 Gb/s PHY to utilize Cat 6 cable ([Attachment G2](#)).

***MOTION:***

That 802.3 approve the creation of a 1 Gig Cat 6 Study Group and authorize an interim meeting.

M: Mr. T. Cobb, S: Mr. S. Fritz  
Y: 18 N: 49 A: 11 Failed.

***MOTION TO AMEND (TO READ):***

That 802.3 approve the creation of a greater than or equal to 2.5 Gig Cat 6 Study Group and authorize an interim meeting.

M: Mr. B. Tolley, S: Mr. W. Wery  
Y: 27 N: 39 A: 13 Failed.

The amendment was proposed at the beginning of the motion discussion, and discussion on the amendment began. People expressed support, opposition and concerns about the amendment. Mr. Flatman indicated that if the amendment fails, he would propose a friendly amendment to make the motion read greater than or equal to 1 Gb/s. Other comments followed, including: support of the original motion based on the participation of 17 individuals from 9 companies being sufficient market interest; the change would eliminate some equipment vendors because it would require signal processing capability; the amendment would support the 2.5 Gb/s work that has not been included within the HSSG; it was observed that all of the support for the project was from cable and connector providers, with no support from systems vendors (3 of which opposed the project within the study group); the confusion with 1000BASE-T and supporting two 1Gb/s incompatible PHYs on an RJ-45 was expressed, and the fact that 1000BASE-T

operates on Cat 6. In response to questions, Mr. Cobb indicated there were 43 people in attendance at the Ad Hoc, and he did not know of the company representation between system and component companies. Concern was also expressed that the amendment hijacks the intent of the call for interest; and on possible problems with two MAC projects working on the same clause at different speeds.

Mr. Thompson stated that at a time in the past, we involved ourselves in development of cable specs. Those specifications were generally incomplete. As a result, 802.3 changed to encourage cabling work being done in cooperating committees. As a result, there is some tension between the cable groups pushing us to use technology before market push has developed for the system products. It was also observed that historically, the creation of a study group generally results in the creation of a PAR because things develop a life of their own, and consequently the Working Group views Study Groups differently than what their intended role is. Mr. Thompson indicated he had no way of changing this other than to encourage the correct view of Study Groups and to trust in the Working Group membership.

The vote was called, and on count split 30 for and 30 against. As a result, a request for a roll call vote was recognized, and the motion to amend failed as recorded above.

***MOTION TO AMEND (TO READ):***

That 802.3 approve the creation of a Cat 6 Study Group and authorize an interim meeting.

M: Mr. A. Flatman, S: Mr. S. Fritz

Y: 17 N: 46 A: 11 Failed.

The motion to call the question passed by voice vote, and the motion to amend failed.

The original motion was called without opposition and failed as recorded above.

There will be a Call for Interest on “Operation at 2.5 Gb/s or Greater on Category 6 Cabling” from Mr. DiMinico at the November meeting. Mr. Dove expressed the intent to issue a Call for Interest on a 10 Gb/s patch cord technology, though Mr. Thompson felt it was still within the purview of the HSSG. The reflector and web includes (or will include) details on these calls for interest.

**HIGHER SPEED STUDY GROUP**

Mr. Jonathan Thatcher presented on the Study Group and Ad Hoc working meetings held this week. ([Attachment E2](#)). He reviewed the many presentations made to the group. These presentations are archived on the 802.3 web site under the HSSG. The Study Group added five new objectives to those accepted in Coeur d’Alene.

***MOTION:***

In response to the motion passed in the HSSG, requests that the 802.3 Chair sign an appropriate letter addressed to 802.3 members that enlists their support in administering a cabling survey developed within the HSSG to support 802.3 standards effort.

M: Mr. J. Thatcher

Approved by voice vote.

To highlight the inaccuracies of these types of surveys, Mr. Thompson displayed the results of a web survey on cabling indicating that 11% of the respondents were currently using Gigabit Ethernet over premises copper cabling. Mr. Tolley indicated that accuracy would be improved because the proposed survey would be directed rather than having unqualified respondents.

**MOTION:**

Request that 802.3 extend the HSSG charter until November, 1999.

M: Mr. J. Thatcher

Approved by voice vote.

Mr. Thatcher indicated that Texas Instruments has volunteered to host January interim meetings in Dallas, TX for all the Study Group and Task Force that have been co-locating (e.g., 802.1, 802.3ad, HSSG, etc.) Mr. Thatcher thanked the Study Group participants for their hard work during the week and the progress made as a result. Mr. Thompson added his congratulations for the commitment of the group toward the standardization process rather than entering into acrimonious debate, and for maintaining a collegial atmosphere while dealing with important issues.

**ADMINISTRATIVE MATTERS**

Mark Nowell, Peter Wang , Ian Varen, Jeff Lynch Tom Dineen, Paul Bottorff, Geoff Thompson and Roy Bynum volunteered to participate in the SONET SG7 liaison letter Ad Hoc.

**Future Meetings**

Interim meetings will be held in York, England. Meeting information will be posted to the 802.3 web site.

Higher Speed Study Group (HSSG)	York, England	27-29 Sep 1999
Link Aggregation (802.3ad)	York, England	30 Sep-1 Oct 1999
DTE Power via MDI Study Group	York, England	30 Sep-1 Oct 1999
802.3 Working Group Plenary	Kuaiti, HI	8-11 Nov 1999
	Albuquerque, NM	6-10 Mar 2000
	La Jolla, CA	10-14 Jul 2000
	Tampa, FL	6-10 Nov 2000

Mr. Jim Carlo, Chair of 802, congratulated the Working Group on its completion of 802.3ab and thanked Mr. Thompson for his efforts.

**Action Items**

Law	Prepare for 1802.3 reaffirmation ballot
Mick, Law	Post maintenance requests to 802.3 web pages
Thompson	Issue Working Group Ballot on 802.3ad
Thompson, et.al.	Response to ITU SG7 liaison letter

Mr. Thompson thanked all for their participation and without objection the meeting adjourned at 1145.

Respectfully submitted 23 July 1999

Robert Grow

IEEE 802.3 Secretary

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**ATTACHMENTS:**

- A1 Monday/Tuesday 802.3 Agenda
- A2 802.3 Voting Member List
- A3 802.3 Voters in Peril
- A4 802.3 Potential Voter List
- A5 July 1999 Attendance List
- A6 802.3 Standards Status
- A7 8802.3 Clause Change Matrix
- A8 Call for patents and example response letter
- A9 Thursday 802.3 Agenda
  
- B1 FO 2.2.1 Status Update (Hackert)
- B2 TIA Report (Kish)
- B3 TR42 letter on unallocated margin
- B4 TR41 letter on 1 Gb/s Category 6 PHY
- B5 SC25/WG3 Report (Flatman)
- B6 SC25/WG3 letter on Category 6 cable
- B7 SC25/WG3 letter on high performance multimode fiber optic cable
  
- C 802.16 PAR
  
- D Thursday 802.3ad Task Force report (Haddock)
  
- E1 Tuesday HSSG report (Thatcher)
- E2 Thursday HSSG report (Thatcher)
  
- F1 DTE Power via MDI Call for Interest (Law)
- F2 Thursday Report on DTE Power via MDI Ad Hoc (Carlson)
  
- G1 1 Gb/s Category 6 PHY Call for Interest (Cobb)
- G2 Thursday Report on 1 Gb/s Category 6 PHY Ad Hoc (Cobb)