

Confirmed Meeting Minutes: IEEE P802.3bq 40GBASE-T Task Force  
November 12, 2013  
Dallas, TX, USA

Prepared by George Zimmerman

IEEE P802.3bq 40GBASE-T Task Force meeting convened at 09:00 AM, Tuesday, November 12, 2013 by David Chalupsky, 802.3bq Task Force Chair.

Attendance is listed in Appendix A

**ADMINISTRATIVE MATTERS**

**Presentation:** [agenda\\_3bq\\_01\\_1113.pdf](#)

**Presenter:** Dave Chalupsky, Chair.

The Chair called for introductions and affiliations, and a short joke, song or limerick.

The Chair reviewed the agenda. Mr. Chalupsky turned to presentation agenda\_3bq\_01\_1113.pdf and reviewed the schedule of presentations for the meeting.

**Motion #1:** Approve the agenda as shown in [agenda\\_3bq\\_01\\_1113.pdf](#)

**M:** Shadi AbuGhazaleh

**S:** Alan Flatman

**Approved by voice vote without opposition (Procedural > 50%)**

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**Motion #2:** Approve the minutes from the September meeting

([http://www.ieee802.org/3/bq/public/sep13/Unconfirmed\\_minutes\\_3bq\\_0913.pdf](http://www.ieee802.org/3/bq/public/sep13/Unconfirmed_minutes_3bq_0913.pdf))

**M:** Paul Vanderlaan

**S:** Chris DiMinico

**Approved by voice vote without opposition (Procedural > 50%)**

The Chair then resumed the review of presentation agenda\_3bq\_01\_1113.pdf:

- Mr. Chalupsky asked if anyone was attending from the press including those who would run a public blog on this meeting. (There were no responses)
- Mr. Chalupsky noted that there should be no recording or photography without permission.

Mr. Chalupsky reviewed the goals for the meeting, access to the reflector and website, and ground rules.

**Attendance**, Mr. Chalupsky advised the group of the IEEE meeting attendance tool and procedures, including both the attendance book and the web attendance tracking tool.

**IEEE Patent Policy**, at 09:34 am, Mr. Chalupsky showed slides 0 through 4 patent policy from [agenda 3bq\\_01\\_1113.pdf](#). Mr. Chalupsky read aloud slides 0 through 4. Mr. Chalupsky made the call for potentially essential patents at 09:38am, and none responded. Mr. Chalupsky then completed the reading of slide #4.

Mr. Chalupsky then continued review of the presentation, Big Ticket items for this meeting, and a possible project timeline.

### **LIAISONS**

The Chair moved to liaisons, and announced that a new incoming liaison from ISO/IEC JTC1/SC 25 WG3, had been received by the 802.3 chair and forwarded to the task force. The liaison advised of progress on Technical Report ISO/IEC/TR 11801-99-1, likely resulting in a revised draft to be circulated in a formal manner, and inviting IEEE experts to submit editorial comments through their appropriate national body. (see [http://www.ieee802.org/3/minutes/nov13/incoming/25N2203\\_LiaisonRep\\_toIEEE\\_40gG\\_objectives.pdf](http://www.ieee802.org/3/minutes/nov13/incoming/25N2203_LiaisonRep_toIEEE_40gG_objectives.pdf)). Mr. Flatman added that sometime in December the Secretariat will decide whether the document will proceed to the formal final stage – if it does not, then IEEE experts may submit technical or editorial comments directly, as in the prior ballot stage.

The Chair completed review of the presentation noting the project objectives which were unchanged from the prior meeting, and since the group has been in Task Force.

### **PRESENTATIONS**

The Chair then moved to the presentations for the meeting. (Secretary's note – where significant group discussion occurred, particularly involving future actions, a summary of any follow-on points is provided. Abstracts are given as a guide to the presentation material, where possible, these are as provided by authors.)

**Title:** Channel Modeling Ad Hoc Report ([cibula 3bq\\_01\\_1113.pdf](#))  
**Abstract:** Report of activities of the 802.3bq channel modeling ad hoc since the September interim meeting,  
**Presenter:** Pete Cibula, Intel, Co-chair 802.3bq channel modeling ad hoc  
**Co-author:** Brad Booth, Microsoft, Co-chair 802.3bq channel modeling ad hoc  
**Discussion:** There was some discussion about whether additional channel models were needed. The ad hoc chair noted that refinements to the MDI modeling, and extensions of the PCB modeling to include impedance variation were welcome. Additionally, the group discussed that eventually, a “zero-connector” or short direct-connect link segment would be valuable, but that this was not needed prior to PHY selection. Further, getting a direct-connect link would be problematic before the MDI was stabilized.

**Title:** 40GBASE-T ICM (Integrated Connector Module)  
([buckmeier 3bq\\_01\\_1113.pdf](#))

**Abstract:** The presenter provided typical characteristics of a 40GBASE-T ICM, sixteen port model.

**Presenter:** Brian Buckmeier, Bel Stewart & TRP Connector

**Co-Author:** Victor Renteria, Bel Stewart & TRP Connector

**Discussion:** The presenter noted that the design was based on an existing 1G/10G design to preserve backwards compatibility, isolation and hi-pot specs. The presenter clarified that this presentation adds pinouts perhaps not in prior versions. Discussion centered on pair-to-pair variation in the data, and the presenter noted that the data included at least one pair with significant variation on the magnetics to show variability, due primarily to hand-wound magnetics.

**Title:** Comparative Channel Measurements with and without MDIs  
([rossbach 3bq 01 1113.pdf](#))

**Abstract:** Is the MDI detrimental to channel performance at a certain point?

**Presenter:** Harry Forbes, Nexans Cabling Solutions

**Co-Author:** Martin Rossbach, Nexans; Jonathan Nevett, Nexans

**Discussion:** The presenter clarified that the MDI connector considered did not include isolation magnetics.

#### **BREAK AT 10:22 AM AND RECONVENED AT 10:48 AM.**

The chair asked the group's consent to move forward in the agenda to accommodate Mr. DiMinico presenting in another Task Force.

**Title:** Practical Equipment Cord and Link Lengths in Data Centre Applications  
([forbes 3bq 01 1113.pdf](#))

**Abstract:** This examines lengths of links and cord usage from a practical perspective which could assist with PHY modeling and PHY specifications.

**Presenter:** Harry Forbes, Nexans

**Title:** 40GBASE-T Channel Models ([diminico 3bq 02a 1113.pdf](#))

**Abstract:** Considerations for the insertion loss and noise budgets based on channel component measurements received e.g., PCB, Mag/Jack, Cabling...

**Presenter:** Chris DiMinico, MC Communications, Panduit

**Title:** An Update on ISO/IEC 11801-99-1 40GBASE-T Cabling Guidelines  
([flatman 3bq 01 1113.pdf](#))

**Abstract:** This presentation will provide a report on developments in 40GBASE-T cabling from the October 2013 meeting of ISO/IEC SC25 WG3. It will also compare Class I and Class II with the current definition of TIA Cat 8 cabling.

**Presenter:** Alan Flatman, LAN Technologies, Independent

**Discussion:** During discussion the presenter (also the liaison officer to ISO/IEC SC25 WG3) clarified that the presentation represented his personal views and was not an official liaison report.

**BREAK AT 12:27 PM AND RECONVENED AT 1:30 PM.**

Following the break, the group was joined by the members of the 4 Pair Power over Ethernet Study Group to hear the following presentation of mutual interest:

**Title:** TIA-162-A Telecommunications Cabling Guidelines for Wireless Access Points ([larsen\\_3bq\\_01\\_1113.pdf](#))

**Abstract:** This presentation provided an overview of work in TIA on cabling standards for wireless access points as a potentially important 40GBASE-T application

**Presenter:** Wayne Larsen, Commscope

**Title:** Limit Line Scaling ([larsen\\_3bq\\_02a\\_1113.pdf](#))

**Abstract:** This presentation provided a methodology and results for scaling measurement data to worst-case limits for PHY analysis.

**Presenter:** Wayne Larsen, Commscope

Bill Woodruff took over secretary at 2:23 as George Zimmerman relinquished the secretary role to make his presentation.

The chair commented that channel models have been updated on the web site. George Zimmerman asked for permission to use a version of this presentation which contains edited content, and there were no objections.

**Title:** Impact of length-scaling on worst-case NEXT for 30m channels ([zimmerman\\_3bq\\_01a\\_1113.pdf](#))

**Abstract:** Component-level limits for NEXT are used to construct worst-case NEXT models for 30m channels, length scaled to represent long channels. Differences between these limits, designed for worst-case long channel topologies, and the overall worst-case channel limits adopted by cabling standards bodies will be discussed.

**Presenter:** George Zimmerman, CME Consulting / Commscope & Aquantia

At 2:47 George Zimmerman completed his presentation and reassumed responsibilities as secretary.

**Title:** Link Segment Limit Line Scaling ([diminico\\_3bq\\_01\\_1113.pdf](#))

**Abstract:** Considerations for scaling measurements to limit lines.

**Presenter:** Chris DiMinico, MC Communications, Panduit

**Co-Author:** Paul Kish, Belden

**BREAK AT 3:18 PM AND RECONVENED AT 3:40 PM.**

**Title:** Time Domain Analysis of Cable Measurement Scaling  
([grimwood\\_3bq\\_02\\_1113.pdf](#))

**Abstract:** The time domain channel responses for raw and scaled cable measurements are compared.

**Presenter:** Mike Grimwood, Broadcom

**Title:** PHY Channel Model Updates ([grimwood\\_3bq\\_01\\_1113.pdf](#))

**Abstract:** The impact of the PHY Channel model on estimated PHY analog power is revisited based on the latest contributions.

**Presenter:** Mike Grimwood, Broadcom

Having concluded the presentations for the meeting, the Chair then moved to discussion, motions and (additional) straw polls.

### **DISCUSSION, MOTIONS & STRAW POLLS**

The group discussed whether to send a liaison to the ISO/IEC JTC1 SC25 WG3 requesting that they extend the frequencies to which they have specified beyond the current 1.6GHz. Discussion suggested that the group has not yet selected a channel specification, and therefore was not yet ready to formally communicate a frequency to another group.

Straw Poll #1:

To proceed forward, we should

- A) Form an ad hoc to develop a PHY strawman
- B) Encourage individuals develop proposals
- C) Do nothing (need more channel models)

A: 20

B: 1

C: 0

The Chair then chartered a PHY proposal ad hoc, chaired by George Zimmerman, with the following charter/objectives:

- Identify elements necessary to form a baseline proposal
  - o Signaling bandwidth (bounds)
  - o Modulation, EQ, coding, etc.

The chair then discussed future meetings.

### **OTHER ADMINISTRATIVE BUSINESS**

#### **Future Meetings Straw Poll**

Straw Poll #2:

Will you attend the January 2014 interim meeting in Indian Wells, CA

YES! - 17  
Maybe - 5  
NO! - 1

Straw Poll #3:

Will you attend the March 16-21 2014 plenary meeting in Beijing, China

YES! - 9  
Maybe - 10  
NO! – 2

### **Adjournment**

**Motion #3: To adjourn the meeting.**

**M: Paul Vanderlaan      S: Shadi AbuGhazaleh**

**MOTION PASSES by voice without opposition**

**The Meeting was adjourned at 5:24 PM, Tuesday, November 12, 2013.**

Appendix A: Attendees at the IEEE P802.3bq 40G BASE-T Task Force Meeting, November 12, 2013

				Total attended:	31
<b>IEEE P802.3bq 40GBASE-T Task Force November 2013</b>					11/12/2013
Last Name	First Name	Employer	Affiliation	Tuesday	
Abughazaleh	Shadi	Hubbell	Hubbell	x	
Belopolsky	Yakov	Bel Stewart	Bel Stewart	x	
Bliss	Will	Broadcom	Broadcom	x	
Buckmeier	Brian	Befuse Inc	Befuse Inc	x	
Chalupsky	David	Intel	Intel	x	
Cibula	Pete	Intel	Intel	x	
Dinh	Thuyen	Pulse Electronics	Pulse Electronics	x	
Flatman	Alan	LAN Technologies	LAN Technologies	x	
Forbes	Harry	Nexans	Nexans	x	
Grimwood	Michael	Broadcom	Broadcom	x	
Hamidy	Farid	Pulse	Pulse	x	
Hammond	Bernard	TE Connectivity	TE Connectivity	x	
Jimenez	Andrew	Anixter Inc.	Anixter Inc.	x	
Kim	Frank	Leviton	Leviton	x	
Lackner	Hans	QoSCom Gmbh	QoSCom Gmbh	x	
Larsen	Wayne	Commscope	Commscope	x	
LeVan-Etter	Loni	3M	3M	x	
Lipke	Dean	Leviton	Leviton	x	
Love	Grayling	Leviton	Leviton	x	
Maguire	Valerie	Siemon	Siemon, TIA	x	
Nordin	Ron	Panduit Corp.	Panduit Corp.	x	
Nouri	Ahmad	Broadcom	Broadcom	x	
Renteria	Victor	Belfuse Inc	Belfuse Inc	x	
Seefmed	Jeff	Leviton	Leviton	x	
Valle	Stefano	ST Microelectronics	ST Microelectronics	x	
Vanderlaan	Paul	Berk-Tek LLC	Berk-Tek LLC	x	
Wagner	Bob	Panduit Corp.	Panduit Corp.	x	
Woodruff	Bill	Broadcom	Broadcom	x	
Wu	Peter	Marvell	Marvell	x	
Yu	CC	Mediatek	Mediatek	x	
Zimmerman	George	CME	Commscope, Aquantia	x	