

Unconfirmed Meeting Minutes: IEEE P802.3bq 40GBASE-T Task Force  
January 23, 2014  
Indian Wells, CA, USA

Prepared by George Zimmerman

IEEE P802.3bq 40GBASE-T Task Force meeting convened at 09:00 AM, Thursday, January 23, 2014 by David Chalupsky, 802.3bq Task Force Chair.

Attendance is listed in Appendix A

**ADMINISTRATIVE MATTERS**

**Presentation:** [agenda\\_3bq\\_01\\_0114.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\_0114.pdf and reviewed the schedule of presentations for the meeting.

The Chair noted there was a late submission from Paul Langner of Aquantia and asked the group if there was objection to adding it to the agenda following the presentation zimmerman\_3bqah\_01\_1213.pdf, and preceding the presentation zimmerman\_3bq\_02\_0114.pdf.

**Motion #1:** Approve the agenda as modified from [agenda\\_3bq\\_01\\_0114.pdf](#)

**M:** Paul Vanderlaan

**S:** Bob Wagner

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

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

[http://www.ieee802.org/3/bq/public/nov13/unconfirmed\\_minutes\\_3bq\\_1113.pdf](http://www.ieee802.org/3/bq/public/nov13/unconfirmed_minutes_3bq_1113.pdf))

**M:** Bob Wagner

**S:** Paul Vanderlaan

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

The Chair then resumed the review of presentation agenda\_3bq\_01\_0114.pdf:

- Mr. Chalupsky asked if anyone was attending from the press including those who would run a public blog on this meeting. (Scott Kipp reported that he writes a blog for Ethernet Alliance, and may write about the meeting, but would not write direct quotes)
- 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 09:33 am, Mr. Chalupsky showed slides 0 through 4 patent policy from [agenda 3bq 01 0114.pdf](#). Mr. Chalupsky read aloud slides 0 through 4. Mr. Chalupsky made the call for potentially essential patents at 09:37am, 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 noted that a draft of the ISO/IEC Draft Technical Report (ISO/IEC Draft Technical Report 11801-99-1) and a draft of the TIA Category 8 specification (Draft 0.9b of ANSI/TIA-568-C.2-1), both as of January 2014 were posted to the private area of the Task Force website.

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 0114.pdf](#))

**Abstract:** Report of activities of the 802.3bq channel modeling ad hoc since the November plenary meeting. The channel modeling ad hoc held 2 conference calls since the November plenary, and did not hold a planned January call, to accommodate the PHY Baseline Proposal ad hoc. The main activity reported was in expansion of models for the host PCB. In 2014, channel ad hoc meetings will be on Tuesdays, with the next meeting Tuesday February 4, 2014 at 8AM PST.

**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:** Some discussion of clarification

At 9:49AM, Mr. Woodruff assumed secretary role so Mr. Zimmerman could present.

**Title:** PHY Baseline Proposal Ad Hoc Report ([zimmerman 3bq 01 0114.pdf](#))

- Abstract:** Two meetings of the PHY Baseline Proposal Ad Hoc were held since its chartering at the November meeting. In those two meetings, contributions were heard with a strawman proposal, based on 10GBASE-T, and showing good margin and use of the existing channel models. Additional work was identified in DSP / implementation-specific power analysis, and in measuring the background noise at the receiver input on host systems. The noise measurement was handed off to the channel modeling ad hoc.
- Presenter:** George Zimmerman, CME Consulting / Aquantia & Commscope, Chair 802.3bq PHY Baseline Proposal ad hoc
- Discussion:** Presenter expressed need for additional presentations on baseline, and on power estimates. Reviewed the relative “complexity” of the 40GBASE-T challenge on the defined channel vs. 10GBASE-T.

At 10:04AM, Mr. Zimmerman re-assumed secretary role.

- Title:** Update on ISO/IEC 11801-99-1 40GBASE-T Cabling Guidelines ([flatman\\_3bq\\_01\\_0114.pdf](#))
- Abstract:** The presenter discussed the status of the ISO/IEC 11801-99-1 draft technical report (DTR), including details of Class I and Class II cabling and comparisons to TIA Category 8 work. Significant harmonization was noted. The presenter invited IEEE experts to submit comments through their national committees and noted ISO/IEC 11801-99-1 DTR national review ends 17 Mar 2014. The next step will be to specify next generation cabling in ISO/IEC 11801 Edition 3.
- Presenter:** Alan Flatman, LAN Technologies
- Discussion:** Discussion noted that the connector insertion loss equation on slide 7 for Category 8 had a factor (B) in it which appeared to be from a prior draft of the TIA specification. IEEE members are directed to submit comments to their national bodies. The presenter offered to take comments from members that could not get through their national bodies. Additionally, the secretary offered that the USTAG administrator (for US members to submit comments) could receive comments at [FOtieno@tiaonline.org](mailto:FOtieno@tiaonline.org).

The Chair then asked the group to entertain a brief verbal presentation from Wayne Larsen, who broke from attending another meeting, to discuss the new TIA Category 8 draft (9b) which was posted to the private website. Mr. Larsen described the primary changes in the Category 8 specification, and answered some brief questions related to the insertion loss noted in the discussion of Mr. Flatman’s presentation.

#### **BREAK AT 10:27 AM AND RECONVENED AT 10:51 AM.**

- Title:** 40GBASE-T link segment and PHY channel: Modelling and measurements ([franck\\_3bq\\_01a\\_0114.pdf](#))
- Abstract:** The contribution deals with the modelling and measurement of long and short ISO/IEC Channel I and Channel II (part 1). In addition the

contribution shows the impact of PCB and MDI on the PHY Channel (part 2).

**Presenter:** Alexander Franck, LEONI Kerpen

**Discussion:** The discussion highlighted that the slide labeled “no magnetics” actually was “no MDI (including magnetics)”. A requester noted that presentations needed to be explicit on what is included in the model.

The Chair asked to skip the next presentation on the agenda due to a conflict the presenter had in another Task Force, coming back to it later.

At 11:25, Mr. Woodruff assumed secretary role so Mr. Zimmerman could present.

**Title:** Strawman for PHY Baseline Proposal ([zimmerman 3bqah 01 1213.pdf](#))

**Abstract:** A strawman proposal for 40GBASE-T is presented based on 10GBASE-T running at 4X the symbol rate. The strawman is shown to sit in the sweet spot of the analog power analysis previously presented to the group by Mike Grimwood, and would provide well-known technology to implement and make power trades from. Possible improvements on 10GBASE-T are identified, and further work focusing on implementation-specific DSP power is suggested. Alternative proposals are also solicited to compare to the strawman.

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

**Discussion:** Questions of clarification on the strawman were asked and answered. Contributions on alternatives, modifications and power were requested.

**Title:** 40GBASE-T Power Scaling ([langner 3bq 01 0114.pdf](#))

**Abstract:** Power scaling analysis for a combined 10G/40GBASE-T PHY is presented based on the strawman of 10GBASE-T signaling running at 4X the signaling rate. Power in 14nm processes is estimated between 1.6x and 2.1x 10GBASE-T power at 28nm.

**Author:** Paul Langner, Aquantia (not present)

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

**Discussion:** Questions of clarification were asked and answered on the analysis.

**Title:** Importance and Issues in Background Noise Measurement  
([zimmerman 3bq 02 0114.pdf](#))

**Abstract:** A strawman proposal for 40GBASE-T is presented based on 10GBASE-T running at 4X the symbol rate. The strawman is shown to sit in the sweet spot of the analog power analysis previously presented to the group by Mike Grimwood, and would provide well-known technology to implement and make power trades from. Possible improvements on 10GBASE-T are identified, and further work focusing on implementation-specific DSP power is suggested. Alternative proposals are also solicited to compare to the strawman.

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

**Discussion:** Mr. Cibula, co-Chair of the Channel Modeling ad hoc reiterated that contributions on measurement of background noise and measurement methodology would be appreciated.

At 12:18PM, Mr. Zimmerman re-assumed secretary role.

**Title:** 40GBASE-T Channel SNR 8in-3m-24m-3m-8in  
([diminico 3bq 01 0114.pdf](#))

**Abstract:** The presenter considers concatenated channel models presented to the 802.3bq Channel Modeling ad hoc and determines Salz SNR over the link, showing a range of baud rates over which adequate Salz SNR can be obtained with cancellation of internal cabling impairments. The presenter noted that background noise measurements are necessary to optimize the configurations for power and performance.

**Presenter:** Chris Di Minico, MC Communications/Panduit

**Discussion:** No questions were offered.

This concluded the pre-submitted presentations, and the Chair recessed for lunch and ad hoc meetings during the break.

The Channel Modeling Ad Hoc Chair announced a meeting at 2PM, going directly to a PHY Baseline Proposal Ad Hoc meeting beginning at either 3PM or directly after the Channel Modeling ad hoc meeting, whichever was later.

## **BREAK AT 12:05 PM AND RECONVENED AT 4 PM.**

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

Having concluded the presentations for the meeting, the Chair then moved to discussion, motions and (additional) straw polls, of which there were none.

### **OTHER ADMINISTRATIVE BUSINESS**

The Chair then discussed future meetings.

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

Straw Poll #1:

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

YES! - 11

Maybe - 6

NO! – 7

(26 in the room at the time)

#### **Adjournment**

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

**M: Chris Di Minico S: Ron Nordin**

**MOTION PASSES by voice without opposition**

**The Meeting was adjourned at 4:16 PM, Thursday, January 23, 2014.**

*Appendix A: Attendees at the IEEE P802.3bq 40G BASE-T Task Force Meeting,  
January 23, 2014*

			attended:	33
<b>IEEE P802.3bq 40GBASE-T Task Force January 2014</b>				<b>1/23/2014</b>
<b>Last Name</b>	<b>First Name</b>	<b>Employer</b>	<b>Affiliation</b>	<b>Thursday</b>
Abughazaleh	Shadi	Hubbell	Hubbell	x
An	Na	FIT	FIT	x
Bliss	Will	Broadcom	Broadcom	x
Booth	Brad	Microsoft	Microsoft	x
Brillart	Theo	Fluke Electronics	Fluke Electronics	x
Chalupsky	David	Intel	Intel	x
Chen	David	NSN	NSN	x
Cibula	Pete	Intel	Intel	x
DiMinico	Christopher	MC Communications	Panduit	x
Dinh	Thuyen	Pulse Electronics	Pulse Electronics	x
Donahue	Curtis	UNH - IOL	UNH - IOL	x
Engels	Yvan	Leoni	Leoni	x
Flatman	Alan	LAN Technologies	LAN Technologies	x
Franck	Alexander	Leoni	Leoni	x
Hamidy	Farid	Pulse	Pulse	x
Hammond	Bernard	TE Connectivity	TE Connectivity	x
Jimenez	Andrew	Anixter Inc.	Anixter Inc.	x
Kipp	Scott	Brocade	Brocade	x
Lo	William	Marvell	Marvell	x
Maguire	Valerie	Siemon	Siemon, TIA	x
Nordin	Ron	Panduit Corp.	Panduit Corp.	x
Renteria	Victor	Belfuse Inc	Belfuse Inc	x
Salunke	Vineet	Cisco Systems	Cisco Systems	x
Souvignier	Tom	Broadcom	Broadcom	x
Sparrowhawk	Bryan	Leviton	Leviton	x
Takatori	Hiroshi	Huawei	Huawei	x
Vaden	Sterling	Optical Cable Corp.	Optical Cable Corp.	x
Vanderlaan	Paul	Berk-Tek LLC	Berk-Tek LLC	x
Vareljian	Albert	Independent	Independent	x
Wagner	Bob	Panduit Corp.	Panduit Corp.	x
Woodruff	Bill	Broadcom	Broadcom	x
Wu	Peter	Marvell	Marvell	x
Zimmerman	George	CME	Commscope, Aquantia	x