Approved Minutes
IEEE 802.3 Next Generation BASE-T Study Group Interim Meeting
September 24-25, 2012
Genève, Switzerland

Prepared by George Zimmerman

IEEE 802.3 Next Generation BASE-T Interim meeting convened at 08:35, Monday, September 24, 2012 by David Law, 802.3 Working Group chair

Attendance is listed in Appendix A

Administrative Matters

Mr. Law appointed George Zimmerman as recording secretary for this session

Mr. Law explained that the Working Group chair appoints the study group chair, and the study group would confirm the appointment. Mr. Law then reminded the group that he had announced his intention to appoint Bill Woodruff Study Group chair at the July Plenary, and he then appointed the Bill Woodruff Study Group chair.
As Mr. Woodruff was unable to make the meeting due to a family illness, Mr. Law further indicated that he would delegate the meeting chair to Dave Chalupsky, following the confirmation process,
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Motion #1:   To confirm Mr. Woodruff as Study Group Chair
M: John D'Ambrosia   S: Alan Flatman
Y: 32 , N: 0 , A: 0
MOTION PASSES (>= 75%)

Mr. Law turned the meeting over to acting chair David Chalupsky
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Presentation:	agenda_01a_0912.pdf
Presenter: David Chalupsky, acting chair.
The acting chair called for introductions and affiliations.
The acting chair reviewed the agenda. Mr. Chalupsky turned to presentation agenda_01a_0912.pdf and reviewed the schedule of presentations for the 2 day meeting---

Motion #2:   to approve the agenda as shown in agenda_01a_0912.pdf

M: Brad Booth S: Valerie Maguire
Approved by voice vote without opposition (Procedural > 50%)

The acting chair then resumed the review of presentation agenda_01a_0912.pdf.

- Mr. Chalupsky asked if anyone was attending from the press including those who would run a public blog on this meeting. None responded.
- Mr. Chalupsky noted that there should be no recording or photography without permission.

IEEE Patent Policy, Mr. Chalupsky read aloud the patent policy for study groups from agenda_01a_0912.pdf, page entitled "Guidelines for IEEE-SA Meetings" (08:54am).

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.

LIAISON REPORT – ISO/IEC JTC1/SC25 WG3

Mr. Law indicated that 802.3 has received a liaison from ISO/IEC JTC1/SC25 WG3 which he intended to forward to the NGBASE-T Study Group.

Mr. Flatman (liaison between ISO/IEC JTC1/SC25/WG3 and IEEE 802.3) presented a liaison from ISO/IEC JTC 1/SC25/WG3: "Liaison letter from ISO/IEC JETC1/SC 25 WG3 to IEEE 802.3 regarding a technical report for 40 Gbit/s cabling systems". (25N2052_Liaison_to_IEEE802_3.pdf) – Mr. Flatman also introduced Albrech Oehler, convener of ISO/IEC JTC/1 SC/25 WG/3.

Mr. Chalupsky appointed an ad hoc, to be chaired by Mr. Flatman, to prepare a response for approval at the ending 802.3 plenary meeting in November.

PRESENTATIONS

The acting chair then moved to the presentations for the meeting.

Presentation #1:   law_01_0912.pdf "Major PAR form questions".
Presenter: David Law, HP (Chair IEEE 802.3 WG)
Discussion: Questions were asked and answered regarding the place in the PAR form for applications needs.

Presentation #2:   dove_02_0912.pdf "Project Objectives"
Presenter: Dan Dove, Applied Micro
Discussion: Questions were asked and answered regarding the example formats used in prior project objectives.

Presentation #3:   dambrosia_01_0912.pdf "Review of the 5 Criteria"
Presenter: John D'Ambrosia, Dell
Discussion: Mr. D'Ambrosia noted that there was a recent update to the 5 criteria which might not be reflected in his presentation, he promised to check and update. Mr.

D'Ambrosia will be posting an update to his presentation. Questions were asked and answered clarifying the 5 criteria aspects.

Break at 10:00, meeting to resume at 10:30, and it reconvened at 10:34

Presentation #4:   flatman_01_0912.pdf - "ISO/IEC JTC1 SC25 WG3 – an overview"
Presenter: Alan Flatman, LAN Technologies (ISO/IEC JTC1/SC25/WG3 Liaison)
Discussion: Mr. Flatman answered some questions of clarification and deferred Q&A to a joint session with the next presenter.

Presentation #5:   Maguire_01_0912.pdf – "TIA TR-42.7 Next Generation Cabling Project Update"
Presenter: Valerie Maguire, The Siemon Company (Incoming TIA TR42 Liaison)
Discussion: Ms. Maguire & Mr. Flatman held a joint question and answer session. Questions were asked and answered regarding various aspects of TIA and ISO specifications and their relative working relationship.

Presentation #6:   larsen_01b_0912.pdf, "Cabling Parameters".
Presenter: Wayne Larsen, Commscope
Discussion: Questions were asked and answered regarding patch cords, and regarding balance specifications or other additional specifications that IEEE might need to consider.

Presentation #7:   larsen_02_0912.pdf, "Length Distribution"
Presenter: Wayne Larsen
Discussion: Questions were asked to clarify the data. Discussion focused on additional data available in http://www.ieee802.org/3/100GCU/public/mar11/flatman_01_0311.pdf and on projecting future reach distributions on cabling based on trends, and general discussion was supporting a shorter than 100m reach.

The meeting broke for lunch at 12:30 and reconvened at 14:00

Presentation #8:   Vanderlaan_01_0912.pdf, "Preliminary Study: Modeled 40G Reach on category cabling".
Presenter: Paul Vanderlaan, Nexans
Discussion: Questions of clarification on the data and modeling methodology were asked and answered. A request for relative cost of different channel solutions was

made for future meetings, and concern over the study group entering into the relative costs of products generally available in the market was made.

Presentation #9:   Nordin_01a_0912.pdf, "Cabling Challenges and Opportunities" (note – this is an updated file posted during the meeting – small update to figure on slide 3)
Presenter: Ron Nordin, Panduit
Discussion: There were no questions.

The meeting then broke at 14:40 for an afternoon break and reconvened at 15:00.

Mr. Chalupsky asked if there was any objection to continuing into the presentations previously planned for tomorrow, to better utilize the time. Hearing no objection, he sent a notice to the reflector to alert any attendees not present that he planned to continue into the next day's planned presentations following the next presentation.

Presentation #10:   diminico_01_0912.pdf, "NGBASE-T Link Segments"
Presenter: Chris DiMinico, MC Communications
Discussion: There were no questions.

Presentation #11:   Chalupsky_01_0912.pdf, "Server NIC Market Update from CFI"
Presenter: David Chalupsky, Intel
Discussion: There was some discussion regarding desired timing for the standard, generally indicating that sooner would be better than later.

Presentation #12:   zimmerman_02_0912.pdf, "Considerations for Objectives in Next-Gen BASE-T"
Presenter: George Zimmerman, CME Consulting
Discussion: There was some discussion regarding latency as an objective, and regarding why Energy Efficient Ethernet might be optional.

Presentation #13:   booth_02a_0912.pdf, "NGBASE-T Considerations: Reach and Migration Path"
Presenter: Brad Booth, Dell
Discussion: There was some discussion regarding the tradeoffs between new deployments (e.g., PODS), and using existing cabling. There was some discussion regarding the backwards compatibility aspects of shorter than 100m reach for NG BASE-T.

Presentation #14:   dove_01b_0912.pdf, "NGBASE-Tsr A Scalable BASE-T Approach"
Presenter: Dan Dove, Applied Micro
Discussion: There was discussion about whether this approach would split the market and whether we might need multiple PARs and 5 criteria analyses for within row and within rack reaches. There was also discussion about the rates and lengths associated with leaf-spine architectures vs. traditional data centers. There was also much discussion about how well a spec-designed (e.g., 10GBASE-T 100m PHY at 30m) PHY can scale cable length vs. a special-purpose PHY designed for short reach, as well as the possible impacts of new coding for 40G at shorter reach.

Presentation #15:   dambrosia_02b_0912.pdf, "Thoughts on Rate Objective"
Presenter: John D'Ambrosia
Discussion: There was discussion about market timing, and how that relates to market position of BASE-T versus alternatives.

The meeting recessed at 18:18 to reconvene the following day at 9AM

The meeting resumed at 09:05 25 September, 2012

Review of agenda_01a_0912.pdf
Acting Chair David Chalupsky reminded participants that no recording nor public reporting was allowed without permission. He asked if there were any reporters present – none responded.

Introductions, Mr. Chalupsky then welcomed the group and asked for introductions.

The acting chair then reviewed agenda_01a_0912.pdf with the group.

IEEE Patent Policy Mr. Chalupsky read the IEEE patent policy for study groups aloud, as detailed on the "Guidelines for IEEE-SA Meetings" page of agenda_01a_0912.pdf at 09:15am.

Following a review of the remaining agenda, presentations resumed.

Presentation #16:   Bennett_01_0912.pdf
Presenter: Mike Bennett, LBNL
Discussion: Discussion centered on whether the 802.3az model would be appropriate for NGBASE-T. Consensus was that the mode of energy efficiency would need to be resolved in task force.

Presentation #17:   bliss_01a_0912.pdf
Presenter: Will Bliss, Broadcom
Discussion: There was discussion on several of the technical points of this presentation. Questions were asked and answered, and further directions to take PHY modeling were discussed.

This concluded the scheduled technical presentations, with some presentations remaining for PAR documentation and setting early objectives.

The acting chair then entertained an unscheduled presentation, contributed late. He asked the group if there were any objections to hearing the presentation, and heard none.

Presentation #18:   Thompson_01_0912.pdf
Presenter: Geoff Thompson, GraCaSi (Independent)
Discussion: The presentation and discussion supported the inclusion of a "power vs. reach" or "power & cost vs. reach" graph to counterweigh the "application space coverage vs. reach" analysis.

The group then took a break at 11:10, and reconvened at 11:30.

Administrative: As Mr. Zimmerman was presenting the following contribution, Mr. Chalupsky, the acting Chair, asked Mr. Diab to temporarily assume recording the minutes, and he agreed.

Presentation #19:   zimmerman_01a_0912.pdf, "Proposed objectives for Next-Gen BASE-T"
(note the "01a" version of the presentation was a modification of the previously posted "01" presentation, modified only to include additional supporters, the posted zimmerman_01a_0912.pdf includes modifications introduced during discussion on the floor (see below)).
Presenter: George Zimmerman, CME Consulting / Commscope
Discussion: During the discussion, two of the proposed objectives were dropped as requiring either some additional wordsmithing or consensus building, resulting in a new slide, slide 4 of zimmerman_01a_0912.pdf.

Motion #3: to adopt the objectives as modified on slide 4 of zimmerman_1a_0912.pdf.
M: Wael Diab   S: Wayne Larsen
Y: 35 N: 1   A: 2 Technical (>= 75%)
MOTION PASSES

<u>Amendment offered during debate</u>
During debate of the above motion, an amendment was offered by Mr. Thompson to delete the word "optional" on the Energy Efficient Ethernet objective and/or replace it with "configurable". The mover and seconder did not consider it friendly. Mr. Thompson offered a motion to amend which died for lack of seconder.

Recessed at 12.17 and reconvened at 14:05

Administrative: Mr. Zimmerman resumed taking the minutes.

<u>Presentation #20:   diab_01a_0912.pdf (revised from diab_01_0912.pdf during presentation) "Filling in the PAR"</u>
Presenter: Wael Diab, Broadcom
Discussion: During the discussion, there was an edit to PAR item 5.5 to clarify that "interconnects" meant connections between pieces of equipment. At that point,

<u>Motion#4:</u> Move to adopt the responses to the PAR as revised in diab_01a_0912.pdf
M: Wael Diab   S: Mike Bennett
Y: 34 N: 0   A: 1 Technical (>= 75%)

MOTION PASSES

Mr. Chalupsky then passed the acting chair to Mr. Diab so that he could make the following presentation:

<u>Presentation #21:   Chalupsky_01_0912.pdf "5C: Initial Draft"</u>
Presenter: David Chalupsky, Intel.
Discussion: Mr. Chalupsky presented an initial draft on the 5 criteria. Some discussion followed, including whether we could vote on 5 criteria text prior to adopting objectives. Mr. Chalupsky offered that the 5 criteria draft was being offered to socialize the 5 criteria and that these might be a guide on what we might want to show. Mr. Chalupsky invited those interested to work offline with him in refining the text.

Mr. Diab then returned the chair to Mr. Chalupsky

OBJECTIVES AND PAR DRAFT
Mr. Chalupsky called Mr. Zimmerman back to continue progress and call straw polls on the objectives.

<u>Presentation:</u>　　　Objectives discussion, straw polls, and motions, see below
(note, the content projected is captured below in the minutes)

Presenter:　　George Zimmerman, CME Consulting
Discussion:　Presenter revisited the objectives not adopted during the discussion of
zimmerman_01a.pdf, with straw polls to reach consensus on rewording.

Straw polls:

PROPOSED OBJECTIVE TEXT	Y	N	A
Support local area networks using point-to-point links over structured cabling topologies, including directly connected cabling link segments.	27	2	2
Not preclude meeting FCC and CISPR EMC requirements	22	1	5

Based on the straw polls, the following two motions were made:

<u>Motion #5:</u> **To adopt the objective: Support local area networks using point-to-point links over structured cabling topologies, including directly connected link segments**
M: W. Larsen　　S: R. Nordin
Y: 31　N: 1　A: 1　(Tech >= 75%)
MOTION PASSES

<u>Motion #6:</u> **To adopt as an objective: Do not preclude meeting FCC and CISPR EMC requirements**
M: G. Zimmerman　S: R. Nordin
Y: 26　N:1　A:5　(Tech >= 75%)
MOTION PASSES

<u>Additional Objective Motions:</u>
The acting chair then considered an additional motion regarding objectives, and the following motion was received by the chair:

<u>Motion #7:</u>　**The NGBASE-T Study Group adopt as an objective: Support a data rate of 40 Gb/s at the MAC/PLS Service Interface**
M: B. Booth S: W. Diab
Y: 34　N: 0　A: 0　(Tech >= 75%)
MOTION PASSES

Mr. Chalupsky then entertained a clarifying presentation and motion from Mr. Diab regarding the PAR wording.

Presentation #22:   diab_02_0912.pdf
Presenter: W. Diab, Broadcom
Discussion: No discussion

Motion #8: Move to adopt the response to PAR question 8.1 as captured in diab_02_0912.pdf
M: W. Diab   S: B. Booth
Y: 31 N: 0   A: 1   (Tech >=75%)
MOTION PASSES

OTHER ADMINISTRATIVE BUSINESS

Straw Poll on future meetings
The acting chair then asked for planned attendance at future study group meetings, as an aid to the 802 executive committee in planning
San Antonio Y: 28 N: 2   Maybe: 5
January: Y: 27 N: 0   Maybe: 6

Adjournment

Motion #9: To adjourn the meeting.
M: B. Booth S: G. Zimmerman
MOTION PASSES by voice without opposition

The Meeting was adjourned at 16:15 25-September 2012

Appendix A: Attendees at the IEEE 802.3 Next Generation BASE-T Study Group Interim Meeting, September 24-25, 2012

		# attended:	42	38
IEEE 802.3 Next Generation BASE-T Study Group, Sept 2012			**9/24/2012**	**9/25/2012**
Last Name	**First Name**	**Affiliation**	**Monday**	**Tuesday**
Barrass	Hugh	Cisco	x	
Bennett	Mike	LBNL	x	x
Bliss	Will	Broadcom	x	x
Booth	Brad	Dell	x	x
Brown	Kevin	Broadcom	x	x
Carlson	Steve	HSD	x	x
Chadha	Mandeep	Vitesse Semiconductors	x	x
Chalupsky	David	Intel	x	x
Chou	Joseph	Realtek	x	
Choudhury	G. Mabud	Commscope	x	x
Crepin	J. Francois	Akros Silicon	x	x
D'Ambrosia	John	Dell	x	
Diab	Wael	Broadcom	x	x
Dove	Dan	Applied Micro	x	x
El Bakoury	Hesham	Huawei		x
Flatman	Alan	LAN Technologies	x	x
Forbes	Harry	Nexans	x	x
Hajduczenia	Marek	ZTE		x
Hammond	Bernard	TE Connectivity	x	x
Harm	Cronie	Kandou Bus SA	x	
Huff	Lisa	Discerning Analytics	x	x
Lackner	Hans	QoSCom Gmbh	x	
Larsen	Wayne	Commscope	x	x
Laubach	Mark	Broadcom	x	
Law	David	HP	x	x
Lusted	Kent	Intel	x	
Maguire	Valerie	Siemon, TIA	x	x
Mei	Richard	Commscope	x	x
Nielsen	Allan	TE Connectivity	x	
Nordin	Ron	Panduit Corp.	x	x
Oehler	Albrecht	Reichlinger University	x	x
Pandya	Harshang	Psiber Data		x
Parnaby	Gavin	Marvell	x	x
Rossbach	Martin	Nexans	x	x
Saeki	Naoto	NEC		x

Saner	Martin	SNT Saner Netenektechnik	x	
Sparrowhawk	Bryan	Leviton	x	x
Tajima	Akio	NEC Corporation		x
Thaler	Pat	Broadcom	x	x
Thompson	Geoff	GraCaSI	x	x
Toyoda	Hidehiro	Hitachi	x	x
Tracy	Nathan	Tyco Electronics	x	x
Vaden	Sterling	Optical Cable Corp.	x	x
Valle	Stefano	ST Microelectronics	x	x
Vareljian	Albert	Independent	x	x
Wang	Xiaofeng	Qualcomm	x	x
Zimmerman	George	CME Consulting, Commscope	x	x