

IEEE 802.3ck 100Gb/s, 200Gb/s and 400Gb/s Electrical Interfaces Task Force Ad Hoc meeting – August 15, 2018

Prepared by Kent Lusted.

The proposed agenda for today:

- Approval of the Agenda
- Update on July 25 Ad Hoc Minutes
- IEEE Patent Policy reminder:
- IEEE Participation Requirements reminder
- Logistics for September interim meeting
- .3ck Ad Hoc –
 - Power Considerations for 400GAUI-4 – Brian Welch
 - 100GEL Package Aspects Update – Rich Mellitz/Liav BenArtsi
 - COM 2.41 100GEL Update – Rich Mellitz
 - System Vendor Concerns – Dave Ofelt/Jeff Maki/Gary Nicholl/Rob Stone
 - 112G Cabled Backplane Channel and PCB Design Impact Using 112G Ready Connectors – Rich Mellitz

Presentations posted at: <http://www.ieee802.org/3/ck/public/adhoc/index.html>

Meeting began at ~7:00 a.m. Pacific by Beth Kochuparambil, Task Force Chair.

Meeting began with the agenda presentation.

The chair reminded participants to indicate full names and employer/affiliation correctly for the meeting minutes. Beth reminded participants to mute lines when not speaking and reviewed the steps to unmute.

Showed the links to the 100 Gb/s, 200 Gb/s, and 400 Gb/s Electrical Interfaces P802.3ck Task Force ad hoc page and the email reflector.

Presented the proposed agenda and asked if there was objection as written. The agenda was modified. http://www.ieee802.org/3/ck/public/adhoc/aug15_18/agenda_180815a_3ck_adhoc.pdf. The modified agenda was approved by the ad hoc.

Chair noted that the minutes from the previous meeting were not posted to the ad hoc web page. Will seek approval for both minutes at the next Ad Hoc mtg.

Reminded participants of the IEEE patent policy. Chair asked if anyone was unfamiliar with the IEEE patent policy. No one responded.

Reminded participants of the IEEE Participation Requirements and showed the slide with the Participation requirements. Chair asked if anyone was unfamiliar with the IEEE Participation Requirements. No one responded.

Agenda Items

Task Force Update – Beth Kochuparambil

- The 3ck Task Force meets the week of September 10 in Spokane, WA. Meet on Wednesday and Thursday.
- Requests for presentations due Friday, August 31 AOE. Presentations due 5pm Pacific, Wednesday, September 5.
- Reviewed the current status of the Task Force.
- There is one more ad hoc meetings before September meeting: August 29, chaired by TF Vice Chair.

Presentation #1:

“Power Considerations for 400GAUI-4”, Brian Welch

See: http://www.ieee802.org/3/ck/public/adhoc/aug15_18/welch_3ck_adhoc_01a_081518.pdf

- Clarifying questions were asked and answered.
- Discussed the module thermal power limitations. The max number charts does not represent the worst case of each sub-component.

Presentation #2:

“100GEL Package Aspects Update”, Liav Ben-Artzi and Rich Mellitz

See: http://www.ieee802.org/3/ck/public/adhoc/aug15_18/mellitz_3ck_adhoc_03_081518.pdf

- Surface roughness uses flat bond technology.

Presentation #3:

“COM 2.41 with 100GEL Update”, Rich Mellitz

See: http://www.ieee802.org/3/ck/public/adhoc/aug15_18/mellitz_3ck_adhoc_01_081518.pdf

- Files found at
http://www.ieee802.org/3/ck/public/tools/tools/mellitz_3ck_adhoc_02_081518_COM2p41.zip

Presentation #4:

“System Vendor Concerns”, David Ofelt

See: http://www.ieee802.org/3/ck/public/adhoc/aug15_18/ofelt_3ck_adhoc_01_081518.pdf

- Clarifying questions were asked and answered.

Presentation #5:

“112G Cabled Backplane Channel and PCB Design Impact Using 112G Ready Connectors”, Rich Mellitz

See: http://www.ieee802.org/3/ck/public/adhoc/aug15_18/mellitz_3ck_adhoc_02_081518.pdf

- Clarifying questions were asked and answered.

Chair reminded participants to review the action items list. Next ad hoc is August 29.

Meeting ended at ~9:00 a.m. Pacific.

List of attendees (captured from Webex tool)

Name	Affiliation	Employed by
Adam Healey	Broadcom	Broadcom
Adee Ran	Intel	Intel
Alex Haser	Molex	Molex
Alex Levin	Microsoft	Microsoft
Ali Ghiasi	GhiasiQuantum LLC	GhiasiQuantum LLC
Andy Zambell	Amphenol	Amphenol
Arturo Pachon	TE Connectivity	TE Connectivity
Beth Kochuparambil	Cisco	Cisco
Bill Kirkland	Semtech	Semtech
Brian Holden	Kandou	Kandou
Brian Welch	Luxtera	Luxtera
Burrell Best	Samtec	Samtec
Dan Symes	Keysight	Keysight
Dave Lewis	Lumentum	Lumentum
David Malicoat	Senko & Aquantia	Malicoat Networking Solutions
David Ofelt	Juniper	Juniper
David Piehler	Dell EMC	Dell EMC
Dino Pozzebon	Microsemi	Microsemi
Gary Nicholl	Cisco	Cisco
Geoff Zhang	Xilinx	Xilinx
Greg LeCheminant	Keysight	Keysight Technologies
Greg McSorley	Amphenol	Amphenol
Hai-Feng Liu	Intel	Intel
Jane Lim	Cisco	Cisco
Jayen Desai	Intel	Intel
Jeff Philips	Teledyne	Teledyne
Jeffery Maki	Juniper	Juniper
Jeremy Stephens	Intel	Intel
John Calvin	Vital Technical marketing	Vital Technical marketing
John Ewen	Globalfoundries	Globalfoundries
Ken Jackson	Sumitomo	Sumitomo
KengHua Chuang	HPE	HPE
Kent Lusted	Intel	Intel
Kumaran Krishnasamy	Broadcom	Broadcom
Liav Ben-Artzi	Marvell	Marvell
Mark Kimber	Samtech	Samtech
Mark Nowell	Cisco	Cisco
Mau-Lin Wu	Mediatek	Mediatek
Mike Dudek	Cavium	Cavium
Nathan Tracy	TE Connectivity	TE Connectivity
Pete Anslow	Ciena	Ciena

Phil Sun	Credo	Credo
Piers Dawe	Mellanox	Mellanox
Pirooz Tooyserkani	Cisco	Cisco
Rajmohan Hegde	Broadcom	Broadcom
Rich Mellitz	Samtec	Samtec
Rick Rabinovich	Keysight	IXIA
Rita Horner	Synopsys	Synopsys
Rob Stone	Broadcom	Broadcom
Sam Kocsis	Amphenol	Amphenol
Scott Sommers	Molex	Molex
Shimon	Axalume	Axalume
Stas Litski	Intel	Intel
Steve Sekel	Keysight	Keysight
Steve Trowbridge	Nokia	Nokia
Thananya Baldwin	Ixia	Ixia
Toshiaki Sakai	Socionext	Socionext
Upen Kareti	Cisco	Cisco
Vittal Balasubramanian	Innovium	Innovium
Xinyuan Wang	Huawei	Huawei
Yasuo Hidaka	Independent	Independent
Yuchun(Louis) Lu	Huawei	Huawei
Zvi Rechtman	Mellanox	Mellanox
Adrian Butter	Global Foundries	Global Foundries
Akinori Hayakawa	Fujitsu Labs	Fujitsu Labs
Alexander Rysin	Mellanox	Mellanox
Amir Bar-Niv	Aquantia	Aquantia
Anadi Shukla	Cadence	Cadence
Andre Szczepanek	HSZ Consulting	HSZ Consulting
Arthur Marris	Cadence	Cadence
Ben Jones (Xilinx)	Xilinx	Xilinx
Bilal Ahmad	Huawei	Huawei
Bob Grow	RMG Consulting	RMG Consulting
Brad Booth	Microsoft	Microsoft
Brett McClellar	Marvell	Marvell
Bruce Champion	TE Connectivity	TE Connectivity
Carl Posthuma	Nokia	Nokia
Chengbin Wu	ZTE	ZTE
Chien-Ping Kao	Intel	Intel
Chris DiMinico	PHY-SI	PHY-SI
Clint Walker	Intel	Intel
Craig Carlson	Cavium	Cavium
Dale Murray	Lightcounting	Lightcounting
Dave Estes	Spirent	Spirent
Dave Hess	Corddata	Corddata
David Chalupsky	Intel	Intel

David Chen	Applied Optoelectronics	Applied Optoelectronics
David Katz	Phoenix Contact	Phoenix Contact
David Law	HPE	HPE
David Tetzlaff	Rockley Photonics	Rockley Photonics
Derek Cassidy	BT	BT
Ed Cady	Luxshare	Luxshare
Ed Frlan	Semtech	Semtech
Ed Nakamoto	Spirent	Spirent
Ed sayre	Samtech	Teraspeed
Erdem Matoglu	Amphenol	Amphenol
Eric Baden	Broadcom	Broadcom
Eric Baldwin	Broadcom	Broadcom
Femi Akinwale	Intel	Intel
Fernando DeBerardinis	eSilicon	eSilicon
Fernando Villarreal	Cisco	Cisco
Flavio Marques	Furukawa Electric	Furukawa Electric
Francois Baeaugard	Belden	Belden
Frank Chang	Inphi	Inphi
Frank Lambrecht	Gigamon	Gigamon
Geoff Thompson	GraCaSI S.A./Ind ADI, APL Group, Aquantia, BMW, Cisco Systems, Commscope	Independent CME phy consulting
George Zimmerman	QoSCom	QoSCom
Hans Lackner	Broadcom	Broadcom
Henry Chen	Fujitsu Optical Components	Fujitsu Optical Components
Hideki Isono	JAE	JAE
Hideki Kiuchi	Microsemi	Microsemi
Hormoz Djahanshahi	Intel	Intel
Howard Heck	Intel	Intel
Hsinho Wu	Huawei	Huawei
Huang Xi	Marvell	Marvell
Hui Wang	Inphi	Inphi
Ilya Lyubumirshky	HPE	HPE
Jacky Chang	Marvell	Marvell
Jacov Brener	Etopus	Etopus
James Fife	Fluke	Fluke
James Wititex	Amphenol	Amphenol
Jaw De Crest	UNH-IOL	UNH-IOL
Jeff Lapak	Broadcom	Broadcom
Jeff Slavick	Credo	Credo
Jeff Twombly	Ixia	Ixia
Jerry Pepper	Samtec	Samtec
jim nadolny		

John D'Ambrosia	FutureWei (Subsidiary of Huawei)	FutureWei (Subsidiary of Huawei)
John Mein	Dust Photonics	Dust Photonics
John Nolan	Qlogic	Qlogic
John Yurtin	Aptiv	Aptiv
Jon Lewis	Dell EMC	Dell EMC
	Foxconn Interconnect	Foxconn Interconnect
Jonathan Ingham	Technology	Technology
Jonathan King	Finisar	Finisar
JuneHee Lee	Samsung	Samsung
Kai Yang	Global Foundries	Global Foundries
Kapil Shrikhande	Innovium	Innovium
Karen Liu	Kaiam	Kaiam
KARTHIK GOPALAKRISHNAN	Inphi	Inphi
Kenneth Jackson (Sumitomo)	Sumitomo	Sumitomo
Kevin Zhang	IDT	IDT
Kohichi Tamura	Oclaro	Oclaro
Larry McMillan	Western Digital	Western Digital
Lavi Koch	Mellanox	Mellanox
Liyang Sun	Huawei	Huawei
Marco Mazzini	Cisco	Cisco
Marco Vital	sicoya	sicoya
Marco Vitali	Sicoya	Sicoya
Marek Hajouczenia	Charter Communications	Charter Communications
Margaret	Cadence	Cadence
Mark Gustlin	Xilinx	Xilinx
Martin Langhammer	Intel	Intel
Martin White	Cavium	Cavium
Masashi Shimanouchi	Intel	Intel
Matt Brown	Macom	Macom
Megha Shanbhag	TE Connectivity	TE Connectivity
Mike Engbretson	GRL	GRL
Mike Hardwood	HSZ Consulting	HSZ Consulting
Mike Howard	HSZ Consulting	HSZ Consulting
Mike Li	Intel	Intel
Mike Ressi	Hitachi Cable America	Hitachi Cable America
Nhat Nguyen	Rambus	Rambus
Paul Brooks	Viavi Solutions	Viavi Solutions
Paul Kolesar	CommScope	CommScope
Pavel Zivny	Tektronix	Tektronix
Peter Jones	Cisco	Cisco
Peter Stassar	Huawei	Huawei
Phong Pham	US Conec	US Conec
PV Sreekanta	Rowltel - India	Rowltel - India
Ralf-Peter Braun	Deutsche Telecom	Deutsche Telecom

Ramin Farjadrad	Aquantia	Aquantia
Rich Baca	Microsoft	Microsoft
Rick Pimpinella	Panduit	Panduit
Rob Callan	Global Foundries	Global Foundries
Robert Aekins	Legrand	Legrand
Robert Lingle	OFS Optics	OFS Optics
Roy Wang	Hewlett Packard Enterprise	Hewlett Packard Enterprise
Salvatore Rotolo	ST Microelectronics	ST Microelectronics
Scott Airwin	Mosys	Mosys
Scott Kipp	Broadcom	Broadcom
Scott Schube	Intel	Intel
Steffen Graber	Pepperl & Fuches	Pepperl & Fuches
Steve Baumgartner	Global Foundries	Global Foundries
Steve Gorshe	Microsemi	Microsemi
Takeshi Nishimura	Yamaichi Electronics, USA	Yamaichi Electronics, USA
Ted Sprague	Infinera	Infinera
TiDong Xu	ZTE	ZTE
Tim Pak	Luxshare	Luxshare
Tom Issenheth	Huawei	Issenhuth Consulting
Tom Palkert	Molex/Macom	Molex/Macom
Tomoo Takahara	Fujitsu Labs	Fujitsu Labs
Toshiyuki Moritake	JAE	JAE
Vipul Bhatt	Finisar	Finisar
Vivek Telang	Broadcom	Broadcom
Wendy Wu	Cadence	Cadence
Will Miller?	Wilder Tech	Wilder Tech
Xiang	Huawei	Huawei
Yan Zhuang	Huawei	Huawei
Yang Zhiwei	ZTE	ZTE
Yasuaki Kawatsu	Apresia Systems	Apresia Systems
Zhang Yuambin	ZTE	ZTE
Zhenyu Liu	Credo	Credo
Zuowei Shen	Google	Google