IEEE 802.3 Beyond 400 Gb/s Ethernet (B400G) Study Group, April 2021 Electronic Interim Series
Unapproved Meeting Minutes, Prepared by Tom Issenhuth, John D'Ambrosia

Meeting called to order at 10:02 am ET (all times ET), 01 Apr 2021

Meeting called to order by John D'Ambrosia, SG Chair.

Chair showed IMAT information and asked everyone to sign-in as meeting attendance would be taken from IMAT.

Presentation #1 **Agenda and General Information**
Presenter: John D'Ambrosia
URL: https://www.ieee802.org/3/B400G/public/21_04/agenda_b400g_210401.pdf

Chair asked if there were any objections to the agenda, there were none, and the agenda (Slide #2) was considered approved.

Minutes - https://www.ieee802.org/3/B400G/public/21_03/minutes_b400g_a_2103_unapproved.pdf

Chair asked if there were any other corrections, there were none.
Chair asked if there were any objections to approving the minutes. One correction was noted, the file name wang_b400g_01a_210301 was changed to wang_b400g_01b_210301. No further corrections were noted and, and the minutes were considered approved.

Chair noted that the information regarding the procedures had been sent out, and requested that individuals review the following IEEE SA policies prior to the interim meeting –

- IEEE SA Pre-PAR Patent Policy
- IEEE SA Participation Policy
- IEEE SA Copyright Policy

Chair showed the IEEE SA Pre-PAR Patent Policy slides.
Chair showed the IEEE SA Participation Policy slides.
Chair showed the IEEE SA Copyright Policy slides.

Chair asked if anyone needed to review the policies at that time – there were no requests to do so.

Presentation #2 **Agenda and General Information**
Presenter: John D'Ambrosia
URL: https://www.ieee802.org/3/B400G/public/21_04/motions_b400g_210401.pdf

Straw poll #1

I would support adopting the following objective:	Results
a) Support a MAC data rate of 800 Gb/s	13
b) Support a MAC data rate of 1.6 Tb/s	1
c) Support a MAC data rate of 800 Gb/s and 1.6 Tb/s	50
d) Need more information	17
e) Abstain	4

Straw poll #2

I would support adopting the following objective: • Support a MAC data rate of 800 Gb/s	Results
a) Yes	73
b) No	5
c) Need more information	4
d) Abstain	4

Straw poll #3

I would support adopting the following objective: • Support a MAC data rate of 1.6 Tb/s	Results
a) Yes	35
b) No	9
c) Need more information	41
d) Abstain	6

Motion #1

Motion	**Move to adopt the following objective:** • Support a MAC data rate of 800 Gb/s
M:	Matt Brown
S:	Kent Lusted
Technical (>=75%)	
All (y/n/a)	85 / 2 / 4
Results	Motion passes

Motion #2

Motion	**Move to adopt the following objectives**: • Support full-duplex operation only • Preserve the Ethernet frame format utilizing the Ethernet MAC • Preserve minimum and maximum FrameSize of current IEEE 802.3 standard
M:	Kent Lusted
S:	Jim Weaver
Technical (>=75%)	
All (y/n/a)	81 / 2 / 7
Results	Motion passes

Straw poll #4

For the following proposed objective in support of 800 Gb/s operation, I would support the following – • Support a BER of better than or equal to _____ at the MAC/PLS service interface (or the frame loss ratio equivalent)	Results
a) 10^{-13}	42
b) 10^{-14}	26
c) 10^{-15}	4
d) Better than 10^{-15}	2
e) Need more information	10
f) Abstain	7

Straw poll #5

For the following proposed objective in support of 1.6 Tb/s operation, I would support the following – • Support a BER of better than or equal to _____ at the MAC/PLS service interface (or the frame loss ratio equivalent)	Results
a) 10^{-13}	13
b) 10^{-14}	26
c) 10^{-15}	2
d) Better than 10^{-15}	0
e) Need more information	38
f) Abstain	6

Straw poll #6

I would support adopting the following: • Provide appropriate support for OTN	Results
a) Yes	49
b) No	10
c) Need more information	17
d) Abstain	14

Chair called a break at 12:11.

Meeting restarted at 12:16.

Motion #3

Motion	**Move to adopt the following objective:** • Provide appropriate support for OTN
M:	Steve Trowbridge
S:	Ted Sprague
Technical (>=75%)	
All (y/n/a)	37 / 23 / 12
Results	Motion Fails

Meeting recessed at 1:00pm

Meeting reconvened at 10:02 am ET (all times ET), 05 Apr 2021

Meeting called to order by John D'Ambrosia, SG Chair.

Chair showed IMAT information and asked everyone to sign-in as meeting attendance would be taken from IMAT.

Chair did a recap of the activities from the last session.

Chair noted that the information regarding the procedures had been sent out, and requested that individuals review the following IEEE SA policies prior to the interim meeting –

- IEEE SA Pre-PAR Patent Policy
- IEEE SA Participation Policy
- IEEE SA Copyright Policy

Chair asked if anyone needed to review the policies at that time – there were no requests to do so.

Chair noted that a series of straw polls targeting potential optical physical layer specifications had been prepared, based on presentations received to date. Chair noted that the strawpolls had been prepared on reach.

Chair noted that an updated motions and strawpolls presentation would be available as version "a ".

https://www.ieee802.org/3/B400G/public/21_04/agenda_b400g_a_210401.pdf

Chair asked if there were any objections to taking both MM straw polls at the same time and there were none.

Straw poll #7

I would support adopting the following objective: • Define a physical layer specification that supports 800 Gb/s operation over 8 pairs of MMF with lengths up to at least 50 m	Results
Yes	64
No	3
Need more information	12
Abstain	11

Straw poll #8

I would support adopting the following objective: • Define a physical layer specification that supports 800 Gb/s operation over 8 pairs of MMF with lengths up to at least 50 m	Results
Yes	59
No	6
Need more information	14
Abstain	11

Motion #4

Motion	**Move to adopt the following objectives:** • Define a physical layer specification that supports 800 Gb/s operation over 8 pairs of MMF with lengths up to at least 50 m • Define a physical layer specification that supports 800 Gb/s operation over 8 pairs of MMF with lengths up to at least 100 m
M:	Robert Lingle
S:	Ramana Murty
Technical (>=75%)	
All (y/n/a)	61 / 13 / 18
Results	Motion passes

Chair asked if there were any objections to taking all three SM straw polls at the same time and there were none.

Straw poll #9

I would support adopting the following objective: • Define a physical layer specification that supports 800 Gb/s operation over 8 pairs of SMF with lengths up to at least 500 m	Results
Yes	80
No	7
Need more information	0
Abstain	5

Straw poll #10

I would support adopting the following objective: • Define a physical layer specification that supports 800 Gb/s operation over 4 pairs of SMF with lengths up to at least 500 m	Results
Yes	79
No	0
Need more information	5
Abstain	8

Straw poll #11

I would support adopting the following objective: • Define a physical layer specification that supports 800 Gb/s operation over 4 pairs of SMF with lengths up to at least 2 km	Results
Yes	59
No	8
Need more information	14
Abstain	11

Chair noted that the complete text of the motion was not visible in the Zoom polling window but the full text was still visible in the presentation slide that was visible. en. Chair asked if there any concerns proceeding with the polling tool and there were none.

Motion #5

Motion	**Move to adopt the following objectives:** • Define a physical layer specification that supports 800 Gb/s operation over 8 pairs of SMF with lengths up to at least 500 m • Define a physical layer specification that supports 800 Gb/s operation over 4 pairs of SMF with lengths up to at least 500 m • Define a physical layer specification that supports 800 Gb/s operation over 4 pairs of SMF with lengths up to at least 2 km
M:	Brian Welch
S:	Ilya Lyubomirsky
Technical (>=75%)	
All (y/n/a)	76 / 8 / 6
Results	Motion passes

Straw poll #12

I would support adopting the following objective: • Define a physical layer specification that supports 800 Gb/s operation over 8 wavelengths over a single SMF in each direction with lengths up to at least 2 km	Results
Yes	48
No	13
Need more information	12
Abstain	9

Straw poll #13

I would support adopting the following objective: • Define a physical layer specification that supports 800 Gb/s operation over 4 wavelengths over a single SMF in each direction with lengths up to at least 2 km	Results
Yes	62
No	2
Need more information	11
Abstain	7

Chair called a break at 11:42

Meeting restarted at 11:50.

Motion #6

Motion	**Move to adopt the following objective:** • Define a physical layer specification that supports 800 Gb/s operation over 4 wavelengths over a single SMF in each direction with lengths up to at least 2 km
M:	Brian Welch
S:	Ilya Lyubomirsky
Technical (>=75%)	
All (y/n/a)	61 / 1 / 9
Results	Motion passes

Straw poll #14

I would support adopting the following objective: • Define a physical layer specification that supports 800 Gb/s operation over a SMF in each direction with lengths up to at least 4 km	Results
Yes	13
No	21
Need more information	28
Abstain	6

Straw poll #15

I would support adopting the following objective: • Define a physical layer specification that supports 800 Gb/s operation over a SMF in each direction with lengths up to at least 6 km	Results
Yes	26
No	8
Need more information	27
Abstain	7

Straw poll #16

I would support adopting the following objective: • Define a physical layer specification that supports 800 Gb/s operation over a SMF in each direction with lengths up to at least 10 km	Results
Yes	44
No	0
Need more information	12
Abstain	7

Straw poll #17

I would support adopting the following objective: • Define a physical layer specification that supports 800 Gb/s operation over a SMF in each direction with lengths up to at least 40 km	Results
Yes	42
No	0
Need more information	13
Abstain	8

Motion #7

Motion	**Move to adopt the following objectives:** • Define a physical layer specification that supports 800 Gb/s operation over a SMF in each direction with lengths up to at least 10 km • Define a physical layer specification that supports 800 Gb/s operation over a SMF in each direction with lengths up to at least 40 km
M:	Peter Stassar
S:	Ray Nering
Technical (>=75%)	
All (y/n/a)	44 / 9 / 14
Results	Motion passes

Straw poll # 18 (Chicago Rules)

I would support an objective(s) targeting the development of optional inter-sub layer physical instantiations of interfaces for 800 Gb/s Ethernet based on:	Results
a) 100 Gb/s per lane	45
b) 200 Gb/s per lane	44
c) Non-rate specific per lane	24
d) Need more information	8
e) Abstain	4

Chair reminded group of the deadline for presentation requests for the May session, and noted everyone should review the agenda deck for full details.

Chair adjourned the session at 1:04 pm, 05 Apr 2021.

Attendees Per IMAT

Name	Employer	Affiliation	4/1/2021	4/5/2021
Abbott, John	Corning Incorporated	Corning Incorporated	1	1
Baldwin, Thananya		Keysight Technologies	1	
Bechtolsheim, Andreas		Arista Networks Inc.		1
Bhatt, Vipul	II-VI Incorporated	II-VI Incorporated	1	
Bliss, Will	Broadcom Corporation	Broadcom Corporation	1	
Bois, Karl		TE Connectivity	1	1
Brown, Matthew	Huawei Technologies Canada	Huawei Technologies Canada		1
Bruckman, Leon	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd	1	1
Calvin, John	Keysight Technologies	Keysight Technologies	1	1
Chang, Yongmao	Inphi Corporation	Source Photonics	1	1
Chen, Chan	Applied Optoelectronics, Inc.	Applied Optoelectronics, Inc.	1	1
Cole, Christopher R	Finisar Corporation	Finisar Corporation	1	1
D'Ambrosia, John	Futurewei Technologies	Futurewei Technologies, U.S. Subsidiary of Huawei	1	1
Dawe, Piers J G	NVIDIA	Nvidia	1	
Ewen, John	Marvell	Marvell	1	1
Ferretti, Vincent	Corning Incorporated	Corning Incorporated	1	1
Geng, Limin	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd	1	
Ghiasi, Ali	Ghiasi Quantum LLC	Ghiasi Quantum LLC, Inphi	1	1
Gorshe, Steven Scott	Microchip Technology, Inc.	Microchip Technology, Inc.	1	
Gustlin, Mark	Cisco Systems, Inc.	Cisco Systems, Inc.	1	1
Harstead, Ed	Nokia	Nokia	1	
Haser, Alexandra	Molex Incorporated	Molex Incorporated	1	1
He, Xiang	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd	1	1
Healey, Adam	Broadcom Inc.	Broadcom Inc.	1	1
Heck, Howard	Intel Corporation	Intel Corporation	1	
Hidaka, Yasuo	Credo Semiconductor	Credo Semiconductor	1	1
HUANG, QINHUI		Huawei Technologies Co., Ltd	1	
Huber, Thomas	Nokia	Nokia	1	
Isono, Hideki	Fujitsu Optical Components Limited	Fujitsu Optical Components Limited	1	1
Issenhuth, Tom	Issenhuth Consulting, LLC	Huawei Technologies Co., Ltd		1
Jackson, Kenneth	Sumitomo Electric Device Innovations, USA	Sumitomo Electric Industries, LTD	1	1
Jimenez, Andrew	Anixter Inc.	Anixter Inc.	1	1
Johnson, John	Broadcom Corporation	Broadcom Corporation	1	1
Kabra, Lokesh	Synopsys, Inc.	Synopsys, Inc.	1	1
Kao, Chienping	Intel Corporation	Cornelis Networks	1	1
Kim, Inho	MaxLinear	MaxLinear	1	1

Kim, Kihong/Joshua	Hirose Electric (USA), Inc.	Hirose Electric (USA), Inc.		1
Kimber, Eric	Semtech Ltd	Semtech Ltd	1	1
Klempa, Michael	University of New Hampshire InterOperability Laboratory (UNH-IOL)	Amphenol Corporation		1
Kochuparambil, Elizabeth	Cisco Systems, Inc.	Cisco Systems, Inc.	1	1
Kocsis, Sam	Amphenol Corporation	Amphenol Corporation	1	1
Koleva, Vera		Finisar Corporation	1	
Kuschnerov, Maxim		Huawei Technologies Duesseldorf GmbH	1	1
Lam, Cedric		Google	1	
Le Cheminant, Greg	Keysight Technologies	Keysight Technologies		1
Levin, Itamar		Intel Corporation		1
Lewis, David	Lumentum Inc.	Lumentum Inc.	1	1
Lim, Jane	Cisco Systems, Inc.	Cisco Systems, Inc.	1	1
Lingle, Robert	OFS	OFS	1	
Liu, Karen	Lightwave Logic	Lightwave Logic	1	1
Lusted, Kent	Intel Corporation	Intel Corporation		1
Lyubomirsky, Ilya	Inphi Corporation	Inphi Corporation		1
Mak, Gary	Inphi Corporation	inphi	1	
Malicoat, David	Malicoat Networking Solutions	Malicoat Networking Solutions; SENKO Advanced Components	1	1
Maniloff, Eric	Ciena Corporation	Ciena Corporation	1	1
mi, guangcan	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd	1	
Milicevic, Mario	MaxLinear	MaxLinear	1	
Montreuil, Leo	Broadcom Corporation	Broadcom Corporation	1	1
Moorwood, Charles	Keysight Technologies	Keysight Technologies	1	1
Mu, Jianwei		Hisense	1	
Muller, Shimon	Axalume, Inc.	Axalume, Inc.	1	1
Murty, Ramana	Broadcom Inc.	Broadcom Corporation	1	1
Nering, Raymond	Cisco Systems, Inc.	Cisco Systems, Inc.	1	1
Nicholl, Shawn	Xilinx	Xilinx	1	1
Nowell, Mark	Cisco Systems, Inc.	Cisco Systems, Inc.		1
Ofelt, David	Juniper Networks, Inc.	Juniper Networks, Inc.	1	1
Omori, Kumi	NEC Corporation	NEC Corporation		1
Palkert, Thomas	Macom, Samtec	Samtec-Macom	1	1
PARK, CHUL SOO	Juniper Networks Inc.	Juniper Networks, Inc.	1	1
Parthasarathy, Vasu	Broadcom Corporation	Broadcom Corporation	1	1
Pepper, Gerald	Keysight Technologies	Keysight Technologies	1	1
Piehler, David	Dell Technologies	Dell		1
Pimpinella, Rick	Panduit Corp.	Panduit Corp.	1	1
Pitwon, Richard	Resolute Photonics	AIO Core		1
Rabinovich, Rick	Keysight Technologies	Keysight Technologies		1

Radhamohan, Rajeshmohan	MAXLINEAR INC	Broadcom Corporation	1	1
Ramesh, Sridhar	MaxLinear	MAXLINEAR INC		1
Rannow, R K	silverdraft supercomputing	Silverdraft Supercomputing		1
Rechtman, Zvi	Mellanox Technologies	NVIDIA Corporation	1	1
Ren, Hao	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd	1	1
Sakai, Toshiaki	Socionext Inc.	socionext	1	1
Sambasivan, Sam	AT&T	AT&T	1	1
Sarlet, Gert	II-VI Incorporated	II-VI Incorporated	1	1
Savi, Olindo	Hubbell Incorporated	Hubbell Incorporated	1	1
She, Qingya	Fujitsu Network Communications	Fujitsu Network Communications		1
Son, Yung Sung	Optomind Inc	Optomind Inc	1	
Sone, Yoshiaki	NTT	Nippon Telegraph and Telephone Corporation (NTT)	1	1
Sorbara, Massimo	GLOBALFOUNDRIES	GLOBALFOUNDIRES	1	1
Sprague, Edward	Infinera Corporation	Infinera Corporation	1	1
Stassar, Peter	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd		1
Stone, Robert	Broadcom Corporation	Facebook	1	1
Sun, Junqing	Credo Semiconductor	Credo Semiconductor	1	1
Sun, Yi		OFS	1	1
Tailor, Bharat	Semtech Canada Corporation	Semtech Canada Corporation	1	1
TAKAHARA, TOMOO	FUJITSU LABORATORIES LIMITED	FUJITSU LIMITED	1	1
Terada, Masaru	FURUKAWA ELECTRIC	FURUKAWA ELECTRIC	1	1
Theodoras, James	HG Genuine	HG Genuine	1	
Tooyserkani, Pirooz	Cisco Systems, Inc.	Cisco Systems, Inc.	1	1
Tracy, Nathan	TE Connectivity	TE Connectivity	1	1
Tran, Viet	Keysight Technologies	Keysight Technologies	1	1
Trowbridge, Stephen	Nokia	Nokia	1	1
Ulrichs, Ed	Intel	Intel		1
Walker, Clinton	Alphawave IP	Alphawave IP	1	1
Wang, Haojie	China Mobile Communications Corporation (CMCC)	China Mobile Communications Corporation (CMCC)	1	
Wang, Ruoxu	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd	1	1
Wang, Xinyuan	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd	1	
Weaver, James	Arista Networks	Arista Networks	1	1
Weber, Markus	socionext	Acacia Communications	1	
Welch, Brian	Cisco Systems, Inc.	Luxtera	1	1
Williams, Tom	Acacia Communications	Acacia Communications	1	1
Wu, Mau-Lin	MediaTek Inc.	MediaTek Inc.	1	
Xu, Yu	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd	1	1
Young, James	CommScope, Inc.	CommScope	1	1
Zhang, Bo	Inphi Corporation	Inphi Corporation	1	
Zhiwei, Yang	ZTE Corporation	ZTE Corporation	1	1