IEEE 802.3 Beyond 400 Gb/s Ethernet (B400G) Study Group, June 3, 2021 Electronic Interim Meeting
Unapproved Meeting Minutes, Prepared by Tom Issenhuth, John D'Ambrosia

Session called to order at 10:02 am ET (all times ET), 03 June, 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_06/agenda_b400g_210603.pdf

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

Chair noted that only draft of the May 2021 Session minutes had been uploaded at this time, and did not include meeting attendees. Therefore the May session minutes would not be considered for approval at this meeting.

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 Copyright Policy
- IEEE SA Participation 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.

Chair presented the Pre-PAR Patent Slide. (See Slide #21).

Chair presented the second slide (See Slide #23) of the IEEE SA Participation Policy slides. Chair noted – "Participants in the IEEE-SA "individual process" shall act independently of others, including employers. By participating in standards activities using the "individual process", you are deemed to accept these requirements; if you are unable to satisfy these requirements then you shall immediately cease any participation."

Chair presented the first slide (See Slide #26) of the IEEE SA Copyright Policy slides. Chair noted – "By participating in this activity, you agree to comply with the IEEE Code of Ethics, all applicable laws, and all IEEE policies and procedures including, but not limited to, the IEEE SA Copyright Policy."

D'Ambrosia asked Issenhuth to chair the meeting, while he gave the following presentation. Issenhuth started chairing the call at 10:13 am.

Presentation #2 **May 2021 Summary Review**
Presenter: John D'Ambrosia
URL: https://www.ieee802.org/3/B400G/public/21_06/dambrosia_b400g_01a_210603.pdf

There was general discussion about the presentation. D'Ambrosia noted that editorial changes had been made to the 01a version ("PMD" was replaced with "physical layer specification" on Slide #8) that was presented but was not yet uploaded. An additional topic #6 related to 800Gb CR (nx200G) will be added and the presentation will be updated.

D’Ambrosia resumed chairing the meeting at 10:34 am.

D’Ambrosia noted that due to character limitations with the Zoom tool when doing straw polls that any motions or straw polls under consideration would be shown with slides from the following noted presentation. There were no objections.

Presentation #3 **Motions # Strawpolls**
Presenter: John D’Ambrosia
URL: https://www.ieee802.org/3/B400G/public/21_06/motions_b400g_01a_210603.pdf

Motion #1 – Topic #1, Proposed New Objective

Motion #1	Move to adopt 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 2 km
M:	Scott Schube
S:	Paul Brooks
Technical (>=75%)	
All (y/n/a)	67 / 8 / 17
Results	Motion passes

Straw Poll #1 – Topic #2 Objective Modification

I would support modifying the minimum reach from "up to at least 2km" to “up to at least 3km” of this adopted 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
a) Yes	39
b) No	24
c) Need more information	20
d) Abstain	14

Straw Poll #2 – Topic #3 - 200 Gb/s & 400 Gb/s Physical Layer Specifications Interest
Chicago Rules

I am interested in physical layer specifications that are based on physical layer specifications objectives for beyond 400 Gb/s Ethernet for:	Results
a) 200 Gb/s Ethernet	73
b) 400 Gb/s Ethernet	61

Note: 114 participants at the time of the straw poll*. *77 participants voted.

Chair noted interest raised in straw poll and indicated that individuals needed to drive contributions for consideration at the July session, as the full scope of the project needed to be understood to begin drafting the PAR and CSD responses.

Chair called a break at 11:35.

Meeting restarted at 11:40.

D'Ambrosia asked Issenhuth to take over chairing the meeting, as he would be participating in the discussion, motion, and voting related to 1.6 Tb/s. Issenhuth took over chairing the call at 11:43 am

Straw poll #3 – Topic #5 – New Objectives 1.6 Tb/s

I would support adopting the following objectives:
• Support a MAC data rate of 1.6 Tb/s
• Support optional eight-lane 1.6 Tb/s attachment unit interfaces for chip-to-module and chip-to-chip applications
• Define a physical layer specification that supports 1.6 Tb/s operation:
  ○ over 8 pairs of SMF with lengths up to at least 500 m
  ○ over 8 pairs of SMF with lengths up to at least 2 km
	Results

a) Yes	69
b) No	3
c) Need more information	11
d) Abstain	5

Motion #2- Topic #5 – New Objectives 1.6 Tb/s

Motion #2	Move to adopt the following objectives:
	• Support a MAC data rate of 1.6 Tb/s
	• Support optional eight-lane 1.6 Tb/s attachment unit interfaces for chip-to-module and chip-to-chip applications
	• Define a physical layer specification that supports 1.6 Tb/s operation:
	  ○ over 8 pairs of SMF with lengths up to at least 500 m
	  ○ over 8 pairs of SMF with lengths up to at least 2 km

M:	John D'Ambrosia
S:	Leesa Noujeim
Technical (>=75%)	
All (y/n/a)	69 / 2 / 12
Results	Motion passes

D'Ambrosia resumed chairing the meeting at 10:11 am.

Straw poll #4 – Topic #4 – New Objective related to Ethernet MAC Parameters for >= 800 Gb/s

I would support adopting the following objective: ○ "Adopt the same Ethernet MAC Parameters for MAC data rates of 800 Gb/s and 1.6 Tb/s"	Results
a) Yes	42
b) No	9
c) Need more information	4
d) Abstain	13

The chair noted that the study group was the errand child of 802.3, and that any motion it passed was only applicable to the effort it had been chartered, and that a future study group or task force could decide to make changes at that time.

The chair asked Mr. Booth if he would want to pursue a motion on this topic. Mr. Booth indicated yes. There was 5 minutes left in the meeting. There were no objections to attempt the motion with 5 minutes left in the meeting.

Chair reviewed future meetings while motion was being prepared. See Slide #6 of agenda deck.

Motion #3 - Topic #5 – New Objectives 1.6 Tb/s

Motion #3	Move to adopt the following objective – ○ Adopt the same Ethernet MAC Parameters for MAC data rates of 800 Gb/s and 1.6 Tb/s
M:	Brad Booth
S:	Joshua Kim
Technical (>=75%)	
All (y/n/a)	36 / 13 / 14
Results	Motion fails

Meeting adjourned at 1:01pm.

Meeting Attendees

Name	Employer	Affiliation
BakroNagy, Istvan	EFFECT Photonics	Effect Photonics
Baldwin, Thananya	Keysight Technologies	Keysight Technologies
Bliss, Will	Broadcom Corporation	Broadcom Corporation
Brooks, Paul	Viavi solutions GmbH	Viavi Solutions
Brown, Matthew	Huawei Technologies Canada	Huawei Technologies Canada
Bruckman, Leon	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd
Cassan, Dave	Alphawave	Alphawave
Chang, Yongmao	Inphi Corporation	Source Photonics
Chen, Chan	Applied Optoelectronics, Inc.	Applied Optoelectronics, Inc.
D'Ambrosia, John	Futurewei Technologies	Futurewei Technologies, U.S. Subsidiary of Huawei
Ewen, John	Marvell	Marvell
FAn, DAWEI	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd
Geng, Limin	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd
Ghiasi, Ali	Ghiasi Quantum LLC	Ghiasi Quantum LLC, Marvel
Gustlin, Mark	Cisco Systems, Inc.	Cisco Systems, Inc.
Harstead, Ed	Nokia	Nokia
He, Xiang	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd
Healey, Adam	Broadcom Inc.	Broadcom Inc.
Heck, Howard	Intel Corporation	Intel Corporation
Huang, Kechao		Huawei Technologies Co., Ltd
HUANG, QINHUI	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd
Huber, Thomas	Nokia	Nokia
Hutchins, Jeff	Ranovus	Ranovus
Isono, Hideki	Fujitsu Optical Components Limited	Fujitsu Optical Components Limited
Issenhuth, Tom	Issenhuth Consulting, LLC	Huawei Technologies Co., Ltd
Jackson, Kenneth	Sumitomo Electric Device Innovations, USA	Sumitomo Electric Industries, LTD
Jimenez, Andrew	Anixter Inc.	Anixter Inc.
Johnson, John	Broadcom Corporation	Broadcom Corporation
Kabra, Lokesh	Synopsys, Inc.	Synopsys, Inc.
Kao, Chienping	Intel Corporation	Intel Corporation
Kareti, Upen	Cisco Systems, Inc.	Cisco Systems, Inc.
Kim, Kihong/Joshua	Hirose Electric (USA), Inc.	Hirose Electric (USA), Inc.
Kim, Yongbum	Tenstorrent	Tenstorrent
Kimber, Eric	Semtech Ltd	Semtech Ltd
Kocsis, Sam	Amphenol Corporation	Amphenol Corporation
Lam, Cedric		Google
Law, David	Hewlett Packard Enterprise	Hewlett Packard Enterprise
Le Cheminant, Greg	Keysight Technologies	Keysight Technologies
Lewis, David	Lumentum Inc.	Lumentum Inc.
Lingle, Robert	OFS	OFS
Lu, Yuchun	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd
Lusted, Kent	Intel Corporation	Intel Corporation
Lyubomirsky, Ilya	Inphi Corporation	Marvell Corporation
Mak, Gary	Inphi Corporation	inphi

Maki, Jeffery	Juniper Networks, Inc.	Juniper Networks, Inc.
Malicoat, David	Malicoat Networking Solutions	Malicoat Networking Solutions; SENKO Advanced Components
Maniloff, Eric	Ciena Corporation	Ciena Corporation
mi, guangcan	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd
Milicevic, Mario	MaxLinear	MaxLinear
Moorwood, Charles	Keysight Technologies	Keysight Technologies
Mu, Jianwei		Hisense
Muller, Shimon	Enfabrica Corp.	Axalume, Inc.
Murty, Ramana	Broadcom Inc.	Broadcom Corporation
Muth, Karlheinz	Broadcom Corporation	Broadcom Corporation
Nicholl, Shawn	Xilinx	Xilinx
Noujeim, Leesa	Google	Google
Nowell, Mark	Cisco Systems, Inc.	Cisco Systems, Inc.
Ofelt, David	Juniper Networks, Inc.	Juniper Networks, Inc.
Omori, Kumi	NEC Corporation	NEC Corporation
Palkert, Thomas	Macom, Samtec	Samtec-Macom
PARK, CHUL SOO	Juniper Networks Inc.	Juniper Networks, Inc.
Pepper, Gerald	Keysight Technologies	Keysight Technologies
Pozzebon, Dino	Microchip Technology, Inc.	Microchip Technology, Inc.
Rabinovich, Rick	Keysight Technologies	Keysight Technologies
Rahn, Jeffrey	Infinera Corporation	Infinera Corporation
Ran, Adee	Cisco Systems, Inc.	Cisco systems
Rannow, R K	silverdraft supercomputing	Silverdraft Supercomputing
Rechtman, Zvi	Mellanox Technologies	NVIDIA Corporation
Ren, Hao	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd
Rodes, Roberto	II-VI	II-VI
Sakai, Toshiaki	Socionext Inc.	socionext
Sambasivan, Sam	AT&T	AT&T
Schube, Scott	Intel Corporation	Intel Corporation
Shah, Darshan	Palo Alto Networks	Palo Alto Networks
She, Qingya	Fujitsu Network Communications	Fujitsu Network Communications
Shrikhande, Kapil	Innovium Inc.	Innovium
Shukla, Priyank	Synopsys, Inc.	Synopsys, Inc.
Sommers, Scott	Molex LLC	Molex Incorporated
Son, Yung Sung	Optomind Inc	Optomind Inc
Sone, Yoshiaki	NTT	Nippon Telegraph and Telephone Corporation (NTT)
Stassar, Peter	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd
Stone, Robert	Broadcom Corporation	Facebook
SU, CHANGZHENG		Huawei Technologies Co., Ltd
Sun, Junqing	Credo Semiconductor	Credo Semiconductor
TAKAHARA, TOMOO	FUJITSU LABORATORIES LIMITED	FUJITSU LIMITED
Takahashi, Tadashi	Nitto Denko Corporation	Nitto Denko Corporation
Theodoras, James	HG Genuine	HG Genuine
Tooyserkani, Pirooz	Cisco Systems, Inc.	Cisco Systems, Inc.
Tracy, Nathan	TE Connectivity	TE Connectivity
Tran, Viet	Keysight Technologies	Keysight Technologies
Trowbridge, Stephen	Nokia	Nokia

Ulrichs, Ed	Intel Corporation	Intel Corporation
Wang, Haojie	China Mobile Communications Corporation (CMCC)	China Mobile Communications Corporation (CMCC)
Wang, Ruoxu	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd
Wang, Xinyuan	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd
Weaver, James	Arista Networks	Arista Networks
Williams, Tom	Cisco Systems, Inc.	Cisco Systems, Inc.
Wu, Mau-Lin	MediaTek Inc.	MediaTek Inc.
Young, James	CommScope, Inc.	CommScope
Zhang, Bo	Marvell Technology, Inc	Marvell Technology, Inc
Zhuang, Yan	Huawei Technologies Co., Ltd	Huawei Technologies Co., Ltd