Meeting Minutes

Group: IEEE Greater than 50G bidirectional optical access PHYs task force meeting

Location: IEEE plenary, Berlin, Germany.

Date: July 10, 2023

Opening

13:00 (GMT+2) The meeting was called to order by Yuanqiu Luo, chair. Frank Effenberger volunteered to be the Recording Secretary.

The task force chair gave her opening introduction on decorum, and an attendance list will be passed around.

Motion 1

- Move to approve the agenda, located at:
- https://grouper.ieee.org/groups/802/3/dk/public/2307/8023dk 2307 Task Force agenda.pdf
- M: Kenneth Jackson S: John Johnson
- Motion result: Approved by voice without opposition

Motion 2

- Move to approve the minutes from May 2023, located at:
- https://grouper.ieee.org/groups/802/3/dk/public/2305/2305 8023dk unapproved minutes.pdf
- M: Hanhyub Lee S: Helen Xu
- Motion result: Approved by voice without opposition

The study group chair gave her opening introduction on goals, big ticket items, ground rules, process, attendance tool, and patent policy.

- 13:12 The task force chair made a call for patents; no response was made.
- 13:17 The task force chair reviewed the IEEE Participation guidelines and the IEEE SA Copyright policy.

All the usual IEEE policies and procedures were reviewed.

Goals for the July meeting were to discuss contributions and identify baseline candidates, concentrating on the wavelength plans, speed per wavelength, and loss budgets.

Presentations

Report of 100G transmission

experiment toward 100G x 1ch 40-km

specification

Kenneth Jackson

Sumitomo Electric Device Innovations

Toshio Takagi Yoshinori Kannan

Takuya Kanai

NTT Device Innovation Center

Hirotaka Nakamura

Mizuki Shirao

Hideki Isono

Mitsubishi Electric Corporation

Kei Masuyama

Tomoo Takahara **Fujitsu**

Fujitsu Optical Components

This presented an experiment that measured the dispersion penalty for a few samples of transmitter, over the dispersion range that is predicted from the G.652 fiber spec. The dispersion penalty is below 2 dB. It was commented that if we use the new work on statistical dispersion design, then the penalty situation will only be better.

100GBASE-BR40 specification proposal Rang-Chen Yu

SiFotonics

with transceiver module test data

This made a first attempt at an optical spec for a 40 km link. A 30 km MSA specification was used as a starting point. Transceivers were tested showing that the presented spec is realizable. It does achieve a loss up to 18 dB.

Dynamic range and BR-40

Frank Effenberger

Futurewei

This considered the problem that is caused by the limited power range of 100G APD receivers. If the loss range is limited to 10 dB, then we might need to define four budgets to cover the entire loss range of 0 dB to 23 dB. There was a long discussion over what the loss budgets should be: the ITU and IEEE budgets are different. This needs to be considered more by the group, to make sure the budgets are both feasible and usable.

Four wave mixing in BR40 (2x50G)

HanHyub Lee

ETRI

wavelength plan

Hwan Seok Chung

This considers the FWM generation in a 2 channel bidirectional link (4 wavelength in total), and how it might combine with link reflections to cause interference. The analysis shows that the penalty due to this combined FWM plus reflections is small.

10km and 20km budgets and optics

Frank Effenberger

Futurewei

<u>safe</u>ty

This presented the overload issue we seem to be facing with 100G APDs, which puts a much tighter bound on the link loss. Methods are discussed that can reduce or eliminate the chances of detector burn-out. It was commented that the adjustment of Tx levels is limited (perhaps 5 dB is the biggest we can handle), and the easy mode of the APD will also have limits. There was interest in investigating these methods of auto-negotiation.

Consideration of the 100GBASE-BR10

Sisi Tan

Huawei

and 100GBASE-BR20 optical

specifications

Tao Gui

This started to compile the optical specifications for the 100G BR optics by taking values from selected previous clauses.

Consideration of the construction of Sisi Tan Huawei

802.3dk draft Tao Gui

This looked at the clause structure of our project. It proposed an intro clause, a clause for 100G, and a clause for 200G. It was suggested that the intro clause could be folded into Clause 157.

Discussions, straw-polls, other motions

Future meeting plan

The plans for our next meetings were discussed.

A zoom meeting will be held on Aug 8 (Tuesday) EDT 21:00 to 23:00. (Aug 9, GMT 02:00 to 04:00). The September 11-14 interim meeting will be in Brazil. .3dk will meet on Monday Sep 11. The November 13-16 plenary will be in Oahu, Hawaii.

Motion 3

Move to adjourn the meeting.

Procedural (>50%)

John Johnson S: HanHvub Lee

Motion passes by voice without opposition

16:35 (GMT+2) Meeting adjourned

Attendees (23)

<u>Name</u>	<u>Affiliation</u>	7/10/2023
Alireza Razavi	Marvell	<u>X</u>
Andy Shen	Futurewei	<u>X</u>
Chan Chih	AOI	<u>X</u>
Dekun Liu	Huawei	<u>X</u>
Frank Effenberger	Futurewei	<u>X</u>
Guangcan Mi	Huawei	<u>X</u>
Haim Ringle	GM	<u>X</u>
Hanhyub Lee	ETRI	<u>X</u>
Janik Steyer-Ege	Bosch	<u>X</u>
John Johnson	Broadcom	<u>X</u>
Kenneth Jackson	Sumitomo	<u>X</u>
Limin Geng	Huawei	<u>X</u>
Rangchen Yu	SiFotonics	<u>X</u>
Ray Nering	Cisco	<u>X</u>
Sisi Tan	Huawei	<u>X</u>
Tingting Zhang	Huawei	<u>X</u>
Tao Gui	Huawei	<u>X</u>
Tomoo Takahara	Fujitsu	<u>X</u>

Vince Ferretti	Corning	<u>X</u>
Yan Zhuang	Huawei	<u>X</u>
Yuanqiu Luo	Futurewei	<u>X</u>
Yu Xu	Huawei	<u>X</u>
Yuefeng Cai	Huawei	<u>X</u>