

# 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](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](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

<a href="#">Report of 100G transmission experiment toward 100G x 1ch 40-km specification</a>	Kenneth Jackson Toshio Takagi Yoshinori Kannan Takuya Kanai Hirotaka Nakamura Mizuki Shirao Kei Masuyama Tomoo Takahara Hideki Isono	Sumitomo Electric Device Innovations  NTT Device Innovation Center Mitsubishi Electric Corporation Fujitsu Fujitsu Optical Components
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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.

<a href="#">100GBASE-BR40 specification proposal with transceiver module test data</a>	Rang-Chen Yu	SiFotonics
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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.

<a href="#">Dynamic range and BR-40</a>	Frank Effenberger	Futurewei
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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.

<a href="#">Four wave mixing in BR40 (2x50G) wavelength plan</a>	HanHyub Lee Hwan Seok Chung	ETRI
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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.

<a href="#">10km and 20km budgets and optics safety</a>	Frank Effenberger	Futurewei
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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.

<a href="#">Consideration of the 100GBASE-BR10 and 100GBASE-BR20 optical specifications</a>	Sisi Tan Tao Gui	Huawei
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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>