

# Unconfirmed Meeting Minutes: Meeting of the IEEE P802.3dg Long-Reach Single Pair Ethernet TF

January 24, 2024 Hybrid Plenary meeting

Prepared by Bob Voss

All times in EST

IEEE P802.3dg Task Force meeting was convened at 1/25/2024 8:04 AM by the chair, George Zimmerman.

The meeting was held in person and electronically.

Attendance is listed in Appendix A.

All presentations referenced in these minutes are located on the Task Force Public web page ([https://www.ieee802.org/3/dg/public/May\\_2022/index.htm](https://www.ieee802.org/3/dg/public/May_2022/index.htm))

The Chair displayed and proceeded to review the agenda in [https://www.ieee802.org/3/dg/public/May\\_2022/agenda\\_3dg\\_01a\\_240125.pdf](https://www.ieee802.org/3/dg/public/May_2022/agenda_3dg_01a_240125.pdf).

The agenda was approved at 8:07AM by unanimous consent.

Bob Voss continues as recording secretary for the task force.

The minutes from November 2023 were approved at 8:09AM EST by unanimous consent.

**Members of the Press**, at 8:11AM EST the chair asked for any press members to identify themselves. None heard.

**Attendance**, the Chair advised the group that the attendance would be taken from Webex and IMAT.

At 8:13AM EST, the Chair resumed review of the agenda deck, including the following items – a review of the participation policy, a review of the IEEE copyright policy, a review of the IEEE policy on dominance, and a review of the IEEE Standards process. There were no questions.

**IEEE Patent Policy**, The Chair read aloud the patent slides.

The call for patents was made at 8:17AM EST and **none** responded.

The Chair resumed review of the agenda deck material after the call for patents.

At 8:19AM, the chair reviewed the IEEE SA Copyright policy, participant behavior, individual process, fair and equitable consideration,

The chair said there are no liaisons or communications for the task force to consider at this time.

### Presentations and Discussion:

At 8:26AM EST, the Chair moved on to the presentations.

#### **Presentation: 802.3 MII Options – Past, Present, and Proposals for Future**

(Presented by Jason Potterf, Cisco Systems)

- [https://iee802.org/3/dg/public/May\\_2022/potterf\\_3dg\\_01\\_012524.pdf](https://iee802.org/3/dg/public/May_2022/potterf_3dg_01_012524.pdf)
- Presentation started at 8:27AM EST.
- Starting at 8:55AM EST, questions were asked and answered

At 9:15AM EST, the chair started an open discussion on the MII topic. The chair asked that the discussion be constrained by a stop time of 9:45AM EST. Discussion was engaging and ran a bit longer.

**Meeting break at 9:59AM EST, will resume at 10:15AM EST.**

#### **Presentation: Low Latency and Long Reach PHY Proposals**

(Presented by William Lo, Axonne)

- [https://iee802.org/3/dg/public/May\\_2022/Lo\\_3dg\\_01\\_012524.pdf](https://iee802.org/3/dg/public/May_2022/Lo_3dg_01_012524.pdf)
- Presentation started at 10:18AM EST.
- Starting at 10:57AM EST, questions were asked and answered.

#### **Presentation: Experimental Results on 100BASE-T1 PHY Delays**

(Presented by Jingcong Sun, Motorcomm)

- [https://iee802.org/3/dg/public/May\\_2022/jingcong\\_dg\\_Jan.pdf](https://iee802.org/3/dg/public/May_2022/jingcong_dg_Jan.pdf)
- Presentation started at 11:30AM EST.
- Starting at 11:39AM EST, questions were asked and answered.

**Meeting break at 11:55AM EST, will resume at 1:30PM EST.**

#### **Presentation: IEEE P802.3dg IEC61000-4-4 Interference Waveform**

(Presented by David D. Brandt, Rockwell Automation)

- [https://iee802.org/3/dg/public/May\\_2022/brandt\\_3dg\\_01\\_0124.pdf](https://iee802.org/3/dg/public/May_2022/brandt_3dg_01_0124.pdf)
- Presentation started at 1:32PM EST.
- Starting at 1:48PM EST, questions were asked and answered.

#### **Presentation: Consideration on the solutions to low latency, intrinsic safety, and long reach**

(Presented by Tingting Zhang, Huawei Technologies)

- [https://iee802.org/3/dg/public/May\\_2022/Tingting\\_3dg\\_25\\_01\\_2024.pdf](https://iee802.org/3/dg/public/May_2022/Tingting_3dg_25_01_2024.pdf)
- Presentation started at 2:02PM EST.
- Starting at 2:18PM EST, questions were asked and answered.

#### **Presentation: IEEE P802.3dg 100BASE-T1L PHY Time Domain Simulations (01a)**

(Presented by Brian Murray, Analog Devices, Inc.)

- [https://iee802.org/3/dg/public/May\\_2022/Murray\\_3dg\\_01a\\_01242024.pdf](https://iee802.org/3/dg/public/May_2022/Murray_3dg_01a_01242024.pdf)
- Presentation started at 2:37PM.
- Starting at 2:56PM EST, questions were asked and answered.

**Meeting break at 3:17PM EST, will resume at 3:35PM EST.**

Chair resumed meeting at 3:39PM EST.

## PHY Baseline Discussion – Moving Forward

Starting at 3:50PM EST, the chair led the task force in a discussion of PHY considerations.

- Reach (Long Reach Performance)
  - Noise Model
    - Come up with an AWGN level.
    - George can do the calculation and have it on the reflector by Tuesday.
    - Chair asked if that seems like a reasonable noise model.
  - Impulse Noise
    - On the line versus at the receiver
    - Steffen & Michal to provide a nominal front-end model to the PHY pins by Fri, 02Feb (wideband)
  - S-parameters of a real cable – Bob & Francois to provide.
    - 18AWG / 500m
    - Brian asserts data for 400m at 18AWG would be good to have.
- Short Reach Latency
  - Impulse Noise (Brandt model / EFT versus PWM – as presented versus modified)
    - David/Dayin to check with experts.
    - Hector to review prior presentations.
  - S-parameters of 100m motor control cable (Dayin to recommend a reasonable proxy cable that can be tested)
- Implementation Synergy (10BASE-T1L)

**Presentations and discussion concluded at 4:58PM EST.**

### Discussion of future meetings

- Next meeting is an Ad Hoc on 07Feb2024.
  - Simulation parameters & data
- A telephonic interim meeting will be called 28Feb2024.
- March 2024 802 Plenary – Denver, CO USA
  - In Person with remote access
  - Registration Fee required.
- Follow on topics: Progress PHY baselines, progress MII discussion.

Having exhausted the agenda, a motion to adjourn was sought by the chair.

M = Geoff Thompson

S = Chad Jones

the meeting was adjourned at 5:01PM EST.

## Appendix A: IEEE P802.3dg Long-Reach Single Pair Ethernet Task Force Attendance

Last Name	First Name	Affiliation	WebEx	IMAT	In-Room
Arroyo	Hector	Analog Devices Inc.	X	X	X
Baggett	Tim	Microchip Technology, Inc.	X	X	
Beauregard	Francois	Belden	X	X	
Brandt	David	Rockwell Automation	X	X	
Brychta	Michal	Analog Devices Inc.	X	X	
Carty	Clark	Cisco Systems, Inc.	X	X	
Chabot	Craig	UNH	X		
Fischer	Peter	BKS Kabel-Service AG	X	X	
Gilb	James	GA-ASI, USD, Gilb Consulting		X	X
Graber	Steffen	Pepperl+Fuchs SE	X	X	
Haydt	Mary Sue	Microchip Technology, Inc.	X	X	
Huszak	Gergely	KONE	X	X	
<b>HYAKUTAKE</b>	<b>YASUHIRO</b>	<b>Orbray Co., Ltd.</b>	<b>X</b>	<b>X</b>	
Jones	Chad	Cisco Systems, Inc.	X	X	X
Jones	Peter	Cisco Systems, Inc.	X	X	X
Lackner	Hans	QoSCom GmbH	X	X	
Law	David	Hewlett Packard Enterprise		X	X
Lewis	Jon	Dell Technologies			X
Lo	William	Axonne Inc.	X	X	
Lou	Wei	Broadcom Corporation	X	X	
Mark	Simon	Wurth Elektronik Group	X	X	
mash	chris	Ethernovia Inc	X	X	
Mueller	Harald	Endress + Hauser	X	X	
Murray	Brian	Analog Devices	X	X	
Neulinger	Christian	MD Elektronik	X		
Ng	Hiok Tiaq	Aviva Links Inc	X	X	
Nikolich	Paul	802 Chairman(self)	X		
Pandey	Sujan	Huawei Technologies (Netherlands) B.V.	X	X	
Paul	Michael	Analog Devices	X	X	X
Potterf	Jason	Cisco Systems, Inc.	X	X	
Schreiner	Stephan	Rosenberger	X	X	
Sharma	Rohit	Molex	X		
Sisk	Jason	University of New Hampshire InterOperability Laboratory (UNH-IOL)	X	X	
Stewart	Heath	Analog Devices Inc.	X	X	
Sun	jingcong	Motorcomm Electronic Technology Co	X	X	X
Thompson	Geoff	GraCaSI S.A.	X		
Voss	Robert	Panduit Corp.	X	X	X
Withey	James	Fluke Corporation	X	X	
Wu	Peter	Marvell	X		
Xu	Dayin	Rockwell Automation	X	X	

Last Name	First Name	Affiliation	WebEx	IMAT	In-Room
Zerna	Conrad	Avivalinks Inc.	X	X	
Zhang	Tingting	Huawei Technologies Co., Ltd	X	X	
Zhuang	Yan	Huawei Technologies Co., Ltd	X	X	
Zimmerman	George	CME Consulting/ADI, APL Group, Cisco, Marvell, OnSemi, SenTekSe LLC, Sony	X	X	

**Note - Highlighted Individual only attended 1st 30 minutes of 802.3dg meeting (for agenda presentation)**