Unconfirmed Meeting Minutes: Meeting of the IEEE P802.3dg 100 Mb/s Long-Reach Single Pair Ethernet Task Force

Wednesday November 16, 2022
Hybrid Task Force meeting

Prepared by Clark Carty

IEEE 802.3dg 100 Mb/s Long-Reach Single Pair Ethernet Task Force meeting called to order at **8:12AM ICT**, Wednesday, November 16, 2022 by George Zimmerman, Chair of the IEEE 802.3dg Task Force.

The meeting was held electronically via in-person attendance in Bangkok, Thailand and remotely using WebEx. All presentations referenced in these minutes are located on the Task Force Meeting Materials site. The Chair asked if there were any corrections or additions to the agenda. The agenda was modified by adding approval of previous meeting minutes There being no further corrections or additions, the agenda was approved by unanimous consent.

Attendance is listed in Appendix A

Administrative Matters

Mr. Zimmerman asked for Clark Carty to act as temporary recording secretary. He accepted. No objections were posed.

Mr. Zimmerman called the meeting to order. Mr. Zimmerman asked for task force approval as recording secretary of Clark Carty (present in-person in Bangkok). No objections heard.

Mr. Zimmerman then called for a brief round of introductions for in-person participants. This being a hybrid meeting with remote participation via teleconference, the Chair asked that participants introduce themselves when speaking, in lieu of a formal roll call of remote participants. No objections heard.

At 8:17AM ICT, Mr. Zimmerman displayed and reviewed the agenda deck at https://www.ieee802.org/3/dg/public/May_2022/agenda_3dg_01b_221116.pdf.

The Chair asked if there were any corrections or additions to the agenda. The agenda was modified by adding approval of previous meeting minutes There being no further corrections or additions, the agenda was approved by unanimous consent.

At 8:17AM ICT, The Chair asked if anyone has not had a chance to review the minutes from November 2, 2022. None responded. The chair, Mr. Zimmerman, asked for approval of the minutes from the November 2 meeting. No objections heard. Meeting minutes approved by unanimous consent.

Members of the Press At **8:18AM ICT** the chair asked for any press members to identify themselves. None heard.

Agenda deck continues. Chair reviewed the meeting ground rules.

From the "INSTRUCTIONS FOR THE WG CHAIR" slide in
https://www.ieee802.org/3/WG_tools/templates/Task_Force_agenda_V3p9.pptx:
> Instruct the WG Secretary to record in the minutes of the relevant WG meeting:

- That the foregoing information was provided and that slides 1 through 4 (and this slide 0, if applicable) were shown;
- That the chair or designee provided an opportunity for pt

At **8:20AM ICT**, Mr. Zimmerman presented goals for the meeting.

At **8:21AM ICT**, Mr. Zimmerman reminded participants that a registration fee is required to participate in this and other IEEE 802.3 plenary meetings during the week and explained consequences of not paying this fee.

Mr. Zimmerman placed a sign-up sheet in circulation within the meeting room to record the presence of in-person participants. Also mentioned was recording attendance in IMAT. This action taken at **8:23AM ICT**.

At **8:24AM ICT**, Mr. Zimmerman 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, Mr. Zimmerman read aloud the patent slides at **8:24AM ICT**.
The call for Potentially Essential Patents was made at **8:26AM ICT** and none responded.

The slides on SA Copyright Policy as well as Code of Ethics and Conduct were shown and presented at **8:28AM ICT**.

At **8:36AM ICT** opening agenda slides complete. The meeting moves on to presentations.

Presentations and Discussion:

8:38AM ICT: Presentation by Ragnar Jonsson, Marvell
"Method for Restricting Micro-Reflections"
8:53AM ICT: Start of Q&A.

9:21AM ICT: presentation done.

9:21AM ICT: Presentation by Chris DiMinico, PHY-SI / MC Communications/SenTekSe
"SPE TIA Specification References"

9:22AM ICT: Start of Q&A.

9:32AM ICT: presentation done.

9:32AM ICT Presentation by Stephan Schreiner, Rosenberger
"Thoughts on Cable AWG"
9:41AM ICT Start of Q&A
10:07AM ICT Presentation done

10:07AM ICT Meeting Recess
10:32AM ICT Meeting resumes

10:33AM ICT Presentation by Ludwig Winkel, LAN Winkel Consulting
"Contribution of IEC/IEEE 60802 Concerning profiling of 802.3"
11:05AM ICT Start of Q&A
11:11AM ICT Presentation done

11:12AM ICT Presentation by Dayin Xu, Rockwell Automation
"100BASE-T1L for Motor Feedback Communication Update"
11:26AM ICT Start of Q&A
11:38AM ICT Presentation done

11:38AM ICT Presentation by Michal Brychta, Hector Alberti Arroyo, Jürgen Funkhänel, Marc
Lanigra, Analog Devices, Analog Devices, Sick AG, Sick AG
"Hybrid Motor Cable Evaluation"
12:04PM ICT Start of Q&A
12:24PM ICT Presentation done

12:25PM ICT Meeting Recess
1:25PM ICT Meeting resumes

1:25PM ICT Presentation by Steffen Graber, Pepperl+Fuchs
"Possible Installation Changes to 100BASE-T1L"
1:43PM ICT Start of Q&A
1:47PM ICT Presentation done

1:48PM ICT Presentation by Wayne Larsen, CommScope
"Link Segment Proposal"
1:59PM ICT Start of Q&A
2:04PM ICT Presentation done

2:05PM ICT Presentation by Chris DiMinico, PHY-SI / MC Communications/SenTekSe
"802.3dg Link Segment Considerations"
2:17PM ICT Start of Q&A
2:23PM ICT Presentation done

2:24PM ICT Presentation by Bernd Horrmeyer, Phoenix Contact
"APL Measurements of NEXT/RL to 100MHz"
2:31PM ICT Start of Q&A
2:36PM ICT Presentation done
2:36PM ICT There was a discussion of adopting Chris's Insertion Loss Considerations slide as a
       baseline for IL.

2:50PM ICT Meeting Recess
3:29PM ICT Meeting resumes

3:29PM ICT Motion was created to adopt the link segment insertion loss as given below, from slide 12 of Chris DiMinico's presentation:

IL(f() = 4.92*SQRT(f(MHz)+0.04*f(MHz)+0.8/SQRT(f(MHz)+5*0.02*SQRT(f(MHz)), where f is the frequency in MHz. 0.3 <= f <= 60

This IL equation supports up to at least 5 inline connectors for up to at least 500m reach on 16 AWG cabling.

M: Chris DiMinico
S: Steffen Graber

Y: 16 N: 3 A: 5 (Motion Passes). **3:53PM ICT**

3:53PM ICT The chair asked if there were any more motions related. There were no replies.

3:54PM ICT Presentation by Steffen Graber, Pepperl+Fuchs
"Hazardous Area Requirements including 2-WISE"
4:20PM ICT Start of Q&A
4:24PM ICT Presentation done

4:24PM ICT Presentation by Harald Mueller, Endress-Hauser
"Process Industry View of 100BASE-T1L APL use case"
4:36PM ICT Start of Q&A
4:40PM ICT Presentation done

4:41PM ICT Chair leads open discussion of open items (echo response, RL, improving Alien
       XTalk, considerations for voltages, further discussion on PHY parameters). What really
       needs discussed is powering.

4:52PM ICT Agenda concludes, meeting is adjourned

Next meeting – Ad Hoc, Wednesday November 30th, 7-9AM Pacific time.

Meeting closed at 4:52PM ICT

Appendix A: Attendees at IEEE P802.3dg 100 Mb/s Long-Reach Single-Pair Ethernet Task Force

Last Name	First Name	Affiliation	IMAT	WEBEX	In-Room
==Assmann==	==Ralf==			==X==	
Baggett	Tim	Microchip Technology, Inc.	X	X	
Beruto	Piergiorgio	onsemi	X		X
Brandt	David	Rockwell Automation	X	X	
Brillhart	Theo	Fluke Corp	X	X	X
Brychta	Michal	Analog Devices Inc.	X	X	
Canchi	R	Kyocera International		X	
Carlson	Steve	HSD, Bosch, Ethernovia	X	X	
Carty	Clark	Cisco Systems, Inc.	X	X	X
DiMinico	Chris	MC Communications/PHY-SI/SenTekse	X	X	X
Fellhauer	Felix	Robert Bosch GmbH	X	X	X
Fischer	Peter	BKS Kabel-Service AG	X	X	
Fritsche	Matthias	HARTING Electronics GmbH	X	X	
Gopaz	Amrit	Ford Motor Co			(60802)
Graber	Steffen	Pepperl+Fuchs SE	X	X	
Gubow	Martin	Keysight Technologies	X		X
Gunter	Steindl	Siemens			(60802)
Haasz	Jodi	IEEE SA		X	X
Hantel	Martin	Rockwell Automation			(60802)
Hess	Dave	Cord Data	X	X	
Horrmeyer	Bernd	Phoenix Contact	X	X	X
Hoshino	Masayuki	Continental Automotive	X		
Hyakudai	Toshihisa	Sony Corporation	X	X	
Jimenez	Andy	Wesco	X	X	X
Jones	Chad	Cisco Systems, Inc.	X	X	X
Jonsson	Ragnar	Marvell	X	X	
Kehrs	Stephan	Hirschmann Automation			(60802)
Klein	Christian	Bosch		X	(60802)
Lackner	Hans	QoSCom - Quality in Communications - GmbH	X	X	
Larsen	Wayne	CommScope	X	X	
Lennartsson	Kent	Kvaser AB	X	X	X
Mark	Simon	Wurth Electronik Group	X	X	
Matheus	Kirsten	BMW Group	X		X
Mu	Tong	Huawei Technologies Co., Ltd	X	X	
Mueller	Harald	Endress + Hauser	X	X	

New	Anthony	Prysmian Cables & Systems	X	X	
Paul	Michael	Analog Devices	X		X
Petrov	Vitaly	Northeastern		X	(60802)
Potterf	Jason	Cisco Systems, Inc.	X	X	
Schreiner	Stephan	Rosenberger	X	X	X
sisk	jason	University of New Hampshire InterOperability Laboratory (UNH-IOL)	X	X	
Stewart	Heath	Analog Devices Inc.	X	X	X
Sun	Wensheng	Marvell Semiconductor, Inc.	X	X	
TAZEBAY	MEHMET	Broadcom Corporation	X		
Thompson	Geoffrey	INDEPENDENT	X	X	
Turner	Max	Ethernovia		X	(60802)
Winkel	Ludwig	LAN Winkel Consulting			(60802)
Withey	James	Fluke Corporation	X	X	X
Woods	Jordon	Analog Devices			(60802)
Xu	Dayin	Rockwell Automation	X	X	
Zhang	Tingting	Huawei Technologies Co., Ltd	X	X	
Zhuang	Yan	Huawei Technologies Co., Ltd	X	X	X
Zimmerman	George	CME Consulting/APL Group, Cisco, CommScope, Marvell, OnSemi, SenTekSe LLC	X	X	X