Minutes IEEE P802.3cy Greater than 10 Gb/s Electrical Automotive Ethernet PHY TF AdHoc meeting February 9, 2021

Prepared by Natalie Wienckowski

Proposed Agenda:

Title	Presenters(s)	Affiliation(s)
Agenda	Natalie Wienckowski (ad hoc Chair)	General Motors
TF Chair's Comments	Steve Carlson	High Speed Design, Robert Bosch GmbH, Ethernovia
Insertion Loss MEASUREMENTS 26AWG and 24AWG STP CABLES	Stefan Gianordoli, Jonathan Silvano de Sousa	Gebauer & Griller Kabelwerke Gesellschaft m.b.H
25GBASE-T1: Status and Way Forward	Sujan Pandey	Huawei
P802.3cy To-do list	Natalie Wienckowski	General Motors
Closing Remarks	Steve Carlson	High Speed Design, Robert Bosch GmbH, Ethernovia

See adhoc webpage for agenda deck and presentations

Agenda/Admin Natalie Wienckowski as ad hoc chair:

Meeting began at 10:03 am ET.

Introductions & Affiliations.

Presented file: cy_Task_Force_adhoc_agenda_02_09_21.pdf

1. Reviewed the Attendance information related to the ad hoc.
2. Displayed patent slide deck and asked if any participant had not read the IEEE-SA Patent Slides slide set, none responded.
   Call for Patents was made at 10:07 am Eastern Time, none responded
3. Displayed the IEEE-SA Copyright policy slide and asked if any participant had not read the IEEE copyright slide set, none responded.
4. Displayed the IEEE-SA Participation slide and reviewed it.
5. Reminded participants to indicate full names and employer/affiliation for the meeting minutes.

Instructions for subscribing to the reflector may be found at http://www.ieee802.org/3/cy/reflector.html. If you cannot subscribe to the reflector for some reason, and need additional assistance please contact the Task Force chair.

Chair's comments: The Chair was not able to attend.

Presentations/Discussion:

Presentation: Insertion Loss MEASUREMENTS 26 AWG and 24 AWG STP CABLES (Stefan Gianordoli & Jonathan Silvano de Sousa, Gebauer & Griller Kabelwerke Gesellschaft m.b.H)

Jonathan presented IL data on an AWG24 and AWG26, both STP. The cables were 10m long and were tested at room temp and 105 C. The IL of the AWG24 was less than that of AWG26. Please note, the IL is normalized to dB/m and is not the total IL.

The zimmerman IL should be above the kadry limit line, but it is swapped in the presentation. An updated presentation will be provided.

Future work is to increase the suck out frequency of the 24AWG cable.

Future presentations may be provided with information on RL and phase.

Presentation: 25GBASE-T1: Status and Way Forward (Sujan Pandey, Huawei)

Sujan presented his thoughts on the status of the 25GBASE-T1 and what he thinks the important points are. He feels that it is key to meet the objective of 11m for the project. Loss of board components cannot be ignored. We are missing information on coupling attenuation and RF ingress which may be requried to make some decisions. Sujan calculated the Margin to Capacity based on some of the data that was previously presented. This shows that PAM4 and PAM5 are the best options and he gives his reasoning for selecting PAM4.
Sujan also presented information on the Noise floor and his thoughts on what this could be.
Sujan discussed RF Ingress Noise Immunity related to FEC and NBI (Narrow Band Interference). He suggested estimating a noise level baed on the IEEE802.3ch measurements.
Need to be careful lumping the Tx filter into the TX-PSD mask as this could require you to boost the transmitter to overcome the board loss. It's important to define a board loss limit.

More information is needed on Noise at the frequencies under consideration.

Coupling attenuation measurements were done up to 7.5 GHz in IEEE802.3ch. New measurements will need to be done up to the higher frequencies. The performance is highly dependent on how good the shield termination is.

The EMC Filter shown on Slide 8 represents the CMC. With a shielded cable, it may be possible to leave out the CMC. However, if the shield isn't terminated properly, it may be necessary to add this.

Presentation: P802.3cy To-do list usage (Natalie Wienckowski, General Motors)

The To-Do list was updated. Participants are urged to review the list for topics they can support and for missing topics. Please send a message to the reflector with requested changes to the list.

Haysam is looking for feedback on advanced PCB board types that others have used for Automotive Applications.

The current list can be found on this page: To Do spreadsheets

Closing Discussion

Future meeting notices can be found on the 802.3 calendar.

Meeting adjourned at 11:30 PM ET.

Attendees (snapshot of participants in meeting, email)

First	Last	Affiliation
Brett	McClellan	Marvell
Carty	Clark	Cisco
Christian	Neulinger	MD Elektronik
Dan	Kennefick	Daikin America
Daniel	Koppermüller	MD Elektronik
Dave	Hess	Cord Data
Doug	Oliver	Ford
Eric	DiBiaso	TE Connectivity
Erwin	Köeppendörfer	Leoni Kabel GmbH
George	Zimmerman	CME Consulting / ADI, APL Group, Cisco Systems, CommScope, Marvell, SenTekSe
German	Feyh	Broadcom
Harsh	Patel	Molex
Haysam	Kadry	Ford
Hossein	Sedarat	Ethernovia
Istvan	BakroNagy	EFFECT Photonics
Jamila	Borda	BMW
Jan	De Geest	Amphenol

First	Last	Affiliation
Jonathan	Silvano de Sousa	GG - Austria
Kambiz	Vakilian	Broadcom
Larry	McMillan	Western Digital
Louise	Yi	FIT
Makoto	Nariya	Sony
Manabu	Kagami	NITech (Nagoya Institute of Technology)
Masato	Shiino	Furukawa
Michikazu	Aono	Yazaki
Natalie	Wienckowski	General Motors
Olaf	Grau	Robert Bosch GmbH
Peter	Wu	Marvell
Ragnar	Jonsson	Marvell
Rich	Boyer	Aptiv
Roland	Preis	MD Elektronik
Ryan	Petrarca	TDK
Shaowu	Huang	Marvell
Shivesh Kumar	Dubey	NXP
Stefan	Gianordoli	GG Group
Sujan	Pandey	Huawei
Taiji	Kondo	MegaChips
Takeo	Masuda	OITDA/PETRA
Terry	Little	Foxconn Interconnect Technology
Thomas	Müller	Rosenberger
Tom	Souvignier	Broadcom
Toshihiro	Ichimaru	Sumitomo
Yoshihiro	Niihara	Fujikura Ltd.
TOTAL	**44**	**Attendees**

Presenters (43)

- Boyer, Rich - External Network
- Brett McClellan (Marvell) Guest
- Christian Neulinger - MD Elektronik Guest
- Clark Carty (Cisco) Guest
- Dan Kennefick Guest
- Daniel Koppermüller - MD Elektronik GmbH G
- Dave Hess, Cord Data Guest
- Doug Oliver [Ford] Guest
- Eric DiBiaso - TE Guest
- Erwin Koeppendoerfer; Leoni Kabel GmbH Gu
- George Zimmerman (CME Cnsltng/ADI,APL G..
- German Feyh (Broadcom) Guest
- Haysam M. Kadry [Ford] Guest
- Hossein Sedarat (Ethernovia) Guest
- Istvan BakroNagy (EFFECT Photonics) Guest
- Jamila J. Borda(BMW) Guest
- Jan De Geest (Amphenol) Guest
- Jonathan Silvano de Sousa (GG - AUSTRIA) Gu
- Kambiz Vakilian(Broadcom) Guest
- Larry McMillan (Western Digital) Guest
- Louise Yi (FIT) Guest
- Makoto Nariya (Sony) Guest
- Manabu Kagami - NITech Guest
- Masato Shiino, FURUKAWA Guest
- Michikazu Aono - [Yazaki] Guest
- Natalie A. Wienckowski
- Nobuyasu Araki YAZAKI Guest
- Patel, Harsh Guest
- Peter Wu, Marvell Guest
- Ragnar Jonsson (Marvell) Guest
- Roland Preis - MD-Elektronik GmbH Guest
- Ryan Petrarca (TDK) Guest
- Shaowu Huang (Marvell) Guest
- Shivesh Kumar Dubey, NXP Guest
- Stefan Gianordoli, GG Group Guest
- Sujan Pandey (Huawei) Guest
- Taiji Kondo, MegaChips Guest
- Takeo Masuda (OITDA) Guest
- Terry Little (Foxconn Interconnect Technology)
- Thomas Mueller (Rosenberger) Guest
- Tom Souvignier (Broadcom) Guest
- Toshihiro Ichimaru (Sumitomo) Guest
- Yoshihiro Niihara - Fujikura Ltd. Guest

Grau Olaf (XC/EKE1) - External Network