Minutes IEEE P802.3cy Greater than 10 Gb/s Electrical Automotive Ethernet PHY TF AdHoc meeting February 23, 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
Return Loss MEASUREMENTS 24 AWG STP CABLES	Stefan Gianordoli, Jonathan Silvano de Sousa	Gebauer & Griller Kabelwerke Gesellschaft m.b.H
Laning Split for PMA Reuse	George Zimmerman	CME Consulting, Inc., Marvell
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 10:07 am ET.

Introductions & Affiliations.

Presented file: cy_Task_Force_adhoc_agenda_a_02_23_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 10:10 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: With Teams, we think you can only change your name to add your affiliation before you connect. If you use Teams in your company, you may not be able to edit this.

Presentations/Discussion:

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

Jonathan provided Return Loss data on 24AWG cables that he had provided Insertion Loss data for at a preveious meeting.

Participants are interested in seeing time based data for this cable.

There was a question on the type of fixture used. Jonathan will see if he can show the test setup in a future meeting.

The gating method is important to know the quality of the cable and to remove the impact of the connection to the tool.

Presentation: Laning Split for PMA Reuse (George Zimmerman, CME Consulting, Inc., Marvell)

George presented 3 different options on where to "split" the lanes for reuse of the 25Gb/s PMA. He defined the different functional parts of the PHY where the "split" could occur. The three options for the "split" were shown in graphical form and Pros/Cons for each option were shared.

George prefers te PMA + FEC (middle option)

If interleaving is used, it is done as part of the FEC, wherever that may be located.

Scrambling is generally part of the PCS. This needs to be carefully considered to ensure it doesn't cause noise multiplication, especially in the option with the FEC with the PCS instead of the PMA.

If you wanted to use a different scrambler for different lanes, it may require devices to know which lane they are in if done at the "green" level. This is a potential issue for the third option to Lane PMA + FEC + PCS.

There is no orthodoxy in 802.3 that would impact where the division needs to be.

Mike Tu prefers the third option as he expects the 25G PHY will be built first. This option also provides the potential of using the remaining lanes if one of the lanes breaks. While this may be possible, you need to be careful and define this operation to ensure this occurs without issue. This may require a change in scope to the project, if we decide to go this way. This could cause heartburn in 802.3 and at higher levels.

Need to be careful with mutiple lanes with autonegotiation for different speeds if different lanes end up at different speeds.

It is probably possible to configure any of the three options to be used as a single 100G link, 2 50G links, or 4 25 G links. It may be easier to do with #3, then #2, then #1. To do this, we may need a different state machine for each potential link so this may be easier in #3.

Do we need to define a max difference in length between the link segments on a 50G or 100G link? Will this be 4 separate 1-pair cables or 1 4-pair cable? 4 separate 1-pair cables is more flexible and may be preferred by users. We expect that all pairs for a single link will be routed together. May need to define the method to measure skew between lanes. Probably want to limit this to 1 ns as a ballpark value. Need to see what actual length variation we have in the processing.

Servicability – What happens if a single pair is replaced and it isn't the same length as the original pair? How much difference is acceptable?

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.

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

Closing Discussion

Any topic that you may request a Motion for at the March 16th Plenary call must be presented no later than the March 1st ad hoc call.

WG Plenary meetings will be on March 8th, March 11th, and March 18th. You will need to attend meetings on at least 6 of the 8 days to get attendance credit.

The March 1st meeting is on a Monday. Presentation requests are due by 3 pm on Friday, February 26th. Presentations are requested at this time as well.

Meeting adjourned at 12:01 PM ET.

Attendees (snapshot of participants in meeting, email)

First	Last	Affiliation
Brett	McClellan	Marvell
Carty	Clark	Cisco
Christian	Neulinger	MD Elektronik
Clark	Carty	Cisco
Dan	Kennefick	Daikin America
Emilio	Cuesta	TE Connectivity
Eric	DiBiaso	TE Connectivity
Erwin	Köeppendörfer	Leoni Kabel GmbH
Fred	Dawson	Chemours
George	Zimmerman	CME Consulting / ADI, APL Group, Cisco Systems, CommScope, Marvell, SenTekSe
German	Feyh	Broadcom
Harsh	Patel	Molex
Haysam	Kadry	Ford
Hossein	Sedarat	Ethernovia
Jae-yong	Chang	Keysight
Jamila	Borda	BMW
Jim	Graba	Broadcom
Jonathan	Silvano de Sousa	GG - Austria
Kambiz	Vakilian	Broadcom
Ken		
Larry	McMillan	Western Digital
Lokesh	Kabra	
Louise	Yi	FIT
Luisma	Torres	KDPOF
Martin	Glanzner	SEI ANTech Europe GmbH
Michikazu	Aono	Yazaki
Mike	Tu	Broadcom
Natalie	Wienckowski	General Motors
Nobuyasu	Araki	Yazaki
Olaf	Grau	Robert Bosch GmbH
Peter	Wu	Marvell
Ragnar	Jonsson	Marvell
Rich	Boyer	Aptiv
Roland	Preis	MD Elektronik
SJ	Yu	Foxconn Interconnect Technology
Stefan	Gianordoli	GG Group

First	Last	Affiliation
Stephan	Hartmann	Siliconally GmbH
Steve	Carlson	High Speed Design, Robert Bosch GmbH, Ethernovia
Sujan	Pandey	Huawei
Taiji	Kondo	MegaChips
Thomas	Müller	Rosenberger
Tom	Souvignier	Broadcom
Tong	Mu	Huawei
TOTAL	**43**	**Attendees**