

IEEE P802.3df 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet Task Force

March 2022 Electronic Session

Unapproved Meeting Minutes, prepared by John D'Ambrosia

Session called to order at 10:02 am ET (all times ET), 08 March 2022

Meeting called to order by John D'Ambrosia, IEEE P802.3df Task Force Chair

Chair noted that attendance would be taken by IMAT.

Presentation #1

Agenda and General Information

Presenters

John D'Ambrosia

URL

https://www.ieee802.org/3/df/public/22_03/agenda_3df_a_220308.pdf

Chair reminded everyone attending must register and pay a fee to register. Chair displayed Slide #2 regarding if an individual is in arrears.

Chair reviewed the agenda (Slide #3) and noted presentation order on Slide #4. Chair noted that straw polls might be taken during any meeting of the March 2022 session, pending need and time availability. He noted that any motions for the session would be considered @ the 15 and 16 March meetings, pending time availability. Chair noted that pending discussions with presenters for the 22 and 29 March meetings, motions might be heard, pending time availability. Chair will announce prior to these meetings if motions may occur.

Chair asked if there were any objections to the agenda (Slide #3). It was noted that the agenda slide listed the last meeting as March 24, and not March 29. Chair indicated this was a cut / paste error and corrected the meeting date to March 29 on Slide #4. The updated presentation is noted above. The chair asked if there were there any other objections, and there were none. The chair asked if there were any objections to the approval of the agenda, and there were none. The agenda was considered approved by unanimous consent.

Minutes – Feb 2022 session

https://www.ieee802.org/3/df/public/22_02/minutes_3df_0222_unapproved.pdf

Chair asked if there were any other corrections. There were none. Chair asked if there were any objections to approving the modified minutes. There were none, and the minutes were considered approved by unanimous consent.

Chair reviewed the Task Force Project Information / Organization. See Slides #5. Chair noted the 4 task force reflectors, and indicated individuals needed to join each separately. Chair also noted that Task Force information, such as meeting announcements would be sent to stds-802-3-b400g@listserv.ieee.org.

Chair reviewed meeting decorum. See Slide #6.

Chair reviewed Ground Rules. See Slide #7.

Chair Reviewed Task Force Comment Phase. See Slide #8.

Chair ruled Task Force voting, voting rights, and attendance. See Slides #9-10.

Slide #11 - Chair noted that the information regarding the IEEE SA Policies had been sent out, and requested that individuals review the following IEEE SA policies prior to the interim meeting –

- IEEE SA Patent policy
- IEEE SA Copyright Policy
- IEEE SA Participation Policy

Chair asked if anyone needed to review the policies at that time – there were no requests to do so.

Chair presented the third slide (See Slide #31) of the IEEE SA Patent Policy slides. Chair did call for Potentially Essential Patents, and no one came forward.

Chair presented the second slide (See Slide #36) of the IEEE SA Copyright Policy slides. Chair noted – “By participating in this activity, you agree to comply with the IEEE Code of Ethics, all applicable laws, and all IEEE policies and procedures including, but not limited to, the IEEE SA Copyright Policy.”

Chair presented the second slide (See Slide #40) of the IEEE SA Participation Policy slides. Chair noted – “Participants in the IEEE-SA “individual process” shall act independently of others, including employers. By participating in standards activities using the “individual process”, you are deemed to accept these requirements; if you are unable to satisfy these requirements then you shall immediately cease any participation.”

Chair noted that as of 08 Mar, there was only one liaison received (OIF 800G Coherent Project) for the Task Force to consider. See Slide #12.

Presentation #2 **Further Consideration on FEC architecture for 800G and 1.6T**
Presenters Leon Bruckman
URL https://www.ieee802.org/3/df/public/22_03/bruckman_3df_01_220308.pdf

General questions and discussion.

Presentation #3 **Analysis on FEC1 in Architecture of 800G/1.6TbE**
Presenter Xinyuan Wang
URL https://www.ieee802.org/3/df/public/22_03/wang_3df_01a_220308.pdf

The speaker noted that editorial corrections were made, and he will be sending the chair an update (noted above) after the meeting.

General questions and discussion.

Presentation #4 **Concatenated Code for 800 GbE & 1.6 TbE**
Presenters Xiang He
URL https://www.ieee802.org/3/df/public/22_03/he_3df_01a_220308.pdf

General questions and discussion.

Chair reviewed future Task Force meetings. See Slide #13 of agenda presentation.

- It was noted that details of meetings for May 2022 session were still being worked out.
- Call for presentations was announced, and due date is 06 May 2022.

Chair reviewed ad hocs (Slide #14) and reminded everyone of ad hoc meetings (Slide #15).

Session recessed for the day at 11:02am

Session reconvened at 10:03 am ET (all times ET), 15 March 2022

Meeting called to order by John D'Ambrosia, IEEE P802.3df Task Force Chair

Chair noted that attendance would be taken by IMAT.

Chair reminded Task Force that today's call required registration and paying meeting fee. Chair noted consequences of non-payment of registration fees. See Slide #2.

The chair noted that presentations had been withdrawn from the 22 Mar and 29 Mar meetings at the request of the presenters.

Slide #11 - Chair noted that the information regarding the IEEE SA Policies had been sent out, and requested that individuals review the following IEEE SA policies prior to the interim meeting –

- IEEE SA Patent policy
- IEEE SA Copyright Policy
- IEEE SA Participation Policy

Chair asked if anyone needed to review the policies at that time – there were no requests to do so.

Chair presented the third slide (See Slide #31) of the IEEE SA Patent Policy slides. Chair did call for Potentially Essential Patents, and no one came forward.

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Chair presented the second slide (See Slide #40) of the IEEE SA Participation Policy slides. Chair noted – “Participants in the IEEE-SA “individual process” shall act independently of others, including employers. By participating in standards activities using the “individual process”, you are deemed to accept these requirements; if you are unable to satisfy these requirements then you shall immediately cease any participation.”

The chair reviewed the business for the day.

Presentation #5	Baseline proposal for 800GbE electrical interfaces and PMDs using 100 Gbps/lane signaling
Presenters	Kent Lusted
URL	https://www.ieee802.org/3/df/public/22_03/lusted_3df_01a_220315.pdf

General questions and discussion.

Chair noted that once IEEE P802.3df Draft 1.0 is generated, if either .3ck or .3db make any subsequent changes, those changes would need to be made to the .3df draft via comment.

Based on feedback there may be some potential changes to his presentation. Chair reminded Mr. Lusted that any subsequent motion / straw poll would need to use the updated file name. Updated presentation noted above.

Presentation #6 **Adding 400Gb/s / 2km Objective & Baseline**
 Presenter Mark Nowell
 URL https://www.ieee802.org/3/df/public/22_03/nowell_3df_01a_220315.pdf

The chair thanked Mr. Nowell for reviewing the PAR and CSD as part of his effort to add a new project objective. Jeff Maki, Paul Brooks, Flavio Marques, and David Ofelt requested that they be added as supporters to Mr. Nowell’s presentation. Presentation update to be sent after the meeting (noted above).

Presentation #7 **PAM4 for 200G/L Optics at 500m and 2km**
 Presenters Brian Welch
 URL https://www.ieee802.org/3/df/public/22_03/welch_3df_01a_220315.pdf

Mr. Welch noted a supporters page had been added, and he would send the updated presentation after the meeting (noted above).

Presentation #8 **Baseline Proposal for 800 GbE over Eight Pairs of MMF for 50 ad 100 m Reaches**
 Presenters Ramana Murty
 URL https://www.ieee802.org/3/df/public/22_03/murty_3df_01a_220315.pdf

General questions and discussion.

Ray Nering, Gary Nicholl, Jianwei Mu, Vince Ferretti, Paul Brooks, Lance Thompson, Jose Castro, Nathan Tracy, Adee Ran requested that they be added as supporters to Mr. Murty’s presentation. Mr. Murty indicated he would send an updated presentation after the meeting (noted above).

Mr. D’Ambrosia requested that Mr. Nowell take over chairing the call while he gave the following presentation. Mr. Nowell assumed chairing the meeting at 10:55am.

Presentation #9 **Proposed Response to OIF Liaison – 800G Coherent Project Status**
 Presenter John D’Ambrosia
 URL https://www.ieee802.org/3/df/public/22_03/dambrosia_3df_01_220315_Redacted.pdf

Mr. D’Ambrosia reviewed the liaison and captured TF discussion in https://www.ieee802.org/3/df/public/22_03/IEEE_802d3_to_OIF_3df_0315_draft_Redacted.pdf.

Mr. D’Ambrosia resumed chairing the call at 11:07am.

Motion #1	Move that the IEEE P802.3df Task Force approve: <ul style="list-style-type: none"> • IEEE_802d3_to_OIF_3df_0315_draft.pdf with editorial license granted to the Chair (or his appointed agent) as a liaison communication from the IEEE 802.3 Working Group to OIF.
Technical (>= 75%)	
Moved by	Mark Nowell
Second by	Mike Li
Results 802.3 (y/n/a)	Approved by unanimous consent

Motion #2	Move to adopt the following objective: <ul style="list-style-type: none"> • Define a physical layer specification that supports 400 Gb/s operation over 4 pairs of SMF with lengths up to at least 2 km
Technical (>= 75%)	
Moved by	Mark Nowell
Second by	Jeffery Maki
Results 802.3 (y/n/a)	Approved by unanimous consent

Motion #3	Move to adopt the eight-lane 800GbE electrical interfaces and PMDs, per lusted_3df_01a_220315.pdf, slides 4-6
Technical (>= 75%)	
Moved by	Matt Brown
Second by	Beth Kochuparambil
Results 802.3 (y/n/a)	Approved by unanimous consent

Motion #4	Move to adopt PAM4 optical modulation as the basis for all the 200 Gb/s per lane 500m and 2km SMF reach objectives
Technical (>= 75%)	
Moved by	Adee Ran
Second by	Joshua Kim
Results 802.3 (y/n/a)	Approved by unanimous consent

Motion #5	Adopt slide 8 of murty_3df_01a_220315.pdf as baselines for 800GBASE-VR8 and 800GBASE-SR8 PMDs.
Technical (>= 75%)	
Moved by	Ramana Murty
Second by	Earl Parsons
Results 802.3 (y/n/a)	Approved by unanimous consent

Chair reviewed future Task Force meetings. See Slide #13 of agenda presentation. Chair noted he would be working on getting meeting invitations sent out, as well as updates to the IEEE P802.3df webpage.

Chair reviewed ad hocs (Slide #14) and reminded everyone of ad hoc meetings (Slide #15).

Session recessed for the day at 11:39am.

IEEE P802.3df 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet Task Force

March 2022 Electronic Session

Session called to order at 10:03 am ET (all times ET), 16 March 2022

Meeting called to order by Mark Nowell, IEEE P802.3df Task Force Vice-Chair

Chair noted that Mr. D'Ambrosia was addressing some personal issues and would be late joining the call.

Chair noted that attendance would be taken by IMAT.

Chair reminded Task Force that today's call required registration and paying meeting fee. Chair noted consequences of non-payment of registration fees. See Slide #2.

Slide #11 - Chair noted that the information regarding the IEEE SA Policies had been sent out, and requested that individuals review the following IEEE SA policies prior to the interim meeting –

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- IEEE SA Copyright Policy
- IEEE SA Participation Policy

Chair asked if anyone needed to review the policies at that time – there were no requests to do so.

Chair presented the third slide (See Slide #31) of the IEEE SA Patent Policy slides. Chair did call for Potentially Essential Patents, and no one came forward.

Chair presented the second slide (See Slide #36) of the IEEE SA Copyright Policy slides. Chair noted – “By participating in this activity, you agree to comply with the IEEE Code of Ethics, all applicable laws, and all IEEE policies and procedures including, but not limited to, the IEEE SA Copyright Policy.”

Chair presented the second slide (See Slide #40) of the IEEE SA Participation Policy slides. Chair noted – “Participants in the IEEE-SA “individual process” shall act independently of others, including employers. By participating in standards activities using the “individual process”, you are deemed to accept these requirements; if you are unable to satisfy these requirements then you shall immediately cease any participation.”

Presentation #10	224G Package Investigations and COM Reference Model
Presenters	Mike Li
URL	https://www.ieee802.org/3/df/public/22_03/mli_3df_01a_220316.pdf

Mr. Li noted that he had made some editorial corrections and would send the updated presentation after the meeting (noted above).

General questions and discussion.

Presentation #11	Reference Die and Package Models for 802.3df Host
Presenter	Mike Li
URL	https://www.ieee802.org/3/df/public/22_03/mli_3df_02a_220316.pdf

Mr. Li noted that he had made some editorial corrections and would send the updated presentation after the meeting (noted above).

General questions and discussion.

Presentation #12 **200 Gb/s Baseline proposal for Annex 93A**
Presenters Rich Mellitz
URL https://www.ieee802.org/3/df/public/22_03/mellitz_3df_01b_220316.pdf

General questions and discussion.

During discussion it was noted that there were some errors that needed to be corrected. Mr. Mellitz will send an updated presentation after the meeting (noted above).

The chair noted that given that IEEE P802.3ck is in SA Ballot that he wanted the latest version of COM to reside on the P802.3ck website, and just point to the .3ck webpage from the .3df webpage. Beth Kochuparambil, chair of IEEE P802.ck agreed, and noted she was uploading the latest version of COM onto the .3ck website. She indicated she would send an email to the .3df electrical reflector when it was uploaded.

Presentation #13 **PAMn vs Channel and FEC Investigations for 224G**
Presenters Mike Li
URL https://www.ieee802.org/3/df/public/22_03/mli_3df_03a_220316.pdf

Mr. Li noted that he had made some editorial corrections and would send the updated presentation after the meeting (noted above).

Meeting break at 11:58am

Meeting reconvened at 12:03pm

General questions and discussion.

Presentation #14 **COM Simulation and Analysis for 200Gbps/lane Chip-to-Module**
Presenter Tobey Li
URL https://www.ieee802.org/3/df/public/22_03/tli_3df_01a_220316.pdf

General questions and discussion.

Note - Chair was contacted after the meeting that the presentation shown was not the one that had been previously sent, and the presenter sent the chair the correct presentation.

Kent Lusted gave the group some closing comments on today's electrical focused presentations and impact on future meetings of the electrical ad hoc.

The chair suggested that more detailed discussion be taken to the electrical reflector.

The chair reminded everyone that we are a contribution driven organization and encouraged individuals to start working together on consensus presentations.

Chair reviewed future Task Force meetings. See Slide #13 of agenda presentation.

Chair reviewed ad hocs (Slide #14) and reminded everyone of ad hoc meetings (Slide #15).

Session recessed for the day at 1:00pm

IEEE P802.3df 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet Task Force

March 2022 Electronic Session

Session called to order at 10:03 am ET (all times ET), 22 March 2022

Meeting called to order by John D'Ambrosia, IEEE P802.3df Task Force Chair

Chair noted that attendance would be taken by IMAT.

Slide #11 - Chair noted that the information regarding the IEEE SA Policies had been sent out, and requested that individuals review the following IEEE SA policies prior to the interim meeting –

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Chair asked if anyone needed to review the policies at that time – there were no requests to do so.

Chair presented the third slide (See Slide #31) of the IEEE SA Patent Policy slides. Chair did call for Potentially Essential Patents, and no one came forward.

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Chair presented the second slide (See Slide #40) of the IEEE SA Participation Policy slides. Chair noted – “Participants in the IEEE-SA “individual process” shall act independently of others, including employers. By participating in standards activities using the “individual process”, you are deemed to accept these requirements; if you are unable to satisfy these requirements then you shall immediately cease any participation.”

Presentation #15 **An investigation of a copper cable assembly channel**
Presenter Nathan Tracy
URL https://www.ieee802.org/3/df/public/22_03/tracy_3df_01a_220322.pdf

General questions and discussion.

Presentation #16 **224G PAM4 CR+/CR Channels and Their Characteristics**
Presenters Mike Li
URL https://www.ieee802.org/3/df/public/22_03/li_3df_01a_220322.pdf

General questions and discussion.

Editorial corrections were made and the presenter will send update to the chair for posting . Update noted above.

Presentation #17 **224G PAM4 CR+/CR Channel COM Analysis**
Presenters Mike Li
URL https://www.ieee802.org/3/df/public/22_03/li_3df_02a_220322.pdf

General questions and discussion.

Editorial corrections were made and the presenter will send update to the chair for posting. Update noted above.

Chair reviewed future Task Force meetings. See Slide #13 of agenda presentation. Chair reviewed ad hocs (Slide #14) and reminded everyone of ad hoc meetings (Slide #15), noting the change of the Optical Ad hoc meeting on 27 Apr to 28 Apr.

Session recessed for the day at 12:00 pm

IEEE P802.3df 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet Task Force

March 2022 Electronic Session

Session called to order at 10:03 am ET (all times ET), 29 March 2022

Meeting called to order by John D'Ambrosia, IEEE P802.3df Task Force Chair

Chair noted that attendance would be taken by IMAT.

Slide #11 - Chair noted that the information regarding the IEEE SA Policies had been sent out, and requested that individuals review the following IEEE SA policies prior to the interim meeting –

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- IEEE SA Participation Policy

Chair asked if anyone needed to review the policies at that time – there were no requests to do so.

Chair presented the third slide (See Slide #31) of the IEEE SA Patent Policy slides. Chair did call for Potentially Essential Patents, and no one came forward.

The Chair reviewed “Other guidelines for IEEE WG meetings. See Slide #32.

Chair presented the second slide (See Slide #36) of the IEEE SA Copyright Policy slides. Chair noted – “By participating in this activity, you agree to comply with the IEEE Code of Ethics, all applicable laws, and all IEEE policies and procedures including, but not limited to, the IEEE SA Copyright Policy.”

Chair presented the second slide (See Slide #40) of the IEEE SA Participation Policy slides. Chair noted – “Participants in the IEEE-SA “individual process” shall act independently of others, including employers. By participating in standards activities using the “individual process”, you are deemed to accept these requirements; if you are unable to satisfy these requirements then you shall immediately cease any participation.”

The chair observed that individuals had been sending him updates of presentations with expectation of their immediate upload. The chair noted that individuals should not assume that their presentations would not be updated on the meeting page website between their immediate upload and the close of the presentation. Reminder - that updates were limited to editorial comments and adding supporters. Chair would ensure that the final presentation would be uploaded.

In addition, the chair reminded individuals that presentations are supposed to be sent in pdf format, be <2MB, and should have the properties fields filled out. Individuals are not doing this, and, going forward, they should not be surprised if the Chair asks them to do so before he uploads presentations.

Presentation #18	800GbE PCS/FEC/PMA Baseline Proposal for PHYs using 8x100G PMD lanes
Presenters	Kapil Shrikhande
URL	https://www.ieee802.org/3/df/public/22_03/shrikhande_3df_01_220329.pdf

General questions and discussion.

Presentation #19	On Technical Feasibility of 800G-LR4 with Direct Detection
Presenters	Robert Rodes
URL	https://www.ieee802.org/3/df/public/22_03/rodes_3df_01a_220329.pdf

General questions and discussion.

Ali Ghiasi requested to be added to presentations supporters list. (Updated presentation noted above.)

Meeting break at 11:45am

Meeting reconvened at 11:50am

Presentation #20 **Proposed 800G LR4 Baseline with PAM4 IMDD**
Presenters Ryan Yu
URL https://www.ieee802.org/3/df/public/22_03/3df_01a_220329.pdf

General questions and discussion.

The chair noted that the following slide had been reviewed by IEEE legal, and asked Mr. Law to review proper discussion. Mr. Law reviewed “Other guidelines for IEEE WG meetings.” See Slide #32 of the agenda deck.

Mr. Law noted that if anyone wishes to make a follow-up presentation regarding the analysis presented, they should contact Mr. D’Ambrosia or Mr. Law first.

Presentation #21 **Considerations on an 800G-LR1 and 800G-ER1 baseline**
Presenters Tom Williams
URL https://www.ieee802.org/3/df/public/22_03/williams_3df_01a_220329.pdf

General questions and discussion.

The chair noted that due to time constraints that the leadership observation summary presentation would not be presented but was loaded to the March webpage for individuals to review.

Presentation #22 **802.3df Leadership Observations: March Meeting Cycle**
Presenter Mark Nowell
URL https://www.ieee802.org/3/df/public/22_03/nowell_3df_01_220329.pdf

Chair reviewed upcoming ad hoc meetings in April. See Slide #15 of agenda presentation.

Chair reviewed future Task Force meetings. See Slide #13 of agenda presentation. Chair noted that he will be consulting with Mr. Law, and presentations proposing relative cost analysis may be requested to be submitted early to allow adequate time to get reviewed.

Session adjourned at 1:06 pm

ATTENDANCE

To Be added

Draft