

Approved Minutes
IEEE 25 Gb/s Ethernet on a Single Lane Study Group
Plenary Meeting
November 4-5, 2014
San Antonio, TX, USA
Prepared by Kent Lusted

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IEEE 25 GbE Study Group Meeting – 4 November 2014:

Prepared by Kent Lusted

IEEE 25 Gb/s Study Group plenary meeting convened at 8:31 a.m., Tuesday, 4 November 2014, by Mark Nowell, IEEE 25 Gb/s Ethernet Study Group Chair.

Introductions were made.

Mark Nowell reviewed agenda in

http://www.ieee802.org/3/25GSG/public/Nov14/agenda_25GE_01a_1114.pdf

Motion #1:

Move to approve the agenda:

- Moved by: Adee Ran
- Second by: Mike Dudek
- Pass by voice without opposition

September 2014 interim minutes were posted shortly after the meeting. No comments were received.

Motion #2:

Move to approve the September 2014 minutes:

- Moved by: Mike Dudek
- Second by: Adee Ran
- Pass by voice without opposition

Called for members of the press. No one responded. Photography and recording are not permitted. Chair reminded participants to observe meeting decorum.

Chair noted that the study group used the ad hocs effectively to progress consensus building.

Chair reviewed the reflector and web information. Chair reviewed the ground rules for the meeting. Chair reviewed the IEEE structure.

Chair reviews the Bylaws and Rules slides in --

http://www.ieee802.org/3/25GSG/public/Nov14/agenda_25GE_01a_1114.pdf

Chair read the Guidelines for IEEE-SA meetings. No one responded.

Chair reminded attendees to sign into the IEEE-SA Meeting Attendance Tool and to sign book. Update affiliation, if necessary.

Chair reviewed the purpose of the study group. The purpose is not to choose a solution but to complete the objectives, PAR and CSD.

Chair reviewed the adopted objectives, CSD responses and PAR summaries in the agenda slides.

Chair reviewed the next steps for the Study Group. Comments from other 802 groups will need to be reviewed and responded to during the week.

Goals for the meeting:

- Review set of objectives for the project
- Review responses for the CSD (Criteria for Standards Development)
- Review PAR
- Review presentations towards developing Task Force proposals
- Review Feedback from other 802 WG and respond

Eric Baden made a late presentation request. Chair asked if there was objection to hearing the presentation, if there is sufficient time. No one responded.

Chair reviewed the future meetings.

Future Meetings:

- Jan 2015 Interim - Week of Jan 12
 - Hyatt Regency, Atlanta, GA, USA
- Mar 2015 Plenary - Week of Mar 8
 - Estrel Hotel and Convention Center, Berlin, Germany
- May 2015 interim – Week of May 18th
 - Pittsburgh, PA

Chair noted that the architecture and optical ad hocs will continue. Ad hoc schedule will be sent to the email reflector.

Chair advised participants that the task force, if approved, may consider an extra interim to help with the schedule. The announcement will be made over the email reflector.

Anyone interested in hosting a meeting should contact the Chair or Steve Carlson.

Presentation #1:

Title: 25GE Study Group Architecture Ad-hoc report

By: Matt Brown

See: http://www.ieee802.org/3/25GSG/public/Nov14/brown_25GE_01_1114.pdf

Presentation #2:

Title: Architectural Thoughts – 25G Interconnect

By: Brad Booth

See: http://www.ieee802.org/3/25GSG/public/Nov14/booth_25GE_01a_1114.pdf

- Discussed CI 74 FEC effectiveness and implementation in industry
- Discussed why CI 91 RS-FEC is not listed as mandatory in the presentation. Presentation outlines minimum criteria.
- Discussed auto-negotiation of 10G FEC on backplanes and linking a lower speed.
- Discussed use case of OTN in switch-to-server interconnects. OTN objective intent is to prevent doing harm.

Presentation #3:

Title: 25G Ethernet Layering and Gaps

By: Yong Kim

See: http://www.ieee802.org/3/25GSG/public/Nov14/baden_25GE_01a_1114.pdf

- Discussed differences between single lane implementations of CI 49 w/ FEC vs. CI 82 w/ RS-FEC.
- Discussed purpose of alignment markers in a single lane PHY. AMs can be used for FEC block delineation.
- Discussed interoperability concern with a PCS that has both an AM and AM-less mode.

Break at 10:30 a.m. Resumed at 10:50 a.m.

Presentation #4:

Title: Sub-Layering for 25GbE

By: Venu Balasubramonian

See: http://www.ieee802.org/3/25GSG/public/Nov14/lo_25GE_01_1114.pdf

- Matt Brown offered his support to the presentation.
- Discussed the implementation impact of 20 lane PCS.
- Discussed the desire to keep CI 83 without modification and make PMA adjustment in the new PMA clause.

Adee Ran had an updated presentation with minor changes and asked to present it. No one objected.

Presentation #5:

Title: RS-FEC synchronization for 25 Gb/s and beyond

By: Adee Ran

See: http://www.ieee802.org/3/25GSG/public/Nov14/ran_25GE_02a_1114.pdf

Presentation #6:

Title: Towards a 25G MMF baseline proposal

By: Jonathan King

See: http://www.ieee802.org/3/25GSG/public/Nov14/king_25GE_01_1114.pdf

Break at 12:10 p.m. Resume at 1:15 p.m.

Presentation #7:

Title: Nomenclature Consensus Building

By: Kent Lusted

See: http://www.ieee802.org/3/25GSG/public/Nov14/lusted_25GE_01a_1114.pdf

- Discussed use of single lane vs. serial in the base standard definitions

Chair reminded attendees to sign into the IEEE-SA Meeting Attendance Tool and to sign the book. Update affiliation, if necessary.

Presentation #8:

Title: Path to a baseline proposal for copper and backplane PMD clauses

By: Adee Ran

See: http://www.ieee802.org/3/25GSG/public/Nov14/ran_25GE_01_1114.pdf

- Discussed on the 5m objective being equivalent to P802.3bj Clause 92.
- Discussed on number of PMD host losses and the impact on the clause organization.
- Discussed PCS requirements on AN being different from the past. This project may have many different capabilities (i.e. FEC, FEC type, host class, etc) that impact what might be advertised in AN.
- Discussed the need for a proposal to resolve the link budget with the different host loss classes for interoperability.

Presentation #9:

Title: Direct attach copper 3 and 5m S parameters

By: Tom Palkert

See: http://www.ieee802.org/3/25GSG/public/Nov14/palkert_25GE_01a_1114.pdf

- Discussion on QSFP to QSFP as 4 links of 25 Gb/s (vs. a 100 Gb/s link) use case.
- Discussion of breakout related to CDFP as 16 links of 25 Gb/s.

Presentation #10:

Title: Channel Budgeting

By: Rich Mellitz

See: http://www.ieee802.org/3/25GSG/public/Nov14/mellitz_25GE_01_1114.pdf

Break at 3:15 p.m. Resume at 3:35 p.m.

Presentation #11:

Title: Measurement Results of up to 3m QSFP-to-4SFP Breakout Cables for Non-FEC 25Gbps/lane Server Connections

By: Erdem Matoglu

See: http://www.ieee802.org/3/25GSG/public/Nov14/matoglu_25GE_01a_1114.pdf

Presentation #12:

Title: Considerations for 25 Gb/s Cable Assembly, Test Fixture, and Channel Specifications

By: Chris DiMinico

See: http://www.ieee802.org/3/25GSG/public/Nov14/diminico_25GE_01_1114.pdf

Presentation #13:

Title: AN Considerations with 25G Ethernet

By: Brad Booth

See: http://www.ieee802.org/3/25GSG/public/Nov14/baden_25GE_02_1114.pdf

Motion #3:

Move to request IEEE 802.3 extend the 25 Gb/s Ethernet Study Group for an additional period of 6 months.

- Moved by: Brad Booth
- Second by: Adee Ran
- Procedural (>50%)
- Y: 41 , N: 0 , A: 1
- Result: passes @ 5:00 pm

Attendance straw polls:

I will attend the IEEE 25 Gb/s meetings at the January interim in Atlanta, GA, USA (week of January 12, 2015)

- Y: 35 , Maybe Y: 2 , Maybe N: 1 , N: 3

I will attend the IEEE 25 Gb/s meetings at the March plenary in Berlin, Germany (week of March 8, 2014)

- Y: 19 , Maybe Y: 17 , Maybe N: 1 , N: 3

Straw Poll #1: 5:08 p.m.

I would support the use of AN as a means of determining configurations (including FEC enable/disable, FEC type, host loss, etc.) for copper links

- Yes: 40
- No: 0
- Abstain: 1

Straw Poll #2: 5:11 p.m.

I support copper cable types in the specification beyond (QSFP-QSFP, QSFP-SFP, and SFP-SFP)?

- Yes: 6
- No: 29
- Abstain: 7

Discussed how to potentially get a sense of the number of host loss variants the study group is willing to consider. Straw poll attempted but ultimately retracted. General discussion considered that there is interest in more than one host loss option. There is interest in support of a higher loss variant, but also interest in supporting asymmetric host losses across a link which would imply support of a lower loss host budget too.

Discussion deferred to future ad hoc meeting and potential straw-man presentations.

Break at 5:39 p.m.

IEEE 25 GbE Study Group Meeting – 5 November 2014:

Prepared by Kent Lusted

IEEE 25 Gb/s Ethernet Study Group plenary meeting resumed at 8:00 a.m., Wednesday, 5 November 2014, by Mark Nowell, 25 Gb/s Ethernet Study Group chair.

Chair noted that no more comments on the project documentation were received last night.

Chair noted that ad hocs will continue as scheduled to address the various working areas.

Chair reminds attendees to sign into the IEEE-SA Meeting Attendance Tool and sign the book.

Kent Lusted displayed 25GE_CSD_BMP_updated_1114.pdf (see http://www.ieee802.org/3/25GSG/public/Nov14/25GE_CSD_BMP_updated_1114.pdf) that incorporates feedback on the CSD Broad Market Potential. Participants discussed the proposed changes.

Motion 4: 8:08 a.m.

Move that the Study Group adopt 25GE_CSD_BMP_updated_1114.pdf for the amended CSD submittal

- Moved by: Rich Mellitz
- Second by: Brad Booth
- Technical ($\geq 75\%$)
- Y: 16+11 , N: 0 , A: 0
- Motion passes!

Kent Lusted displayed 25GE_PAR_v5.pdf (see http://www.ieee802.org/3/25GSG/public/Nov14/25GE_PAR_v5.pdf) that incorporates feedback on the PAR. Participants discussed the proposed changes.

Motion 5: 8:12 a.m.

Move that the Study Group adopt 25GE_PAR_v5.pdf for the amended SG PAR submittal

- M: Brad Booth
- S: Rich Mellitz
- Technical ($\geq 75\%$)
- Y: 16+12 , N: 0, A: 0
- Motion passes!

Agenda complete.

Motion #6: 8:17 a.m.

Motion to Adjourn:

- Moved by: Brad Booth
- Second by: Adee Ran
- Passed by voice without opposition.

Meeting ends at 8:17 a.m.

Attendees

IEEE 25Gb/s Study Group, Nov 2014 Plenary			4-Nov-14	5-Nov-14
Last Name	First Name	Affiliation	Tuesday	Wednesday
Andrewartha	Mike	Microsoft	X	X
Bains	Amrik	Cisco	X	
Balasubramanian	Vittal	Dell Force10	X	
Balasubramonian	Venugopal	Marvell	X	
Booth	Brad	Microsoft	X	X
Brown	Matt	Applied Micro	X	X
Brown	Tom	Vitesse Semiconductors	X	
Calderon	Juan-Carlos	Inphi	X	X
Carty	Clark	Cisco	X	
Castillo	JC	Comira	X	
Cates	Ron	Marvell Semiconductor	X	
Cheng	Xiaoguang "Eric"	Lenovo	X	X
Chidambara	Sundar	Broadcom	X	
Cober	Donald	Comira	X	
Dai	Yuxin	Cox Comm.	X	
DiMinico	Christopher	MC Communications/Panduit	X	
Dudek	Mike	QLogic	X	
Estes	Dave	Spirent Communications	X	
Feller	Scott	Inphi	X	X
Horner	Rita	Synopsys	X	
Kawatsu	Yasuaki	Hitachi-Metals	X	
Kim	Yong	Broadcom	X	
King	Jonathan	Finisar Corp.	X	X
Kipp	Scott	Brocade	X	
Klempa	Mike	UNH-IOL	X	X
Lee	Arthur	MediaTek Inc	X	
Lingle, Jr.	Robert	OFS	X	
Lusted	Kent	Intel	X	X
Marris	Arthur	Cadence	X	X
Matoglu	Erdem	Amphenol	X	
Mellitz	Richard	Intel	X	X
Moritake	Toshiyuki	JAE	X	X
Muir	Ron	JAE	X	X
Mula	Liron	Mellanox	X	
Nogales	Charlie	Emulex	X	X
Nowell	Mark	Cisco	X	X
Palkert	Tom	Luxtera	X	
Petrilla	John	Avago Technologies	X	
Rabinovich	Rick	Alcatel-Lucent	X	X
Ran	Adee	Intel	X	X

IEEE 25Gb/s Study Group, Nov 2014 Plenary			4-Nov-14	5-Nov-14
Last Name	First Name	Affiliation	Tuesday	Wednesday
Roth	Christopher	Molex	X	X
Sameer	Shah	Broadcom	X	
Seiger	Alex	UNH-IOL		X
Shami	Qhsim	Comira	X	
Shanbhag	Megha	TE Connectivity	X	X
Shrikhande	Kapil	Dell	X	
Slavick	Jeff	Avago Technologies	X	X
Sommers	Scott	Molex	X	
Stone	Rob	Broadcom	X	
Tseng	WenCheng	MediaTek	X	X
Twombly	Jeff	Credo	X	
Wertheim	Oded	Mellanox	X	
White	Martin	Cavium	X	X
Zambell	Andrew	FCI	X	
Zhuang	Yan	Huawei	X	