Unapproved Minutes

IEEE 802.3 100 Gb/s Wavelength Short Reach PHYs Study Group Ad Hoc Meeting

WebEx Meeting
April 9, 2020
Prepared by Mabud Choudhury

Group Name: IEEE 802.3 100 Gb/s Wavelength Short Reach PHYs Study Group
Date/Location: Thursday, April 9, 2020. WebEx meeting.
Chair: Robert Lingle, Jr, affiliated with OFS
Recording Secretary: Mabud Choudhury, affiliated with OFS
Meeting Participants: Attendance is listed in Appendix A (39 attendees)

Call to order:
IEEE 802.3 100 Gb/s Wavelength Short Reach PHYs (100GSR) Study Group (SG) Ad Hoc WebEx meeting was convened at 12:03 PM Eastern Daylight Time (EDT/ UTC -4), Thursday, April 9, 2020 by Robert Lingle, Jr., 100GSR SG Chair.

Mr. Lingle welcomed attendees. He requested that each attendee indicate their name and employer/affiliation in an e-mail to the ad hoc recording secretary: Mabud Choudhury (mchoudhury@ofsoptics.com) for the meeting minutes.

Presentation #1:
Title: "Agenda, Study Group Status and Work"
Presenter: Robert Lingle, Jr. (OFS)
lingle_100GSR_adhoc_01a_040920.pdf

Mr. Lingle then proceeded with reviewing the **Agenda** and asked if there any modifications, additions or deletions? There were none.
The agenda was approved by the ad hoc. Approved Agenda:

- Meeting Attendance and WebEx
- Approve Agenda
- 100GSR Study Group ad hoc communications
- IEEE Patent Policy reminder: https://mentor.ieee.org/myproject/Public/mytools/mob/preparslides.pdf
- IEEE SA Copyright Policy reminder: https://standards.ieee.org/ipr/index.html
- IEEE Participation Requirements reminder: https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/Participant-BehaviorIndividual-Method.pdf
- SG Status
- Call for Contributions for May 13th 100GSR SG Interim Teleconference
- Presentation
    - "200G-DR2 Considerations" Brian Welch (Cisco)
    - "100Gbps MMF Objectives" Steve Swanson (Corning)
- Future Meetings

Chair showed the links to the IEEE 100GSR Study Group page, ad hoc page and the email reflector.

Chair inquired if there were new participants who were unfamiliar with IEEE SA meeting policies and guidelines. There were new participants who requested review of all policies and guidelines slides. Chair reviewed the **Guidelines for IEEE SA Meetings**, which includes IEEE patent policy for pre-PAR projects.

IEEE SA Copyright Policy: Mr. Lingle provided overview of slides 7-8 of lingle_100GSR_adhoc_01a_040920.pdf entitled "IEEE SA Copyright Policy" at 12:08 PM EDT/ UTC -4.

IEEE SA Participation Policy: Mr. Lingle showed the participation policy slides 9-11 of lingle_100GSR_adhoc_01a_040920.pdf .

The Chair provided links for Draft PAR, CSD and Objectives.

- PAR
- Criteria for Standards Development
- Objectives

Chair reviewed the SG approved Objectives.

The Chair then reviewed information for the **SG Interim Teleconference on May 13, 2020 meeting**:

- Details:
    - May 13, 2020 at 10am US Eastern Time for up to 3 hours, Webex meeting
    - Will be able to vote on motions and conduct the full business of the SG
    - Final guidance on procedures will be forthcoming soon. It is likely that a procedure will be followed whereby you will register to attend the Study Group Telephonic Interim, at least one hour in advance, to allow the chair to compose a roll, to be used for roll-call voting.

- Goal:
    - Vote on motions for additional objectives plus potential changes to the previously adopted PAR/CSD responses
    - We need to forward our final PAR, CSD responses to the EC going into the July Plenary

Chair indicated that there are three (including current April 9 meeting) Ad Hoc calls scheduled between now and the Telephonic Interim.

Future meetings:

- Ad Hoc Meetings:
    - April 23, 2020, 12 noon – 2 pm EDT/UTC -4
    - May 7, 2020, 12 noon – 2 pm EDT/UTC -4
    - Ad Hoc Call Schedule & Info: http://www.ieee802.org/3/100GSR/public/adhoc/
- Interim Teleconference:
    - May 13, 2020, 10 am – 1 pm EDT/UTC -4

Chair reviewed call for contributions for May 13th SG Interim Teleconference meeting:

- Deadlines/Topics
    - The presenter shall request time by MONDAY, MAY 4th, 2020 11:59pm (AoE). Requests shall be submitted by sending an email to the Chair, rlingle@ofsoptics.com

    - The presenter shall submit a PDF, soft-copy version of the presentation, by e-mailing it to the Chair, rlingle@ofsoptics.com . This shall be done by FRIDAY, MAY 8th, 2020 11:59pm (AoE) for publication to the IEEE 802.3 100 Gb/s Wavelength Short Reach PHYs Study Group webpage.
    - Presentations directly related to PAR, CSD and Objectives are encouraged. Contributions on other topics will only be considered after all other agenda items are completed.
- Procedure for Presenters: http://www.ieee802.org/3/100GSR/public/presentproc.html

Presentation #2:
Title: "200G-DR2 Broad Market Potential"
Presenter: Brian Welch (Cisco)
welch_100GSR_adhoc_01_040920.pdf

- Presentation provided:
    - Relative Market Sizes (≤ 2km) for 100G, 200G, 400G
    - Potential 200G-DR2 Applications:
        - TOR Uplinks
        - Server Uplinks
- Technical discussion followed.
- Topics discussed included:
    - Relative market sizes based on reach
    - 400G-SR8 utilized as 2x200G (included in 200G market size) vs. 400G (not included in 400G market size)
    - For server uplinks application, TOR elimination for 200G NIC, with 200G-DR2 uplink directly to the Tier 1 switch – eliminating TOR depends on DC operator
    - 50G vs. 100G SERDES
- Author welcomed feedback from the group.

Presentation #3:
Title: "100Gbps MMF Objectives"
Presenter: Steve Swanson (Corning)
swanson_100GSR_adhoc_01_040920.pdf

- Presented:
    - Two distinct market needs for the 100G Short Reach MMF SG:
        - Interconnects between switches - based on supporting the maximum link length MMF 100G switch-to-switch interconnect, 100 m desirable with cost less than 100G-DR
        - Interconnects between switches and servers - based on supporting the minimum cost MMF 100G switch-to-server interconnects, cost competitive with AOC and copper
- Proposed:
    - One set of objectives supporting 100m switch-to-switch
    - One set of objectives supporting lowest cost switch-to-server, 20 m
- Technical discussion followed.
- Topics discussed included:

    - Recent “800G MSA” paper – questions whether 50m over MMF is long enough for 800G-SR8 applications.
    - 50 m reach objective – desirable based on timing, cost effectiveness of 20 m PMD vs. 50 m PMD, optical requirements for 100 m reach very different from those for 50 m reach, additional time required to determine technical/economic feasibility of 100m reach is possible
    - Meeting power targets very difficult with 100m reach
    - Chromatic dispersion for OM3/4 should be same as OM5
    - Relative cost vs. length plot needed. It would be difficult to show combined technical and economic feasibility for 100m
    - OFC paper, 100G single wavelength VCSELs will go 1km at both 850 and 910. Contribution for next ad hoc meeting. SM VCSELs – power, temperature concerns
    - Broadcom OFC paper on reach
- Author welcomed feedback from the group.

Chair encouraged continued discussion on objectives on reflector.

The Study Group Ad Hoc meeting was adjourned at 2:02 PM EDT/ UTC -4, Thursday, April 9, 2020.

Next Meeting:
Scheduled (pending contributions) 100GSR SG ad hoc WebEx meeting for Thursday, April 23, 2020 at 12:00 noon – 2 pm EDT/UTC -4.

Appendix A: Attendees at the IEEE 802.3 100 Gb/s Wavelength Short Reach PHYs Study Group WebEx Ad Hoc Meeting, 9 April 2020.
39 individuals attended on Thursday, 9 April 2020, 12:03 PM – 2:02 PM EDT/UTC -4

	Last Name	**First Name**	**Employer**	**Affiliations**
1	Abbott	John	Corning	Corning
2	Akbaba	Enis	Maxim Integrated	Maxim Integrated
3	Bhatt	Vipul	II-VI	II-VI
4	Bruckman	Leon	Huawei	Huawei
5	Chen	Chan Chih (David)	AOI	AOI
6	Chorchos	Lukasz	VI Systems GmbH	VI Systems GmbH
7	Choudhury	Mabud	OFS	OFS
8	Dawe	Piers	Mellanox	Mellanox
9	Dudek	Mike	Marvell	Marvell
10	Ghiasi	Ali	Ghiasi Quantum	Ghiasi Quantum
11	He	Xiang	Huawei	Huawei
12	Jackson	Ken	Sumitomo Electric	Sumitomo Electric
13	Kamino	John	OFS	OFS
14	LeCheminant	Greg	Keysight Technologies	Keysight Technologies
15	Ledentsov	Nikolay N.	VI Systems GmbH	VI Systems GmbH
16	Ledentsov Jr.	Nikolay	VI Systems GmbH	VI Systems GmbH

17	Lewis	David	Lumentum	Lumentum
18	Lingle, Jr	Robert	OFS	OFS
19	Lusted	Kent	Intel	Intel
20	Maki	Jeffrey	Juniper Networks	Juniper Networks
21	Malicoat	David	Malicoat Networking Solutions	Senko Advanced Components
22	Marques	Flávio	Furukawa Electric LatAm S.A.	Furukawa Electric LatAm S.A.
23	Mi	Guangcan	Huawei	Huawei
24	Murray	Dale	LightCounting	LightCounting
25	Murty	Ramana	Broadcom	Broadcom
26	Nicholl	Gary	Cisco	Cisco
27	Parsons	Earl	CommScope	CommScope
28	Piehler	David	Dell Technologies	Dell Technologies
29	Pondillo	Peter	Corning	Corning
30	Sorbara	Massimo	GlobalFoundries	GlobalFoundries
31	Stassar	Peter	Huawei Technologies	Huawei Technologies
32	Sun	Yi	OFS	OFS
33	Swanson	Steve	Corning Incorporated	Corning Incorporated
34	Thompson	Geoff	GraCaSI S.A	Independent
35	Ulrichs	Ed	Source Photonics	Source Photonics
36	Welch	Brian	Cisco	Cisco
37	Young	Dianna	Corning	Corning
38	Young	James	CommScope	CommScope
39	Zhang	Bo	Inphi	Inphi