Meeting Minutes

Group: IEEE P802.3cs Physical Layers for increased-reach Ethernet optical subscriber access
(Super-PON) Task Force

Event: Plenary meeting

Date: July 17th, 2019

Location: Vienna, Austria

Opening

9:08 AM: The meeting was called to order by Claudio DeSanti, the Task Force chair. Duane Remein was
volunteered to be the Recording Secretary (using his "new" ultra-low power computing device).

Note: all URLs prefaced with http://www.ieee802.org/3/cs/public/201907/ unless otherwise noted.

Motion #1

Move to approve the agenda as recorded in 20190717-Agenda.pdf

Moved: Vince Ferretti   Second: Phong Pham

Procedural (>50%)   Passed by voice without opposition

Motion #2

Move to approve the minutes of the past meetings
– May 21, 2019 http://www.ieee802.org/3/cs/public/201905/20190521-Minutes_P802d3cs_Salt_Lake.pdf
– June 20, 2019 http://www.ieee802.org/3/cs/public/AdHoc/20190620-Minutes.pdf

Moved: Duane Remein   Second: James Young

Procedural (>50%)   Passed by voice without opposition

The Chair gave his opening report including decorum, goals, big ticket items, reflector, web site, process,
etc.

9:15 AM: The chair made a call for patents; no response was made.

The Chair reviewed the IEEE Participation guidelines. It was suggested that a liaison be established with
ITU-T Q2/SG15 about the G.9807.3 project.

Presentations

All presentations are in the following format:

Presentation #

| **Title** | Presenter | affiliation |

Comments

Filename: FileRef

Presentation # 1

EDFAs and WDM Operation	Earl Parsons	CommScope
	Xiangjun Zhao	Google
	Liang Du	Google

This presentation covered a review of EDFA characteristics; in particular, constant gain vs constant power operation was covered. It was noted that the ODN needs to be leveled so the upstream amplifier input power from each wavelength at the EDFA input is within 15 dBs of all other wavelengths. Furthermore, the total power input to the EDFA needs to be constrained. Lastly, we need to consider the intrinsic noise (ASE) of the amplifier in specifying the black link.

Filename: 20190717-EDFA_and_WDM.pdf

Presentation # 2

| **P802.3cs Black Link Parameters** | Claudio DeSanti | Google |
| | Liang Du | Google |

This presentation summarized the needed parameters for specification o the black link via a comparison with the G.689.2 specification. Parameters were proposed for the OLT and the ONU for both transmit and receive optical budgets.

Filename: 20190717-Black_Link_Parameters_v1.pdf

Presentation # 3

| **P802.3cs Black Link Parameters** | Claudio DeSanti | Google |

This presentation proposed the cleaned up tables needed for the standard following the previous discussion.

Filename: 20190717-Updated_Link_Parameters_v1.pdf

10:27 AM Break, reconvened at 10:45ish.

Presentation # 4

| **Considerations for Link Loss** | Vince Ferretti | Corning |

This presentation summarized the characteristic of modern optical fiber based on a recent study. The conclusion is that use of statistical modeling is very appropriate for the Super-PON application. It was suggested that this be illustrated in an annex to the draft.

Filename: 20190717-Link_Loss.pdf

Presentation # 5
Low loss CAWG design for Super-PON systems

Henk Bulthuis   Broadex Technologies

This presentation summarized the characteristics of athermal AWGs. The insertion loss of these devices is typically about 4.8 dB for 16 channel devices and 5.8 dB for 20 channel devices. Loss mechanisms were detailed and improvements with technology development were illustrated. A loss of between 4.7 and 3.2 dB is achievable.
Filename: 20190717-Low_Loss_CAWG.pdf

Presentation # 6
Super-PON Link Budget Analysis   Liang Du   Google

This presentation summarized the Super-PON link budget. A total loss of ~41.1 dB (possibly more with connectors) is expected and a "worst case" loss of 47.8 dB (L Band) or 44.05 (C Band) may be seen if splices are lossy. The presentation included analysis of the black link points and optical power requirements, ER analysis, ODN component loss. It was noted a reasonable loss downstream of 41.5 dB and upstream of 39.3 dB is expected. It was concluded that we cannot assume "worst case" for all components and must use at least some statistical modeling.
Filename: 20190717-Super-PON_Link_Budget.pdf

Presentation # 7
Super-PON PCS Options   Claudio DeSanti   Google

This presentation suggested that we could use the P802.3av or the 802.3ca PCS. These two PCS specifications were compared and contrasted. It was also suggested that tunability may be fixed (no tuning) or limited to installation time, which would help lower costs. A method to use an XGMII for 2.5 Gb/s was noted. It was suggested that the Discovery process for either 802.3av or P802.3ca could be extended to accommodate the needed wavelength information.
Filename: 20190717-PCS_v1.pdf

12:28 PM: Recessed for lunch, resumed at 1:00 PM

Comment Resolution

The 10 received comments were reviewed and resolved (See 802d3cs_D0_1_approved.pdf).

Motions and Closing

Motion #3
Move to accept 20190717-Updated_Link_Parameters_v1.pdf for inclusion in the next version of the P802.3cs draft
Moved: Liang Du   Second: Vince Ferretti
For: 7   Against: 0   Abstain: 4
Technical (≥75%)   Motion Passed

Motion #4

Move to instruct the editor to generate P802.3 draft 0.2, using draft 0.1 as baseline and incorporating all accepted material

Moved: Marek Hajduczenia   Second: Duane Remein

For: 9   Against: 0   Abstain: 2

Technical (≥75%)   Motion Passed

The Chair proposed a teleconference for August 22 @ 10:30am PDT.

The Chair recorded the normal future meeting polls.

Motion #5

Move to adjourn.

Moved: Mark Laubach   Second: Marek Hajduczenia

Procedural (>50%)   Passed by voice without opposition

1:30 PM: The meeting was adjourned.

Attendees

Name	Employer	Affiliation
Arkin Aydin	Nokia	Nokia
Bill Powell	Nokia	Nokia
Claudio DeSanti	Google	Google
Daisuke Ogawa	NEL	NEL
Dekun Liu	Huawei	Huawei
Duane Remain	Futurewei	Futurewei
Earl Parsons	CommScope	CommScope
Edward Walter	AT&T	AT&T
Erick Pelletier	Teraxion	Teraxion
Glen Kramer	Broadcom	Broadcom
Han Hyub Lee	ETRI	ETRI
James Young	CommScope	CommScope
Liang Du	Google	Google
Marek Hajduczenia	Charter	Charter
Mark Laubach	Broadcom	Broadcom
Phong Pham	US Conec	US Conec
Vince Ferretti	Corning	Corning