IEEE 802.3 Ethernet Working Group
Liaison Communication

Source: IEEE 802.3 Working Group[1]

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From: IEEE 802.3

Subject: Liaison on Wavelength Plan for P802.3ca

Approval: Agreed to at IEEE 802.3 Jan 2017 Interim Meeting, Huntington Beach, CA, USA

Deadline: 10 March 2017

Dear Mr. Trowbridge,

The IEEE P802.3ca Task Force is progressing on its work on 25Gb/s, 50Gb/s, and 100Gb/s PON, and is currently in the phase of "baseline selection," which is when the group makes all of the major technical design decisions for the project. One of the choices before the group is the selection of the wavelength plan. There have been many technical contributions, and many candidate plans have been considered. We invite all interested parties to review all our meeting materials, which are available at the IEEE P802.3ca web page http://www.ieee802.org/3/ca/index.shtml.

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[1] This document solely represents the views of the IEEE 802.3 Working Group, and does not necessarily represent a position of the IEEE, the IEEE Standards Association, or IEEE 802.

Currently, there are two plans that are of particular interest due to various factors of performance, cost, and technical feasibility. These plans are outlined in the following table. Note that these wavelengths are approximate, and subject to change / optimization.

Plan	Upstream				Downstream			
	Ch1	Ch2	Ch3	Ch4	Ch1	Ch2	Ch3	Ch4
A	1290	1295	1300	1305	1340	1345	1350	1355
B	1270	1295	1300	1305	1340	1345	1350	1355

Wavelength plan table

The purpose of this liaison is to raise the awareness of your groups to these plans, and to ask for your input. The choice of wavelength plan has direct impact on the coexistence capabilities of the system, and the coexistence requirements need clarification. The following matrices display the PMD coexistence that is possible between the various systems that are being defined in IEEE P802.3ca and other legacy systems. The green boxes show possible coexistence, and the acronyms give the method of coexistence possible. The red boxes are combinations that are not possible.

As can be seen from these matrices, there are distinct coexistence possibilities for these plans. Since coexistence is a key capability for the PON system, our group seeks more input on the requirements for coexistence, and this input will be given all due consideration in the task force decision making process. This can come in the form of a liaison response, or in contributions to our meetings, or as participation; and we hope that this can be provided by our next face-to-face meeting, which is scheduled to be March 13-16 in Vancouver, Canada. There may be earlier teleconferences that could also be used for information exchange (see website for details), and the group also has a publicly available email exploder that can be utilized for discussion on this topic.

Sincerely,

David Law

Chair, IEEE 802.3 Ethernet Working Group

	40nm G-PON	20nm G-PON	XG(S)-10GE-PON	25/10-EPON	25/25-EPON	50/25-EPON	50/50-EPON	100/50-EPON
XG(S)-10GE-PON	WDM WDMA	WDM WDMA						
25/10G-EPON	WDM WDMA	WDM WDMA	WDM TDMA					
25/25G-EPON	No	WDM WDMA	WDM WDMA	TDM WDMA				
50/25G-EPON	No	WDM WDMA	WDM WDMA	TDM WDMA	TDM TDMA			
50/50G-EPON	No	No	WDM WDMA	TDM WDMA	TDM TDMA	TDM TDMA		
100/50G-EPON	No	No	WDM WDMA	TDM WDMA	TDM TDMA	TDM TDMA	TDM TDMA	
100/100G-EPON	No	No	WDM WDMA	TDM WDMA	TDM TDMA	TDM TDMA	TDM TDMA	TDM TDMA

Plan A coexistence matrix

[add G after 25/10 etc. in both tables]

	40nm G-PON	20nm G-PON	XG(S)-10GE-PON	25/10-EPON	25/25-EPON	50/25-EPON	50/50-EPON	100/50-EPON
XG(S)-10GE-PON	WDM WDMA	WDM WDMA						
25/10G-EPON	WDM WDMA	WDM WDMA	WDM TDMA					
25/25G-EPON	WDM WDMA	WDM WDMA	WDM TDMA	TDM TDMA				
50/25G-EPON	WDM WDMA	WDM WDMA	WDM TDMA	TDM TDMA	TDM TDMA			
50/50G-EPON	No	No	WDM TDMA	TDM TDMA	TDM TDMA	TDM TDMA		
100/50G-EPON	No	No	WDM TDMA	TDM TDMA	TDM TDMA	TDM TDMA	TDM TDMA	
100/100G-EPON	No	No	WDM TDMA	TDM TDMA	TDM TDMA	TDM TDMA	TDM TDMA	TDM TDMA

Plan B coexistence matrix