IEEE 802.3 Ethernet Working Group
Liaison Communication

Source:	IEEE 802.3 Working Group[1]	
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Subject:	Liaison reply to Low Power Modes for Fibre backhaul for FTTdp October 3, 2016 Communication	
Approval:	Agreed to at IEEE 802.3 Plenary meeting, San Antonio, TX, USA, 10th November 2016	

[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.

Dear Michael,

Thank you for your liaison letter regarding Low Power Modes for Fibre backhaul for FTTdp.

Regarding the energy efficiency features of P2MP (EPON) systems, these are defined in IEEE Std 1904.1-2013. This allows the ONU to go into a low power mode where the optical transceiver and associated electronics can be powered down. The time required to go into this mode is implementation specific, but are on the order of a millisecond. Therefore, to support low bandwidth modes, a rapid duty cycling of the ONU is possible while still maintaining a reasonable latency. The amount of power that can be saved is implementation and configuration specific, but the requested 10x reduction is within the realm of possibility. A key aspect of any power saving system is the prompt and accurate triggering of the low power transitions, and if the G.fast subsystem can provide that cueing, then the overall system will perform better.

Regarding the EEE protocol for P2P Ethernet technologies, as defined in IEEE Std 802.3-2015, Clause 78 IEEE 802.3 optical PHYs specified for P2P operation may support the optional Energy Efficient Ethernet (EEE) fast wake capability. This capability enables entering the Low Power Idle (LPI) mode to conserve energy during periods of low link utilization, which does not imply operating at some lower rate of operation. Power savings are realized in this mode of operation by essentially enabling the powering down of circuitry behind the optical PHY, rather than by reducing the power associated with the optical PHY.

The extension to the EEE protocol for optical PHYs suggested for P2P Ethernet technologies would require a new project. One of the first steps in the IEEE 802.3 standards development process is the creation of a Study Group. Study groups are chartered to create a formal Project Authorization Request (PAR) document that includes a description of the project’s scope and purpose. As a contribution driven organization, we welcome the participation of individuals who are interested in initiating new projects. Furthermore, to assist in developing consensus on new Ethernet projects, the IEEE 802.3 Next Generation Enterprise/Campus/Data Centre (NG-ECDC) ad hoc is a forum that can be leveraged.

Please feel to refer any interested individuals to contact me.

Sincerely,
David Law
Chair, IEEE 802.3 Ethernet Working Group