# IEEE 802.3 Ethernet Working Group
# DRAFT Liaison Communication

Source: IEEE 802.3 Working Group[1]

Subject: Reply to Incoming Liaison JTC 1/SC 25/WG 3 N 1330

Approval: Agreed to at IEEE 802.3 Working Group meeting, Teleconference, 19 Jan 2023

Dear Dr. Oehler,

We would like to thank you for your liaison communication JTC 1/SC 25/WG 3 N 1330. We notice that you ask for information on three separate points:

- predicted average lengths of installed cabling and length expectations for 1 pair remote powering
- cabling structures, e.g., connected via plug or fixed cabling
- use cases for 1 pair remote powering, especially applications requiring 2 A
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We will address the three of these separately.

For predicted average lengths, IEEE 802.3 does not specify lengths of cabling for powering, but instead specifies the loop resistance. Because we do not specify the construction of cabling, including such factors as the gauge and materials of the wiring, these are not directly translatable to length. Furthermore, we specify a maximum resistance and therefore do not have information to offer you on average lengths of cable used for 802.3 powering applications. We would appreciate WG3's assistance in providing generic cabling specifications to meet the loop resistance specifications found in Clause 104 of IEEE Std 802.3-2022.

Regarding cabling structures, generally IEEE 802.3 looks to other standards bodies, including ISO/IEC SC25 WG3, to define the construction and structure of the cabling. However, any link segment which meets the performance requirements specified in IEEE Std 802.3 would be compliant. The cabling technology used to implement IEEE 802.3 systems can vary substantially by use case. For example, the IEEE P802.3dg Task Force has recently seen discussions of the construction of special purpose cabling used in motor control applications which is significantly different than the generic cabling we might normally consider. One can see that our constructions could be very broad ranging.

For use cases, please find the 'use case library' compiled by the Single Pair Multidrop Study Group: https://www.ieee802.org/3/SPMD/usecase/SPMD_Usecase_Library.pdf. The consensus is the use cases listed on slide two of the presentation are generally applicable to point to point cases in addition to multidrop use cases.

https://www.ieee802.org/3/cg/public/Jan2017/10SPE_Powering_Use_Cases_BV.pdf

https://www.ieee802.org/3/cg/public/Jan2017/Graber_10SPE_09a_0117.pdf

[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.

Some of these use cases may not be appropriate for WG3, and we look to WG3 for guidance as to which of these falls with their scope.

Thank you for your continued collaboration with the IEEE 802.3 Working Group.

Sincerely,

David Law

Chair, IEEE 802.3 Ethernet Working Group