ISO/IEC JTC 1/SC 25/WG 3 N 1329
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ISO/IEC JOINT TECHNICAL COMMITTEE 1

SUBCOMMITTEE No.25: INTERCONNECTION OF
INFORMATION TECHNOLOGY EQUIPMENT
WORKING GROUP 3: CUSTOMER PREMISES CABLING

To: David Law, Chairman IEEE 802.3 [redacted]

CC: Adam Healey, Vice Chair IEEE 802.3, [redacted]
Jon Lewis, Secretary, IEEE 802.3 Ethernet Working Group, [redacted]
Konstantinos Karachalios, Secretary, IEEE-SA Standards Board, [redacted]
Paul Nikolich, Chair, IEEE 802 LMSC, [redacted]
James Withey, IEEE 802.3 Liaison Officer, [redacted]

Subject: Liaison from ISO/IEC JTC 1/SC 25/WG 3 on multi-drop cabling

Dear Mr Law,

Firstly, we thank you for your prior liaison providing update of the status of project IEEE 802.3da and confirmation of cooperation once further developed.

We are also writing to inquire more about the bandwidth differences of differential transmission parameters vs. mixed mode transmission parameters in IEEE 802.3cg.

Above 40 MHz, where the return loss could fall less than 8 dB, the significant presence of reflections makes it difficult to control the reflected mode conversion performance (TCL/LCL). Our analysis of inclusion of potential filter inductance to compensate node return loss appears to exacerbate this concern as the high frequency roll-off of return loss increases leading to excessive reflections at a lower frequency.

In light of this concern, would you be able to provide more context into why such a large mode conversion bandwidth is needed in IEEE 802.3cg and any analysis into control of these parameters in multidrop systems? Specifically, could we reduce the maximum frequency to 100 MHz or 40 MHz for all parameters? In response, could you also comment on the expected impedances in mode conversion specifications in mixing segments? More specifically, would this parameter apply to both 50 Ω transmit impedances and 10 kΩ high impedance receive impedances

Sincerely,

Albrecht Oehler
Convenor, ISO/IEC JTC 1/SC 25/WG 3