

## IEEE P802.3cr D3.1 Maintenance #14: Isolation 1st Sponsor recirculation ballot comments

CI 0	SC 0	P63	L11	# R1-17
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Comment Type	TR	Comment Status	R
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This comment applies to 70.9.1, 71.9.1, 72.9.1, 84.10.1, 93.10.1, 94.5.1, 130.9.1, 83A.6.1, and 83B.3, which specify backplane PHYs and chip-to-chip AUIs.

The change introduced in D3.1 states that equipment "shall conform to the applicable requirements of Annex J". It is not stated which requirements are applicable and which aren't. The possible interpretation that all requirements are applicable including J.1, would mean that equipment "shall withstand" electrical isolation tests such as 1500 V rms or 2250 V dc for 60 seconds.

These isolation tests are designed for devices with magnetic AC coupling, mainly BASE-T PHYs, and are unsuitable for backplane PHYs; Backplane PHYs can have DC coupled connections at least on their transmitter connection (AC coupling is either in the Rx connection or in the channel). With a 100 Ohm differential termination, such a test means the termination dissipates tens of kW, which is unthinkable. In addition, the requirement that "the resistance after the test shall be at least 2 MΩ, measured at 500 V dc" cannot be met even before the test, since the resistance in these interfaces is 100 Ohms. Even AC coupled interfaces (where they exist) are not designed to withstand these high voltages.

From the above I conclude that isolation requirements in J.1 are definitely inapplicable for these PHYs, which leaves only the safety requirements in J.2. The text in Draft 3.0 described this accurately and should not have been changed.

It is unclear to me what the phrase "(including isolation requirements)" in these clauses of the base document refers to, since the IEC 60950-1 is not publicly available. If it implied something like the content of J.1, then it is a mistake that should be corrected in this project.

Note that the copper cable PHYs (Clauses 54, 84, 92, 110, 136) all point to 14.7, which only includes the safety requirements in J.2, as appropriate. Also, the related Clause 128

*SuggestedRemedy*

Revert the text in 70.9.1, 71.9.1, 72.9.1, 84.10.1, 93.10.1, 94.5.1, 130.9.1, 83A.6.1, and 83B.3, to what Draft 2.0 has in these places:

"shall conform to the general safety requirements as specified in J.2".

Response	Response Status	W
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REJECT.

The CRG disagrees with the commenter. The deleted text includes a parathetical expression "including isolation requirements" which includes all sections of Annex J.