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Title: LS/r on IEEE 802.3 Ethernet Working Group contribution to ITU-T SG5 (reply to [IEEE.802.3-LS10](#))

LIAISON STATEMENT

For action to: -

For information to: IEEE 802.3 Working Group

Approval: ITU-T Study Group 5 meeting (Virtual, 20 May 2021)

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Abstract: This liaison replies to IEEE 802.3 Working Group on the revisions to Recommendation ITU-T K.147 “Ethernet port resistibility testing for overvoltages and overcurrents”.

This liaison answers [IEEE.802.3-LS10](#).

ITU-T Study Group 5 would like to thank the IEEE 802.3 WG for reviewing Recommendation ITU-T K.147 “Ethernet port resistibility testing for overvoltages and overcurrents”.

In Recommendation ITU-T K.147, the key protection parameters needed are the maximum working voltages, maximum currents, data rates and loop resistance. These will determine the protector voltage threshold, capacitance, current threshold, and any series resistance value. Under surge conditions, the link cable, connectors, transformers, EMC screen spacing, printed wiring, power source, power conversion and transceiver voltage withstands will set the maximum limiting voltage at various points in the system. Guidance on these parameters and circuit configurations need to be included in Recommendation ITU-T K.147 and not in another document.

ITU-T SG5 experts reviewed the contribution and found the suggestion of directly referring to IEEE 802.3 had the following drawbacks:

1. The suggestion to look in IEEE 802.3 for protection parameters is not particularly practical as IEEE 802.3 is nearly 100 MB in size and over 500 pages long.
2. When reviewing IEEE 802.3, it was discovered that its content is in conflict with established ITU-T test levels and test circuits. This means IEEE 802.3 can only be an informative reference in bibliography and should not be a normative reference. Otherwise, it would cause confusion when implementing related ITU-T Recommendation practice.

3. The IEEE 802.3 vocabulary is very different than the ITU-T protection vocabulary.
4. The ITU-T generated informative figures, such as conductor usage for data and powering, were removed.
5. Technically the IEEE 802.3 is missing important protection information such as conventional two-winding common-mode chokes cannot be used with PoE because the net twisted pair DC would saturate the magnetic core.

ITU-T SG5 experts concluded at the meeting that the drawbacks of referring to IEEE 802.3 for protection parameters far outweighed any advantage it will bring. The belief that IEEE 802.3 contains everything that a protection engineer needs to know about Ethernet network protection may have been engendered by the copious references made to the IEEE 802.3 in the original Recommendation.

ITU-T SG5 would like to thank the IEEE 802.3 WG for their review as it identified items that were not clear or redundant. Q2/5 will take appropriate action to improve Recommendation ITU-T K.147 that give greater focuses on protection needs and use familiar ISO/IEC/ITU networking terminology.
