Text for Environmental sections of 802.3dg

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(text is adapted from Clause 146 and Clause 188 (802.3da, in draft):

Insert text in 190.9:(P109 L48)

190.9.1 General safety

Equipment subject to this clause shall conform to the general safety requirements in J.2. An example of an application-specific standard potentially applicable to this clause is IEC 61010-1. All equipment subject to this clause may be additionally required to conform to any applicable local, state, or national standards

190.9.2 Network safety

All cabling and equipment subject to this clause is expected to be mechanically and electrically secure in a professional manner. All 100BASE-T1L cabling is expected to be routed according to any applicable local, state, or national standards considering all relevant safety requirements.

190.9.2.1 Environmental safety

This subclause sets forth a number of recommendations and guidelines related to safety concerns; this list is neither complete nor does it address all possible safety issues. The designer is urged to consult the relevant local, national, and international safety regulations to ensure compliance with the appropriate requirements. Systems described in this subclause are subject to various environmental hazards during their installation and use. In particular, equipment used in automotive and industrial environments can expect to meet the potential environmental stresses with respect to their mounting location defined for the application. Stresses expected in these environments may include but are not limited to those found in the listed specifications.

The following specifications define potential environmental stresses in an industrial environment:

— Environmental loads: IEC 60529 and ISO 4892

— Mechanical loads: IEC 60068-2-6 and IEC 60068-2-31

— Climatic loads: IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-30, IEC 60068-2-38, IEC 60068-2-52, and IEC 60068-2-78

Additional environment(s) require careful analysis prior to implementation to determine appropriate environmental safety requirements.

190.9.2.2 Electromagnetic compatibility

A system integrating the 100BASE-T1L PHY is expected to comply with all applicable local and national codes for electromagnetic compatibility.

190.9.3 Telephony voltages

The use of building wiring brings with it the possibility of wiring errors that might connect telephony voltages to a DTE. Other than voice signals, the primary voltages that can be encountered are the “battery” and ringing voltages. Although there is no universal standard, the following maximums generally apply: Battery voltage to a telephone line is generally 56 V dc, applied to the line through a balanced 400 Ω source impedance. Ringing voltage is a composite signal consisting of an ac component and a dc component. The ac component is up to 175 Vp at 20 Hz to 60 Hz with a 100 Ω source resistance. The dc component is 56 V dc with 300 Ω to 600 Ω source resistance. Large reactive transients can occur at the start and end of each ring interval. Care should be taken to avoid such connections as they can damage equipment.