



**Proposed Isolation
Environment C
Addition to IEEE 802.3**

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Basic Isolation Environment Definitions

- **Environment A:** When a LAN or LAN segment, with all its associated interconnected equipment, is entirely contained within a single low-voltage power distribution system and within a single building.
- **Environment B:** When a LAN crosses the boundary between separate power distribution systems or the boundaries of a single building.
- **Environment C:** When a LAN segment is configured to carry power in accordance with Section XX.yyy <IEEE 802.3af specifications> and provided that such segment does not cross the boundary between separate power distribution systems or the boundaries of a single building, maintaining compliance with IEC 60950 [1999] section 3.5.1.

Environment C Requirements

- **LOOP RESISTANCE AND GROUNDING**

- The attachment of network segments, compliant with Environment C definitions, are required to exhibit a maximum of ten (10) ohms resistance from either polarity terminal of the conductors powering the attached PD (as defined in Section XX.yyy) to the protective ground of the repeater unit (PSE) (as defined in Section XX.zzz) sourcing the DC power, so as to be compliant with IEC 60950 [1999] section 5.1.1. Such PSE ground shall be assumed to be directly connected to the positive or negative terminal of the PSE DC source supply, with a connection exhibiting no more than 0.05 ohms resistance. A repeater unit (PSE) of this variety requires professional installation.

Environment C Requirements...continued

- **INSULATION**

- If external MAUs are used for PD attachment to media segments, then the segments shall be installed such that it is not possible for an equipment user to touch the trunk cable screen or signal conductor. A PD shall employ a nonconductive cabinet or housing, of a design such that no conductive LAN segment elements are accessible by the user, in compliance with IEC 60950 [1999] section 2.2.3.1.

Environment C Requirements...continued

- **INTER-BUILDING SEGMENTS**

- Interconnected electrically conducting LAN segments that are partially or fully external to a single building environment shall be prohibited under this specification. It is mandatory that LAN segments that are partially or fully external to a single building environment (including those which cross an intrabuilding boundary between separate power distribution systems) be handled by the use of a nonelectrically conducting LAN segment (see 9.9 or Clause 15) and by the use of a separate PSE in the external target environment.