802.3 Isolation Ad Hoc Recommendations - Review

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Remove Clause 8 & 10

Remove Clause 8 (10BASE5) and Clause 10 (10BASE2)

1. Leave the entries in the TOC and add a note that the clauses are deprecated and have been removed

2. Examine all links to and from Clauses 8 and 10 in IEEE 802.3cj and make a recommendation for each as to how the missing reference is to be handled. (NOTE: This cross-reference issue is of concern to the IEEE 802.3 Vice Chair/Maintenance Chair and may be a significant effort)

From: 1117_carlson%20_1_iso_ad_hoc.pdf

Clause 8 references

- 1.4.43 10BASE5: IEEE 802.3 Physical Layer specification for a 10 Mb/s CSMA/CD local area network over coaxial cable (i.e., thicknet). (See IEEE Std 802.3-2018, Clause 8.)

- 13.1: Table 13–1 summarizes the delays for the various network media segments. In addition, Clause 14 summarizes the delays for the 10BASE-T MAU (Table 14–2); IEEE Std 802.3-2018, Clause 8, the delays for the 10BASE5 MAU; IEEE Std 802.3-2018, Clause 10, the delays for the 10BASE2 MAU;

Clause 8, Page 2

- 30.5.1.1.2:

- 10BASE5 Thick coax MAU as specified in IEEE Std 802.3-2018, Clause 8

Clause 10 references

- **1.4.42 10BASE2:** IEEE 802.3 Physical Layer specification for a 10 Mb/s CSMA/CD local area network over RG 58 coaxial cable. (See IEEE Std 802.3-2018, Clause 10.)

- 9.4.1:

10BASE5 and 10BASE2 MAUs associated with the repeater unit shall be as specified in IEEE Std 802.3-2018, Clause 8 for type 10BASE5 and IEEE Std 802.3-2018, Clause 10 for type 10BASE2 with the following restrictions:

a) The MAU shall implement receive mode collision detect as defined in IEEE Std 802.3-2018, 8.3.1.5 or IEEE Std 802.3-2018, 10.4.1.5.

b) The MAU shall not implement the *signal_quality_error* Message Test function as defined in 8.2.1.1

and IEEE Std 802.3-2018, 10.3.1.1. The MAU shall not activate its Jabber function when operated under the worst-case Jabber Lockup Protection condition as specified in 9.6.5.

c) The MAU shall operate only in the normal mode as defined in IEEE Std 802.3-2018, 8.1.3.4, not in the monitor mode.

Clause 10, Page 2

- 13.1: Table 13–1 summarizes the delays for the various network media segments. In addition, Clause 14 summarizes the delays for the 10BASE-T MAU (Table 14–2); IEEE Std 802.3-2018, Clause 8, the delays for the 10BASE5 MAU; IEEE Std 802.3-2018, Clause 10, the delays for the 10BASE2 MAU;

- D.3: Clause 7 and IEEE Std 802.3-2018, Clause 10 of the standard provide detailed specifications…

Clause 10, Page 3

- 30.5.1.1.2:

- 10BASE2 Thin coax MAU as specified in IEEE Std 802.3-2018, Clause 10

Recommendations to Maintenance TF

1. Identify by clause number all instances in IEEE 802.3cj that refer to "isolation" and "safety"

2. Identify by clause number all instances in IEEE 802.3cj that refer to "IEC 60950" and IEC 60950-1"

3. Move all references to IEEE Std 802.3 isolation requirements to a single place in the document
   1. This might be the introduction or an annex

4. Create language for isolation requirements and testing that reference the appropriate clause(s) in IEC 62368-1

5. Insure that all language that references "safety" is a pointer to an external safety standard, not a requirement mandated by IEEE 802.3cj.

6. Locate and remove all language that directly mandates compliance with IEC 60950-1 as this is frequently misconstrued

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60950, 60950-1 Where Used

Normative References: 2 references (60950:1991, 60950-1)

Isolation Requirements - 14 references (Each references the spec more than 1x)

- **8.3.2, 9.9.3.1, 12.10.1**, 14.3.1.1, 15.3.4, **23.5.1.1, 23.12.4.12 (PICS)**, 25.4.6, **32.6.1.1, 32.13.5.8 (PICS), 33.4.1**, 40.6.1.1, 40.12.7 (PICS), 55.5.1, 113.5.1, 126.5.1

General Safety - 63 references

- **8.7.1, 8.8.6.11 (PICS**), 14.7.123.12.4.16, 14.10.4.5.15 (PICS), **23.9.1, 23.12.4.12 (PICS), 23.12.4.16 (PICS)**, **27.5.1, 27.7.4.11 (PICS)**, **32.10.1, 32.13.5.11 (PICS), 33.4.1, 33.7.1, 33.8.3.9 (PICS)**, 38.7.1, 38.12.4.5 (PICS), 40.9.1, 40.12.10 (PICS), 41.4.1, 41.6.4.11 (PICS), 52.10.1, 52.15.3.11 (PICS), 53.10.1, 53.15.4.5 (PICS), 55.9.1, 55.12.9 (PICS), 58.8.1, 58.10.3.6 (PICS), 59.8.1, 59.10.3.6 (PICS), 60.10.1, 60.12.4.12 (PICS), 68.10.3.5 (PICS), 70.9.1, 70.10.4.5 (PICS), 71.9.1, 71.10.4.6 (PICS), 72.9.1, 72.10.4.7 (PICS), 75.8.1, 75.10.4.19 (PICS), 84.10.1, 84.11.4.5 (PICS), 86.9.1, 86.11.4.5 (PICS), 87.9.1, 87.13.4.6 (PICS), 88.9.1, 88.12.4.6 (PICS), 89.8.1, 89.11.4.5 (PICS), 93.10.1, 93.11.4.5 (PICS), 94.5.1, 94.6.4.6 (PICS), 95.9.1, 95.12.4.5 (PICS), 96.9.1, 96.11.4.9 (PICS), 97.9.1, 97.11.13 (PICS), 100.5.1, 100.7.3.3 (PICS), 112.8.1, 112.11.4.5 (PICS), 113.9.1, 113.12.10 (PICS), 126.9.1, 126.12.9 (PICS), 83A.6.1, 83A.7.7 (PICS), 83B.3.1, 83B.4.6 (PICS), 86A.7.1, 86A.8.4.4 (PICS)

Regulatory requirements

- 10.8.3

Red Text indicates clauses that are to be removed in this proposal

Example of change: Isolation

40.6.1.1 Isolation requirement

A PHY with a MDI that is a PI (see 33.1.3) shall meet the isolation requirements defined in 33.4.1.

A PHY with a MDI that is not a PI shall provide electrical isolation between the port device circuits,

including frame ground (if any) and all MDI leads. This electrical isolation shall withstand at least one of the

following electrical strength tests:

> a) 1500 V rms at 50 Hz to 60 Hz for 60 s, applied as specified in subclause 5.2.2 of IEC 60950-1:2001.
>
> b) 2250 V dc for 60 s, applied as specified in subclause 5.2.2 of IEC 60950-1:2001.
>
> c) A sequence of ten 2400 V impulses of alternating polarity, applied at intervals of not less than 1 s. The shape of the impulses shall be 1.2/50 μs (1.2 μs virtual front time, 50 μs virtual time of half value), as defined in IEC 60950-1:2001 Annex N.

There shall be no insulation breakdown, as defined in subclause 5.2.2 of IEC 60950-1:2001, during the test.

The resistance after the test shall be at least 2 M□, measured at 500 V dc.

TO:

40.6.1.1 Isolation requirement

Refer to [Section/Location TBD] for Isolation requirements.

How to Change the PICS

- Remove the existing PICs that apply to safety and write a generic PICs section in the new section/clause (TBD).
  - In each section we would remove the existing PICs calling out each specific test and instead add a PICS that points to the new section

Item	Feature	Subclause	Value/Comment	Status	Support
ES1	General safety	84.10.1	Complies with applicable section of IEC 60950-1	M	Yes [ ]

  - Change Value/Comment to "Complies with [section TBD].