Maintenance Items

Maintenance Request #1271

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|                  8802-3/802.3 REVISION REQUEST                 |
+----------------========================================--------+
DATE: 2015-01-12
NAME: GEOFF THOMPSON
COMPANY/AFFILIATION: GRACASI S.A./LINEAR TECHNOLOGY
E-MAIL: thompson@ieee.org

REQUESTED REVISION:
  STANDARD: 802.3-2012
  CLAUSE NUMBER: 33.1.4
  CLAUSE TITLE: Type 1 and Type 2 system parameters
PROPOSED REVISION TEXT:

See attached sheet for proposed new text.



RATIONALE FOR REVISION:
Move as much of the cabling specification to cabling documents as
possible. (This RR was entered as a tracking mechanism for
Thompson Comment #59 against P802.3REVbx/D2.0 during initial
WG ballot.  Resolution of this comment was given over to P802.3bt
as they will have Cl 33 open.)




+----------------------------------------------------------------+
IMPACT ON EXISTING NETWORKS:
There should be no impact on existing networks.
This is a documentation change only.


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|Please attach supporting material, if any                       |
|Submit to:-   David Law, Chair IEEE 802.3                       |
|and copy:-    Adam Healey, Vice-Chair IEEE 802.3                |
|                                                                |
|At:-          E-Mail: stds-802-3-maint-req@ieee.org             |
|                                                                |
|          +------- For official 802.3 use -----------+          |
|          | REV REQ NUMBER: 1271                      |          |
|          | DATE RECEIVED: 13th January 2015          |          |
|          | EDITORIAL/TECHNICAL                       |          |
|          | ACCEPTED/DENIED                           |          |
|          | BALLOT REQ'D    YES/NO                    |          |
|          | COMMENTS:                                 |          |
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| For information about this Revision Request see -              |
|http://www.ieee802.org/3/maint/requests/revision_history.html  |
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33.1.4 Type 1 and Type 2 system parameters

A power system, consists of a single PSE, a single PD and the link section connecting them. A power system is characterized as Type 1 or Type 2 by lowest type number of the PSE or PD in the system, see Table 33–1. These parameters define not only certain performance characteristics of the system, but are also used in calculating the various electrical characteristics of PSEs and PDs as described in 33.2 and 33.3.

Table 33–1—System Parameters vs. System Type

System Type (Lowest type of PSE & PD)	Nominal highest current per pair (I_{cable}, A)	Channel Pair-set maximum DC loop resistance (R_{chan}, Ω)	Minimum Cabling Type[3]
Type 1	0.35	20	Twisted-pair Cabling per 14.4 and 14.5 (Class D recommended)
Type 2	0.6	12.5	Class D (ISO/IEC 11801:1995)

[a]Class D recommended.

I_{Cable} is the current on one twisted pair in the multi-twisted pair cable. Two twisted pairs are required to source I_{Cable}—one carrying ($+ I_{Cable}$) and one carrying ($- I_{Cable}$), from the perspective of the PI.

It should be noted that the cable references use "DC loop resistance," which refers to a single conductor. This clause uses "DC pair loop resistance," which refers to a pair of conductors in parallel. Therefore, R_{Ch} is related to, but not equivalent to, the "DC loop resistance" called out in the cable references.

33.1.4.1 Cabling requirements

The supply of power over the data connection is intended to operate with no additional requirements to the cabling that is normally installed for data usage. This is approximately true but may require some further attention. Power at Type 1 power levels may be transmitted over all specified premises cabling without further restrictions. Higher power levels may require heavier gauge conductors than are found in Class C/Category 3 cabling and (more uncommonly) in some lighter gauge Class D or better cable. The requirements for Type 2 are met by Category 5 or better cable and components as specified in ANSI/TIA/EIA-568-A

Under worst-case conditions, Type 2 operation requires a 10 °C reduction in the maximum ambient operating temperature of the cable when all cable pairs are energized at ICable (see Table 33–1), or a 5 °C reduction in the maximum ambient operating temperature of the cable when half of the cable pairs are energized at ICable. Additional cable ambient operating temperature guidelines for Type 2 operation are provided in ISO/IEC TR 29125 [B49]20 and TIA TSB-184 [B60].

IEEE P802.3bx Initial Working Group ballot comment #59

Cl **33**   *SC* **33.1.4.1**   *P* **610**   *L* **1**   # 59

Thompson, Geoff   GraCaSI S.A.

Comment Type   **TR**   *Comment Status*   **R**   *P802.3bt*

(through line 6, i.e. the first paragraph of 33.1.4.1)

Simplify the first paragraph by updating the reference to the 2002 version of 11801 which incorporates the additional requirement.

SuggestedRemedy

33.1.4.1 Cabling requirement

Operation requires Class D, or better, cabling as specified in ISO/IEC 11801:2002. These requirements are also met by Category 5e or better cable and components as specified in ANSI/TIA-568-C.2; or Category 5 cable and components as specified in ANSI/TIA/EIA-568-A.

The second paragraph of this clause can remain unchanged unless the referenced cabling documents already cover this material.

Response   *Response Status*   **C**

REJECT.

This topic is better addressed by the IEEE P802.3bt amendment project.

The IEEE 802.3 Maintenance Task Force chair will submit this comment (referring to revision request #1271) to the IEEE P802.3bt Task Force so that it may be considered and appropriate changes made to that draft amendment.

No changes will be made to the P802.3 revision draft.

IEEE P802.3bx Initial Working Group ballot comment #60

CI **33**	SC **33.1.4.2**	P **610**	L **14**	# 60

Thompson, Geoff   GraCaSI S.A.

Comment Type   **TR**   *Comment Status*   **R**   *P802.3bt*

(through line 28, i.e. the entirety of 33.1.4.2)

The first sentence should be deleted. It would be appropriately handled by updating the reference to 11801 to the 2002 edition which precisely matches this requirement with the following text:
6.4.8 Direct current (d.c.) resistance unbalance

The d.c. resistance unbalance between the two conductors within each pair of a channel shall not exceed 3 % for all classes. This shall be achieved by design.

The remainder of 33.1.4.2 should be deleted as it is purely informative/tutorial material on cabling parameter measurement. It is more appropriate to the referenced cabling documentation. If 802.3 strongly feels that it needs to be retained in our document then it should be moved to an informative annex.
(Ref: 2014 Style Manual, cl. 10.1, last paragraph)

SuggestedRemedy

With both of these actions being taken, the entire sub-clause should be deleted.

Response   *Response Status*   **C**

REJECT.

This topic is better addressed by the IEEE P802.3bt amendment project.

The IEEE 802.3 Maintenance Task Force chair will submit this comment (referring to revision request #1271) to the IEEE P802.3bt Task Force so that it may be considered and appropriate changes made to that draft amendment.

No changes will be made to the P802.3 revision draft.