8802-3/802.3 REVISION REQUEST 1244

DATE: 30th May 2013
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REQUESTED REVISION:
STANDARD: 802.3-2012
CLAUSE NUMBER: 80.4
CLAUSE TITLE: Delay constraints

PROPOSED REVISION TEXT:

The second paragraph in this clause says "See 44.3 for the calculation of bit time per meter of fiber or electrical cable."
It should be changed to the following text (including a new equation):

<start replacement text>
Equation (80-1) specifies the calculation of cable delay in nanoseconds per meter of fiber or electrical cable, based upon the parameter n, which represents the ratio of the speed of electromagnetic propagation in the fiber or electrical cable to the speed of light in a vacuum, c = 3x10^8 m/s.

cable delay = 10^9/(n*c)[ns/m] (80-1)

The value of n should be available from the fiber or electrical cable manufacturer, but if no value is known then a conservative delay estimate can be calculated using a default value of n = 0.66, which yields a default cable delay of 5 ns/m.
<end replacement text>

RATIONALE FOR REVISION:

Clause 44.3 deals with 10 Gb/s and the calculation implicitly assumes a bit time of 100 ps. Clause 80 is an introduction to 40 Gb/s and 100 Gb/s networks, so this assumption results in the calculation being wrong.

The proposed text is based on the text in 44.3, but without assumption of any specific bit rate.

(Originally submitted as comment #210 on IEEE P802.3bj D1.3)

IMPACT ON EXISTING NETWORKS:

Networks built using the existing calculation may assume delays large than practically required and thus endpoint guidelines might be overly restrictive. Using the correct calculation should not disrupt a network that tolerates a larger delay.

Existing networks may have been built with lengths determined using the correct calculation. Such networks would not be impacted by correcting the documentation.

Please attach supporting material, if any		
Submit to:- David Law, Chair IEEE 802.3		
and copy:- Wael William Diab, Vice-Chair IEEE 802.3		
E-Mail: stds-802-3maint-req@ieee.org		
	For official 802.3 use	
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For information about this Revision Request see -		
http://www.ieee802.org/3/maint/requests/revision_history.html#REQ1244		