P802.3cb

Submitter Email: david_law@ieee.org
Type of Project: Modify Existing Approved PAR
PAR Request Date: 30-Jul-2016
PAR Approval Date: 22-Sep-2016
PAR Expiration Date: 31-Dec-2019
Status: Modification to a Previously Approved PAR for an Amendment
Root PAR: P802.3cb **Approved on:** 05-Dec-2015
Root Project: 802.3-2015

1.1 Project Number: P802.3cb
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for Ethernet Amendment: Physical Layer Specifications and Management Parameters for 2.5 Gb/s and 5 Gb/s Operation over Backplane

Changes in title: ~~Approved Draft~~ Standard for Ethernet Amendment: Physical Layer Specifications and Management Parameters for 2.5 Gb/s and 5 Gb/s Operation over Backplane~~and Copper Cables~~

3.1 Working Group: Ethernet Working Group (C/LM/WG802.3)
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3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)
Contact Information for Sponsor Chair
  Name: Paul Nikolich
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4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 12/2017
4.3 Projected Completion Date for Submittal to RevCom
Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 10/2018

5.1 Approximate number of people expected to be actively involved in the development of this project: 15
5.2.a. Scope of the complete standard: This standard defines Ethernet local area, access and metropolitan area networks. Ethernet is specified at selected speeds of operation; and uses a common media access control (MAC) specification and management information base (MIB). The Carrier Sense Multiple Access with Collision Detection (CSMA/CD) MAC protocol specifies shared medium (half duplex) operation, as well as full duplex operation. Speed specific Media Independent Interfaces (MIIs) provide an architectural and optional implementation interface to selected Physical Layer entities (PHY). The Physical Layer encodes frames for transmission and decodes received frames with the modulation specified for the speed of operation, transmission medium and supported link length. Other specified capabilities include: control and management protocols, and the provision of power over selected twisted pair PHY types.

5.2.b. Scope of the project: The scope of this project is to specify additions to and appropriate modifications of IEEE Std 802.3 to add 2.5 Gb/s and 5 Gb/s Physical Layer (PHY) specifications and management parameters for operation over backplanes consistent with current storage interconnect applications within a single rack.

Changes in scope of the project: The scope of this project is to specify additions to and appropriate modifications of IEEE Std 802.3 to add 2.5 Gb/s and 5 Gb/s Physical Layer (PHY) specifications and management parameters for operation over ~~channels such as~~ backplanes~~and twinaxial copper cables~~ consistent with current storage

interconnect applications within a single rack.

5.3 Is the completion of this standard dependent upon the completion of another standard: No

5.4 Purpose: This document will not include a purpose clause.

5.5 Need for the Project: There is a greater bandwidth need than the current 1 Gb/s Ethernet connectivity over backplane that serves rotational storage devices ("Hard Disk Drives", HDDs). The object based HDD market is expected to grow significantly to meet the growing cloud storage demand and the existing 1 Gb/s solution is already bandwidth limited. While existing 10 Gb/s and higher speed solutions fulfill the bandwidth need for HDD's, they do not lend themselves to optimized system cost. The sustained bandwidth needs for HDD are on the order of 2.5 Gb/s to 5 Gb/s and this new standard will provide an optimized system cost vs. performance solution in this growing market segment.

5.6 Stakeholders for the Standard: Users and producers of systems and components for the Ethernet enterprise, cloud, and storage networks.

Intellectual Property

6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No

6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

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7.1 Are there other standards or projects with a similar scope?: No

7.2 Joint Development

  Is it the intent to develop this document jointly with another organization?: No

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8.1 Additional Explanatory Notes: Item 1: Section 2.1 - remove the words from the title, 'and Copper Cables'

Item 2: Section 5.2.b - remove the words 'channels such as ' also 'and twinaxial copper cables '.

Item 3: Section 5.5 - remove the words 'and copper cable'.

The changes are proposed because the IEEE P802.3cb project is intended to address a backplane system within a box (enclosure) that contains an array of storage devices interfacing to a backplane, not a stand-alone cable solution. However, the storage devices plug directly into the enclosure's sub-system, through either a backplane board, or backplane board plus internal cables. To avoid any confusion with a stand-alone cable system, it has been decided to remove the reference to 'cable' from the PAR title, scope and need.