



# Proposed Project Authorization Request

IEEE 802.3  
Next Generation  
40 Gb/s and 100 Gb/s Optical Ethernet  
Study Group

Dan Dove, Applied Micro  
Minneapolis, MN : 15-16 May 2012

# IEEE 802.3 PAR

The IEEE 802 Procedure for PARs (Project Authorization Request) is defined in clause 12 of the 'IEEE project 802 LAN/MAN Standards Committee (LMSC) operations manual'.

The sponsor submits an online form containing a combination of pre-filled information, and added content that describes the proposed project.

Submitted information (proposed) is shown in **blue** below.

# Proposed Text (sec 1, 2)

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**Submitter Email:** [dan\\_dove@ieee.org](mailto:dan_dove@ieee.org)

**Type of Project:** [Amendment to IEEE Standard 802.3-2008](#)

**PAR Request Date:** [09-May-2012](#)

**PAR Approval Date:**

**PAR Expiration Date:**

**Status:** **Unapproved PAR**, PAR for an Amendment to an existing IEEE Standard

**1.1 Project Number:** [P802.3bm](#)

**1.2 Type of Document:** [Standard](#)

**1.3 Life Cycle:** Full Use

**2.1 Title:** Standard for Information technology--Telecommunications and information exchange between systems--Local and metropolitan area networks--Specific requirements Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications [Amendment: Physical Layer Specifications and Management Parameters for 40 Gb/s and 100 Gb/s Operation Over Fiber Optic Cables](#)

# Proposed Text (sec 3)

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## **3.1 Working Group: Ethernet Working Group (C/LM/WG802.3)**

### **Contact Information for Working Group Chair**

Name: David Law

Email Address: david\_law@ieee.org

Phone: +44 131 665 7264

### **Contact Information for Working Group Vice-Chair**

Name: Wael Diab

Email Address: wael.diab@gmail.com

Phone: 4154468066

## **3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)**

### **Contact Information for Sponsor Chair**

Name: Paul Nikolich

Email Address: p.nikolich@ieee.org

Phone: 857.205.0050

### **Contact Information for Standards Representative**

None

# Proposed Text (sec 4)

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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: [07/2014](#)

4.3 Projected Completion Date for Submittal to RevCom: [03/2015](#)

# Proposed Text (sec 5.1, 5.2a)

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**5.1 Approximate number of people expected to be actively involved in the development of this project:** 108

**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.

# Proposed Text (sec 5.2b, 5.3, 5.4)

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**5.2.b. Scope of the project:** This project is to specify additions to and appropriate modifications of IEEE Std 802.3 to add 100 Gb/s Physical Layer (PHY) specifications and management parameters, using a four-lane electrical interface for operation on multimode and single-mode fiber optic cables. In addition, to add 40 Gb/s Physical Layer (PHY) specifications and management parameters for operation on extended reach (> 10 km) single-mode fiber optic cables.

**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.

# Proposed Text (sec 5.5, 5.6)

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**5.5 Need for the Project:** Rapid growth of server, network, and internet traffic is driving the need for higher data rates, higher density, lower cost fiber optic solutions, especially in the data center space. Advances in technology now allow the specification of new 100 Gb/s Physical Layer types with reduced lane count, addressing these needs. IEEE Std 802.3 does not currently define a 100 Gb/s four-lane electrical interface between host ICs and optical modules, nor does it define an extended reach solution for 40 Gb/s on single-mode fiber beyond 10 km.

**5.6 Stakeholders for the Standard:** Stakeholders that have been identified to date include, but are not limited to: users and producers of systems and components for servers, network storage, networking systems, data centers, high performance computing, and telecommunications carriers.



# Proposed Text (sec 6-8)

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## 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**

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**

8.1 Additional Explanatory Notes (Item Number and Explanation): **none**



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Thank You!