P802.3dh

Type of Project: Amendment to IEEE Standard 802.3-2018
Project Request Type: Initiation / Amendment
PAR Request Date: 14 Mar 2022
PAR Approval Date: 13 May 2022
PAR Expiration Date: 31 Dec 2026
PAR Status: Active
Root Project: 802.3-2018

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

2.1 Project Title: Standard for Ethernet
Amendment: Physical Layer Specifications and Management Parameters for multi-gigabit optical Ethernet using graded-index plastic optical fiber for application in the automotive environment

3.1 Working Group: Ethernet Working Group(C/LM/802.3 WG)
3.1.1 Contact Information for Working Group Chair:
Name: David Law
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3.1.2 Contact Information for Working Group Vice Chair:
Name: Adam Healey
Email Address: adam.healey@broadcom.com
3.2 Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee(C/LM)
3.2.1 Contact Information for Standards Committee Chair:
Name: Paul Nikolich
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3.2.2 Contact Information for Standards Committee Vice Chair:
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4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot: Jan 2024
4.3 Projected Completion Date for Submittal to RevCom: Sep 2024

5.1 Approximate number of people expected to be actively involved in the development of this project: 30
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: This project will specify additions to and appropriate modifications of IEEE Std 802.3 to add Physical Layer specifications and management parameters for multi-gigabit optical Ethernet using graded-index plastic optical fiber for application in the automotive environment.

5.3 Is the completion of this standard contingent upon the completion of another standard? Yes
Explanation: IEC 60793-2-40:2021 has been proposed for early revision to address automotive applications. Wavelength of operation will be considered as well as bandwidth and attenuation specifications and mechanical properties.
5.4 Purpose: This document will not include a purpose clause.

5.5 Need for the Project: Applications in automotive industries have begun the transition of legacy automotive networks to Ethernet to support Advanced Driver Assist Systems (ADASs). This has generated a need for data rates greater than 1 Gb/s in the automotive environment. Optical fiber has been used in automotive applications both for Ethernet and other protocols. This project will complement both existing IEEE Std 802.3 Automotive Ethernet standards and ongoing projects using electrical and optical media. The project will provide increased data rates using graded-index plastic optical fiber media for operation in the automotive environment. The number of cameras in vehicles is increasing as is the camera data rate with movement to higher resolution video. Optical data links are applicable to both the vehicle network backbone as well as connection of selected devices where location or other factors favor using an optical link.
5.6 Stakeholders for the Standard: End-users, vendors, automotive Original Equipment Manufacturers (OEMs), Tier x suppliers, system integrators, and providers of systems and components (e.g., sensors, actuators, test and measurement equipment, harnesses and harness components, software, silicon, and control units) for automotive applications.

6.1 Intellectual Property

6.1.1 Is the Standards Committee aware of any copyright permissions needed for this project?
No

6.1.2 Is the Standards Committee 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 Is it the intent to develop this document jointly with another organization? No

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8.1 Additional Explanatory Notes: 5.3 -- IEC 60793-2-40:2021 "Optical fibres – Part 2-40: Product specifications – Sectional specification for category A4 multimode fibres"
5.6 -- Tier x refers to the various levels of suppliers to OEM (e.g., car manufacturer). A Tier 1 supplier for example supplies components or subsystems directly to the OEM.