PAR DRAFT
IEEE 802.3 E-PLCA Study Group

IEEE 802.3 November 2026 Plenary Session

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Edited by: PLCA Enhancement (eplca) SG

PLCA Enhancement PAR Fields (1 of 4)

- Type of Project: Amendment to IEEE 802.3-2022
- Project Request Type: Initiation / Amendment

1.1 Project Number: 802.3dx

1.2 Type of Document: Standard

1.3 Life Cycle: Full Use

2.1 Project Title: IEEE Standard for Ethernet. Amendment: Physical Layer Collision Avoidance (PLCA) Enhancements

4.1 Type of Ballot: Individual

4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot: Sept 2028

4.3 Projected Completion Date for Submittal to RevCom:
May 2029

PLCA Enhancement PAR Fields (2 of 4)

5.1 Approximate number of people expected to be actively involved in the development of this project: 20

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 the project is to make additions and modifications to the IEEE Std 802.3 Physical Layer Collision Avoidance (PLCA) Reconciliation Sublayer to enhance the control of PLCA packet transmission, including management parameters and physical layer service access points.

PLCA Enhancement PAR Fields (3 of 4)

5.3 Is the completion of this standard contingent upon the completion of another standard? No.

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

5.5 Need for the Project: The current maximum latency properties of PLCA are insufficient to serve some closed-loop control applications (e.g., in industrial automation and in-vehicle networks). Reduced maximum latency and enhanced determinism for some closed-loop control applications are needed on some multidrop shared networks.

5.6 Stakeholders for the standard: Providers of systems and components (e.g., processors, controllers, stand-alone MACs, as well as Ethernet PHY chip and IP developers) for networked devices, vendors, system integrators, and end-users that benefit from further adoption of Ethernet.

PLCA Enhancement PAR Fields (4 of 4)

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

6.1.2 Is this Standards Committee aware of possible registeration activity related to this project? No.

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

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

8.1 Additional Explanatory.