PAR/CSD Comments

IEEE 802.3

PLCA Enhancements Study Group

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SG Adopted PAR and CSDs

- https://www.ieee802.org/3/EPLCA/P802.3dx_PAR.pdf
- https://www.ieee802.org/3/EPLCA/CSD-draft_eplca_02609b.pdf

Comments - Nescom

In Section 5.2, it appears that the plural term “PLCA sublayers” may create ambiguity regarding the intended technical scope. IEEE Std 802.3 currently defines the PLCA Reconciliation Sublayer, and it is not clear whether the proposed project is intended to modify only this sublayer or additional Physical Layer sublayers.

Could you please consider revising the wording to:

“...make additions and modifications to the IEEE Std 802.3 Physical Layer Collision Avoidance (PLCA) Reconciliation Sublayer...”

If modifications to other Physical Layer sublayers are also intended to be within the scope of the project, it would be helpful to identify them more explicitly in the Scope.

Comments - Nescom

Suggested Response:
5.2b, CHANGE: The scope of the project is to make additions and modifications to the IEEE Std 802.3 PLCA sublayers …
TO: The scope of the project is to make additions and modifications to the IEEE Std 802.3 Physical Layer Collision Avoidance (PLCA) Reconciliation ~~s~~Sublayer~~s~~ …

In CSDs make similar changes.

In Broad Market Potential,
CHANGE: Enhancements to PLCA and associated sublayers …
TO: Enhancements to the PLCA ~~and associated~~ Reconciliation ~~s~~Sublayer~~s~~ …

In Compatibility, c)
CHANGE: … and PLCA sublayers may be updated.
TO: … and the PLCA Reconciliation ~~s~~Sublayer~~s~~ may be updated.

All NesCom responses approved by Study Group without objection 11/11/2022 (44 on the call)

Comments – 802.1

PAR
5.2.b Scope of the project
The scope of the project seems to be open ended. It sounds like additions and modifications to enhance the control of PLCA packet transmission. Nonetheless, 5.2.b does not give any hint on the nature of enhancements that are planned to be added. You might consider having a limited scope for progressing the work quickly.

Proposed Response: The scope is being modified to the following: The scope of the project is to make additions and modifications to the IEEE Std 802.3 Physical Layer Collision Avoidance (PLCA) Reconciliation ~~s~~Sublayer~~s~~ to enhance the control of PLCA packet transmission, including management parameters and physical layer service access points.

It might be good to clarify in 5.2.b what kind of enhancements will be added to the base standard by the proposed project. Perhaps at least give an example enhancement.
Proposed Response: This is stated in the Broad Market Potential CSD: Enhancements to the PLCA ~~and associated~~ Reconciliation ~~s~~Sublayer~~s~~ to reduce maximum latency, differentiated by station and/or by frame priority, e.g. Priority Code Point (PCP), and improve determinism to allow broader application of 10BASE-T1S/M technology to existing and emerging market segments such as automotive, aerospace, controls, automation, and robotics.

Comments – 802.1

Where does the information for differentiating latency come from? What is the information for differentiating latency (e.g. priority)?
Note that answers to these questions may go into the CSD rather than the scope.
Are there 802.1 specifications (e.g. 802.1AC, 802.1Q, 802.1DC) that you'd like to leverage as you define your solution? If so, we'd like to help.

How .1 can help: This project would like 802.1 to consider defining an "EPLCA" client. Please see this presentation for more details: https://www.ieee802.org/3/EPLCA/public/1126/kim_eplca_02b_1126.pdf.

Proposed Response: Modify the CSD Broad Market Potential statement as follows:

CHANGE: Enhancements to PLCA and associated sublayers to reduce maximum latency and improve determinism allow broader application of 10BASE-T1S/M technology to existing and emerging market segments such as automotive, aerospace, controls, automation, and robotics.

TO: Enhancements to the PLCA ~~and associated~~ Reconciliation ~~s~~Sublayer~~s~~ to reduce maximum latency, differentiated by station and/or by frame priority, e.g. Priority Code Point (PCP), and improve determinism to allow broader application of 10BASE-T1S/M technology to existing and emerging market segments such as automotive, aerospace, controls, automation, and robotics.

Comments – 802.1

PAR continued
5.5 Need for project:
The distinction of the term “control” in 5.2.b and in 5.5 may be not that clear. Consider expanding it in 5.5, e.g., replace “control application” with “control loop” or “control loop, e.g., in industrial automation and in-vehicle networks”.

Proposed Response: In 5.2.b, make no change. This in not talking about a control loop or application it is intended to mean limit, restrict, etc.

Proposed Response: In 5.5

CHANGE: The current maximum latency properties of PLCA are insufficient to serve some control applications. Reduced maximum latency and enhanced determinism for some control applications are needed on some multidrop shared networks.

TO: 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.

Comments – 802.1

CSD
Slide 4 paragraph 1 • Suggest changing: "10BASE-T1S/M (single pair multidrop) network is widely adopted Ethernet PHY" to "10BASE-T1S/M (single pair multidrop) network is a widely adopted Ethernet PHY"

Proposed Response:

REPLACE: 10BASE-T1S/M (single pair multidrop) network is widely adopted Ethernet PHY in automotive and industrial networks.

WITH: 10BASE-T1S or 10BASE-T1M single-pair multidrop PHYs with Physical Layer Collision Avoidance (PLCA) are widely adopted in automotive and industrial networks.

Approved by Study Group without objection 11/11/2026 (44 on the call)

Comments – 802.15

Please add additional explanation (8.1) in PAR about the need for the project – e.g. a summary of the CSD: Broad Market Potential.

Proposed Response: The following change to 5.5, the project need, is being made based on a comment by 802.1 to further expand on the project need.

CHANGE: The current maximum latency properties of PLCA are insufficient to serve some control applications. Reduced maximum latency and enhanced determinism for some control applications are needed on some multidrop shared networks.

TO: 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.

Approved by Study Group without objection 11/11/2026 (45 on the call)

Thank You!