IEEE 802.3 Major PAR form questions

The PAR form is completed on-line in though the myProject system. Many of the PAR question are proforma and are automatically complete by selecting a IEEE 802.3 amendment project. These items include Standards Committee and the Working Group officers. This slideset therefore provides the major items from the PAR form to assist in consensus building leading up to approving a completed draft PAR form.

All acronyms shall be spelled out at first use.

The following are the Major PAR responses for the IEEE P802.3**ds** draft PAR

To add a continuation slide: CTRL-M -> right click new slide -> Layout -> select 'Continued' layout

PAR item 2.1 – Project title

Project title: Standard for Ethernet Amendment:
Physical Layer Specifications and Management Parameters for 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6Tb/s Operation over Multimode Fiber using 200 Gb/s Signaling (.3ds)

Physical Layer and Management Parameters for 400 Gb/s over Multimode Fiber (.3cm)

Physical Layer Specifications and Management Parameters for 100 Gb/s, 200 Gb/s, and 400 Gb/s Operation over Optical Fiber using 100 Gb/s Signaling (.3db)

Media Access Control Parameters for 800 Gb/s and Physical Layers and Management Parameters for 400 Gb/s and 800 Gb/s Operation (.3df)

Help text: The title of the base standard is uneditable. Please enter the amendment title in the text box. The title should be sufficiently unambigious, understandable by NesCom member not from the society that submitted the PAR. All acronyms shall be spelled out in the title.

PAR item 4.2 and 4.3 Project dates

4.2 Expected Date of submission of draft to the IEEE-SA for Initial Standards Association Ballot:

Nov 2026

Help text: Enter the date the draft standard is planned to be submitted to IEEE-SA for Initial Standards Association Ballot.

4.3 Projected Completion Date for Submittal to RevCom:

Mar 2027

Help text: Enter the date the draft standard is planned to be submitted to RevCom for processing (not to exceed four years from the date of PAR submission). **It is suggested to allow at least six months after Initial Standards Association Ballot for the ballot process.** Cutoff dates for submitting draft standards to RevCom can be found in the yearly calendar located: http://standards.ieee.org/about/sasb/meetings.html.

PAR item 5.1 – Project participation

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

40

Help text: This includes Working Group members, additional non-voting participants.

PAR item 5.2A – Standard scope

5.2A 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.

Help text: If this Amendment will change the scope statement of the complete document (base + Amendment), it can be edited and should be explained in the Additional Explanatory Notes field at the end of the PAR form. If this Amendment will not change the scope statement of the complete document the pre-populated text should be left as is.

PAR item 5.2B – Project scope

5.2B Scope of the Project:

This project specifies additions to and appropriate modifications of IEEE Std 802.3 and adds Physical Layer specifications and management parameters for 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Ethernet optical interfaces for Artificial Intelligence (AI) back-end networks, as well as front-end networks for server-attachment and other intra-data center applications using 200 Gb/s signaling over multimode fiber physical media. (.3ds, option 1, based on .3db)

Define Physical Layer specifications (PHY) and management parameters for the transfer of Ethernet format frames at 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s using 200 Gb/s signaling per lane technology over multimode fiber physical media. (.3ds, option 2, based on .3df)

Help text: State what the Amendment is changing or adding.

PAR item 5.2B – Project scope

5.2B Scope of the Project:

Define Physical Layer specifications (PHY) and management parameters for the transfer of Ethernet format frames at 400 Gb/s over fewer than 16 pairs of multimode fiber physical media. (.3cm)

This project specifies additions to and appropriate modifications of IEEE Std 802.3 and adds Physical Layer specifications and management parameters for 100 Gb/s, 200 Gb/s, and 400 Gb/s Ethernet optical interfaces for server attachment and other intra-data center applications using 100 Gb/s signaling over optical fiber. (.db)

Help text: State what the Amendment is changing or adding.

PAR item 5.2B – Project scope

5.2B Scope of the Project:

Define Ethernet MAC parameters, physical layer specifications, and management parameters for the transfer of Ethernet format frames at 800 Gb/s over copper, multi-mode fiber, and single-mode fiber physical medium dependent (PMD) sublayers based on 100 Gb/s per lane signaling technology.

Using these new definitions for 800 Gb/s, define physical layer specifications and management parameters for the transfer of Ethernet format frames at 400 Gb/s. (.3df)

Help text: State what the Amendment is changing or adding.

PAR item 5.3 – Project contingency

5.3 Is the completion of this standard contingent upon the completion of another standard (Yes or No)? If yes, please explain below:

No

5.3.1 If yes, please explain:

Help text: Your explanation should include how the standard is dependent upon the completion of another standard. Also, if applicable, why a PAR request is being submitted if the standard currently under development is not yet complete. The title and number of the standard which this project is contingent upon shall be included in the explanation.

PAR item 5.4 – Project purpose

5.4 Will the completed document (base + amendment) contain a purpose clause:

○ Yes ◉ No

Note: IEEE Std 802.3 does not contain a Purpose Clause.

PAR item 5.5 – Project need

5.5 Need for the Project:

The project is necessary to provide solutions to meet the growing bandwidth needs for 200G/lane short reach optical links for AI back-end compute clusters and for front-end/traditional Ethernet networks. (.3ds, option 1, modeled after .3df)

Rapid growth of and growing bandwidth needs for AI back-end compute clusters and for front-end/traditional Ethernet networks are driving the need for higher data rates, higher density, lower cost short reach fiber optic solutions in the data center. To address these needs, advances in technology now enable the specification of 200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s Physical Layer types operating over optical interconnects using 200 Gb/s signaling (per lane?). IEEE Std 802.3 does not currently define operation over multimode fiber using 200 Gb/s signaling (per lane?) (.3ds, option 2, modeled after .3db)

The need for the project details the specific problem that the standard will resolve and the benefit that users will gain by the publication of the standard. The need statement should be brief, no longer than a few sentences.

PAR item 5.5 – Project need

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. To address these needs, advances in technology now allow the specification of new 400 Gb/s physical layer types operating over fewer multimode pairs than in existing IEEE 802.3 Ethernet projects and standards. This will support both the installed base and new installations of multimode fiber cable. (.3cm)

Rapid growth of server, network, and internet traffic is driving the need for higher data rates, higher density, lower cost fiber optic solutions, including the shortest links in the data center such as server-attachment. To address these needs, advances in technology now enable the specification of 100 Gb/s, 200 Gb/s, and 400 Gb/s Physical Layer types operating over optical interconnects using 100 Gb/s signaling. IEEE Std 802.3 does not currently define operation over multimode fiber using 100 Gb/s signaling. (.3db)

The need for the project details the specific problem that the standard will resolve and the benefit that users will gain by the publication of the standard. The need statement should be brief, no longer than a few sentences.

PAR item 5.5 – Project need

5.5 Need for the Project:

The project is necessary to provide solutions to meet the growing bandwidth needs for computing and network interconnect application areas, such as cloud-scale data centers, internet exchanges, co-location services, content delivery networks, wireless infrastructure, service provider and operator networks, and video distribution infrastructure. (.3df)

The need for the project details the specific problem that the standard will resolve and the benefit that users will gain by the publication of the standard. The need statement should be brief, no longer than a few sentences.

PAR item 5.6 – Stakeholders

5.6 Stakeholders for the Standard:

Stakeholders include users and producers of Ethernet systems and components. These include networks for compute clusters used in artificial intelligence (AI) data centers, servers and accelerators, network storage, networking systems, enterprise and cloud-scale data centers, service providers, and high-performance computing. (.3ds, based on .3db and .3dt)

The stakeholders (e.g., telecom, medical, environmental) for the standard consist of any parties that have an interest in or may be impacted by the development of the standard.

PAR item 5.6 – Stakeholders

5.6 Stakeholders for the Standard:

Users and producers of systems and components for servers, networking systems, enterprise and cloud-scale data centers, service providers, and high performance computing. (.3cm)

Users and producers of systems and components for servers and accelerators, network storage, networking systems, enterprise and cloud-scale data centers, service providers, and high-performance computing. (.3db)

Stakeholders include users and producers of systems and components for high-bandwidth applications, such as cloud-scale data centers, internet exchanges, colocation services, content delivery networks, wireless infrastructure, service provider and operator networks, and video distribution infrastructure. (.3df)

Stakeholders include users and producers of Ethernet systems and components. These include networks for compute clusters used in artificial intelligence (AI) data centers. (.3dt)

The stakeholders (e.g., telecom, medical, environmental) for the standard consist of any parties that have an interest in or may be impacted by the development of the standard.

PAR item 7.1 – Similar scope

7.1 Are there other standards or projects with a similar scope? (Yes or No)?

No

If yes, please explain:

Help text: Identify any standard(s) or project(s) of similar scope(s), both within or outside of the IEEE, and explain the need for an additional standard in this area.

For any standard(s) or project(s) of similar scope(s) add ‘Project slide(s)’
To add: CTRL-M -> right click new slide -> Layout -> select ‘Project’ layout

PAR item 8.1 – Additional notes

Additional Explanatory Notes:

If there is any further information that may assist NesCom in recommending approval for this project, include this information here. The title of any documents referenced in the PAR should be listed here.