Major PAR form questions

Standard for Ethernet Amendment: Physical Layers and Management Parameters for 100 Gb/s, 200 Gb/s, and 400 Gb/s Operation over Optical Fiber using 100 Gb/s Wavelengths

Major PAR form questions

The PAR form is completed on-line in thought 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 sponsor and the Working Group officers.

This slideset therefore provides the nine major items from the PAR form to assist in consensus building leading up to approving a completed draft PAR form.

PAR item 2.1 – Project title

Project title: Standard for Ethernet Amendment:

Standard for Ethernet Amendment: Physical Layers and Management Parameters for 100 Gb/s, 200 Gb/s, and 400 Gb/s Operation over Optical Fiber using 100 Gb/s Wavelengths

Help text: The title of the base standard is uneditable. Please enter the amendment title in the text box. The title should be sufficiently unambiguous, understandable by a 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 Sponsor Ballot:

11/2021

Help text: Additional communication and input from other organizations or other IEEE Standards Sponsors should be encouraged through participation in the working group or the invitation pool prior to Sponsor Ballot.

4.3 Projected Completion Date for Submittal to RevCom:

05/2022

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 Sponsor Ballot for the ballot process.** Cutoff dates for submitting draft standards to RevCom are generally in February, May, August, and October. Check the appropriate calendars for the specific dates as the draft matures. Use a best guess estimate for the PAR.

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 is to specify additions to and appropriate modifications of IEEE Std 802.3 to add PHY specifications and Management Parameters for 100 Gb/s, 200 Gb/s, and 400 Gb/s Ethernet optical interfaces for server-attachment and other short-reach applications using 100 Gb/s wavelengths over optical fiber.

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

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:

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 allow the specification of 100 Gb/s, 200 Gb/s, and 400 Gb/s physical layer types operating over short-reach optical interconnects using 100 Gb/s wavelengths. IEEE Std 802.3 does not currently define operation over multimode fiber using 100 Gb/s wavelengths.

Help text: 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:

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.

Help text: 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.

Backup Slides

Major PAR form questions & responses for 100GSR / P802.3db

With PAR form questions & responses for select current and past optical Ethernet projects for reference/comparison.

PAR item 2.1 – Project title

Project title: Standard for Ethernet Amendment:

Standard for Ethernet Amendment: Physical Layers and Management Parameters for 100 Gb/s, 200 Gb/s, and 400 Gb/s Operation over____ Optical Fiber using 100 Gb/s Wavelengths

cm: Standard for Ethernet Amendment Physical Layer and Management Parameters for 400 Gb/s over Multimode Fiber

Cd: Standard for Ethernet Amendment: Media Access Control Parameters for 50 Gb/s and Physical Layers and Management Parameters for 50 Gb/s, 100 Gb/s, and 200 Gb/s Operation

ck: Standard for Ethernet Amendment: Physical Layer Specifications and Management Parameters for 100 Gb/s, 200 Gb/s, and 400 Gb/s Electrical Interfaces Based on 100 Gb/s Signaling

cu: Standard for Ethernet Amendment: Physical Layers and Management Parameters for 100 Gb/s and 400 Gb/s Operation over Single-Mode Fiber

cn: Standard for Ethernet Amendment: Physical Layers and Management Parameters for 50 Gb/s, 200 Gb/s, and 400 Gb/s Operation over Single-Mode Fiber

ct: Standard for Ethernet Amendment: Physical Layers and Management Parameters for 100 Gb/s and 400 Gb/s Operation over DWDM (dense wavelength division multiplexing) systems

Help text: The title of the base standard is uneditable. Please enter the amendment title in the text box. The title should be sufficiently unambiguous, understandable by a 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 Sponsor Ballot:

11/2021 (cm: 11/2019)

Help text: Additional communication and input from other organizations or other IEEE Standards Sponsors should be encouraged through participation in the working group or the invitation pool prior to Sponsor Ballot.

4.3 Projected Completion Date for Submittal to RevCom:

05/2022 (cm: 05/2020)

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 Sponsor Ballot for the ballot process.** Cutoff dates for submitting draft standards to RevCom are generally in February, May, August, and October. Check the appropriate calendars for the specific dates as the draft matures. Use a best guess estimate for the PAR.

PAR item 5.2B – Project scope

5.2B Scope of the Project:

This project is to specify additions to and appropriate modifications of IEEE Std 802.3 to add PHY specifications and Management Parameters for 100 Gb/s (, 200 Gb/s,) and 400 Gb/s Ethernet optical interfaces for server-attachment and other short-reach applications based on 100 Gb/s per wavelength optical signaling.

cm: 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.

ck: This project is to specify additions to and appropriate modifications of IEEE Std 802.3 to add Physical Layer specifications and Management Parameters for 100 Gb/s, 200 Gb/s, and 400 Gb/s electrical interfaces based on 100 Gb/s signaling.

cu: This project is to specify additions to and appropriate modifications of IEEE Std 802.3 to add PHY specifications and Management Parameters for 100 Gb/s and 400 Gb/s Ethernet optical interfaces for reaches up to 10 km based on 100 Gb/s per wavelength optical signaling.

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

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, including the shortest links in the data center such as server-attachment. To address these needs, advances in technology now allow the specification of 100 Gb/s, 200 Gb/s, and 400 Gb/s physical layer types operating over short-reach optical interconnects using 100 Gb/s wavelengths. IEEE Std 802.3 does not currently define operation over multimode fiber using 100 Gb/s wavelengths.

cu: The continual growth of bandwidth demand has driven evolution of higher Ethernet speeds, including 100 Gb/s and 400 Gb/s Ethernet. To meet this growth, ongoing advancement in optical technology enables the opportunity to develop higher density or lower cost optical interfaces using 100 Gb/s per wavelength optical signaling with greater than 500 m reach.

Help text: 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:

cm: 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.

ck: The continual growth of bandwidth demand has driven evolution of higher Ethernet speeds, most recently with 100 Gb/s, 200 Gb/s and 400 Gb/s Ethernet. To meet this growth, ongoing advancement in serializer and deserializer circuit (SERDES) technology

to higher rates of operation enables the opportunity to develop higher density or lower cost electrical interfaces using 100 Gb/s signaling.

cu: The continual growth of bandwidth demand has driven evolution of higher Ethernet speeds, including 100 Gb/s and 400 Gb/s Ethernet. To meet this growth, ongoing advancement in optical technology enables the opportunity to develop higher density or lower cost optical interfaces using 100 Gb/s per wavelength optical signaling with greater than 500 m reach.

Help text: 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:

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.

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

ck: Users and producers of systems and components for servers, network storage, networking systems, data centers, high performance computing, and telecommunications carriers.

cu: Users and producers of systems and components for Ethernet-based networking systems and data centers.

Help text: 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.