

Major PAR form questions

Draft PAR Responses –
Objectives Related to operation over DWDM System
IEEE 802.3 Beyond 10km Optical PHYs Study Group
(IEEE 802.3cp)

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IEEE 802.3 May 2018 Interim
Pittsburgh, PA, USA

Introduction

- Presentation is being given with my “Chair” hat on.
 - None of this discussion should be interpreted as an endorsement of any objective or proposal by me.
 - This presentation is my interpretation, as chair, of conversations in the Study Group and associated ad hoc calls.
- PAR covers objectives related to operation over a DWDM system adopted to date by Study Group
 - http://www.ieee802.org/3/B10K/project_docs/objectives_180308.pdf
 - Potential other objectives related draft text is indicated by **GREY** text
- Documentation generated by Ad hoc activity has been used, as appropriate, to generate the proposed responses.
 - Proposed deleted text indicated by double crossout.
 - Additional text related to DWDM system indicated by **GREEN** text.

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:

Single PAR:

Physical Layers and Management Parameters for ~~50 Gb/s~~, 100 Gb/s, and ~~200 Gb/s~~ [400 Gb/s] Operation over ~~Single-Mode Fiber~~ [a DWDM system.](#)

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:

Date July 2020

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:

Date Mar 2021

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:

Define physical layer specifications and management parameters for the transfer of Ethernet format frames over ~~single-mode fiber at~~ a DWDM system at ~~50 Gb/s,~~ 100 Gb/s, ~~200 Gb/s~~ [, and 400 Gb/s] at reaches greater than 10 km.

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:

[Excerpted from BMP Responses]

~~Optical solutions targeting greater than 10 km will address the bandwidth requirements of the access layers of mobile backhaul networks, in particular in China, as forecasted bandwidth data indicates demand fueled by consumer video in excess of other world regions. Optical solutions targeting greater than 10 km over a DWDM system will address the bandwidth growth and reach requirements of Cable/MSO distribution networks, mobile backhaul networks and interconnect for distributed data centers interconnect networks where reaches in excess of greater than 10 km are required, or where fiber availability drives the need multiple Ethernet interfaces on a single fiber.~~ for multiple instances of Ethernet over a single fiber link segment.

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 mobile backhaul networks, cable/multi-service operator (MSO) distribution networks, data center interconnect networks, and any networks needing reaches in excess of 10 km over a DWDM system.

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.

Other PAR Items

- 5.1 Approximate number of people expected to be actively involved in the development of this project: 80
- Intellectual Property
 - 6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
 - 6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No
- 7.2 Joint Development Is it the intent to develop this document jointly with another organization?: No

PAR Item 7.1

7.1 Are there other standards or projects with a similar scope?:

Yes, but there are no other IEEE standards or projects with a similar scope.

Note - The text below is written to address the scenario where there are objectives at 100G and 400G. This text needs to be revisited upon SG decisions at May Interim.

The IEEE 802.3 Working Group has received a liaison(s) from one (two) organization(s) indicating that the respective group has related efforts underway.

ITU-T Study Group 15 has communicated that it is revising Recommendation ITU-T G.698.2 to include multi-vendor interoperable 100 Gb/s single channel optical interfaces, which specifically includes the rate for 100 Gb/s Ethernet signals, and will include application code for 100G application appropriate for 80 km distances, not precluding 120 km, and without OADMs.

The Optical Internetworking Forum (OIF) has communicated that it is developing the 400ZR implementation agreement (IA), which is targeted at (passive) single channel ZR and (amplified) short-reach DWDM /DCI pluggable modules with distances supported from 80-120 km. The effort will support 400GbE via the 400GAUI-8 interface that is defined by IEEE 802.3, but other system-side formats may also be considered.

The proposed project will provide an IEEE 802.3 standard that will define optimized solutions for 100GbE and 400 GbE. Stakeholders have expressed a desire to see an IEEE 802.3 standard address this area, given the history of multi-vendor interoperability provided by IEEE 802.3 Ethernet standards.