

Major PAR form questions

Proposed Draft PAR Responses
100 GbE over DWDM PHY Objectives
IEEE 802.3ct Task Force

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Introduction

- Presentation is being given with my “Chair” hat on.
 - This presentation is my interpretation, as chair, of conversations in Task Force Meetings and associated interim teleconference meetings.
 - Discussion of 400 GbE over DWDM baseline proposals has raised the question, because of schedule concerns, whether the IEEE P802.3ct Project should be split, based on 100 GbE and 400GbE objectives.
 - 100 GbE over DWDM targeting MSO / Mobile Networks
 - 400 GbE over DWDM targeting DCI
 - As previously discussed, as Chair, I have prepared proposed project documentation (PAR Response / CSD) for the two potential different projects
- Proposed Documentation
 - This presentation summarizes proposed changes to the IEEE P802.3ct PAR defining a project for 100 GbE across a DWDM system
 - Proposed deleted text indicated by double crossout.
 - Additional text, as necessary, 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 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:

Date ~~Jul 2020~~ **Nov 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 ~~Feb 2021~~ **Aug 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 at 100 Gb/s ~~and 400 Gb/s~~ at reaches greater than 10 km over DWDM systems.

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:

Optical solutions targeting greater than 10 km over a DWDM system will address the bandwidth growth and reach requirements of Cable/MSO (multiple system operator) distribution networks, **and** mobile backhaul networks, ~~and interconnect for distributed data centers~~ where reaches greater than 10 km are required, or where fiber availability drives the need for multiple instances of Ethernet over a DWDM system.

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 other networks needing 100 Gb/s operation at reaches in excess of 10 km over DWDM systems.

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 (1 of 2)

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

Yes.

While there are no other IEEE standards or projects with a similar scope, the IEEE 802.3 Working Group has received **a** liaisons from ~~two organizations indicating that the respective groups have related efforts underway.~~ ITU-T Study Group 15 has **that** communicated that it is revising Recommendation ITU-T G.698.2 to include multi-vendor interoperable 100 Gb/s single channel optical interfaces that operate over a DWDM system for approximately 80 km distances. ~~The Optical Networking Forum (ONF) has communicated that it is developing the 400ZR Implementation Agreement (IA), which is targeted at (passive) single channel and (amplified) short reach DWDM (dense wavelength division multiplexing) / DCI (data center interconnect) pluggable modules with distances supported from 80-120 km. The effort will support 400 Gb/s Ethernet via the 400GAUI-8 interface that is defined by IEEE 802.3.~~ Stakeholders have expressed the desire for this project, as it will define physical layer specifications and Protocol Implementation Conformance Statements (PICS) for 100 Gb/s ~~and 400 Gb/s~~ Ethernet operation over DWDM systems that are consistent and completely integrated with existing IEEE 802.3 Ethernet specifications.

PAR Item 7.1 (2 of 2)

- Sponsor Organization: ITU-T SG15 ~~and OIF~~
- Project/Standard Number: Recommendation ITU-T G.698.2 ~~and OIF 400ZR Implementation Agreement~~
- Project/Standard Date:
- Project/Standard Title: Recommendation ITU-T G.698.2 Amplified multichannel dense wavelength division multiplexing applications with single channel optical interfaces ~~and OIF 400ZR Implementation Agreement~~

PAR Form 8.1

- 8.1 Additional Explanatory Notes:

It became apparent to the IEEE 802.3 Working Group that the market demands and the state of technology for 100 GbE and 400 GbE over DWDM systems are different, and that a faster timeline for the 100GbE portion of the IEEE P802.3ct project could be achievable. As a result the 400 Gb/s Operation over DWDM Systems portion of the project has been removed from the IEEE P802.3ct PAR and placed in the new IEEE P802.3cw amendment PAR.

Item 7.1 Project/Standard date: Recommendation ITU-T G.698.2 consent date of 19th Oct 2018 ~~Item 7.1 Project/Standard date: OIF 400ZR Implementation Agreement project start date 3rd Nov 2016~~