

IEEE 802.3ca 100G-EPON Task Force Closing Report

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IEEE 802.3 100G-EPON Task Force Project Information

Task Force Organization:

Chair: Curtis Knittle, CableLabs

Vice Chair: Glen Kramer, Broadcom

Chief Editor: Marek Hajduczenia, Charter

Task Force web and reflector information

Reflector information: http://www.ieee802.org/3/ca/3ca_reflector.shtml

Home page: <http://www.ieee802.org/3/ca/index.shtml>

PAR: http://www.ieee802.org/3/ca/documents/P802_3ca_par_approved.pdf

CSD: <https://mentor.ieee.org/802-ec/dcn/15/ec-15-0100-00-ACSD-802-3ca.pdf>

Objectives: http://www.ieee802.org/3/ca/documents/P802_3ca_objectives.pdf

Progress This Week

- ~20 people met for 2 days, covering ~2 contributions
- Resolved 243 comments
- Agreed to changes of task force objectives
- Agreed to modify PAR to reflect only 25G-EPON and 50G-EPON (remove 100G-EPON)
- Agreed we should extend PAR

Previous Objectives

- ❑ Support subscriber access networks using point to multipoint topologies on optical fiber
- ❑ Provide specifications for physical layers operating over a single SMF strand and supporting symmetric and/or asymmetric MAC data rates of:
 - 25 Gb/s in downstream and less than or equal to 25 Gb/s in upstream
 - 50 Gb/s in downstream and less than or equal to 50 Gb/s in upstream
 - 100 Gb/s in downstream and less than or equal to 100 Gb/s in upstream
- ❑ PHY(s) to have a BER better than or equal to 10^{-12} at the MAC/PLS service interface (or the frame loss ratio equivalent)
- ❑ Support coexistence with 10G-EPON
 - Optical power budgets to accommodate channel insertion losses equivalent to those supported by the 10G-EPON standard
 - Wavelength allocation allowing concurrent operation with 10G-EPON PHYs
- ❑ Wavelength allocation allowing concurrent operation of 25G-EPON and G-PON reduced wavelength set (1290nm-1330nm) PHYs

TF Approved Modifications (in red)

- ❑ Support subscriber access networks using point-to-multipoint topologies on optical fiber
- ❑ Provide Physical Layer specifications that
 - Operate over a single SMF strand
 - Support symmetric and/or asymmetric MAC data rates of:
 - 25 Gb/s in downstream and ~~less than or equal to 10 Gb/s~~ or 25 Gb/s in upstream (25G-EPON)
 - 50 Gb/s in downstream and ~~less than or equal to 10 Gb/s, 25 Gb/s, or 50 Gb/s~~ in upstream (50G-EPON)
 - ~~100 Gb/s in downstream and less than or equal to 100 Gb/s in upstream~~
 - Have a BER better than or equal to 10^{-12} at the MAC/PLS service interface (or the frame loss ratio equivalent)
 - Support coexistence with **select legacy PON technologies**
 - Optical power budgets to accommodate channel insertion losses equivalent to **PR20 and PR30, as defined in Clause 75.**
 - Wavelength allocation allowing concurrent operation with 10G-EPON, **XG-PON1, and XGS-PON PHYs (1575nm-1580nm downstream, 1260nm-1280nm upstream)**
 - Wavelength allocation allowing concurrent operation of 25G-EPON and G-PON reduced wavelength set (**1480nm-1500nm downstream, 1290nm-1330nm upstream**) PHYs

TF Approved Modifications (clean text)

- ❑ Support subscriber access networks using point-to-multipoint topologies on optical fiber
- ❑ Provide Physical Layer specifications that
 - Operate over a single SMF strand
 - Support symmetric and/or asymmetric MAC data rates of:
 - 25 Gb/s in downstream and 10 Gb/s or 25 Gb/s in upstream (25G-EPON)
 - 50 Gb/s in downstream and 10 Gb/s, 25 Gb/s, or 50 Gb/s in upstream (50G-EPON)
 - Have a BER better than or equal to 10^{-12} at the MAC/PLS service interface (or the frame loss ratio equivalent)
 - Support coexistence with select legacy PON technologies
 - Optical power budgets to accommodate channel insertion losses equivalent to PR20 and PR30, as defined in Clause 75.
 - Wavelength allocation allowing concurrent operation with 10G-EPON, XG-PON1, and XGS-PON PHYs (1575nm-1580nm downstream, 1260nm-1280nm upstream)
 - Wavelength allocation allowing concurrent operation of 25G-EPON and G-PON reduced wavelength set (1480nm-1500nm downstream, 1290nm-1330nm upstream) PHYs

WG Motion – Objectives

Move that the IEEE 802.3 Working Group approve the modified IEEE P802.3ca 25 Gb/s, 50 Gb/s and 100 Gb/s EPON objectives, as per 0718_ca_close_report.pdf.

Moved: Curtis Knittle

Second:

Technical (>75%)

Results:

PAR Modification (1/2)

Proposed PAR Changes

2.1 Title Approved Draft Standard for Ethernet Amendment:
Physical Layer Specifications and Management
Parameters for 25 Gb/s, ~~and~~ 50 Gb/s, ~~and 100 Gb/s~~
Passive Optical Networks

**4.2 Expected Date of submission of draft to the IEEE-SA
for Initial Sponsor Ballot:** 07/~~2018~~2019

4.3 Projected Completion Date for Submittal to RevCom:
~~05/2019~~ 01/2020

From: http://www.ieee802.org/3/ca/public/meeting_archive/2018/07/kramer_3ca_9a_0718.pdf

PAR Modification (2/2)

Proposed Scope Change

5.2.b. Scope of the project:

The scope of this project is to amend IEEE Std 802.3 to add physical layer specifications and management parameters for ~~symmetric and/or asymmetric operation at 25 Gb/s, 50 Gb/s, and 100 Gb/s MAC data rates on~~ point-to-multipoint passive optical networks ~~supporting MAC data rates of 25 Gb/s or 50 Gb/s in the downstream direction and 10 Gb/s, 25 Gb/s, or 50 Gb/s in the upstream direction~~, with distance and split ratios consistent with those defined in IEEE Std 802.3-2015.

July 2018

IEEE 802.3ca Task Force, San Diego, CA

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From: http://www.ieee802.org/3/ca/public/meeting_archive/2018/07/kramer_3ca_9a_0718.pdf

WG Motion – PAR Modification

Move that the IEEE 802.3 Working Group approve the modifications to the IEEE P802.3ca 25 Gb/s, 50 Gb/s and 100 Gb/s EPON PAR, as shown in http://www.ieee802.org/3/ca/public/meeting_archive/2018/07/P802_3ca_PARMo_d_Detail.pdf

Moved: Curtis Knittle

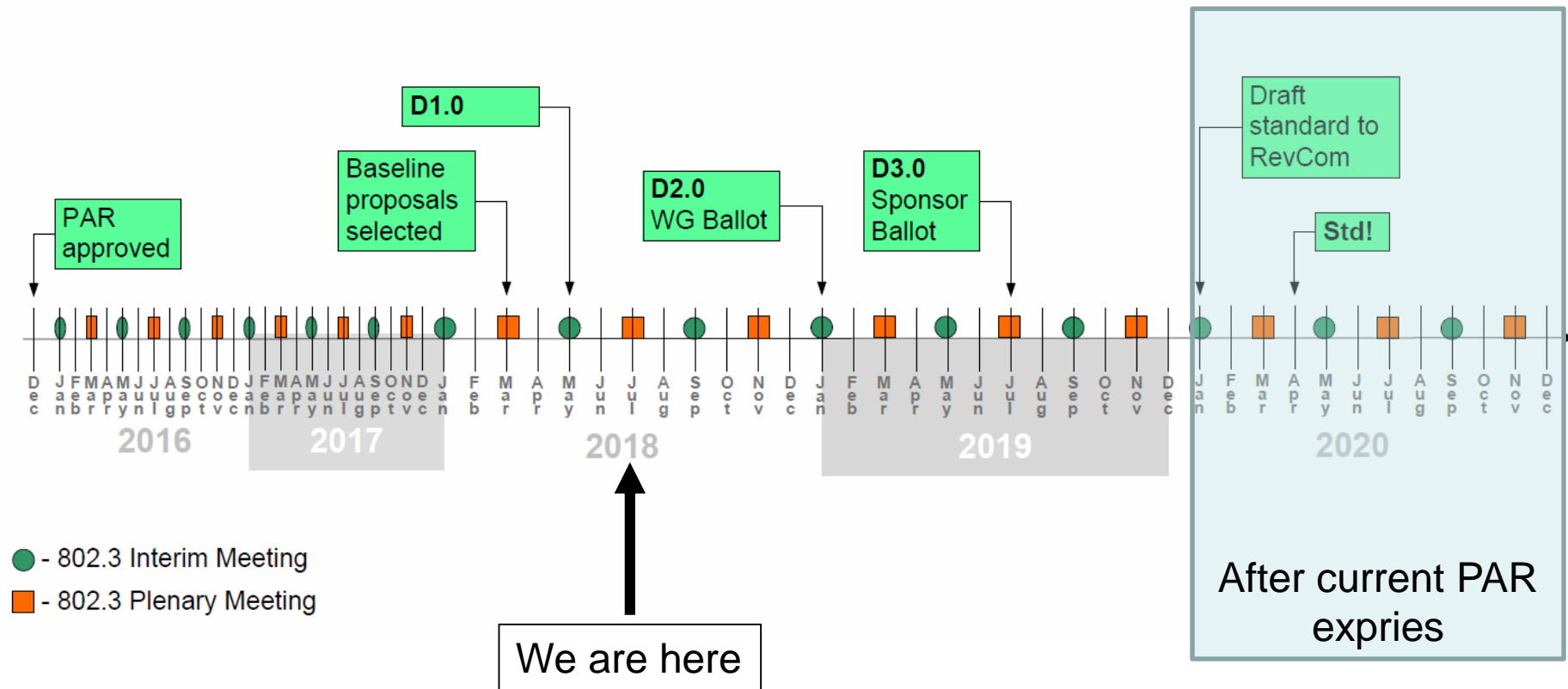
Second:

Technical (>75%)

Results:

PAR Extension

IEEE P802.3ca Timeline



WG Motion – PAR Extension

Move that the IEEE 802.3 Working Group approve the IEEE P802.3ca 25 Gb/s, 50 Gb/s and 100 Gb/s EPON PAR extension request, in http://www.ieee802.org/3/ca/public/meeting_archive/2018/07/P802_3ca_PAR_Extension_Detail.pdf

Moved: Curtis Knittle

Second:

Technical (>75%)

Results:

Questions?

Thank you!