

IEEE 802.3ca 100G-EPON Task Force Closing Report

Curtis Knittle
CableLabs
Berlin, Germany
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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

Activities This Week

- ~26 people met for 2 days, covering 23 presentations
- Major items discussed:
 - Wavelength plan, MPCP+, power budgets, FEC, PON Convergence
- Passed four (4) technical motions

Technical Motions

Adopt the behavior described for the flags, Fragment and Forced Report, and the fragment definitions given in remain_3ca_1_0717.pdf slides 4-9.

Split the ONU GATE Reception Process state diagram into two SDs, GATE Reception Process and Envelope Commitment Process as illustrated in remain_3ca_2_0717.pdf slides 5 through 9.

802.3ca shall adopt an upstream wavelength plan for the first 25G and new 10G (EQ based) channel with two options,

Option 1: at 1310nm width 20nm; WDM coexistent with 10G-EPON

Option 2: at 1270nm width 20nm; WDM coexistent with G-PON reduced wavelength set.

TDM coexistence with legacy PONs is not required.

Move that the 802.3 Working Group approve the new additional objective for the IEEE P802.3ca TF that reads: The wavelength allocation allowing concurrent operation of 25G-EPON and G-PON reduced wavelength set (1290-1330nm) PHYs.

Other Interesting Non-Technical Motions

The Task Force should analyze and compare the following solutions for 50G PON and choose the best one for 50G EPON: 1) Single wavelength TDM-PON with 50Gb/s line rate, 2) Two-wavelength TDM/WDM-PON with 25Gb/s line rate per lane. The Task Force calls for contributions on these topics.

The Task Force should analyze and compare the following solutions for 100G PON and choose the best one for 100G EPON: 1) Two wavelength TDM/WDM-PON with 50Gb/s line rate per lane, 2) Four wavelength TDM/WDM-PON with 25Gb/s line rate per lane. The Task Force calls for contributions on these topics.

Modification of Task Force Objectives (1/2)

- Momentum is growing to converge IEEE and ITU PON technology into single solution
- Range of convergence options:
Wavelength plan → PHY → MAC → Config → Management
- Task Force wishes to adopt an objective to related to PON Convergence

Modification of Task Force Objectives (2/2)

- 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 the 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

New Objective

- Wavelength allocation allowing concurrent operation of 25G-EPON and G-PON reduced wavelength set (1290nm-1330nm) PHYs

WG Motion – Modify Objectives

Move that the 802.3 Working Group approve the new additional objective for the IEEE P802.3ca TF that reads: Wavelength allocation allowing concurrent operation of 25G-EPON and G-PON reduced wavelength set (1290nm-1330nm) PHYs.

Moved: Curtis Knittle

Second: Frank Effenberger

Technical (>75%)

Results:

Liaison Response

Dear Mr. Effenberger and Mr. Kani,

IEEE P802.3ca Task Force appreciates ITU-T Q2/SG15's interest in the on-going efforts to develop a wavelength plan for future 25G, 50G, and 100G PON Systems. We would be interested in a preview of the G.sup.HSP document when it becomes available.

The P802.3ca Task Force has made significant progress on the wavelength plan that can meet ITU-T Q2/15 requirements of 25G-EPON coexistence with established ITU PONs. 25G PON coexistence details are provided below:

1. 25G-EPON will co-exist via WDM with XGS-PON/XG-PON and Reduced G-PON (G.984), but not both simultaneously.
2. The 802.3 Working Group has agreed to add 25G-EPON coexistence with Reduced G-PON as an official P802.3ca Task Force objective.
3. 25/50/100G-EPON will coexist with RF-Overlay (J.185) and NGPON2 (G.989) systems.

Once again, thank you for your interest. We look forward to continued collaboration with the ITU-T Q2/15 team.

Sincerely,

David Law

Chair, IEEE 802.3 Ethernet Working Group

WG Motion – Liaison Response

Move that the IEEE 802.3 Working Group approve: IEEE_802d3_to_ITU_SG15_Q2_0717_draft with editorial license granted to the Chair (or his appointed agent) as liaison communications from the IEEE 802.3 Working Group to ITU-T Study Group 15.

Moved: Curtis Knittle

Second: Mark Laubach

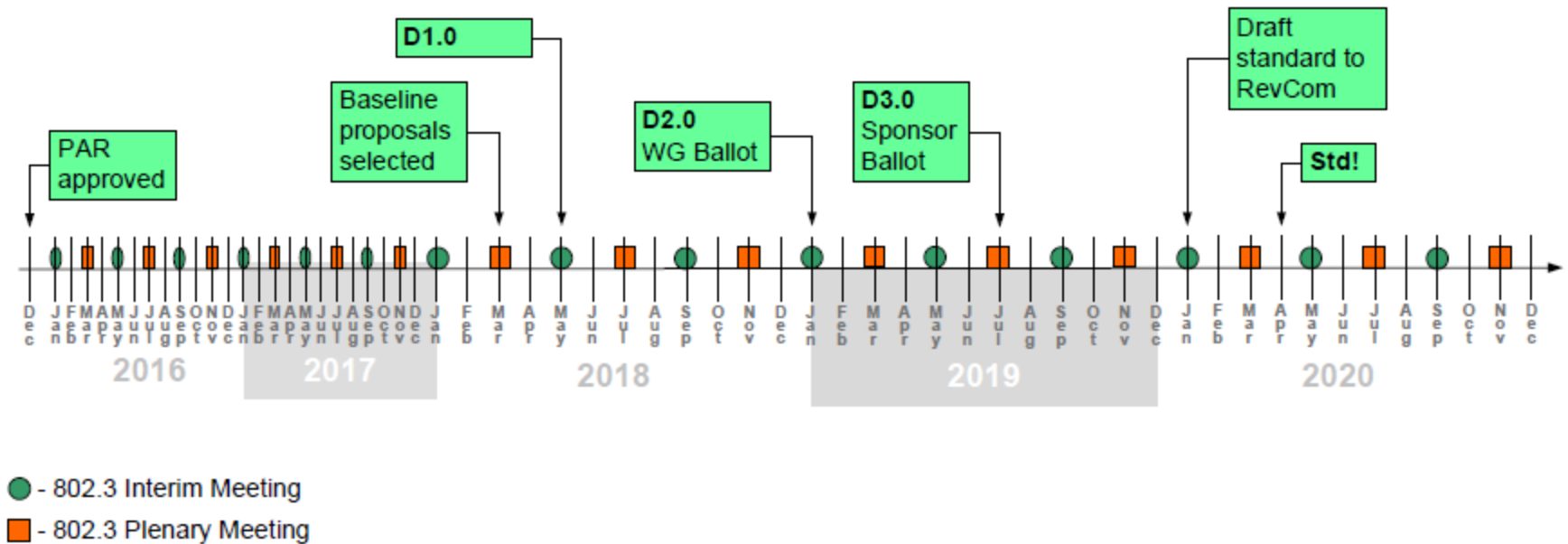
Technical (>75%)

Results:

IEEE 802.3ca 100G-EPON Task Force Timeline

New timeline adopted by Task Force

IEEE P802.3ca Timeline



Questions?

Thank you!