



Future EPON Bandwidth Needs



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P802.3ca 100G Next Generation EPON project background

- Coming out of CFI, Study Group, and project documents:
 - 25 Gb/s, 50 Gb/s, and 100 Gb/s EPON
 - Based on 25 Gb/s serial rate
 - 1, 2, or 4 wavelengths in both downstream and upstream direction
 - Favored by North American Operators
 - Incremental additional capacity to meet needs, starting with 25 Gb/s
 - 10G-EPON and GPON WDM coexistence options
- First Task Force meeting, January 2016
 - Many technical proposals over many meetings

July 2017: Chinese market view of EPON standards through 2025

- In July 2017, P802.3ca (NGEPON) received a presentation from individuals associated with the China EPON market on the PON evolution in China Market
 - The individuals represented 13 affiliations within China
 - Telcom providers, system manufacturers, and semiconductor companies
 - Presentation: [wangbo_3ca_2_0717.pdf](#)
 - Noting that China (south east Asia) is very likely the largest growth market for EPON
- Overview of the presentation
 - Existing 10G-EPON would satisfy needs until 2025
 - China future deployment focused on 100 Gbp/s services based on 50 Gb/s serial rate
 - 10x uptick from current 10G-EPON
 - P802.3ca's 25 Gb/s serial was deemed to be not relative-cost effective for $4 \times 25 = 100$ Gb/s target
 - Desire to evolve directly to 100 Gb/s without “visiting” 25 Gb/s serial; i.e. 1x50 and 2x50 Gb/s
 - They asked that P802.3ca consider adopting a 50 Gb/s serial rate and to consider replacing 25 Gb/s in development

Where did things go?

- Net Net on 50 Gb/s serial
 - Merits were debated over many meetings in P802.3ca
 - Tasks Force came to a decision to retain current focus on 25 Gb/s serial for 25 Gb/s and 50 Gb/s
 - 50 Gb/s serial in 2025 didn't meet P802.3ca timeline of having 25 Gb/s serial in 2019/2020
 - 50 Gb/s serial technical feasibility issues would get better focus in a future project (and after “we” have experience with 25 Gb/s EPON)
 - The 100 Gb/s (aggregate rate) was removed from the PAR, CSD, and Objectives
 - Do not want to confuse / clutter the future 100 Gb/s market by having two solutions
 - Current draft covers 50/50, 50/25, 50/10, 25/25, 25/10 downstream/upstream
- If and when to start 50 Gb/s serial EPON project for 50 Gb/s and 100 Gb/s?
 - We have input from a major market for EPON for availability in 2025
 - CFI would be timely mid-2020, early-2021 (but not sooner than when P802.3ca is submitted to RevCom planned May 2020)

Thank you