

Proposed Objectives for 200GMMF Study Group – Two Options

Mabud Choudhury (Lightera)

17 September 2025

IEEE 802.3 200 Gb/s per Wavelength MMF PHYs Study Group Interim Meeting

Overview

- Two options have been proposed for 200GMMF SG Objectives:
 - Option A: 30 m reach MMF
 - [200 Gb/s 30m over OM4 Objective](#)
 - [200 Gb/s 30m over OM4 Objective and Baseline link proposals](#)
 - Option B: 30 m and 50 m reach MMF
 - [Reach for 200G per Lane Multimode Links](#)
 - [Reach Objectives for 850 nm Links](#)
 - [Proposal for 200Gbps 30m and 50m MM Reach objectives using 1060nm](#)
- Target is for SG to approve Objectives during 17 September SG interim meeting

Option A: 30 m reach MMF

Potential Objectives – Option A (1 of 3)

- **Non-Rate Specific**

- Support full-duplex operation only
- Preserve the Ethernet frame format utilizing the Ethernet MAC
- Preserve minimum and maximum FrameSize of current IEEE 802.3 standard
- Support a BER of better than or equal to 10^{-13} at the MAC/PLS service interface (or the frame loss ratio equivalent)
- Provide support to enable mapping over OTN

Potential Objectives – Option A (2 of 3)

- **200 Gb/s Related**

- Support a MAC data rate of 200 Gb/s
- Define a physical layer specification that supports 200 Gb/s operation:
 - over 1 pair of MMF with lengths up to at least 30 m

- **400 Gb/s Related**

- Support a MAC data rate of 400 Gb/s
- Define a physical layer specification that supports 400 Gb/s operation:
 - over 2 pairs of MMF with lengths up to at least 30 m

Potential Objectives – Option A (3 of 3)

- **800 Gb/s Related**

- Support a MAC data rate of 800 Gb/s
- Define a physical layer specification that supports 800 Gb/s operation:
 - over 4 pairs of MMF with lengths up to at least 30 m

- **1.6 Tb/s Related**

- Support a MAC data rate of 1.6 Tb/s
- Define a physical layer specification that supports 1.6 Tb/s operation:
 - over 8 pairs of MMF with lengths up to at least 30 m

Option B: 30 m and 50 m reach MMF

Potential Objectives – Option B (1 of 3)

- **Non-Rate Specific**

- Support full-duplex operation only
- Preserve the Ethernet frame format utilizing the Ethernet MAC
- Preserve minimum and maximum FrameSize of current IEEE 802.3 standard
- Support a BER of better than or equal to 10^{-13} at the MAC/PLS service interface (or the frame loss ratio equivalent)
- Provide support to enable mapping over OTN

Potential Objectives – Option B (2 of 3)

- **200 Gb/s Related**

- Support a MAC data rate of 200 Gb/s
- Define a physical layer specification that supports 200 Gb/s operation:
 - over 1 pair of MMF with lengths up to at least 30 m
 - over 1 pair of MMF with lengths up to at least 50 m

- **400 Gb/s Related**

- Support a MAC data rate of 400 Gb/s
- Define a physical layer specification that supports 400 Gb/s operation:
 - over 2 pairs of MMF with lengths up to at least 30 m
 - over 2 pairs of MMF with lengths up to at least 50 m

Potential Objectives – Option B (3 of 3)

- **800 Gb/s Related**

- Support a MAC data rate of 800 Gb/s
- Define a physical layer specification that supports 800 Gb/s operation:
 - over 4 pairs of MMF with lengths up to at least 30 m
 - over 4 pairs of MMF with lengths up to at least 50 m

- **1.6 Tb/s Related**

- Support a MAC data rate of 1.6 Tb/s
- Define a physical layer specification that supports 1.6 Tb/s operation:
 - over 8 pairs of MMF with lengths up to at least 30 m
 - over 8 pairs of MMF with lengths up to at least 50 m