Adopted IEEE P802.3dj Objectives (1 of 2)

- **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

- **200 Gb/s Related**
  - Support a MAC data rate of 200 Gb/s
  - Support optional single-lane 200 Gb/s attachment unit interfaces for chip-to-module and chip-to-chip applications
  - Define a physical layer specification that supports 200 Gb/s operation:
    - over 1 lane over electrical backplanes supporting a die-to-die insertion loss <= 40 dB at 53.125 GHz **
    - over 1 pair of copper twin-axial cables in each direction with a reach of up to at least 1.0 meter
    - over 1 pair of SMF with lengths up to at least 500 m
    - over 1 pair of SMF with lengths up to at least 2 km

- **400 Gb/s Related**
  - Support a MAC data rate of 400 Gb/s
  - Support optional two-lane 400 Gb/s attachment unit interfaces for chip-to-module and chip-to-chip applications
  - Define a physical layer specification that supports 400 Gb/s operation:
    - over 2 lanes over electrical backplanes supporting a die-to-die insertion loss <= 40 dB at 53.125 GHz **
    - over 2 pairs of copper twin-axial cables in each direction with a reach of up to at least 1.0 meter
    - over 2 pairs of SMF with lengths up to at least 500 m
    - over 2 pairs of SMF with lengths up to at least 2 km

Adopted IEEE P802.3dj Objectives (2 of 2)

- **800 Gb/s Related**
  - Support a MAC data rate of 800 Gb/s
  - Support optional four-lane 800 Gb/s attachment unit interfaces for chip-to-module and chip-to-chip applications
  - Define a physical layer specification that supports 800 Gb/s operation:
    - over 4 lanes over electrical backplanes supporting a die-to-die insertion loss <= 40 dB at 53.125 GHz **
    - over 4 pairs of copper twin-axial cables in each direction with a reach of up to at least 1.0 meter
    - over 4 pairs of SMF with lengths up to at least 500 m
    - over 4 pairs of SMF with lengths up to at least 2 km
    - over 4 wavelengths over a single SMF in each direction with lengths up to at least 500 m ***
    - over 4 wavelengths over a single SMF in each direction with lengths up to at least 2 km
    - over 1 wavelength over a single SMF in each direction with lengths up to at least 10 km *
    - over a single SMF in each direction with lengths up to at least 20 km ****
    - over 4 wavelengths over a single SMF in each direction with lengths up to at least 10 km *
    - over a single SMF in each direction with lengths up to at least 40 km

- **1.6 Tb/s Related**
  - Support a MAC data rate of 1.6 Tb/s
  - Support optional sixteen-lane 1.6 Tb/s attachment unit interfaces for chip-to-module and chip-to-chip applications
  - Support optional eight-lane 1.6 Tb/s attachment unit interfaces for chip-to-module and chip-to-chip applications
  - Define a physical layer specification that supports 1.6 Tb/s operation:
    - over 8 lanes over electrical backplanes supporting a die-to-die insertion loss <= 40 dB at 53.125 GHz **
    - over 8 pairs of copper twin-axial cables in each direction with a reach of up to at least 1.0 meter
    - over 8 pairs of SMF with lengths up to at least 500 m
    - over 8 pairs of SMF with lengths up to at least 2 km

* - Approved by IEEE 802.3 WG 16 Mar 2023
** - Approved by IEEE 802.3 WG 18 May 2023
*** - Approved by IEEE 802.3 WG, 16 Nov 2023
**** - Approved by IEEE 802.3 WG, 14 Mar 2024