

IEEE 802 Nov 2023

**IEEE 802.3 Ethernet WG
Opening Plenary
13 Nov 2023**

**IEEE P802.3dj
200 Gb/s, 400 Gb/s, 800 Gb/s, and 1.6 Tb/s
Ethernet Task Force
Opening Report**



IEEE P802.3dj Task Force Project information

■ Organization

- **John D'Ambrosia, Chair, IEEE P802.3dj Task Force**
- **Mark Nowell, Vice-Chair, IEEE P802.3dj Task Force; Chair, Optics Track**
- **Kent Lusted, Secretary, Chair, Electrical Track**
- **Matt Brown, IEEE P802.3dj Chief Editor**
- **Mark Gustlin, Chair, Architecture and Logic Track**

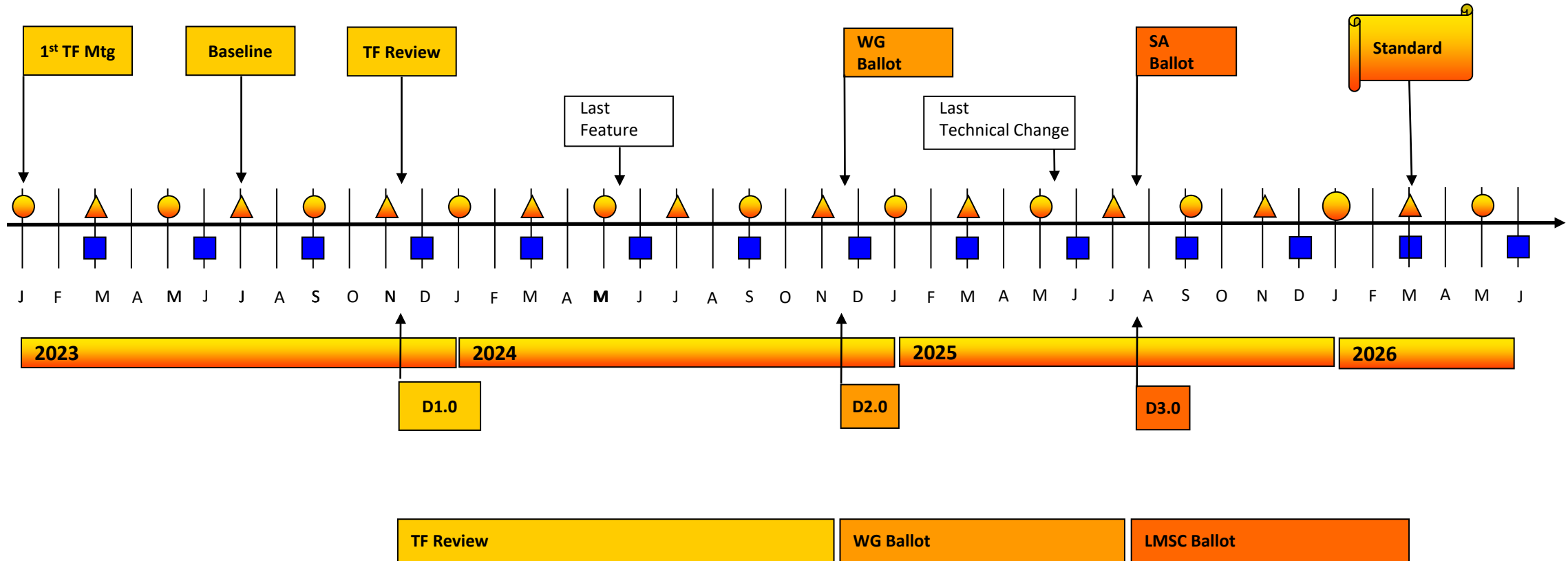
▪ Task force web and reflector information:

- Home page: <https://www.ieee802.org/3/df/index.html>
- Reflector Info - <https://www.ieee802.org/3/df/reflector.html>
 - TF Reflector: stds-802-3-b400g@listserv.ieee.org
 - Logic Reflector: stds-802-3-b400g-logic@listserv.ieee.org
 - Optical Reflector: stds-802-3-b400g-optx@listserv.ieee.org
 - Electrical Reflector: stds-802-3-b400g-elec@listserv.ieee.org

▪ Project Documentation –

- PAR : https://www.ieee802.org/3/dj/projdoc/P802d3dj_PAR.pdf
- CSD: <https://mentor.ieee.org/802-ec/dcn/22/ec-22-0256-00-ACSD-p802-3dj.pdf>
- Objectives: https://www.ieee802.org/3/dj/projdoc/objectives_P802d3dj_230518.pdf
- Adopted Timeline: https://www.ieee802.org/3/dj/projdoc/timeline_3dj_230116.pdf

Adopted IEEE P802.3dj Timeline (16 Jan 2023)



Legend

- ▲ IEEE 802 Plenary
- IEEE 802.3 Interim
- IEEE-SA Standards Board

Summary IEEE P802.3dj Progress @ End of 20 July 2023 Meeting – Logic

	AUI	Backplane	CU Cable	SMF 500m/2km	SMF 10km 4 Wavelength	SMF 10km 1 Wavelength	SMF 40km
Ethernet Rate	PCS/FEC/PMA?	PCS/FEC/PMA?	PCS/FEC/PMA?	PCS/FEC/PMA?	PCS/FEC/PMA?	PCS/FEC/PMA?	PCS/FEC/PMA?
200 Gb/s				Open issues			
400 Gb/s				Open issues			
800 Gb/s				Open issues	Open issues		Two proposals
1.6 Tb/s				Open issues			

Adopted baselines

Proposed Baselines

Summary IEEE P802.3dj Progress @ End of 20 July 2023 Meeting – PMDs (& AUIs)

Ethernet Rate	Assumed Signaling Rate	AUI	Backplane	Cu Cable	SMF 500m	SMF 2km	SMF 10km	SMF 40km
200 Gb/s	200 Gb/s	200GAUI-1 C2C C2M	200GBASE-KR1	200GBASE-CR1	200GBASE-DR1	200GBASE-FR1		
400 Gb/s	200 Gb/s	400GAUI-2 C2C C2M	400GBASE-KR2	400GBASE-CR2	400GBASE-DR2	400GBASE-DR2-2		
800 Gb/s	200 Gb/s	800GAUI-4 C2C C2M	800GBASE-KR4	800GBASE-CR4	800GBASE-DR4	1. 800GBASE-DR4-2 2. 800GBASE-FR4	800GBASE-LR4	
	800 Gb/s						Over single SMF in each direction Coherent	Over single SMF in each direction Coherent
1.6 Tb/s	100 Gb/s	1.6TAUI-16 C2C C2M						
	200 Gb/s	1.6TAUI-8 C2C C2M	1.6TBASE-KR8	1.6TBASE-CR8	1.6TBASE-DR8	1.6TBASE-DR8-2		

Adopted baselines

Proposed Baselines

Activities Since July 2023 Plenary

- **Meetings**
 - **20 July 2023 Electronic Interim**
 - **Additional time for 4 presentations, discussion, straw polls, motions from July 2023 Plenary**
 - **Sept 2023 Interim**
 - **29 Technical presentations**
 - **21 Sept 2023 Electronic Interim**
 - **Additional time for 4 presentations, discussion, straw polls, motions from Sept 2023 Interim**
- **Key Decisions – https://www.ieee802.org/3/dj/projdoc/KeyMotions_3dj_230921.pdf**
- **Ad Hoc Meetings - <https://www.ieee802.org/3/dj/public/adhoc/index.html>**
 - **Electrical Ad hoc – 17 Aug, 31 Aug, 26 Oct**
 - **Optical Ad hoc – 15 Aug, 29 Aug, 19 Oct, 02 Nov**

802.3dj Nov Plenary Plans

- **Meet jointly with IEEE P802.3cw / P802.3df Task Forces**
- **34 Technical Presentations**
- **Major Topics –**
 - **Baseline Selection**
 - **Consideration of how to address AI / ML applications (next page)**
 - **Reconsider project timeline**
- **Liaisons**
 - **Generate liaison to ITU-T regarding G.652 fibers**
 - **Consider liaison from MOPA – Time Synchronization error in PTP networks**

Big Ticket Item – AI / ML Applications

- **Concern expressed that current adopted approach (concatenated FEC) for DR / DR-2 / FR optics (all speeds) not best suited for emerging AI / ML application space**
- **Initial alternate approach – consider creating a physical layer specification that supports two FEC modes (FECi / FECo)**
 - **Different FEC modes with different signaling rates**
 - **Debate regarding mandatory / optional support FEC sublayers and modes**
 - **Are different FEC modes different PHYs?**
 - **Prolonged and currently unresolved debate**
- **Potential solution discussed - Add objectives to develop specifications that target AI / ML applications?**
- **This meeting –**
 - **Presentations in support of adding new objectives**
 - **Proposal to bypass Inner FEC convolutional interleaver**

THANK YOU!

