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P802.3ck 100 Gb/s per lane Electrical Task Force Adopted Objectives (1 of 2)

- Support a MAC data rate of 100 Gb/s, 200 Gb/s, and 400 Gb/s
- 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 the existing bit error ratios (BERs) at the MAC/PLS service interface (or the frame loss ratio equivalent) for 100 Gb/s, 200 Gb/s, and 400 Gb/s Ethernet

- Define a single-lane 100 Gb/s Attachment Unit interface (AUI) for chip-to-module applications, compatible with PMDs based on 100 Gb/s per lane optical signaling
- Define a single-lane 100 Gb/s Attachment Unit Interface (AUI) for chip-to-chip applications
- Define a single-lane 100 Gb/s PHY for operation over electrical backplanes supporting an insertion loss ≤28 dB at 26.56 GHz.
- Define a single-lane 100 Gb/s PHY for operation over twin-axial copper cables with lengths up to at least 2m

P802.3ck 100 Gb/s per lane Electrical Task Force Adopted Objectives (2 of 2)

- Define a two-lane 200 Gb/s Attachment Unit interface (AUI) for chip-to-module applications, compatible with PMDs based on 100 Gb/s per lane optical signaling
- Define a two-lane 200 Gb/s Attachment Unit Interface (AUI) for chip-to-chip applications
- Define a two-lane 200 Gb/s PHY for operation over electrical backplanes supporting an insertion loss ≤28 dB at 26.56 GHz.
- Define a two-lane 200 Gb/s PHY for operation over twin-axial copper cables with lengths up to at least 2m

- Define a four-lane 400 Gb/s Attachment Unit interface (AUI) for chip-to-module applications, compatible with PMDs based on 100 Gb/s per lane optical signaling
- Define a four-lane 400 Gb/s Attachment Unit Interface (AUI) for chip-to-chip applications
- Define a four-lane 400 Gb/s PHY for operation over electrical backplanes supporting an insertion loss ≤28 dB at 26.56 GHz.
- Define a four-lane 400 Gb/s PHY for operation over twin-axial copper cables with lengths up to at least 2m

802.3ck status: Reviewing comments against D1.4

We are here...

154 comments received
20 closed
33 in bucket #1 (9 removed)
110 to address

For the open comments, there are many repeat comments with ~50 responses referring to other comments.

We are recommending that 14 comments be deferred to Working Group ballot.

120G = Chip to Module (Fibre Channel delta point)
120F = Chip to Chip
162 = Copper Cables
163 = Backplane

Stats_by_Clause

Clause	E	G	T	ER	GR	TR	Open	Closed	Total
1	1	0	0	0	0	0	1	0	1
120	0	0	0	0	0	3	3	0	3
120F	0	0	6	2	0	3	11	0	11
120G	3	0	27	2	0	33	61	4	65
136	0	0	0	0	0	3	3	0	3
162	5	0	12	0	0	10	18	9	27
162A	0	0	2	0	0	0	2	0	2
162B	0	0	6	2	0	12	20	0	20
162C	0	0	1	0	0	0	1	0	1
162D	1	0	1	0	0	0	1	1	2
163	3	0	4	0	0	3	4	6	10
163A	1	0	0	0	0	3	4	0	4
163B	0	0	2	0	0	3	5	0	5
Total	14	0	61	6	0	73	134	20	154

802.3ck web site

- The TF web page is here: – http://www.ieee802.org/3/ck/index.html
- Next draft:
  - Leadership focusing on technical completeness
    - Technical gaps
    - TBDs
    - Postpone editorial comments and ‘tweaking’ of numbers

IF WE GO IN THIS DIRECTION… HERE'S WHAT TO EXPECT

- Targeting 3-week review as many have holiday during this time.
- SUBJECT TO CHANGE.

NOW

Posting of Draft 1.4

Close of ballot

D1.4 Comment resolution (Prioritized)

Final sweep for technical completeness & address major concerns

Pre-submit Draft 1.5

Closing Plenary

Su	M	Tu	W	Th	F	Sa	
		24	25	26	27	28	December
29	30	1	2	3	4	5	
6	7	8	9	10	11	12	
13	14	15	16★	17	18	19	
20	21	22	23	24	25	26	
27	28	29	30	31	1	2	January
3	4	5	6★	7	8	9	
10	11	12	13★	14	15	16	
17	18	19	20★	21	22	23	
24	25	26	27	28	29	30	
31	1	2	3	4	5	6	February
7	8	9	10	11	12	13	
14	15	16	17	18	19	20	
21	22	23	24	25	26	27	
28	1	2	3	4	5	6	March
7	8	9	10	11	12	13	
14	15	16	17	18	19	20	
21	22	23	24	25	26	27	

P802.3db 100 Gb/s, 200 Gb/s, and 400 Gb/s Short Reach Fiber Task Force

- Task Force Interim meeting (Teleconference) 21 January 2021
  - Meeting Materials: https://www.ieee802.org/3/db/public/January21/
  - Meeting Minutes: https://www.ieee802.org/3/db/public/January21/unapproved_meeting_minutes_3db_01_0121.pdf
- Task Force Ad Hoc meetings: https://www.ieee802.org/3/db/public/adhoc/index.html
  - 17 December 2020 ad hoc meeting. Baseline proposal: https://www.ieee802.org/3/db/public/adhoc/presentations/murty_3db_adhoc_01b_121720.pdf
- Consensus building on adopting a baseline is ongoing
- Optical specifications will be generated in parallel with 53 G VCSEL/100 Gb/s per wavelength VCSEL development
- TF and WG adopted updated Objectives at November plenary.
  - Adopted additional objectives for physical layer specification that supports 100 Gb/s operation, 100 m MMF
- TF Adopted Timeline at November Plenary
  - Target date for Adopted Baseline: January 2021 (not met), CWV: February 2021
  - Target date for authorizing D1.0: March 2021 (may or may not be met)
  - Target date for Standard: June 2022

P802.3db 100 Gb/s, 200 Gb/s, and 400 Gb/s Short Reach Fiber Task Force

Adopted Objectives (1 of 2)

1. Support a MAC data rate of 100 Gb/s, 200 Gb/sand 400 Gb/s
2. Support full-duplex operation only
3. Preserve the Ethernet frame format utilizing the Ethernet MAC
4. Preserve minimum and maximum FrameSizeof current IEEE 802.3 standard
5. Provide appropriate support for OTN
6. Support a BER of better than or equal to 10^{-12} at the MAC/PLS service interface (or the frame loss ratio equivalent) for 100 Gb/s operation
7. Support a BER of better than or equal to 10^{-13} at the MAC/PLS service interface (or the frame loss ratio equivalent) for 200 Gb/s and 400 Gb/s operation

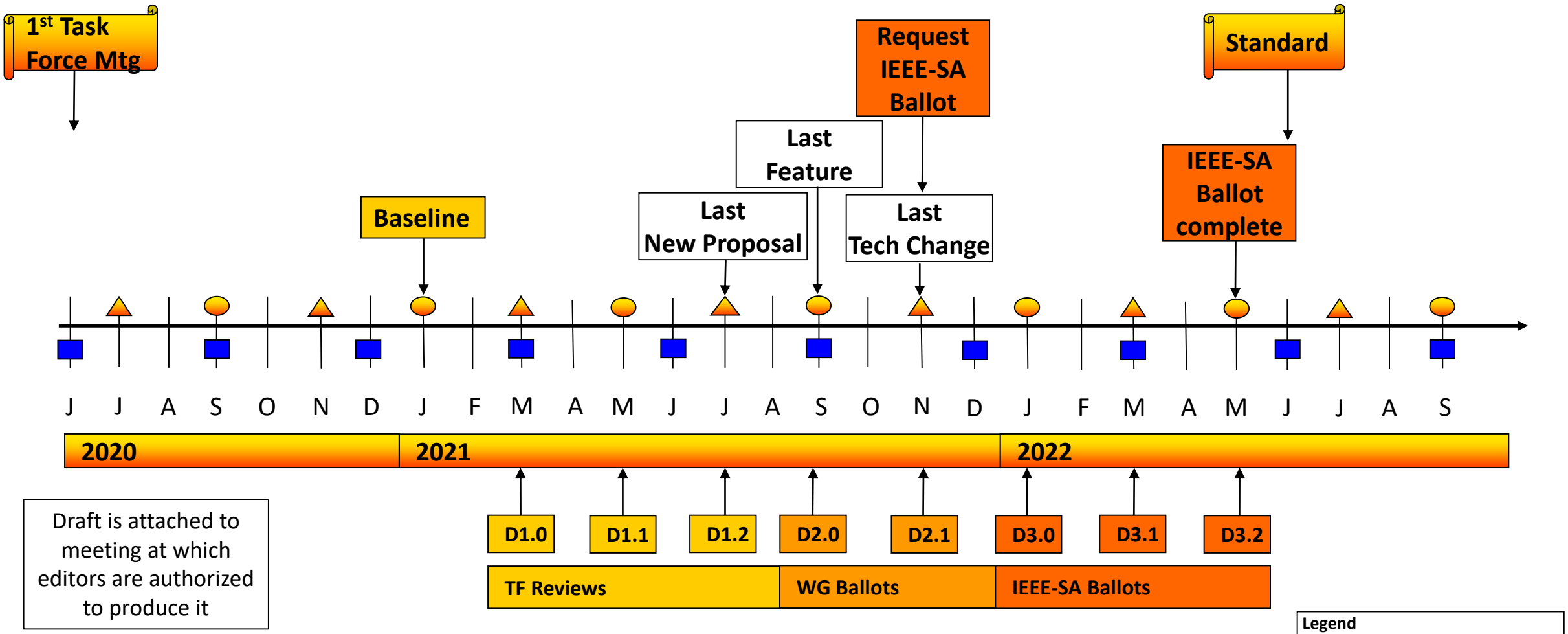
P802.3db 100 Gb/s, 200 Gb/s, and 400 Gb/s Short Reach Fiber Task Force

Adopted Objectives (2 of 2)

8. Define a physical layer specification that supports 100 Gb/s operation over 1 pair of MMF with lengths up to at least 50 m
9. Define a physical layer specification that supports 200 Gb/s operation over 2 pairs of MMF with lengths up to at least 50 m
10. Define a physical layer specification that supports 400 Gb/s operation over 4 pairs of MMF with lengths up to at least 50 m
11. Define a physical layer specification that supports 100 Gb/s operation over 1 pair of MMF with lengths up to at least 100 m
12. Define a physical layer specification that supports 200 Gb/s operation over 2 pairs of MMF with lengths up to at least 100 m
13. Define a physical layer specification that supports 400 Gb/s operation over 4 pairs of MMF with lengths up to at least 100 m

IEEE P802.3db Task Force Timeline

Adopted by TF November 2020



Draft is attached to meeting at which editors are authorized to produce it

Beyond 400G Study Group

- The IEEE 802 LMSC Executive Committee has chartered a Study Group under the IEEE 802.3 Ethernet Working Group to develop a Project Authorization Request (PAR) and Criteria for Standards Development (CSD) responses for:
  (1) Beyond 400 Gb/s Ethernet
  (2) Physical Layer specifications for existing Ethernet rates based on Physical Layer specifications for beyond 400 Gb/s Ethernet.

- Call for interest Consensus presentation:
  - https://www.ieee802.org/3/ad_hoc/ngrates/public/calls/20_1029/CFI_Beyond400GbE_Rev7_201029.pdf

IEEE 802.3 Beyond 400 Gb/s Ethernet Study Group

- Main webpage:
  - https://www.ieee802.org/3/B400G/index.html
- Study Group Interim meeting (Teleconference) 14 January 2021:
  - Meeting Materials: https://www.ieee802.org/3/B400G/public/21_0114/index.html
  - Meeting Minutes: https://www.ieee802.org/3/B400G/public/21_0114/minutes_b400g_a_210114_approved.pdf
- Study Group Interim meeting (Teleconference) 18 January 2021:
  - Meeting Materials: https://www.ieee802.org/3/B400G/public/21_0118/index.html
  - Meeting Minutes: https://www.ieee802.org/3/B400G/public/21_0118/minutes_b400g_210118_unapproved.pdf

Relevant Excerpt from a presentation

- Webscaledeployments are driving the Ethernet switch and interconnect industry to develop solutions to allow them to continue to scale their networks.
- Unfortunately, not a lot of consistency on how they build their networks
- Radix, Fabric speed, Port speed, over-subscriptions, interconnect infrastructure
- Therefore, focus on key building blocks is important, with knowledge that the range of implementations and usage may be broad
- For Webscaledeployments, Multi-rate requirements needs to be considered (a.k.a. signaling backwards compatibility –not module backwards compatibility)
- e.g.A host and module that supports 400GBASE-FR4, that can also be able to support 200GBASE-FR4, or even 100G-CDWM4

Tom P. opinions on Beyond 400G study group

- The consideration of multi-rate brings Ethernet closer to Fibre Channel requirements
- This group will probably initiate a 224G electrical interface
- Lanes for optical channel will probably stay with PAM4 modulation but there is talk of PAM6 and PAM8.
- Both 800G and 1.6Tbit being considered for aggregate data rates. (I don’t think this decision is relevant for T11)

Future Meetings

Meeting	Location	Dates
IEEE 802 March plenary	Virtual	8-18 March 2021
IEEE 802.3 May interim	Virtual	10-20 May 2021
IEEE 802 July plenary	Madrid	12-15 July 2021
IEEE 802.3 September interim	TBD	13-17 September 2021
IEEE 802 November plenary	Vancouver	15-18 November 2021

Upcoming meeting details at: http://ieee802.org/3/interims/index.html