The IEEE P802.3df Standard Document Introduction

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Introduction

- This presentation represents an educated guess at how the P802.3df draft might be organized once baselines are complete.

- Content is based upon objectives that have been adopted thus far and discussions that occurred during the study group phase.

- First, the clauses and annexes in the base standard that might be amended are listed.

- Second, clauses and annexes that might be newly created in P802.3df are listed.

- This presentation might provide some useful insight for those working on baselines to address the various objectives.

Potentially amended general, introduction, and logic clauses and annexes

#	Clause/Annex Subject	Potential Amendments
0	Front matter	
1	Definitions, abbreviations, etc.	New definitions, abbreviations, etc.
4A	Simplified full duplex media access control	Add notes for Table 4A-2 for 800/1600 Gb/s
30	Management Objects	new content for 200G/400G/800G/1600G
45	MDIO	new content for 200G/400G/800G/1600G
69	Backplane introduction	new content for 200G/400G/800G
73	AN	new content for 200G/400G/800G
116	400GE/200GE introduction	add new 200G/400G PHY/AUI support
119	400GE/200GE PCS	add new 200G/400G PHY/AUI support
120	400GE/200GE PMA	add new 200G/400G PHY/AUI support

Potentially amended electrical clauses and annexes

#	Clause/Annex Subject	Potential Amendments
93A	Specs. for Electrical Channels (COM, ERL)	incremental changes, as necessary
120F[1]	100GAUI-1, 200GAUI-2, 400GAUI-4 C2C	add 800GAUI-8, 1600GAUI-16
120G[1]	100GAUI-1, 200GAUI-2, 400GAUI-4 C2M	add 800GAUI-8, 1600GAUI-16
162	100GBASE-CR1, 200GBASE-CR2, 400GBASE-CR4 PMD	add 800GBASE-CR8
162A	100G/200G/400GBASE-CR1/2/4 test points, budget, etc.	add 800GBASE-CR8
162B	100G/200G/400GBASE-CR1/2/4 test fixtures	add 800GBASE-CR8
162C	100G/200G/400GBASE-CR1/2/4 MDIs	add 800GBASE-CR8
162D	100G/200G/400GBASE-CR1/2/4 form factors	add 800GBASE-CR8
163	100GBASE-KR1, 200GBASE-KR2, 400GBASE-KR4 PMD	add 800GBASE-KR8
Note 1: If 800GAUI and 1600GAUI per-lane bit rate is increased due to advanced FEC with higher overhead ratio the electrical characteristics would be different thus new annexes might be required.		

Potentially amended optical PMD clauses

#	Clause/Annex Subject	Potential Amendments
151	400GBASE-DR4 PMD	add 800GBASE-DR8 (500 m and 2 km)
167	100GBASE-VR1/SR1, 200GBASE-VR2/SR2, 400GBASE-VR4/SR4 PMD	add 800GBASE-VR8/SR8

Potential new architecture and logic clauses and annexes

#	Clause/Annex Subject
299[1]	200G/400G PCS with 200 Gb/s FEC
300	Introduction to 800 GbE and 1600 GbE
301	800G/1600G RS
302	800G/1600G PCS[2]
303	800G/1600G FEC #1[2]
304	800G/1600G FEC #2[3]
305	800G/1600G PMA
305A	PMA examples

Note 1: This assumes that for the 200 Gb/s per lane PMDs an FEC like that chosen for 800 GbE will be necessary.
Note 2: Assumes that the PCS does not include FEC and thus separate PCS and FEC sublayers are provided. Also, if an inverse PCS and FEC are defined that will be within these clauses rather than additional separate clauses.
Note 3: Assumes at least one additional FEC (segmented or concatenated) is defined.

Potential new electrical clauses and annexes

#	Clause/Annex Subject
305B	200GAUI-1, 400GAUI-2, 800GAUI-4, 1600GAUI-8 C2C
305C	200GAUI-1, 400GAUI-2, 800GAUI-4, 1600GAUI-8 C2M
306	200GBASE-CR1, 400GBASE-CR2, 800GBASE-CR4, 1600GBASE-CR8 PMD
306A	800GBASE-CR4 test points, budget, etc.
306B	800GBASE-CR4 test fixtures
306C	800GBASE-CR4 MDIs
306D	800GBASE-CR4 form factors
307[1]	200GBASE-KR1, 400GBASE-KR2, 800GBASE-KR4, 1600GBASE-KR8 PMD
Note 1: Assumes objective for 200 Gb/s per lane backplane objectives are later adopted.	

Potential new optical clauses

#	Clause/Annex Subject
308	200GBASE-DR1[1], 400GBASE-DR2, 800GBASE-DR4, 1600GBASE-DR8 (500 m and 2 km SMF, parallel, single wavelength per fiber)
309	800GBASE-FR4 (2 km SMF, duplex, WDM 4 wavelengths per fiber)
310[2]	800GBASE-TBD (10 km SMF, duplex, format TBD)
311[2]	800GBASE-TBD (40 km SMF, duplex, format TBD)
Note 1: Assumes that 200 GB/s single wavelength 2 km would be designated DR1 rather than FR1. This is a subject for later discussion. Note 2: If coherent signaling like that used for 100GBASE-ZR or 400GBASE-ZR is adopted, an associated FEC/PMA clause like Clause 153 might also be required.

Thanks

IEEE P802.3df Task Force