

Final responses to comments against D0.2

802.3cm 400Gb/s over MMF

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'Bucket' comments 1: accepted, not controversial

#	T/E	clause	Pag	Li	Comment	Suggested Remedy	Respons
1	T	138.2			No references to 400GBASE-SR8	Add references to 400GBASE-SR8 - fixed in draft 0.2a	ACCEPT
2	T	138.5.2			400GBASE-SR8 has eight lanes	"The 400GBASE-SR8 has <u>eight</u> parallel symbol...."	ACCEPT
3	E	138.8.5	281	17	"Table 138-9 specifies the test pattern" should be "Table 138-12"	Change to "Table 138-12 specifies the test pattern"	ACCEPT
6		Introduction	12	44	Example projects are out of date.	Change to 802.3cd.	ACCEPT
7		Introduction	16	13	Wrong number	Change three to four	ACCEPT
8		Fig 138-1	19	19	Missing arrow with MDI	Fix it	ACCEPT
12		Fig 200-1	50	27	The RS-FEC is correctly not in the diagram as it is part of the 400GBASE-R PCS, there shouldn't be a definition of it.	Delete the RS-FEC definition.	ACCEPT

'Bucket' comments 2: accepted, not controversial

13	200.3.1	51	36	The delay has incorrectly been taken from 200G not 400G	Change to "no more than 8192 bit times (16 pause_quanta or 20.48 ns)."	ACCEPT
14	200.3.1	51	36	The "for 400GBASE-SR4.2" isn't needed and isn't in the equivalent 400G PMD clause.	Delete "for 400GBASE-SR4.2"	ACCEPT
15	200.3.2	51	48	The references to 80.5 and figure 80-8 aren't in the equivalent 400G PMD clause and aren't helpful, but references to figure 116-4 would be useful. (see 122.3.2)	Delete the unneeded references (also on page 52 line 10) and add figure 116-4.	ACCEPT
16	200.4	52		tables 200-2 and 200-3: These contain only 4 lane information.	Copy tables 122-2 and 122-3 instead.	ACCEPT
17	200.5.4	54	24	116.3 (for 400G) would be a better reference than 80.3 (for 100G)	Change to 116.3	ACCEPT
22		65	28	There is only one port type	Change e.g. to i.e.	ACCEPT

Comments against clause 1, 138

- Project title

#	T/E	clause	Page	Line	Comment	Suggested Remedy	Response	Response Notes
5		1	1		Do we need a more explicit title as 400G over MMF already exists.	Change to "over 4 and 8 pair Multimode Fiber"	REJECT	Discussed by Task Force, but there was no consensus to change the project title

- Sub-section duplicate numbering in 138

9		138.10.3.2	39	41	There are two sub sections with the same number		AIP	Change numbering of any inserted items to xxx.a to remove numbering ambiguity (where xxx is the preceding similar item
10		138.11.4.6	48	20	subclause reference is wrong for the 400GBASE-SR8.	There is however a problem that there are two sub-clauses with the same number 138.10.3.2 so fixing this may affect the change.	AIP	Fix the reference, and see above proposed response to comment 9

Comments against clause 138: subclause 138.11.4.6, MDI PICS

- PICS for MDI mating and MDI requirements

#	T/E	clause	Page	Line	Comment	Suggested Remedy	Response	Response Notes
11		138.11.4.6	48	38	Need to add MDI mating and MDI requirements for 400GBASE-SR8	I think you can probably add 400GBASE-SR8 to OC8 and OC11, but I'd ask the fiber experts.	AIP	Contribution needed. Add editors note to PICS

Comments against clause 200: subclause 200.6, description of bi-di lanes

#	T/E	clause	Page	Line	Comment	Suggested Remedy	Response	Response Notes
4		200.6	30	12 to 16	Instead of “it is evident that there are two types of lane: (i) lanes that comprises a transmit lane that uses the wavelength range 844 to 863 nm and a receive lane that uses the wavelength range 900 to 918 nm; (ii) lanes that comprises a transmit lane that uses the wavelength range 900 to 918 nm and a receive lane that uses the wavelength range 844 to 863 nm.”	I propose “it is evident that there are two types of lane: (i) composite lanes that comprises a transmit lane that uses the wavelength range 844 to 863 nm and a receive lane that uses the wavelength range 900 to 918 nm on the same fiber; (ii) composite lanes that comprises a transmit lane that uses the wavelength range 900 to 918 nm and a receive lane that uses the wavelength range 844 to 863 nm on the same fiber.”	AIP	See response to comment 20
20	T	200.6	56	13	Lanes are signal paths. You can't have a lane with different wavelengths for the Tx and Rx.	Change Table 200-5 Title to "Wavelength ranges" and just have two rows. The title row would have "TxRx pair type" instead of "Lane". One row would have TR the other RT. Change to "The transmit and receive wavelength ranges for the 400GBASE-SR4.2 PMD are defined in Table 200-5. From Table 200-5, it is evident that there are two types of TxRx pairs: (i) TxRx pairs (TR) that comprise a transmitter that uses the wavelength range 844 to 863 nm and a receive lane that uses the wavelength range 900 to 918 nm; (ii) TxRx pairs (RT) that comprise a transmitter that uses the wavelength range 900 to 918 nm and a receive lane that uses the wavelength range 844 to 863 nm. When connecting a 400GBASE-SR4.2 PMD to another 400GBASE-SR4.2 PMD, it is a requirement that the TxRx pairs in each PMD be connected to the opposite type in the other PMD. This positioning of TxRx pairs at the	AIP	See final comment response to 20

Comment 20 final response:

- Change Table 200-5 Title to "Wavelength ranges" and just have two rows. The title row would have "TxRx pair type" instead of "Lane". One row would have TR the other RT.
- Change to "The transmit and receive wavelength ranges for the 400GBASE-SR4.2 PMD are defined in Table 200-5. From Table 200-5, it is evident that there are two types of TxRx pairs: (i) TxRx pair type (TR) that comprises a transmitter that uses the wavelength range 844 to 863 nm and a receiver that uses the wavelength range 900 to 918 nm; (ii) TxRx pair type (RT) that comprises a transmitter that uses the wavelength range 900 to 918 nm and a receiver that uses the wavelength range 844 to 863 nm. When connecting a 400GBASE-SR4.2 PMD to another 400GBASE-SR4.2 PMD, it is a requirement that each TxRx pair type RT at one end of the link be connected to a TxRx pair type TR at the other end of the link. This positioning of TxRx pairs at the MDI is specified in 200.10.3.1."

Comments against clause 200: subclause 200.8.5, TDECQ bandwidth

#	T/E	clause	Page	Line	Comment	Suggested Remedy	Response	Response Notes
21	T	200.8.5	61	14	The bandwidth used for measuring TDECQ depends on the fiber bandwidth which will be different at 850nm and 910nm. If it is desired to not penalize the 850nm transmitters with the worst case bandwidth of the fiber at 910nm then different measurement bandwidths should be used for the different wavelengths.	Reword the bullet to have different TBD bandwidths for 850 nm and 910 nm.	AIP	Comment was withdrawn by the commenter

Comments against clause 200: subclause 200.7, signal detect, Tx Return Loss, Tx 'off' average power

#	T/E	clause	Page	Line	Comment	Suggested Remedy	Response	Response Notes
18	T	200.7	54	38	With a connector opened the bidirectional signal reflected will only be 14dB below the signal i.e. with these powers signal detect will not fail.	Change from -30dBm to -10dBm. Also add "reflections of transmitted power" on line 49.	AIP	Change Table 200-4 to define FAIL and OK criteria for wavelength ranges appropriate for each of the TxRX pair types (RT and TR) at TP3 (see final response to comment 18)
23		200.7.1	58	22	Is a receiver reflectance of 12dB adequate for this bidirectional system. I suspect it needs to be significantly better.	Provide evidence that 12dB is adequate or provide a better number.	REJECT	Counterpropagating signals have different wavelengths which are separated by a WDM demux, -12 dB receiver reflectance should not be an issue.
19	T	200.7.1	57	40	Table 200-7: With the change to signal detect level should the Average launch power of OFF transmitter be	Consider changing it to -20dBm.	REJECT	No change was made to the signal detect level.

Comment 18 final response:

- Change Table 200-4 SIGNAL_DETECT value definition to:

Receive conditions	SIGNAL_DETECT value
For TxRx pair type TR ^a ; Average optical power at TP3 \leq -30 dBm for wavelength range 900 nm to 918 nm	FAIL
For TxRx pair type RT ^a ; Average optical power at TP3 \leq -30 dBm for wavelength range 840 nm to 863 nm	FAIL
For TxRx pair type TR ^a ; [(Optical power at TP3 \geq average receive power, each lane (min) in Table 200-7 for wavelength range 900 nm to 918 nm) AND (Compliant 400GBASE-SR4.2 signal input)]	OK
For TxRx pair type TR ^a ; [(Optical power at TP3 \geq average receive power, each lane (min) in Table 200-7 for wavelength range 840 nm to 863 nm) AND (Compliant 400GBASE-SR4.2 signal input)]	OK
All other conditions	Unspecified

Add note 'a' to Table 200-4 to reference the TxRx pair types TR and RT descriptions in 200.6, with editorial license