C/ 45 SC 45.2.1.9	2b P 37	L 48	# 1	C/ 91	SC 91.6	P 155	L 33	# 4
Barrass, Hugh	Cisco			Barrass, H	lugh	Cisco		
Comment Type T There is a need for ar RS-FEC PCS lane 0 r	Comment Status X a align status bit in the Tx dired mapping register - Register 1.2	tion (so that it ca 250).	n validate 45.2.1.92j	Comment There	<i>Type</i> T needs to be a P	<i>Comment Status</i> X CS lane alignment status bit - al:	so missing in	Clause 45
SuggestedRemedy Add Register bit 15, F Definition: When read as a one,	PCS_align_status bit 1.201.15 indicates that the	RS-FEC describ	ed in	Add a PCS a Proposed	row for PCS alig align status RS Response	n status: -FEC status register 1.201.15 <i>Response Status</i> 0	5 PCS_alig	n_status
Clause 91 has locked indicates that the RS- Proposed Response	and aligned all transmit PCS FEC has not locked and align Response Status 0	anes. When rea ed all transmit Po	d as a zero, bit 1.201.15 CS lanes.	<i>Cl</i> 99 Bob Grow	SC	P1 RMG Consulting	L 36	# 5
<i>Cl</i> 45 <i>SC</i> 45.2.1.9 Barrass, Hugh	2j P 40 Cisco	L 53	# 2	Comment Needs Suggester 201X	<i>Type</i> E s copyright year <i>dRemedy</i> -> 2013	Comment Status X		
Comment Type T Assuming that an alig changed to reflect tha	n status bit is defined for all P t.	CS lanes, this su	bclause needs to be	Proposed	Response	Response Status O		
SuggestedRemedy Change:				<i>Cl</i> 99 Bob Grow	SC	P 4 RMG Consulting	L 30	# 6
The contents of the La status bit (register 1.2	ane 0 mapping register is valid 01.15) is set to one and is inv	when the transm alid otherwise (se	nit PCS lane alignment ee 45.2.1.92b).	<i>Comment</i> The fr	<i>Type</i> E ont matter should	Comment Status X	802.3.1.	
Proposed Response	Response Status O			Suggeste	dRemedy			
C/ 91 SC 91.6 Barrass, Hugh	P 155 Cisco	L 27	# 3	A com base Std 80 after a	ipanion documer (MIB) modules fo)2.3.1 is updated approval of the er	It IEEE Std 802.3.1 describes Et r use with the Simple Network M to add management capability f hancements.	thernet mana lanagement for enhancem	gement information Protocol (SNMP). IEEE tents to IEEE Std 802.3
Comment Type T The FEC align status	Comment Status X bit is missing			Proposed	Response	Response Status O		
SuggestedRemedy Add a row for FEC ali	gn status:							
FEC align status Fl Proposed Response	EC lane mapping register 1. <i>Response Status</i> O	206.15 FEC_a	lign_status					

Cl 30	SC 30.3.2.1.3	P 23	L 46	# 7	CI 78	SC 7	78.1.3.3.1	P 62	L 17	# 10
Bob Grow		RMG Consulti	ng		Bob Grow			RMG Consulti	ng	
Comment	Type E	Comment Status X			Comment	Туре	ER	Comment Status X		
Forma	atting does not ma	tch 802.3-2012.			Warnir	ng is ina	ppropriate	From the IEEE Standards	Style Manual,	17.4: ?Warnings call
Suggested Match Same	dRemedy formatting (More problem p.34, I.2	white space on left, no visible	e tab between t	he PCS type listed).	followe Cautio avoid	on to the ed precision: ?Cau damage	e use of ma sely to avoi itions call a to equipm	aterials, processes, methods id injury or death.? I don?t t attention to methods and pro ent.	hink this even cedures that h	raises to the level of a ave to be followed to
Proposed	Response	Response Status 0			Suggested	Remed	y			
					Conve	rt to a N	IOTE.			
C/ 30 Bob Grow	SC 30.5.1.1.2	P 24 BMG Consulti	L 11	# 8	Proposed	Respon	se	Response Status O		
Comment		Comment Status X	19		CI 79	sc -	70.0	Dep	1.22	# 44
Forma	atting problem here	e (and in 802.3-2012). It app	ears in the 201	2 merge some	Bob Grow	30	0.2	r os RMG Consulti	L Z 3	#
inserti	ions have the enur	meration outdented as is the	case for each e	numeration here.	Comment	Tuno	F	Comment Status X	19	
Suggested	dRemedy				Editing	instruc	tion could l	be improved. (Inserted rows	include 40 Gb)/S.
Remo	ve outdents per 80	02.3-2008 enumerations.			Suggester	,on de IDomod				
Proposed	Response	Response Status 0			Chang 78-2.	le table	title and co	lumn heading and insert the	following rows	at the bottom of Table
C/ 45	SC 45.2.1.92i	P 41	L 5	# 9	Proposed	Respon	se	Response Status 0		
Bob Grow	····,	RMG Consulti	ng							
Comment	Type E	Comment Status X	-		C/ 00	SC		Р	L	# 12
We ha	ave not done a goo	od job on Reserved bits/regis	ters. This draft	includes two of the four	Bob Grow			RMG Consulti	ng	
Descr	iptions we have in	802.3-2012. These two refle	ect the two diffe	rent perspectives: the	Comment	Tvpe	Е	Comment Status X		
bits/re	gisters.	is/registers and managemen	it (pernaps rem	otery) looking at the	Use of	acrony	ms not in 1	.5. FW is broadly used in th	is document, t	hough primarily as part
For th read?	e implementation, is the manageme	?Value always 0, writes igno nt perspective. We are spec	ored is acceptat	ble?. The ?Ignore on mentation (per the	of vari clause acrony	able nai 30 and /ms.	nes it is als 78 text. T	so used as an acronym. DL LV is in the definitions in 802	L is also used i 2.3-2012, but it	n variable names and in isn?t listed in the
PICS)	, so the former De	scription should be used.			Suggested	Remed	y			
(Per tł by (igr on rea	he PICS, an imple nore) a write. Wha ad and write reserv	mentation is to return a 0 (be at we do not state is that mar red bits as 0.)	tter then always agement shoul	s 0) and not be affected d ignore reserved bits	Add to DLL FW TLV	1.5: data lin fast wal type, le	k layer ke ngth, value			
Suggester	dRemedy	oness of Algebras on reada	th 2) (alua alua	vo 0. writee impered?	Proposed	Respon	se	Response Status O		
керіа		ences of rignore on read? W	un ?value alwa	ys u, writes ignorea?.						
Proposed	Response	Response Status O								

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Comment ID

CI 79	SC 79.3.6.3	P 73	L 8	# 13	C/ 30	SC 30.5.1.1.2	P 24	L 14	# 16
Bob Grow		RMG Consult	ing		Hajduczei	nia, Marek	ZTE Corporat	ion	
Comment I think names Table	<i>Type</i> E the title is referring should be used.	Comment Status X ng to the echo of two fields w Not sure if it should be Echo mit EW and Echo Receive Fi	vithin the TLV va o of Transmit FV	alue, so proper field V and Receive FW or per	Comment There 100G	<i>Type</i> E are three new ad BASE-CR4. Now	Comment Status X ded copper PHY types, i.e., hey are defined in order of C	100GBASE-KP Clause 94, 93, a	4, 100GBASE-KR4, and and 92.
Suggested I belie Proposed	IRemedy ve it should be: E Response	cho of Transmit FW and Rec Response Status 0	ceive FW		Suggeste Chan KR4, PHY t Simila indivio	dRemedy ge the order of PH and 100GBASE-K types included in 3 ar change would b dual PHYs and ord	Y names to follow Clause of P4. Once done, the order w 0.6.1.1.5 e suggested in Table 73-4 to ler of their Clauses. Similar of	der, i.e. 100GB Il correspond cl keep it consist change in the lis	ASE-CR4, 100GBASE- losely to the order of eent with teh listing of sting order in 73.10.7.
<i>Cl</i> 79 Bob Grow	SC 79.4.2	P 73 RMG Consult	L 36 ing	# 14	Proposed	Response	Response Status O		
Comment	Туре Е	Comment Status X			<i>Cl</i> 45 Hajduczei	SC 45.2.1.12 nia, Marek	P 34 ZTE Corporat	L 5 ion	# 17
Suggested EEE F Proposed	dRemedy W (delete the ex Response	tra FW). Response Status O			Comment "Inser Origir clearl	<i>Type</i> E t the following row hal Table 45-15 in y which one of the	Comment Status X is into Table 45–15in place of 802.3-2012 contains two row se is being replaced.	of the row current ws with reserved	ntly reserved:" d values. Please indicate
C/ 80	SC 80.1.5	P78 RMG Consult	L 26	# [15	Suggeste Sugg 45–15	<i>dRemedy</i> est to change the 5 in place of the re	editing instruction to read: "li served row for bits 1.13.14:1	nsert the followi 2:"	ng rows into Table
Comment Their i operat PHY a in the p802.2	<i>Type</i> TR isn?t a 40 Gb/s M ting speeds. One is the second ser clause to define 4 3ba so a servic	Comment Status X IAC or a 100 Gb/s MAC, ther also for example can?t mix thence arguably (though not I 40 Gb/s and 100 Gb/s Ethern e to humanity.	re is only one M 40 Gb/s operati ogically) allows net. (Should ha	AC with various on with a 100GBASE . This is also rather late ve caught this on	Proposed Cl 45 Hajduczen	SC 45.2.1.80 nia, Marek	P 34 ZTE Corporat	L 47 ion	# [18
Suggested	Remedy				Comment	ng comma before	the newly added 'or'		
Delete This c Gigab conne impler data ra 100 G	e the second sent lause describes t it Ethernet uses t cted through the mentation. 100 G ate of 100 Gb/s, o b/s Physical Laye	ence. And replace 80.1.1 first he general requirements for he IEEE 802.3 MAC sublaye 40 Gb/s Media Independent igabit Ethernet uses the IEE connected through the 100 G er implementation.	st paragraph wi 40 Gigabit and r operating at a Interface to a 4 E 802.3 MAC s b/s Media Indep	th: 100 Gigabit Ethernet. 40 data rate of 40 Gb/s, 0 Gb/s Physical Layer Jblayer operating at a bendent Interface to a	Suggeste Is "in "in Cl- Simila Proposed	<i>dRemedy</i> Clause 72, Clause ause 72, Clause 8 ar issue in newly a <i>Response</i>	84, Clause 85, Clause 92, 4, Clause 85, Clause 92, Clause 92, Clause 85, Clause 92, Clause 85, Clause 92, Clau	Clause 93 or Cl ause 93, or Clau 1.82, 45.2.1.83,	ause 94." and should be use 94." , and 45.2.1.84.
Proposed	Response	Response Status 0							

C/ 45	SC 45.2.1.92	a.2	P 37	L 34	# 19	C/ 45	SC 45.2.3.9	P 43	L 3	# 21
Hajduczer	nia, Marek		ZTE Corpora	tion		Hajducze	nia, Marek	ZTE Corporat	ion	
Comment	Туре Е	Comme	ent Status X			Comment	t Type E	Comment Status X		
"Wher zero, o bit to d	n written as a one errors are indicate	, this bit er ed to the P	hables bypass of t CS through the sy	he error indicatio nc bits." - we typ	n. When written as ically speak of setting a	Edito not sl	rial instruction is hown right now ir	unclear as to what happens w n thsi table	ith bits 3.20.6 t	hrough 3.20.1, which are
There	are also inconsis	tencies wit	th the use of "a" b	efore the bit valu	e (zero/one).	Suggeste	edRemedy			
Suggestee	dRemedy					Eithe	r explicitly show ty the editorial in	bits 3.20.6 through 3.20.1 as n structions to indicate clearly wh	ot changed from	m base standard, or
Chang "When	ge the text to read n set to a one, this	l: s bit enable	es bypass of the e	rror indication. V	/hen set to a zero,	- repl - repl	acing the reserver	row for bit 3.20.15:7 as sho row for bit 3.20.0 as shoon in	own in the table	3
errors	are indicated to t	he PCS th	rough the sync bit	s."		Proposed	l Response	Response Status 0		
Proposed	Response	Respons	se Status O							
						C/ 45	SC 45.2.3.9	.a P 43	L 40	# 22
C/ 45	SC 45.2.1.92	b	P 37	L 50	# 20	Hajducze	nia, Marek	ZTE Corporat	ion	
Hajduczer	nia, Marek		ZTE Corpora	tion		Comment	t Type E	Comment Status X		
Incons "FEC 0 the Simial	sistent terminolog decoder has abili description will rea Ir issue for bit 1.20	y in Table ty to bypas ad "FEC de 01.2	45–72d. If for bit 1 s error indication" ecoder does not h	1.201.1 we descr , it is only expec ave the ability to	ibe the value of 1 as ted that for the value of bypass error indication"	set to shall In oth consi	o one. If the device be set to zero." her subclauses de stent in here as	escribing the setting for bits, yow	I deep sleep fo	and "a zero" It should be
Suggestee	dRemedy					Suggeste	edRemedy			
Chang 1 = FE 0 = FE	ge description for EC decoder has th EC decoder does	bit 1.201.1 ne ability to not have th	to read: bypass error indi ne ability to bypas	cation s error indication	1	Eithe them and h	r insert article "a' elsewhere wher nighly arbitrary (a	" every time you call "one" or " e they are already used in this t least that is the way it seems	zero" in this set draft. Right no [,] ;).	t of registers, ot remove w it is very inconsistent
Chano 1 = FE 0 = FE	ge description for EC decoder has th EC decoder does	bit 1.202.2 ne ability to not have th	to read: bypass error corn ne ability to bypas	rection s error correctior	1	Proposed	l Response	Response Status O		
Proposed	Response	Respons	se Status O			C/ 69	SC 69.1.3	P 53	L 42	# 23
						Hajducze	nia, Marek	ZTE Corporat	ion	
						Comment	t Type E	Comment Status X		
						Item	g) is a new text,	added under this project and s	hould be marke	ed accordingly.
						Suggeste	dRemedy			
						Unde	rline the content rline.	of item g). The new text in iter	n f) should alsc	be marked with
						Proposed	l Response	Response Status 0		

Hajduczenia, Marek ZTE Corporation Comment Type E Comment Status X Editorial instructions associated with Table 69–1 could be clearer - it takes a while to realize what the actual change was. SuggestedRemedy Change the editorial instruction in line 22 to read as follows: "Replace Table 69–1 (moving 40GBASE-KR4 to Table 69-1a) and insert Table 69–1a as shown:" Proposed Response Proposed Response Response Status O Cl 78 SC 78.2 P 63 L 30 # 25 Hajduczenia, Marek ZTE Corporation Comment Status X	Hajduczenia, Marek ZTE Corporation Comment Type E Comment Status X Missing comma after "When a local link partner receives its echoed values from the remolink partner" Similarly, missing comma on page 73, line 25, after "The cross-references between the E TLV, the EEE FW TLV" (serial comma) Similarly, missing comma on page 80, line 5, after "The terms 40GBASE-R, and100GBASE-R (serial comma) Similarly, missing comma on page 80, line 35, after "The 40GBASE-R, and100GBASE-R (serial comma) SuggestedRemedy Insert missing comma Proposed Response Response Status O
Comment Type E Comment Status X Editorial instructions associated with Table 69–1 could be clearer - it takes a while to realize what the actual change was. SuggestedRemedy SuggestedRemedy Change the editorial instruction in line 22 to read as follows: "Replace Table 69–1 (moving 40GBASE-KR4 to Table 69-1a) and insert Table 69–1a as shown:" Proposed Response Proposed Response Response Status O C/ 78 SC 78.2 P 63 L 30 # [25] Hajduczenia, Marek ZTE Corporation Comment Status Y	Comment Type E Comment Status X Missing comma after "When a local link partner receives its echoed values from the remolink partner" Similarly, missing comma on page 73, line 25, after "The cross-references between the E TLV, the EEE FW TLV" (serial comma) Similarly, missing comma on page 80, line 5, after "The terms 40GBASE-R, and100GBASE-R" (serial comma) Similarly, missing comma on page 80, line 35, after "The 40GBASE-R, and100GBASE-R" (serial comma) Similarly, missing comma on page 80, line 35, after "The 40GBASE-R, and100GBASE-R" (serial comma) SuggestedRemedy Insert missing comma Proposed Response Response Status O
SuggestedRemedy Change the editorial instruction in line 22 to read as follows: "Replace Table 69–1 (moving 40GBASE-KR4 to Table 69-1a) and insert Table 69–1a as shown:" Proposed Response Response Status O Cl 78 SC 78.2 P 63 L 30 # 25 Hajduczenia, Marek ZTE Corporation Comment Status Y	Similarly, missing comma on page 73, line 25, after "The cross-references between the E TLV, the EEE FW TLV" (serial comma) Similarly, missing comma on page 80, line 5, after "The terms 40GBASE-R, and100GBASE R" (serial comma) Similarly, missing comma on page 80, line 35, after "The 40GBASE-R, and100GBASE-R (serial comma) SuggestedRemedy Insert missing comma Proposed Response Response Status 0
40GBASE-KR4 to Table 69-1a) and insert Table 69–1a as shown:" Proposed Response Response Status O Cl 78 SC 78.2 P 63 L 30 # 25 Hajduczenia, Marek ZTE Corporation	R" (serial comma) Similarly, missing comma on page 80, line 35, after "The 40GBASE-R, and100GBASE-R (serial comma) SuggestedRemedy Insert missing comma Proposed Response Response Status O
C/ 78 SC 78.2 P 63 L 30 # 25 Hajduczenia, Marek ZTE Corporation	SuggestedRemedyInsert missing commaProposed ResponseResponse StatusO
C/ 78 SC 78.2 P 63 L 30 # 25 Hajduczenia, Marek ZTE Corporation	Insert missing comma Proposed Response Response Status O
Hajduczenia, Marek ZTE Corporation	Proposed Response Response Status O
Commont Tuno E Commont Statua V	
Table 70.0 date not charming the derive states x	
SuggestedRemedy	C/ 81 SC 81.1.7 P 91 L 26 # 28 Hajduczenia, Marek ZTE Corporation ZEC Corporation
Proposed Response Response Status O	Comment Type E Comment Status X Missing space after "to the XLGMII/CGMII." and before the newly inserted text.
	SuggestedRemedy
Cl 79 SC 79.3.6.1 P72 L 50 # 26	Insert the missing space
Hajduczenia, Marek ZTE Corporation	Proposed Response Response Status O
Comment Type E Comment Status X	
The use of the word "will" should be limited only to the statements of the fact.	C/ 45 SC 45.2.1.6 P 32 L 1 # 29
Excerpt from the Style Manual: "NOTE—The use of the word mustis deprecated and shall	Hajduczenia, Marek ZTE Corporation
not be used when stating mandatory requirements; must is used only to describe unavoidable situations. The use of the word will is deprecated and shall not be used when	Comment Type T Comment Status X
stating mandatory requirements; will is only used in statements of fact."	P802.3bk introduced new register settings as well, namely:
SuggestedRemedy	0 1 1 1 1 1 = 10/1GBASE-PRX-U4
Suggest to change the sentences written in future simple into present simple tense and avoid discussion on whether they are indieed statements of a fact (or not) altogether.	0 1 1 1 1 0 = 10GBASE-PR-U4 0 1 1 1 0 1 = 10/1GBASE-PRX-D4 0 1 1 1 0 0 = 10GBASE-PR-D4
Proposed Response Response Status O	and the reserved range 0 1 1 1 x x = reserved is now gone.
	SuggestedRemedy
	No action is needed in the draft, just making sure that thsi range is not used in 802.3bj for any purpose.
	Proposed Response Response Status O

C/ 45	SC 45.2.1.92a	P 37	L 19	# 30		C/ 80	SC 80).1.3	P 76	L 35	# 33
Hajduczen	nia, Marek	ZTE Corpora	ition			Hajduczer	ia, Marek	Ĩ	ZTE Corpora	tion	
Comment	Type T Comn	nent Status X				Comment	Туре '	т	Comment Status X		
I think it is er	t it would be better if we ex rrors we are really referenc	plictly said what is l ing.	being detected an	d corrected. I assum	ne	Not su 40GB/	re why th ASE-LR4	e text "i is still s	in Clause 84 for 40GBASE-K pecified in Clause 84. Figure	R4" was struck, 84–1 was not n	given that MDI for nodified and MDI is stil
Suggested	dRemedy					Within	the scope	e of Cla	use 84.		
Modify	y description for register 1.	200.0 as follows:				Suggester	Remedy	or oloor	ly avalais is aditarial sate wh	vitio removed	
1 = FE 0 = FE	EC decoder performs error EC decoder performs error	detection without e detection and erro	error correction			Proposed	Response	e clear	Response Status O	ly it is removed.	
Proposed	Response Respo	nse Status O									
C/ 45	SC 45.2.1.92a.1	P 37	L 26	# 31							
Hajduczen	nia, Marek	ZTE Corpora	ition								
<i>Comment</i> "Wher	<i>Type</i> T <i>Comm</i> this variable is set to one	nent Status X " - but it is a bit i	n the register we a	are talkign about.							
Suggested	dRemedy										
Make bit is s Chance	sure descriptions of all mo set to one/zero " ges are needed in (at least	dified registers use) 45.2.1.92a.1, 45.2	He same termine 2.1.92b.1, 45.2.1.	ology i.e., "When this 92b.2	5						
Proposed	Response Respo	nse Status O	·								
CI 45	SC 45.2.3.9.b	P 43	L 47	# 32							
Hajduczen	nia, Marek	ZTE Corpora	ition								
Comment Is ther questi where 45–10 the tex	Type T Comm re any way for 100GBASE- ion for 100GBASE-KP4, 10 you only describe the valu 5 provides also indication xt.	nent Status X CR4 and 100GBAS 00GBASE-CR10, 4 Je of "1" (supported that the given bit m	SE-KR4 not suppo 0GBASE-CR4, ar J). However, the <i>a</i> hay be set to "0", v	ort EEE? Similar Id 40GBASE-KR4, Issociated table Tabl which is not covered	le in						
Suggested	dRemedy										
Add d	escription of the value "0"	for all subclauses a	associated with Ta	ble 45-105							

Proposed Response Response Status **0**

C/ 00	SC 0	Р	L	# 34	C/ 85	SC	85.13.4.1	P 130	L 27	# 35
Anslow, P	ete	Ciena			Anslow,	Pete		Ciena		
Comment	Type E	Comment Status X			Commer	t Type	Е	Comment Status X		
Despi should	te comment 39 d be made.	against D1.3, not all insert ed	iting instructions	say where the insertion	The PF20	PICS ite	ms in the b	ase standard end at PF18, s	o the next item	should be PF19 not
Suggestee	dRemedy				Suggeste	dReme	dy			
Page	60, line 6 chang	ge "Insert item LE8a" to "Inser	t item LE8a after	tiem LE8"	Ren	umber P	F20 throug	h PF22 to PF19 through PF2	21	
Page Page to "Ch Page	70, line 32 char 72, line 7 chang ange the reserv 97, line 7 chang	nge "Insert 78.5.2" to "Insert 7 ge "Insert a row and change th ved row of Table 79-1 and ins ge "Insert the following row int	8.5.2 after 78.5. ne reserved row ert a new row ab o table 81.4.2.3:	I" of Table 79-1 as shown:" ove it as shown:" " to "Insert the following	Propose	d Respo	nse	Response Status O		
row at	t the end of the	table in 81.4.2.3:"		Ũ	C/ 01	SC	1.4.50a	P 22	L 5	# 36
Page	118, line 4 char	nge "Insert the following row in	nto table 82.7.3:"	to "Insert the following	Anslow,	Pete		Ciena		
Page	121. line 19 cha	ange "Insert rows to Table 83-	2" to "Insert ro	ows at the end of Table	Commer	t Type	F	Comment Status X		
83-2 . Page 83-3 . Page row at Page Table Page row at Page	" 121, line 33 cha " 122, line 4 char the end of the 123, line 7 char 84-1 for EEE:" 126, line 5 char the end of the 126, line 20 cha	ange "Insert rows to Table 83- nge "and insert the LPI row i table in 83.7.3:" (note the corn nge "Insert a row in Table 84- nge "Insert the following row in table in 84.11.3: ange "Insert the following rows	3" to "Insert ro nto table 82.7.3: rection to the sub 1 for EEE:" to "In nto table 84.11.3 s into table 84.11	we at the end of Table " to "and insert the *LPI oclause number) sert a row at the end of " to "Insert the following .4.1:" to "Insert the	The whic P802 Suggeste Char Char instri "Inse delet	draft P80 h has the 2.3bk dra edRemen nge the e uction we ert the fol ion of 1.	2.3bk ame e effect of r aft is approv dy numbering of editing instr ould becom llowing defi 4.27 by IEE	of the inserted subclauses ar ructions to include the renum te: inition after 1.4.49 (10GBASI EE Std P802.3bk-201x) as fo	or Ballot) has de quent subclause have to be acco ccordingly. bering informati E-X renumberec illows:"	leted subclause 1.4.27, es. Assuming that the bounted for. on, e.g. the first editing I from 1.4.50 by the
follow Page follow	ing rows at the 126, line 36 cha ing rows at the	end of the table in 84.11.4.1:" ange "Insert the following rows end of the table in 84.11.4.3:"	s into table 84.11	.4.3:" to "Insert the	Propose	d Respo	nse	Response Status O		
Page Table	127, line 7 char 85-1 for EEE:"	nge "Insert a row in Table 85-	1 for EEE:" to "In	sert a row at the end of						
Page follow Page follow Page follow Page row at Page 83A.7 Page 83A.7	129, line 6 char ing row immedia 130, line 5 char t the end of the 130, line 19 cha ing rows at the 130, line 36 cha ing rows at the 302, line 5 char t the end of the 302, line 17 cha .4:"	rige "Insert the following row in ately above the row for Amplit age "Insert the following row in table in 85.13.3:" ange "Insert the following rows end of the table in 85.13.4.1:" ange "Insert the following rows end of the table in 85.13.4.3:" age "Insert the following row in table in 83A.7.3:" ange "Insert rows in 83A.7.4:"	to "Insert rows a to "Insert rows a to "Insert rows a	5.8.3:" to "Insert the k (max) in Table 85-5:" " to "Insert the following 6.4.1:" to "Insert the 9.4.3:" to "Insert the :" to "Insert the following t the end of the table in t the end of the table in						
Proposed	Response	Response Status O								

CI 78	SC 78.4.2.3	P 65	L 15	# 37	C/ 45	SC 45.2.1.92	2b.2 P 38	L 11	# 40
Anslow, Pe	ete	Ciena			Anslow, Pet	e	Ciena		
Comment	Туре Е	Comment Status X			Comment T	ype T	Comment Status X		
The ec	diting instruction	just says "Insert the followi	ing rows into Table	78-3", but it not clear	The title	of 45.2.1.92b.	2 should be "FEC bypass in	ndication ability (1.	201.1)
interlea	ne resulting Tab aved through the	ie 78-3 would look like - shi e table?	ouid the new rows s	tay together, or be	Suggested	Remedy			
If they	stay together, s	hould they be at the top or	the bottom?		Change "FEC by "FEC by	the title from: pass correctio pass indication	n ability (1.201.1)" to: n ability (1.201.1)"		
Since t same a	the Entity and O as in the base ta	bject class entries in the twable, it seems better to inter	vo left hand columns rleave the new rows	appear to be the but in what order?	Proposed R	esponse	Response Status O		
Suggested	lRemedy								
If the n	new rows are to	stay together, amend the e	diting instruction to	say where they should	CI 92A	SC 92A.5	P 313	L 19	# 41
go. If the n	new rows are to	be interleaved with existing	rows, it seems bett	er to make the editing	Anslow, Pet	е	Ciena		
instruc	tion "Change" ra	ather than "Insert" and show	w the complete table	with the new rows in	Comment T	ype T	Comment Status X		
Underii Proposed I	ine font. Response	Response Status O			In the "\ "f is the This me 0.278*1	where" section frequency in M eans that the in 000 = 281.6 dF	of Equation 92A-4 it says: IHz" sertion loss at 1 GHz (1000 3	MHz) is 0.1148*(sqrt(1000)) +
<i>CI</i> 80 Anslow, Pe	SC 80.1.5	Р 79 Ciena	L 43	# 38	Similarl GHz, f	y, for equation	92A-5, since the equations Hz here too.	referred to in the v	where section have f in
Comment	Туре Т	Comment Status X			Suggested	Remedy			
Table 8 but Tal	80-2a shows CA bles 92-1, 93-1	UI as per Annex 83B (chip and 94-1 show CAUI as pe	to module) as optic r Annex 83A as opti	nal for KR4 and CR4, onal	Change both eq	"f is the freque uations 92A-4	ency in MHz" to "f is the free and 92A-5	quency in GHz" in	the where sections of
Suggested Chang Annex	<i>IRemedy</i> je Table 80-2a to 83A as optiona	o be consistent with Tables	92-1, 93-1 and 94-	to show CAUI as per	Proposed R	esponse	Response Status O		
Proposed I	Response	Response Status O							
<i>Cl</i> 83C Anslow, Pe	SC 83C.1a.2	2 <i>P</i> 305 Ciena	L 54	# 39					
Comment The titl	<i>Type</i> T le of Figure 83C	Comment Status X -2b says "XLAUI/CAUI", bu	it is specific to 100G						
Suggested Chang	<i>IRemedy</i> je "single XLAUI	/CAUI" to "single CAUI"							
Proposed I	Response	Response Status O							

C/ 00 SC 0	Р	L	# 42	C/ 92	SC 92.11.3.4	P 196	L 29	# 44
Anslow, Pete	Ciena			Anslow, Pe	ete	Ciena	-	
Comment Type Clauses 92, 93 "For a complete error ratio less t	T Comment Status X and 94 all contain a sentence simile Physical Layer, this specification than 1.7 × 10^–10 for 64-octet fram	lar to: is considered to b les with minimum	e satisfied by a frame inter-packet gap."	Comment As sta as exa Conse Suggested	Type E ted in 1.2.6, "Unl act, with the numl equently, trailing <i>z</i>	Comment Status X ess otherwise stated, numer per of significant digits and tr eros should not be shown in	ical limits in this ailing zeros havi n Equation 92-30	standard are to be taken ng no significance."
However, this te do this would be 1.7E-10 at that expected to be	ext does not say where in the stack e the MAC/PLS service interface, t point would lead to unacceptable I marked as bad by the FEC and dro	this FER is appli- but that is not app /ITTFPA. Most of opped by the PCS	ed. A common place to ropriate as an FER of f the errored frames are S.	Chang Proposed	ge "1.0" to "1" in e Response	equation 92-30 (2 instances) Response Status O		
Wording that is "frame error rati with minimum ir	being proposed in P802.3bm is ec io less than 1.7 × 10 ^A –10 at the FE nter-packet gap when processed a	C service interfact ccording to Claus	ce for 64-octet frames e 91."	<i>Cl</i> 91 Anslow, Pe	SC 91.5.2.7	P 139 Ciena	L 21	# 45
SuggestedRemedy Define the inter MAC/PLS servi	face that the FER applies to in Cla ce interface due to this causing an	uses 92, 93, and unacceptable MT	94 as this cannot be the ITFPA.	<i>Comment</i> The dr	<i>Type</i> E raft is not consist	Comment Status X ent as to whether there is a s	space after the c	omma in "RS(x,y)" or not.
Proposed Response	e Response Status O			Since it.	it is used mostly	without the space, remove the	he space from th	ose instances that have
Cl 69 SC 69 Anslow, Pete Comment Type The editing inst The entirety of t sentence is sho	P.1.3 P 53 Ciena T Comment Status X ruction says "Change item f)". the text of item f) in the base stand own in normal font. This should be	L 39 ard is shown as d in underline font	# 43 leleted and then a new as it is being added.	Suggested remov Page Page Page Page Page	<i>Remedy</i> e the space from 139, line 21 in R 139, line 24 in R 139, line 24 in R 308, line 50 in R 309, line 3 in R <i>Response</i>	: S(n, k) S(528, 514) S(544, 514) S(528, 514) S(528, 514) Response Status O		
Also, the added 1a for KR4 and SuggestedRemedy Show the new t	PMD I text discusses XLAUI, but there is KP4 ext in item f) in underline font	no text for CAUI	as included in Table 69-	CI 45 Anslow, Pe <i>Comment</i> In Tab	SC 45.2.1.92 ete <i>Type</i> E le 45-72g, the ro	e P 39 Ciena <i>Comment Status</i> X w for 1.206.15 has "RS_FEC	L 31 C" rather than "R	# 46
Remove "or An Add a reference	nex 83B" from the addition to CAUI either in item f) or an add	litional item.		Suggested Chang	<i>IRemedy</i> je "RS_FEC" to "	RS-FEC"		
Proposed Response	e Response Status O			Proposed	Response	Response Status 0		

-									
C/ 83C	SC 83C.1a	P 305	L 1	# 47	C/ 78	SC 78.1	P 61	L 18	# 50
Anslow, P	ete	Ciena			Anslow, P	ete	Ciena		
Comment	Type E	Comment Status X			Comment	Type E	Comment Status X		
Claus Also,	e 83C uses "RS the abbreviation l	FEC" rather than "RS-FEC" ir RS-FEC is not included in the	n 7 places e Figure abbrevi	ation expansions	The II http://	EEE 802.3 work www.ieee802.o	ting group guidelines at: rg/3/WG_tools/editorial/require	ements/words.htr	nl
Suggestee	dRemedy				says	use "sublayer" r	not "sub-layer"		
Chang abbre	ge "RS FEC" to "I viation expansior	RS-FEC" in 7 places (includir ns in figures 83C-2a and 83C	ng figures) and a -2b	add RS-FEC to the	Suggester Chang	d <i>Remedy</i> ge "sub-layer" te	o "sublayer"		
Proposed	Response	Response Status O			Proposed	Response	Response Status O		
C/ 69	SC 69.2.4	P 54	<i>L</i> 1	# 48	CI 78	SC 78.1.3.	3.1 <i>P</i> 61	L 52	# 51
Anslow, P	ete	Ciena			Anslow, P	ete	Ciena		
Comment	Туре Е	Comment Status X			Comment	Туре Е	Comment Status X		
In the	base standard "F	Physical Layer signaling syste	ems" is 69.2.3		In the	text:			
Suggestee chang	dRemedy je 69.2.4 to 69.2.3	3			"Fast the fa opera	wake refers to t st wake state (b tion with a shor	the mode for which the transm between the sleep and wake s ter wake time"	itter continues to tates) so that the	transmit signals during receiver can resume
Proposed	Response	Response Status O			The te	ext "(between th are no sleep ar	ne sleep and wake states)" is o nd wake states. It would have	confusing. When to be between ac	looking at Figure 78-3a tive and idle states.
CI 45	SC 45 2 1 6	a P 31	/ 28	# 49	Suggeste	dRemedy			
Anslow, P	ete	ciena	L 20	π 45	Either	change to "(be	tween the active and idle state	es)" or delete this	
Commont		Commont Status V			Proposed	Response	Response Status 0		
The fo	<i>Type</i> E		ability or is not a	ble to stop the ingress					
directi is bit 1	ion AUI signaling 1.1.9 in 45.2.1.2.a	(see 1.1.9)" would indicate	e a reference to	subclause 1.1.9, but this	C/ 91	SC 91.6.2	P 155	L 43	# 52
0					Anslow, P	ete	Ciena		
Simila	ar issue in 45.2.1.	6.D			Comment	Type E	Comment Status X		
Suggestee	dRemedy				The fa	act that this vari	able (FEC_bypass_indication_	_enable) has no e	effect if
Chang In 45.	ge "see 1.1.9" to 2.1.6.b, change "	"see 45.2.1.2.a" see 1.1.8" to "see 45.2.1.2.b" appear links	1		FEC_ Howe	bypass_correct ver, it would be	ion_enable is asserted is cont helpful to repeat that informat	ained in 91.5.3.3 ion here.	(referred to by 91.6.2).
Droposod	Dochonco				Suggeste	dRemedy			
riupusea	response	Response Status U			Add: ' bypas	'This bit shall has correction en	ave no effect (the decoder sha able (1.200.0) is set to one."	III not bypass erro	r indication) if FEC
					Proposed	Response	Response Status 0		

									_
C/ 92 SC 92.8.3.4	P 174	L 8	# 53	CI 79	SC 79.3.6	P 72	L 22	# 56	٦
Anslow, Pete	Ciena			Anslow, P	ete	Ciena			
Comment Type E	Comment Status X			Comment	Type E	Comment Status X			
"20 dB" is split across t Use a non-breaking sp	two lines. bace to prevent this.			Comm Figure	nent #53 agains 79-6a is inserte	t D1.3 has not been implement ed after Figure 79-6 which is th	ted: le last figure in (Clause 79. This means	
SuggestedRemedy				that it	should be numb	bered Figure 79-7			
Make the space in "20	dB" non-breaking (ctrl-space))		Suggested	Remedy				
Proposed Response	Response Status 0			Chang	ge the figure hur	mber to 79-7			
				Proposed	Response	Response Status O			
C/ 45 SC 45.2.1.92	2a P 37	L 8	# 54						
Anslow, Pete	Ciena			C/ 93A	SC 93A.1	P 315	L 24	# 57	
Comment Type E	Comment Status X			Farhoodfa	r, Arash	Cortina-Syster	ms		
Table 45–72c seems to	o be the first table that has be	en inserted after	Table 45-72	Comment	Type TR	Comment Status X			
SuggestedRemedy Renumber Tables 45-7	72c through 45-72j to be Table	es 45-72a throug	jh 45-72h	Equat "An" is and no	ion 93A-1 define the noise amp bise terms inclu	es COM as 20log10(As/An) wh litude as defined in 93A.1.7. Th ding residual-ISI.	ere "As" is the s ne "An" term inc	signal amplitude and ludes ALL interference	
Proposed Response	Response Status O			COM crossi compl	equalizer consisting timing recover ex enough an e	sts of a CTLE and a DFE. The ery with no phase optimization qualizer/timing-recovery and re	COM timing rec capability. This esults in sub-opt	overy is a fixed zero- is most often not timal Equalization/Noise- "Ac/Ap" ratio regulting in	-
CI 78 SC 78.2	P 63	L 24	# 55	a num	ber that is gross	sly mis-leading.	aleu accoruing	AS/AIT Tallo resulting III	
Anslow, Pete	Ciena			For the	e KR4, misleadi	ng COM values are reported fo	or longer/harder	-to-equalize channels.	
Comment Type E	Comment Status X			FFE.	ricularly egregi		eems to be par	licularly full by lack of	
The editing instruction	says "to for 100Gb/s Etherne	t" which has a sp	ourious "to" and rows	Suggested	Remedy				
have been added for 4	0 Gb/s Ethernet also.			Define	e COM as				
SuggestedRemedy				The n	umber of multip	es of the baseline 'noise' (evo	luding ISI and y	Talk) that you could add	
Delete "to for 100Gb/s	Ethernet"			to the	input of the rec	eiver and still maintain BER < 1	1e-12		
Proposed Response	Response Status 0								
				Proposed	Response	Response Status 0			

C/ 93	SC 93.9.1	P 231	L 48	# 58	CI 94	SC :	94.2.2.4	Р	248	L 24	# 60
Farhoodfar	, Arash	Cortina-Systems			Lusted, Ke	nt		Intel			
Comment	Type TR	Comment Status X			Comment	Туре	Е	Comment Statu	s X		
In table profile	e 93-9, "DER0" is in COM. This ca	s specified at 10E-5. The actual n result in incorrect COM value	value should as a function	be a funcion of DFE of the channel.	Spec s Upon t	states " the tran	sition from	the last training fr	ame to the fi	rst PMA fra	me the PRBS13
Suggested	Remedy				genera) and t	ator use	d during tr	aining advances w	ithout re-see	ding (see 9	94.3.10.7.2
Make " Remov	DER0" a functio e "bmax" limitati	n of the DFE profile. ion from the table.			termin withou	ation bit t invers	ts. The PR ion."	BS13 generator co	ontinues to a	dvance with	nout re-seeding and
Proposed I	Response	Response Status 0			But it i lusted	sn't 100 _3bj_01)% clear th _1112.pdf	at the PRBS13 is slide 9)	not inverted i	n the PMA	frame (see
					Suggested	Remed	ly				
Cl 94 Farhoodfar	SC 94.4.1 , Arash	P 286 Cortina-Systems	L 49	# 59	consid Upon	ler chan	iging to " sition from	the last training fr	ame to the fi	rst PMA fra	me the PRBS13
Comment	Type TR	Comment Status X), with	out inve	rsion and t	the output is used	to generate f	he	94.3.10.7.2
In table profile	94-19, "DER0" in COM. This ca	is specified at 3x10E-4. The act n result in incorrect COM valu a	ual value sho s a function c	ould be a funcion of DFE of the channel.	termin Proposed	ation bi Respon	ts." Ise	Response Status	0		
Suggested	Remedy										
Make " Remov	DER0" a functio e "bmax" limitati	n of the DFE profile. ion from the table.			C/ 94	SC S	94.3.11.1.9	9 <i>P</i>	271	L 6	# 61
Proposed I	Response	Response Status O			Comment Figure	<i>Type</i> is hidd	E en on the r	Comment Statu	s X urs in the ne	kt section (S	94.3.12)
					Suggester	Remed	lv			(,
					Move	to previ	, ous page a	and associate with	94.3.11.1.9		
					Proposed	Respon	se	Response Status	w		
					<edito< td=""><td>r chang</td><td>jes subclau</td><td>use from "Figure 9</td><td>1-9" to 94.3.⁻</td><td>11.1.9.></td><td></td></edito<>	r chang	jes subclau	use from "Figure 9	1-9" to 94.3. ⁻	11.1.9.>	
					<i>Cl</i> 94 Lusted, Ke	SC s	94.3.11.1.9	9 P Intel	271	L 6	# 62
					Comment	Type	Е	Comment Statu	x X		
					The ve It disto	ertical al	lignment of graphic in (f the structure and pdf format.	PRBS13 blo	cks in the o	diagram are not aligned.
					Suggested fix	IRemed	ly				
					Proposed	Respon	se	Response Status	w		

<Editor changes subclause from "Figure 94-9" to 94.3.11.1.9.>

CI 94	SC 94.3.10.9	P 268	L 1	# 63	C/ 94 SC 94.3	.10.9 <i>P</i> 268	L 1	# 66
Lusted, Ke	nt	Intel			Lusted, Kent	Intel		
Comment	Туре Е	Comment Status X			Comment Type TR	Comment Status X		
The ve It disto	ertical alignment or orts the graphic in	of the structure and PRBS13 pdf format.	blocks in the di	agram are not aligned.	Figure 94-7 shows	the sequence for Lane 0 and a	PAO = 0. Add de	tails for Lanes 1:3
Suggested fix	Remedy				See future present	tation.		
Proposed I	Response	Response Status W			Proposed Response	Response Status W		
<edito< td=""><td>r changes subcla</td><td>use from "Figure 94-7" to 94</td><td>1.3.10.9.></td><td></td><td><editor changes="" s<="" td=""><td>ubclause from "Figure 94-7" to 94</td><td>4.3.10.9.></td><td></td></editor></td></edito<>	r changes subcla	use from "Figure 94-7" to 94	1.3.10.9.>		<editor changes="" s<="" td=""><td>ubclause from "Figure 94-7" to 94</td><td>4.3.10.9.></td><td></td></editor>	ubclause from "Figure 94-7" to 94	4.3.10.9.>	
C/ 94	SC 94.3.11.1.	9 P 271	L 6	# 64	C/ 81 SC 81.3 Anslow, Pete	a.3.1 <i>P</i> 96 Ciena	L 35	# 67
Comment Figure	Type E 94-7 shows the s	Comment Status X sequence for Lane 0 and a F	PAO = 0. Add d	etails for Lanes 1:3	Comment Type E The heading "Con for receive system Surely these shou	Comment Status X siderations for transmit system b behavior" is 81.3a.3.1 which is c ld be at the same level.	ehavior" is 81.3a one layer down in	.3, but "Considerations the heading heierachy.
See fu	ture presentation				SuggestedRemedy			
Proposed	Pasnonsa	Poopopoo Statuo M			Change 81.3a.3.1	to be 81.3a.4 so that the receive	section is not pa	art of the transmit section
rioposeuri	Nesponse	Response Status W			Proposed Response	Response Status 0		
<edito< td=""><td>r changes subcla</td><td>use from "Figure 94-9" to 94</td><td>1.3.11.1.9.></td><td></td><td></td><td></td><td></td><td></td></edito<>	r changes subcla	use from "Figure 94-9" to 94	1.3.11.1.9.>					
C/ 94 Lusted, Ke	SC 94.3.10.9	P 268 Intel	L 1	# 65	C/ 94 SC 94.3. Ran, Adee	.13.3 P 280 Intel	L 17	# 68
Comment Figure	<i>Type</i> TR 94-7 shows the s	Comment Status X sequence for Lane 0. Other	lanes will be dif	ferent.	Comment Type ER The links with the table94-18 inst	Comment Status X text "see Figure 94-18", in both c ead. In fact, the figure pertinent to	comment b and co o these comment	omment c, point to ts is 94-17, which
Suggested	Remedy				describes the full p	bath from TP0 to TP5.		
Add no transiti and dif	ote related to Figu ion on Lane 0 and fferent PAO value	ure 94-7 such as: "The valu d a PAO of zero. The values as "	es for the PRBS s will be differen	13 are specific to a tfor other lane numbers	SuggestedRemedy Change "Figure 94	4-18" to "Figure 94-17" (twice), ar	nd correct the link	<s.< td=""></s.<>
Proposed I	Response	Response Status W			Proposed Response	Response Status O		
<edito< td=""><td>r changes subcla</td><td>use from "Figure 94-7" to 94</td><td>1.3.10.9.></td><td></td><td></td><td></td><td></td><td></td></edito<>	r changes subcla	use from "Figure 94-7" to 94	1.3.10.9.>					

Cl 92	SC 92.14.4.5	P 210	L 43	# 69	C/ 94	SC 94.3.10).7	P 264	L 23	# 72
Ran, Adee		Intel			Ran, Adee	ł		Intel		
Comment Items	<i>Type</i> ER CA14 and CA16 I	Comment Status X have empty status.			<i>Comment</i> The "s	<i>Type</i> T tatus report" fi	<i>Comn</i> eld has two	nent Status X different definitions	s - tables 94-10 a	nd 94-13. There are
Suggested	Remedy				severa	al issues with t	nese definiti	ons :		
Chang	e status of CA14	to CAST1:M, and status of C	CA16 to CAST2:	М.	1. The	countdown su	b-fields in tr	raining and EEE m	odes are at differ	ent locations. This sub-
Proposed I	Response	Response Status O			case.			le same purpose, c		ent decoding for each
C/ 82	SC 82.6	P 117	L 20	# 70	2. PM require	A alignment of ed if this table	set is used s only for tra	in table 94-10, alth aining mode).	ough it is not def	ined yet (and not
Ran, Adee		Intel			3. Bit (5 is assigned t	wice in both	table 94-10 and 94	4-13, and bit 14 is	not assigned in table
Comment	Type ER	Comment Status X			94-13.	-				-
in Figu RX_A0	ire 82–17, two tra CTIVE) include th	insitions (from RX_SLEEP to ie condition "R_TYPE(rx_cod	RX_ACTIVE, a ed) = IDLE".	nd from RX_WAKE to	4. In E less u	EE mode ther seful for future	e are three s usage.	separate "reserved	" subfields, which	is cumbersome and
But ID 49.2.1	LE is not one of t 3.2.3).	he values defined for R_TYP	E (neither in 82.	2.18.2.3 nor in	The su almos	uggested reme t-identical text	dy is aimed	at making the define	nitions consistent	, and avoid repetition of
Suggested	IRemedy				Suggested	Remedy				
Chang	e IDLE in this fig	ure to one of the values defin	ed for R_TYPE	in 82.2.18.2.3 (C?)	Chang assigr	e bit assignment, with pos	ents in table sibly differe	94-10 as below. Tant descriptions for	able 94-13 shoul some fields.	d have similar bit
Alterna	atively, add the de	efinition of IDLE to the R_TYI	PE value list.		Move	0/31117/D		n) to be a subclaus	e of 9/3 10 7 e	ocify that it must be
Consid	ler correcting Fig	ure 49–13 as well (perhaps i	n maintenance).		zero fo	or training fram	es (per 94.3	3.10.9 and figure 94	4-7).	
Proposed I	Response	Response Status O			Consid 94-10	der deleting tal instead.	ole 94-13 an	d subclauses 94.3	.11.1.4-94.3.11.8	, and referring to table
<i>Cl</i> 94 Ran, Adee	SC 94.3.13.3	P 280 Intel	L 10	# 71	Updat	ed table 94-10	:			
Comment	Туре Т	Comment Status X			Cell -	Name (add to	description)			
The ob <=33 c	pjective that 100G B at 7.0 GHz".	BASE-KP4 is aimed at is "D	efine a 4 lane P	HY insertion loss of	 19 - 18 -	Parity Mode (0: train	ng, 1: EEE)			
Definir	ng the test for the	same loss at a lower frequer	ncy creates an e	xcessive stress.	17:16 15:13	- Countdown (- PMA alignme	same mean	ing for training and ways 000 for traini	EEE) na)	
Suggested	Remedy				12: 7 - Reserved 6 - Receiver ready (always 1 for EEE) 5: 4 - Coefficient (+1) status (always 00 for EEE)					
Chang	e the parameter	"Insertion loss at 6.875 GHz"	to "Insertion los	s at 7 GHz".						
Proposed I	Response	Response Status O			3: 2 - Coefficient (0) status (always 00 for EEE) 1: 0 - Coefficient (-1) status (always 00 for EEE)					
					Proposed	Response	Respo	nse Status O		

C/ 93A	SC 93A.1.6	P 321	L 16	# 73	CI 92	SC 92.7	.12	P 170	L 29	# 75
Ran, Adee		Intel			Ran, Adee			Intel		
Comment T	<i>уре</i> Т	Comment Status X			Comment	Type T R	l	Comment Status X		
Accordi noise a functior	ing to the original t the receiver inp n, but in the curre	COM proposal (mellitz_01 ut, before the CTLE. It shound the procedure it is not.	_0712, slide 7), s uld be affected by	igma_r represents the H_ctf transfer	The va is inter corres	lues of "Init preted as "S pond to S0,	ial outp S0 to S matchi	out" column do not match th 10" instead of "S10 to S0". ing the order in figure 92-3.	e seed data. Th That is, the left	ney do match if the seed most bit should
By the o the RM value a	definition of H_rx S noise at this fil fter applying the	as a noise filter (93A.1.4.1 ter's output, before applying CTLE effect.), it should be und the CTLE effect	derstood that sigma_r is . COM should use a	<i>Suggested</i> Chang Alterna	<i>Remedy</i> e heading c atively, flip a	of the th II seed	nird column from "Seed, S10 Is left to right.) to S0" to "See	ed bits (MSB in S0)".
Reduct for long	ion of noise powe channels, and e	er due to CTLE can lead to nable meeting the 33 dB lo	significant improves objective of 1	vement in COM results 00GBASE-KP4.	Proposed I	Response		Response Status O		
Presen	tation with more i	information will be supplied			C/ 94	SC 94.3	.10.8	P 266	L 27	# 76
Suggested	Remedy				Ran, Adee			Intel		
Define	a CTF-adjusted \	version of sigma_r:			Comment	Type T R		Comment Status X		
sigma_	r_effective^2 = si	igma_r^2/f_r * integral from	0 to f_r H_ctf(f)	^N 2 df	The va seeds should	lues of "Init are interpre correspond	ial 16 b ted as I to S0,	oits" column do not match th "MSB in S0" instead of "MS , matching the order in figure	e seed data. T B in S12". Tha e 94-6.	hey do match if the t is, the leftmost bit
In equa	111001S 93A-27, 93		ma_r_enective in	nstead of sigma_r.	SuggestedRemedy					
Proposed F	kesponse	Response Status O			Chang S0)". Alterna	e heading c atively, flip a	of the so	econd column from "Seed b s left to right.	its (MSB in S1	2)" to "Seed bits (MSB in
C/ 93A Ran, Adee	SC 93A.1.6	P 321 Intel	L 16	# 74	Proposed I	Response		Response Status O		
Comment 7	Type T	Comment Status X								
Calcula when C	tion of FOM uses OM is calculated	s ISI, sigma_r and the contr I, the PDFs of the same noi	ibution of RJ as r se sources are u	noise sources. Later, sed, with additional	C/ 92A Ran, Adee	SC 92A.	5	P 313 Intel	L 19	# 77
C10551a		utions.			Comment	Туре ТВ	l	Comment Status X		
Thus, F COM m	OM assumes low	ver noise than COM, which nother set of equalization p	creates a bias in arameters is sele	equalization selection; cted instead.	f shoul	d be in GHz	z, other	wise Equation 92A-4 yields	unreasonable	values.
Suggested	Remedy				Also a	pplies to line	e 32 (e	quation 92A-5).		
Add a c selecte	crosstalk RMS ter d per crosstalk se	eq. 93A-37, with culated at each ite	max RMS phase eration, with TXFFE and	d SuggestedRemedy Change "in MHz" to "in GHz", in both places.						
CTF ap	plied to FEXT so	ources, and CTF to FEXT so	ources.		Proposed I	Response		Response Status 0		
Add a [DJ noise term to I	FOM, calculated as (A_S*A	_DD)^2.							
Proposed F	Response	Response Status O								

CI 94	SC 94.3.13.3	P 280	L 9	# 78
Ran, Adee		Intel		

Comment Type TR Comment Status X

If the channel is required to have COM of at least 3 dB, then a receiver which passes with any 3 dB COM channel, and any compliant transmitter (including worst case), should be compliant (with at least zero margin).

Requiring worse channel conditions (COM=1.5 dB, below the 3 dB requirement) overstresses the receiver. This over-stress was not justified anywhere. Providing margin is the responsibility of each RX vendor; different vendors may aim to different margins, and may validate their margin in various ways. But the normative test should not require more than the worst case conditions; this "margin on the table" has a cost on each and every deployed system.

In addition, table 94-17 defines a "Max" value for COM which is equal to the "Min" value, implying zero tolerance. Calibrating this value of COM exactly is impossible in practice, so this test cannot be conducted as written (see also clause 1.2.6).

In addition, it is unclear whether the table defines a minimum stress required to make the test valid (as done in Annex 69A) or requires that a DUT must pass any test performed with these parameters (as often suggested).

The suggested remedy aims at making the test practical and following the spirit of Annex 69A, which defines minimum stress values.

SuggestedRemedy

1. Change the Max COM values in both tests to 3 dB (defining the minimum stress).

2. Remove the Min COM requirement.

Proposed Response Response Status O

C/ 94	SC 94.3.13.3	P 280	L 10	# 79
Ran, Adee		Intel		

Comment Type TR Comment Status X

Insertion loss is defined with equal "Min" and "Max" values, implying zero tolerance. Creating a test fixture which has this insertion loss exactly is impossible in practice, so this test cannot be conducted as written (see also clause 1.2.6).

In addition, it is unclear whether the table defines a minimum stress required to make the test valid (as done in Annex 69A) or requires that a DUT must pass any test performed with these parameters (as often suggested).

The suggested remedy aims at making the test practical and following the spirit of Annex 69A, which defines minimum stress values.

The minimum stress for a short channel (test 1) defined by a maximum IL, and for a long channel (test 2), it is a minimum IL.

SuggestedRemedy

For test 1, change the insertion loss MAXIMUM value to 15.4 dB, and remove the minimum. For test 2, change the insertion loss minimum value to 33 dB, and remove the MAXIMUM.

Proposed Response Response Status **O**

C/ 93A	SC 93A.1.6	P 321	<i>L</i> 1	# 80	C/ 94	SC 94.4.1	P 286	L 46	# 82
Ran, Adee	T				Ran, Adee	T			
Comment		Comment Status X			Comment	iype ir	Comment Status X		
Equati The in 100GE	on 93A-24 enab tent was to prote 3ASE-KP4.	ect against error propagatio	n in a DFE implen	ig the parameter b_max. nentation, especially in	A_DD in table	should represer e 94-14 as 0.05	nt half of the peak-to-peak CD UI.	J allowed from a	transmitter - specified
0		anan in sea dia limit all sals.			The va	lue in table 93-9	9 is also 0.05 (though it is pea	ak, not PTP).	
include fact, se	ntly the same b_ es 1/(1+D) preco ome solutions pi	max is used to limit all valu oding that mitigates error pr resented to the task force re	es of h(0)(h). How opagation due to t ely on having the p	ever, 100GBASE-KP4 he first postcursor. In postcursor as large as	In a fe degrac	w cases that we lation in COM.	re checked, the effect of this	increased CDJ le	evel is~0.2 dB
the cu	rsor.				Suggested	Remedy			
Remo	ving the first pos	tcursor constraint enables	better performanc	e, and makes several	Chang	e A_DD to 0.02	5.		
submi GHz, v shows	tted channels ac which is one of c that error propa	chieve the required COM, ir our objectives. Error propag ligation effect does not incre	cluding channels ation analysis pro- ease if this constra	with 33 dB loss at 7 <i>v</i> ided by Dariush Dabiri int is removed.	Proposed I	Response	Response Status O		
It is pr	oposed that b_m	nax limitation for the 1st pos	stcursor be relaxed	d or removed.	C/ 92	SC 92.8.4.3	P 180	L 34	# 83
					Ran, Adee		Intel		
A pres	entation will be	supplied to illustrate the eff	ect of this change.		Comment	Type TR	Comment Status X		
Suggested	Remedy				The ap	plied SJ freque	ncy in this test, 15 MHz, may	be well within th	e tracking bandwidth of
Chang	je equation 93A-	-24 in either of the following	(equivalent) ways		a CDR	. It is too low.			-
(optior Split th For n= For 2<	n 1) ne second case :1, use 1 instead :=n<=N_b, use t	into two cases, n=1 and 2< I of b_max he existing equation.	=n<=N_b		Compa 100 M at a fre	are to the corres Hz". This value r equency no less	ponding KR4 test (table 93-7 matches the guideline of Anni than 1/250 of signaling speed) which requires ex 69A which rea d".	frequency "greater than quires "sinusoidal jitter
(optior Chang	n 2) je the first case t	to be 0<=n<=1, and the sec	cond case to be 2<	≍=n<=N_b.	Suggested In com	Remedy ment (a) of table	e 92-9. change 15 MHz to 10	0 MHz.	
Proposed	Response	Response Status 0			Proposed I	Response	Response Status O		
CI 93	SC 93.9.1	P 231	L 44	# 81					
Ran, Adee		Intel							
Comment	Type TR	Comment Status X							
A_DD transm	should represer hitter - specified	nt half of the peak-to-peak I in table 93-4 as 0.15 UI.	DJ (excluding DDJ) allowed from a					
The va	alue in table 93-9	9, 0.07, doesn't match.							
Suggested	Remedy								
Chang	e A_DD from 0.	07 to 0.075.							
Proposed	Response	Response Status O							

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Comment ID

C/ 91	SC 91.5.4.2.1	P 148	L 28	# 84	C/ 91	SC 91.5.4.2.1	P 148	L 20	# 86	
Szczepan	ek, Andre	Inphi			Szczepar	iek, Andre	Inphi			
Comment	Type ER	Comment Status X			Comment	tType E	Comment Status X			
"reset Boo has p	lean variablethat ut the PCS into lo	controls resetting of the FE w-power mode."	EC during powe	on, and when MDIO	fec_lpi_fw is included as part of the non-EEE variables. Shouldn't it be listed instead with the other "optional EEE capability" variables listed at the bottom of page 148 ?					
The R	S-FEC sublaver r	nav not be in the same de	vice as the PCS.		Suggeste	dRemedy				
Repla	ice "PCS" with "Pl	ΗΥ".			Move	fec_lpi_fw into lis	t of optional EEE capability v	variables.		
Suggeste	dRemedy				Proposed	l Response	Response Status W			
reset" Boo has p	: lean variablethat ut the PHY into lo	controls resetting of the FE	EC during powe	on, and when MDIO	<edit< td=""><td>or changed subcla</td><td>ause from 5.4.2.1 to 91.5.4.2</td><td>.1.></td><td></td></edit<>	or changed subcla	ause from 5.4.2.1 to 91.5.4.2	.1.>		
Proposed	Response	Response Status W			C/ 91	SC 91.6	P 154	L 52	# 87	
					Szczepar	nek, Andre	Inphi			
<edito< td=""><td>or changed subcla</td><td>use from 5.4.2.1 to 91.5.4</td><td>.2.1.></td><td></td><td>Comment</td><td>t Type ER</td><td>Comment Status X</td><td></td><td></td></edito<>	or changed subcla	use from 5.4.2.1 to 91.5.4	.2.1.>		Comment	t Type ER	Comment Status X			
C/ 91 Szczepan Comment The F PMA/ have impler These device regist The C define equive	SC 91.6 ek, Andre EC sublayer adds PMD register set a relevance to a sep mented as part of e registers have be es. But where are ers also needed b Clause 82 PCS lay ed for PCSL receiva alent capability.	P 156 Inphi Comment Status X s two sets of PCSL related "FEC_lane_mapping <x> perated FEC layer. They a a MAC/PCS device. een added to support imple the "Block x lock", "Lane x y such implementations ? er has all these registers (re in Clause 45.2.3. The F</x>	L 27 MDIO registers to " and "BIP_error_c are redundant if FE ementations of sep aligned" & "Lane and lane mapping EC sub-layer (whe	# 85 the clause 45 counter_i". Both only C encoding is perated FEC sublayer alignment status" and BIP error counters) re implemented) needs	The c integr "shall In par totally these <i>Suggeste</i> chang "The contr map I MDIC show to "The contr map I status	poptional RS-FEC M rated and seperate statement) for bo rticular the implem redundant if the l registers must be <i>dRemedy</i> ge optional MDIO cap of and status inform MDIO control varia status variables to n in Table 91–3." optional MDIO cap ol and status inform MDIO control varia s variables to RS-F	ADIO capability does not com ad FEC sub-layers. It require oth use cases. PCS and FEC layers are inter implemented whenever an l bability described in Clause4 mation for and about the RS- ables to RS-FEC control varia- to RS-FEC status variables a bability described in Clause4 mation for and about the RS- ables to RS-FEC control varia- to RS-FEC status variables a bability described in Clause4 mation for and about the RS- ables to RS-FEC control varia- ter status variables as public to RS-FEC control varia- rec status variables as	nprehend the d is the same set rs and PCS lan egrated togethe MDIO is impler -FEC. If MDIO ables as shown as -5 defines seve -FEC. If MDIO ables as shown	ifference between of MDIO registers (via a ne mapping registers is er. As currently worded mented. eral variables that provide is implemented, it shall n in Table 91–2, and eral variables that provide is implemented, it shall n in Table 91–2, MDIO	
Suggester Add "I Claus	dRemedy Block x lock", "Lar e 45.2.1	ne x aligned" & "Lane aligr	iment status" regis	ters to Clause 91.6 and	also r show	map MDIO status n in Table 91–3a."	variables to RS-FEC status	variables as		
Proposed	Response	Response Status W			Remo table	ove BIP error and "Table 91-3a". The	PCS lane mapping rows from is table should also hold bloc	n Table 91-3, a ck and AM lock	ind put them in a new c registers - see my	
<edito< td=""><td>or changed subcla</td><td>use from 6 to 91.6.></td><td></td><td></td><td>Proposed</td><td>Response</td><td>Response Status W</td><td></td><td></td></edito<>	or changed subcla	use from 6 to 91.6.>			Proposed	Response	Response Status W			

<Editor changed subclause from 6 to 91.6.>

C/ 91	SC 91.5.3.6	P 145	L 21	# 88	C/ 93	SC 93.8.2	.3	P 228	L 25	# 90	
Szczepan	ek, Andre	Inphi			Moore, Ch	narles		Avago Techn	ologies		
Comment There and A Block codew Note t no cor So sp Howe	Type ER is no explicit link lignment Marker Distribution is Ro vords. he only constrain straint on where ecifying this way ver for end-to-encon.	Comment Status X between the Block Distributi (re)insertion. bund-Robin, whereas Marker t on AM insertion in the curre they are inserted in the code does NOT require that AMs a d opertaion of AM BIPs they in	on process of co insertion is in pa ent text is on the eword stream. are re-inserted a must be re-inser	dewords (in 91.5.3.6), rallel every 4096 RS- repetition rate, there is their original locations. ed at their original	Comment 100Gi but th specif 100Gi Suggestee A pres	Type T BASE_KR4 ree ere is a gap be by channel. Us BASE_KP4. T dRemedy sentation will b Response	Commen ceiver test is tie etween interfere e COM to calibi 'his will "close" t e provided deta Response	t Status X d to Tx specs th nce tolerance sp rate interference the spec. willing how this sh e Status O	rough jitter and r bec and COM us tolerance as is o ould be done.	ise time ed to Jone for	
Suggested Instea block inserte Proposed	Remedy d of defining the boundary from wl ed at the their orig Response	repetion rate of AM insertion nich the FEC-AMs were remo jinal location. <i>Response Status</i> W	, define AM inse oved. This ensur	tion relative to the FEC es that they are re-	C/ 93A Moore, Ch Comment In the a fast	SC 93A1.2 narles <i>Type</i> T interests of we er transition tin	2.2 Commen porst casing cros	P 317 Avago Techn <i>t Status</i> X stalk, the NEXT m transmitter. S	L 41 ologies transmitter shou Since we assume	# 91	
Cl 93A Moore, Ch Comment Capad "packa Suggested	SC 93A1.2.2 arles Type E citor on opposite o age-side capacita	P 317 P 317 Avago Techn <i>Comment Status</i> X end of package trace from de ince" since there is no packa	<i>L</i> 51 ologies evice should not ge side of the pa	# 89	Tx tra with a Suggestee Add to for ea transr specif	nsition time is faster packag dRemedy o the end of cla ch PMD type. nitter package nitter package ied value.	due to the pack e than the victir ause 93A.1.2.2: These values a for the victim a for any near en	age, we should n channel. "Values for C re used for the re nd far end cross d crosstalk char	d and C_p are sp eceiver package talk channels. T nnel should 0.5 ti	transmitter pecified and the he mes the	
Call ca and us Proposed	apacitor on other se C_b, and S^(b <i>Response</i>	end of package trace from d) to represent the value in ec <i>Response Status</i> 0	evice "board side quations.	e Capacitor"	Proposed	Response	Response	Status O			

C/ 93A	SC 93A1 2.3	P 318	/ 14	# 92	C/ 85	SC 85 8 3 3	Р	1	# 93
Moore, Cha	rles	Avago Techno	ologies		Moore, Ch	arles	Ava	go Technologies	
Comment T The val which a equatio parts at	<i>ype</i> TR ues of rho_0 and ire not integer mu ns 93A-9 and 93A DC, which is non	Comment Status X gamma_0 given in Table 93 tiples of pi. This means tha -10, S_11 and S_21 will ha -physical	3A-2 have imagi at according to ave non-zero ima	nary parts aginary	Comment Metho differe same the tra	<i>Type</i> TR d given for comp nt values for the equalization sett insmitter and the	Comment Status outing coefficients c(coefficients for the ing if different chanr measurement. The	s X -1), c(0), and c(1) can same transmitter at the sel are interposed betw coefficient value are	give e ween supposed
SuggestedF	Remedy				to mea	asure the transm	litter independent of	the channel. I think the	hat the
Choose gamma	a set of rho and _0 values which h	gamma values for Table 93 have imaginary parts which	A-2 which give rare integer mult	ho_0 and iples of pi.	depen	ding on the rise	time of the signal an	id the amount of equal	lization.
I sugge in Table alternat	st just zeroing the 93A-2 and makii ive.	imaginary parts of rho_0 a ng no other change, but i wi	nd gamma_0 cu ill accept any rea	irrently asonable	Suggested Possik	<i>IRemedy</i> ble fixes could be	e:		
Proposed R	Response	Response Status O			1.				
					Tal beginr d(-1), d to give peak c	ke three pulses of hing at times tr-1 d(0), d(1) respect the best LMS fi of the tr pulse as	of the shape of the lii *UI, tr, and tr=1*UI. trively. Sum them ar t the equalized linea t0 in the sampling p	near fit pulse response Weight them with coe nd adjust t0, d(-1), d(0 r fit pulse response. L rocess in step 5.	e but ifficients), and d(1) Jse the
					2.				
					Lik c(0)=d	te the first part o l(0), and c(1)=d(f 1 but do not re-san 1).	nple, just use c(-1)=d(·	-1),
					3. Pos	ssibly some othe	er.		
					Proposed	Response	Response Status	6 O	

CI 93 S	03823	P 228	/ 40	# 04	CI 82	SC 82 2	1831	P117	/ 23	# 96
Moore, Charles	6	Avago Techn	ologies		Barrass, H	lugh		Cisco	- 23	т <u>5</u> 0
Comment Type	e TR Com	ment Status X	-		Comment	Type TR	ł	Comment Status X		
Values for GHz, dB, a	a0, a1, a2, a4 are so and loss as used in a	aled for Hz, Napier, annex 93A.3. Chang	and gain rather t e scaling and sig	han jn of	The re howe	eceive LPI st ver there are	tate diag e no RAN	gram uses variable "receive As transmitted in that case,	ed_tx_mode" when so the variable	nen LPI_FW is TRUE, e is unknown.
SuggestedRen	nedv				Suggeste	dRemedy			0	
use values	:: Tost2 Tost2 To	set 4 Unite			Varioi submi	us options w ission barras	ere disc ss_3bj_0	ussed to resolve this issue. 01_0513.pdf	. Some of these	e are captured in the
a0 0.9	0.9 0.9 0.0	dB dB Hz^-1/2			The c	hanges desc	cribed as	s option #2 were considered	d preferable.	
a2 a4 0.022	d 0.030 0.030	B Hz^-1 0.043 db Hz^-2			Make barras	the changes ss_3bj_02_0	s to the r 9513.	receive LPI state diagram a	as shown in sub	omission
change all and "maxir	"minimum" applying num" to "minimum" i	to a0, a1, a2, and a4 n table 93-7 and ass	to maximum, "r ociated note "a"	nin" to "max",	Proposed	Response	I	Response Status 0		
Proposed Res	oonse Resp	onse Status O			C/ 93A	SC 93A	.1.2.3	P 318	L 13	# 97
	-				Ben-Artsi,	Liav		Marvell		
					Comment	Туре Т		Comment Status X		
CI 82 S	SC 82.2.18.3.1	P 116	L 24	# 95	The p	arameter Zp) (packag	ge trace length) is missing		
Barrass, Hugh		Cisco			Suggeste	dRemedy				
Comment Type	e T Com	ment Status X			Add th	ne paramete	r Zp to ta	able 93A-2 with a value of	12 (no units, as	this is a multiplication
Assuming	that the changes to t	he recieve LPI state	diagram describ	ed in	of 1m	m section)				
state diagr	am are redundant.	alent) are made, so			Proposed	Response	I	Response Status W		
SuggestedRen	nedy				<edito< td=""><td>or changed s</td><td>subclaus</td><td>se from "Table 93A-2" to 93</td><td>3A.1.2.3.></td><td></td></edito<>	or changed s	subclaus	se from "Table 93A-2" to 93	3A.1.2.3.>	
					C/ 93	SC 93.9	.1	P 230	L 15	# 98
Make the c barrass_3t	changes to the receivoj_03_0513.	e LPI state diagram	as shown in sub	mission	Ben-Artsi,	Liav		Marvell		
Proposed Res	bonse Resp	onse Status O			Comment	Type TR	ł	Comment Status X		
		-			The re accou coeffic	equired char int for Rx imp cients	nnel oper perfectio	rating margin is currently 3 ons and implementation lim	dB and should itations as well	be increased to properly as transmitter equalizer
					Suggestee	dRemedy				
					Will b	e supplied by	y the pre	esentation submission due	date	
					Proposed	Response	I	Response Status O		

CI 93	SC 93.11.4.4	P 240	L 34	# 99	C/ 92	SC 92.7.12	P 170	L 11	# 102
Ben-Artsi, L	liav	Marvell			Ran, Adee		Intel		
Comment 1	Type TR	Comment Status X			Comment Ty	pe T	Comment Status X		
The rec accoun coeffici	quired channel o t for Rx imperfec ents.	perating margin is currently tions and implementation lin	BdB and should b nitations as well a	e increased to properly as transmitter equalizer	The cont request t requests	rol function de o be handled at any slow ra	fined in 72.6.10 does not requin any limited time. An implemate and be compliant.	ire a received of entation can sat	coefficient update mple the incoming
Suggestedl	Remedy				The resu	It of a slow rea	sponse is to consume time all	ocated for the u	ndate procedure and
Will be	supplied by the	presentation submission due	date		possibly	limit the numb	er of requests that a receiver	can make withir	the
Proposed F	Response	Response Status 0			link_fail_	inhibit_timer p	eriod (500 ms).		
<i>Cl</i> 92A Ben-Artsi, L	SC 92A.7 .iav	P 314 Marvell	L 44	# 100	It is sugg frame to ms. That link partn	ested that, wh execution of th would likely a ners, even if re	ten frame_lock is TRUE, the c ne request and returning upda llow at least 100 request-resp aching frame lock state requir	lelay between re ited status be lin onse cycles to k res as long as 1 ⁴	eception of a request nited to a maximum of 2 be passed between the 00 ms.
Comment 7 The rec accoun coeffici	<i>Type</i> TR quired channel o t for Rx imperfec ents	Comment Status X perating margin is currently 3 stions and implementation lin	3dB and should b hitations as well a	e increased to properly as transmitter equalizer	Current in maximun Commen	mplementation n of 1 ms. nt also applies	to clause 93.7.12 (a refererer	me are capable	or replying within a is probably sufficient)
Suggestedl	Remedy				and to cla	ause 94 (94.3	.10.12).		
Will be	supplied by the	presentation submission due	date		SuggestedRe	emedy			
Proposed F	Response	Response Status 0			Add the t	following text i	n clause 92.7.12 (with editoria	l license):	
Cl 93A Ben-Artsi, L Comment 1	SC 93A.1.2.3 .iav Гуре TR	P 318 Marvell Comment Status X	L 1422	# 101	"When fra period fro (coefficie to that re frame, ar two millie	ame_lock is tr om presenting ent update field quest by an a nd if needed, a esconds."	ue for a lane, the following red at the receiver input a training d different from the one in the oppropriate change of the statu applying changes to the trans	juirements apply frame which have previous training s report field in mit output wave	y for that lane: The as a new request g frame), to responding the transmitted training form, shall be less than
Rho0 a	nd Gamma0 has	s imaginary parts which is no	t physical		Apply sin	nilarly to the c	orresponding text in clauses 9	3 and 94.	
Suggestedl Will be	R <i>emedy</i> supplied by the	presentation submission due	date		Proposed Re	esponse	Response Status O		
Proposed F	Response	Response Status W							
<editor< td=""><td>changed subcla</td><td>use from "Table 93A-2" to 9</td><td>3A.1.2.3.></td><td></td><td></td><td></td><td></td><td></td><td></td></editor<>	changed subcla	use from "Table 93A-2" to 9	3A.1.2.3.>						

C/ 93 SC 93.9.1 P 230 L 15 # 103 Ban Adee Intel	C/ 82 SC 82.2.18.2.2 P 103 L 42 # 105
Comment Type TR Comment Status X The minimum COM value of 3 dB accounts for receiver implementation penalty. Several components that consume this margin are discussed in an accompanying presentation.	Comment Type E Comment Status X The variable down_count_done is not defined SuggestedRemedy
The proposed updates to COM procedure yield a result of over 4 dB for a channel with 35 dB loss, which is the objective of the 100GBASE-KR4 PHY. It is proposed that this channel be regarded as the limit, and that a 4 dB margin be reserved for receiver implementation; this can enable more design freedom that can result in power saving.	Add definition for down_count_down to 82.2.18.2.2 Proposed Response Response Status W <editor 2.18.2.2="" 82.2.18.2.2.="" changed="" from="" subclause="" to=""></editor>
Change the minimal COM required for 100GBASE-KR4 channels from 3 dB to 4 dB.	C/ 91 SC 91.5.3.3 P 143 L 35 # 106
Proposed Response Response Status O	Keeley, James LSI Corperation
C/ 94 SC 94.1.1 P 285 L 47 # 104 Ran, Adee Intel Intel Intel Intel Intel Comment Type TR Comment Status X Intel Several components that consume this margin are discussed in an accompanying presentation. PAM-4 receivers are likely more complex than NRZ receivers, and may need higher margins. For example, analog front end linearity and detector sensitivity are more critical for PAM-4 receiver than for NRZ. It is therefore reasonable to allocate a higher margin for these receivers.	It is ambiguous on when the counting of the 8192 codeword sampling window for the measurement of total symbol errors is started. The current wording allows for different sampling windows that though correct make it difficult to verify an implmentation complies with 91.5.3.3 SuggestedRemedy Start the the sampling window when the first codeword with a symbol error count > zero is detected. The symbol error count is cleared to zero when either the number of received codewords reaches 8192 or the number of symbol erros exceeds K Change: If the number of symbol errors in a block of 8192 codewords exceeds K To: When the sumplex of number of anything a codeword compliant window errored K
The proposed updates to COM procedure yield a result of over 5 dB for a channel with 33 dB loss, which is the objective of the 100GBASE-KP4 PHY. It is proposed that this channel be regarded as the limit, and that a 5 dB margin be reserved for receiver implementation; this can enable more design freedom that can result in power saving.	Proposed Response Response Status W
SuggestedRemedy	
SuggestedRemedy Change the minimal COM required for 100GBASE-KP4 channels from 3 dB to 5 dB.	<editor 5.3.3="" 91.5.3.3.="" changed="" from="" subclause="" to=""></editor>

CI 74	SC 74.7.4.8	P 556	L	# 107	_	C/ 80	SC 80.3.2		P 81	L 17	#	109
Keeley, Jam	ies	LSI Corperation				Mitsuru, Iwad	oka	Yo	okogawa Electrio	c Cor		

Comment Type

Е

Comment Type TR Comment Status X

With the addtion of Rapid Alignment Markers in Clause 82 it was decided that the FEC in Clause 74 would still use the deterministic FEC blocks for Rapid FEC lock.

The wording in 74.7.4.8 suggest that there are only 2 types of deterministic FEC blocks which is true for a Clause 49 Type PCS, but is not the case for a Clause 82 type PCS to a Clause 74 FEC. When EEE is enabled for a clause 82 PCS and CL74 FEC is enabled the Rapid Alignamnet Markers would replace every 1 of 16 64-bit CL74 FEC words words as shown in Annex 74A for 40G and 1 of 8 64-bit CL74 FEC words as shwon in Annex 74A technically making the clause 74 FEC not 100% determinsitic.

SuggestedRemedy

Replace: PCS sublaver will be encoding /l/ during the wake

state and /LI/ during the refresh state, which produces the two types of deterministic FEC blocks.

With: A PCS sublayer of clause 49 will be encoding /l/ during the wake state and /LI/ during the refresh state, which produces the two types of deterministic FEC blocks.

Add: A PCS sublayer of clause 82 will also be encoding /l/ during the wake state and /Ll/ during the refresh state, but in addition inserting Rapid Alignment Markers into each of the PCS Lanes according to 82.2.8a. This causes the two types of determinitic FEC blocks to have a number of 65-bit words within the deterministic FEC block to be replaced with Rapid Alignment Markers thus not matching the two deterministic patterns as shown in Tables 74A-5 and 74A-6. The locations of the Rapid Alignment Marker though consistant for each Rapid FEC block for each entry into the wake or refresh states can be different for each entry. This modification to the two determininsitc patterns needs to be taken into account by the Rapid FEC Lock implmentation.

Proposed Response Response Status W

<Editor changed subclause from 7.4.8 to 74.7.4.8.>

CI 80	SC 80.1.3	P 77	L 1:
Mitsuru, Iwao	ka	Yokogawa Ele	ectric Cor
Comment Ty	be E	Comment Status X	

In Figure 80-1, 100GBASE-P is missing.

SuggestedRemedy

Add 100GBASE-P to Figure 80-1.

Proposed Response Response Status 0

p.81 line 17 says "Examples of inter-sublayer service interfaces for 40GBASE-R and 100GBASE-R with their corresponding instance names are illustrated in Figure 80-2, Figure 80-3, Figure 80-3a and Figure 80-3b". Though, in Figure 80.3a and Figure 80.3b, a 100GBASE-P is noted under the "MEDIUM" box.
SuggestedRemedy
Modify the sentence to "Examples of inter-sublayer service interfaces for 40GBASE-R, 100GBASE-R and 100GBASE-P with their corresponding instance names are illustrated in
Figure 80-2, Figure 80-3, Figure 80-3a and Figure 80-3b" and add "100GBASE-P" to the

Comment Status X

title of Figure 80-3a. Proposed Response Response Status 0

C/ 45	SC 45.2.3.9.7	P 44	L 19	# 110
Trowbridge, S	Steve	Alcatel-Lucent		
Comment Tv	pe T	Comment Status X		

The sense of the variable seems reversed: every PHY >=40 Gb/s that supports EEE supports Fast Wake. Not every PHY >=40 Gb/s that supports EEE supports deep sleep.

SugaestedRemedv

Consider renaming the variable from LPI_FW to LPI_DS. Additional changes in clause 82 if this change is accepted.

Proposed Response Response Status 0

CI 79	SC 79.3.5	P 72	L 17	# 111
Trowbridge	, Steve	Alcatel-Lucent		

Comment Type **T** Comment Status X

Clarify that TLV subtype=5 is not sent for >=40 Gb/s PHYs that do not support "deep sleep" operation.

SuggestedRemedy

Add: This message is exchanged between EEE-capable PHYs operating at rates <=10 Gb/s, or between EEE-capable PHYs operating at rates >=40 Gb/s where both the PHY and its link partner are capable of Deep Sleep operation as determined by the PHY type and the results of auto-negotiation.

Proposed Response Response Status 0

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Comment ID

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CI 79	SC 79.3.6	P 72	L 22	# 112	CI 82	SC 82.2.12	P 103	L 23	# 115
Trowbridge	e, Steve	Alcatel-Lucen	nt		Slavick, Je	eff	Avago Tech	nologies	
Comment	Туре Т	Comment Status X			Comment	Туре Т	Comment Status X		
Clarify partne	v that Transmit F er (as determine	W and Receive FW must be t d by auto-negotiation) support	rue unless both "deep sleep" op	the PHY and its link eration.	We ha Layer	ave only 100GE s. Table 82-5 (BASE-R PCS, but have 100GI Column header is PCS, so rer	BASE-R and 1000 nove -P/	GBASE-P Physical
Suggested	dRemedy				Suggeste	dRemedy			
Add: T	Fransmit FW and	d Receive FW are set to TRUE	E unless the PH	and its link partner are	Remo	ve the -P/ from	the PCS type entry		
capab negoti	le of Deep Slee ation.	p operation as determined by	the PHY type an	d the results of auto	Proposed	Response	Response Status W		
Proposed	Response	Response Status O			<edito< td=""><td>or changed sub</td><td>clause from 82-5 to 82.2.12.></td><td></td><td></td></edito<>	or changed sub	clause from 82-5 to 82.2.12.>		
					C/ 83	SC 83.5.3.	1 P 00	L 0	# 116
Cl 80	SC 80.1.3	P 77	L 23	# 113	Slavick, Je	eff	Avago Tech	nologies	
Slavick, Je	əff	Avago Techn	ologies		Comment	Туре т	Comment Status X		
Comment 100GE	<i>Type</i> T BASE-P is not lis	Comment Status X sted as one of the stack ups.			We ha	ave added SP0 n 83.5.3 (Skew	to the stack up in Figure 80-5 and Skew Variation).	5a, but Clause 83	doesn't have a section
Suggested	SuggestedRemedy				Suggeste	dRemedy			
Add 1 Also c	00GBASE-P to the shange 82-1	the figures as a valid PHY type	e with a CGMII i	nterface.	Chang Add a	ge the titles of 8 references to I	33.5.3.1 and 83.5.3.2 to includ Figure 80-5a to the text of bot	le SP0 and SP7 h sections	and a first start of
Proposed	Response	Response Status W			data f	low from SP1.	n SPU and SP7 and account	for SP7 being the	opposite direction of
<edito< td=""><td>or changed subc</td><td>lause from 80-4 to 80.1.3.></td><td></td><td></td><td>Proposed</td><td>Response</td><td>Response Status W</td><td></td><td></td></edito<>	or changed subc	lause from 80-4 to 80.1.3.>			Proposed	Response	Response Status W		
C/ 82	SC 82.11.1	P 00	L 0	# 114	<edito< td=""><td>or changes sub</td><td>clause from 5.3.1 to 83.5.3.1.</td><td>></td><td></td></edito<>	or changes sub	clause from 5.3.1 to 83.5.3.1.	>	
Slavick, Je	eff	Avago Techn	ologies		C/ 91	SC 91.5.4.	2.1 <i>P</i> 148	L 17	# 117
Comment	Туре Т	Comment Status X			Slavick, Je	eff	Avago Tech	nologies	
100GE	BASE-P is a Phy	vsical Layer that uses the clau	se 82 PCS.		Comment	Туре Т	Comment Status X		
Suggested Addec	dRemedy 100GBASE-P	Physical layer to the list of Phy	ysical Layers in 8	32.1.1	In the called	variable sectio "fec_lane_map	n the variable is called "fec_la oping".	ane" while in the r	est of the Clause it's
Proposed	Response	Response Status W			Suggeste	dRemedy			
					Chan	ge fec_lane to f	ec_lane_mapping <x></x>		
<edito< td=""><td>or changed subc</td><td>lause from 1.1 to 82.1.1.></td><td></td><td></td><td>Proposed</td><td>Response</td><td>Response Status W</td><td></td><td></td></edito<>	or changed subc	lause from 1.1 to 82.1.1.>			Proposed	Response	Response Status W		
					<edito< td=""><td>or changed sub</td><td>clause from 5.4.2.1 to 91.5.4.</td><td>2.1.></td><td></td></edito<>	or changed sub	clause from 5.4.2.1 to 91.5.4.	2.1.>	

				-					
C/ 91 SC 91.5.4.2	.1 <i>P</i> 148	L 17	# 118	CI 30	SC 30.5.1.1	.11	P 00	L 0	# 121
Slavick, Jeff	Avago Tecl	hnologies		Slavick, Je	eff		Avago Techi	nologies	
Comment Type T	Comment Status X			Comment	Туре Т	Commen	t Status X		
fec_lane/fec_lane_ma	pping state should be quali	fied with amps_lo	ck <x></x>	aBIPE have a	ErrorCount state added the defini	s "For 40/1000 intion for 100G	GBASE-R PHY BASE-P PHYs	s, an array of BIF as well.	error counters." We
SuggestedRemedy				Suggester	dRemedy				
Change "for lane x" to "for lane x when am	ps_lock <x> = true"</x>			Add 1	00GBASE-P as	a valid PHY ty	/pe for providin	g this field.	
Proposed Response	Response Status W			Make	the same chang	ge to 30.5.1.1.	2		
				Proposed	Response	Response	Status W		
<editor changed="" subc<="" td=""><td>lause from 5.4.2.1 to 91.5.4</td><td>.2.1.></td><td></td><td><edito< td=""><td>or changed subo</td><td>clause from 5.1</td><td>1.1.11 to 30.5.1</td><td>.1.11.></td><td></td></edito<></td></editor>	lause from 5.4.2.1 to 91.5.4	.2.1.>		<edito< td=""><td>or changed subo</td><td>clause from 5.1</td><td>1.1.11 to 30.5.1</td><td>.1.11.></td><td></td></edito<>	or changed subo	clause from 5.1	1.1.11 to 30.5.1	.1.11.>	
C/ 91 SC 91.5.3.3	P 143	L 38	# 119	CI 30	SC 30 5 1 1	12	POO	/ 0	# 122
Slavick, Jeff	Avago Tec	hnologies		Slavick, Je	eff	.12	Avago Tech	nologies	π 122
Comment Type T	Comment Status X			Commont		Common		lologico	
Change the If to a Wh	en so that immediately upor	n exceeding the the	reshold the 60-75ms of	comment	<i>Type</i> I Manning needs	to include the			
the 8192 codewords d	uration to complete and the	en evaluate and de	the corruption period.	Currenter	al Da waa a du i				
SuggestedRemedy				Suggested	d the list of Land	manning regi	stors to include	45 2 1 92i and c	shange "MDIO Interface
Per comment.				to the	PCS" to "MDIO	Interface to th	ie PHY"	45.2.1.52j and C	mange mbio intenace
Proposed Response	Response Status W			Proposed	Response	Response	Status W		
						,			
				<edito< td=""><td>or changed subo</td><td>clause from 5.1</td><td>1.1.12 to 30.5.1</td><td>.1.12.></td><td></td></edito<>	or changed subo	clause from 5.1	1.1.12 to 30.5.1	.1.12.>	
<editor changed="" subc<="" th=""><th>lause from 5.3.3 to 91.5.3.3</th><th>i.></th><th></th><th>CI 30</th><th>SC 30.5.1.1</th><th>.16</th><th>P 25</th><th>L 13</th><th># 123</th></editor>	lause from 5.3.3 to 91.5.3.3	i.>		CI 30	SC 30.5.1.1	.16	P 25	L 13	# 123
C/ 30 SC 30.3.2.1	.2 P 23	L 46	# 120	Slavick, Je	əff		Avago Techi	nologies	
Slavick, Jeff	Avago Tec	hnologies		Comment	Type T	Commen	t Status X		
Comment Type T	Comment Status X			We do	o have the ability	y to disable the	RS-FEC corre	ection capability b	by setting 1.200.0 to a 1.
Removing the 64B/66	B from the 100GBASE-* de	finintions removes	information about the	It's sta	atus should read	d through aFE0	Cmode.		
encoding of the PCS I	anes that is present for all c	others in the list.		Suggestee	dRemedy				
SuggestedRemedy				Chang	ge: "When Clau	se 73 Auto-Ne	gotiation is ena	bled for a PHY s	upporting Clause 74
Have the text read: 100GBASE-R Clause	82 100 Gb/s multi-PCS land	e 64B/66B using 2	P-level PAM	FEC a	enabled in Clau	i is not allowed ise 74."	and a GET op	eration maps to t	ne variable
100GBASE-P Clause	82 100 Gb/s multi-PCS lane	e 64B/66B using :	2-level PAM	to:					
Maka sama abanga in	20 2 2 4 2			"Wher Claus	n Clause 73 Aut	o-Negotiation	is enabled for a	a PHY supporting	J Clause 74 FEC or
Make Same Change in	50.5.2.1.5			variab	le FEC_enable	d in Clause 74	or the inverse	of FEC_bypass_	_correction_enable in
Proposed Response	Response Status W			Claus	e 91."				
<editor changed="" subc<="" td=""><td>lause from 3.2.1.2 to 30.3.2</td><td>.1.2.></td><td></td><td>and a</td><td>dd 45.2.1.92a to</td><td>o the list of MD</td><td>IO registers ac</td><td>cessed.</td><td></td></editor>	lause from 3.2.1.2 to 30.3.2	.1.2.>		and a	dd 45.2.1.92a to	o the list of MD	IO registers ac	cessed.	
				Proposed	Response	Response	Status W		
				<edito< td=""><td>or changed subo</td><td>clause from 5.1</td><td>1.1.16 to 30.5.1</td><td>.1.16.></td><td></td></edito<>	or changed subo	clause from 5.1	1.1.16 to 30.5.1	.1.16.>	

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Comment ID

Comment ID 123

Page 26 of 52 2013/05/02 2:13:"

Cl 91 Slavick, Je	SC 91.5.3.3	P 143 Avago Techn	L 40 ologies	# 124	<i>Cl</i> 82 Slavick, Je	SC 82.2.8a	P 100 Avago Te	L 45 chnologies	# 127
Comment	Type TR	Comment Status X			Comment	Type TR	Comment Status X		
The Fl	EC_bypass_indic	ation error monitoring logic v	vill cause the lin	k to go down.	RAMs	should be added	d when the Tx LPI State r	nachine is NOT in	TX_ACTIVE, or TX_FW.
Add a heade LH bit Proposed <edito< td=""><td>C_bypass_indic IRemedy MDIO status reg rs to occur. This that defaults 0. Response or changed subcla SC 91.5.3.3</td><td>ation error monitoring logic v ister that indicates when this will assist in debug of why lin <i>Response Status</i> W ause from 5.3.3 to 91.5.3.3.> <i>P</i> 143</td><td>logic caused co nk downs occur.</td><td>k to go down. Instant invalid sync Should probably be a # 125</td><td>RAMS Suggested Chang down to: "LPI ti and Chang = LI a TX_R</td><td>s should be added dRemedy ge "LPI transmit s _count_done = F/ ransmit state othe ge the transition i nd change the tra AW = LI</td><td>tate other than TX_ACTI ALSE." er than TX_ACTIVE or T> nto to TX_FW to come fr insition from TX_ACTIVE</td><td>NACHINE IS NOT IN VE, LPI_FW = FAI (_FW." DOM TX_ACTIVE when to TX_SLEEP to come</td><td>IX_ACTIVE, or TX_FW. .SE and nen LPI_FW & TX_RAW occur when !LPI_FW &</td></edito<>	C_bypass_indic IRemedy MDIO status reg rs to occur. This that defaults 0. Response or changed subcla SC 91.5.3.3	ation error monitoring logic v ister that indicates when this will assist in debug of why lin <i>Response Status</i> W ause from 5.3.3 to 91.5.3.3.> <i>P</i> 143	logic caused co nk downs occur.	k to go down. Instant invalid sync Should probably be a # 125	RAMS Suggested Chang down to: "LPI ti and Chang = LI a TX_R	s should be added dRemedy ge "LPI transmit s _count_done = F/ ransmit state othe ge the transition i nd change the tra AW = LI	tate other than TX_ACTI ALSE." er than TX_ACTIVE or T> nto to TX_FW to come fr insition from TX_ACTIVE	NACHINE IS NOT IN VE, LPI_FW = FAI (_FW." DOM TX_ACTIVE when to TX_SLEEP to come	IX_ACTIVE, or TX_FW. .SE and nen LPI_FW & TX_RAW occur when !LPI_FW &
Slavick, Je	eff	Avago Techn	ologies		Proposed	Response	Response Status U		
Comment What I Optica occur, Suggested Assum a HI_E bypas fec_al reboot Proposed	Type TR happens if FEC_I I module and AN but will the link g IRemedy hing that a MDIO BER situation has s_indication. Alo ign_status transit the RS-FEC with Response	Comment Status X pypass_indication_enable en isn't present, or AN is disable o down? register to flag that bypass_i been added. We could add ng with qualifying that using ions to true. Then you'd hav n error_indication turned on (Response Status W	ror monitor fires ed. Then we'll o ndication error r that flag to the or not using erro e to induce resta because the flag	and we're hooked to a cause a HI_BER to monitor fired and caused qualfication to enable or_indication is set when art_lock => true and g is set).	C/ 91 Slavick, Je Comment Add th 256/2 Suggestee See c Proposed <edito< td=""><td>SC 91.5.2.6 eff Type E ne missing s to th 57B) dRemedy omment. Response or changed subcla</td><td>P 138 Avago Te Comment Status X e word trancoding to mak Response Status W ause from 5.2.6 to 91.5.2</td><td>L 41 chnologies are it transcoding. (</td><td># <u>128</u> after the 64B/66B to</td></edito<>	SC 91.5.2.6 eff Type E ne missing s to th 57B) dRemedy omment. Response or changed subcla	P 138 Avago Te Comment Status X e word trancoding to mak Response Status W ause from 5.2.6 to 91.5.2	L 41 chnologies are it transcoding. (# <u>128</u> after the 64B/66B to
<edito< td=""><td>or changed subcla</td><td>ause from 5.3.3 to 91.5.3.3.></td><td></td><td></td><td>C/ 91</td><td>SC 91 5 2 8</td><td>P141</td><td>1.8</td><td># 129</td></edito<>	or changed subcla	ause from 5.3.3 to 91.5.3.3.>			C/ 91	SC 91 5 2 8	P141	1.8	# 129
C/ 91	SC 91.5.3.3	P 35143	L 35	# 126	Slavick, Je	eff	Avago Te	chnologies	11 120
Comment The Fl true.	Type TR EC_bypass_indic	Comment Status X ation_enable error monitor s	hould be disable	ed while rx_lpi_active =	Comment Missir Suggester Add li	<i>Type</i> E ng reference "(ref <i>dRemedy</i> nk to 94.2.1.1.1	Comment Status X er to)"		
Add "v rx_lpi_ of 819	vhile rx_lpi_active _active transitions 2 codewords."	e = false" to the end of the 2r from true to false the error r	id sentence. An nonitor will begir	nd add "When n counting a new block	Proposed	Response	Response Status W		
Proposed	Response	Response Status W			<edito< td=""><td>or changed subcla</td><td>ause from 5.2.8 to 91.5.2</td><td>.8.></td><td></td></edito<>	or changed subcla	ause from 5.2.8 to 91.5.2	.8.>	
<edito< td=""><td>r changed subcla</td><td>ause from 5.3.3 to 91.5.3.3.></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></edito<>	r changed subcla	ause from 5.3.3 to 91.5.3.3.>							

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Comment ID

C/ 91 SC 91.5.4.3 Slavick. Jeff	P 151 Avago Techno	L 43 logies	# 130	C/ 78 Slavick, Je	SC 78.4.24	Ļ	P 65 Avago Techn	L 38 ologies	# 133
Comment Type E The variable name is f	Comment Status X ec_lane_mapping not FEC_lar	ne_mapping		Comment Poor w	 Type E vording:	Comment S	Status X		
SuggestedRemedy Downcase FEC in the	2_GOOD state.			examir This fu	ne_TxFW_cha	nge s if the new value	of FW_enable	e	
Proposed Response	Response Status W			that the remote suppor	e local transmi e system or if lo rted FW_enabl	t system can sup ocal system cond le.	port when the itions require	re is an updated a change in the v	request from the value of the presently
<editor changed="" subcl<="" td=""><td>ause from 91-8 to 91.5.4.3.></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></editor>	ause from 91-8 to 91.5.4.3.>								
C/ 91 SC 91.5.4.3 Slavick, Jeff	P 1 52 Avago Techno	L 15 logies	# 131	<i>Suggested</i> examir This fu	Remedy ne_TxFW_cha Inction decides	nge s if the new value	of FW_enable	e	
Comment Type E deskew_done is Boole	Comment Status X ean, no need to compare to "TF	RUE"		is supp system FW er	ported by the lo n or if local sys	ocal transmit syst tem conditions re	em when ther quire a chang	e is an updated r je in the value of	request from the remote the presently supported
SuggestedRemedy Change the 2 instance	es of "deskew_done = true" to c	deskew_done		Proposed I	Response	Response S	tatus W		
Proposed Response	Response Status W			<edito< td=""><td>r changed sub</td><td>clause from 4.24</td><td>to 78.4.24.></td><td></td><td></td></edito<>	r changed sub	clause from 4.24	to 78.4.24.>		
<editor changed="" subcl<="" td=""><td>ause from 91-9 to 91.5.4.3.></td><td></td><td></td><td><i>Cl</i> 80 Slavick. Je</td><td>SC 80.3</td><td></td><td>P 00 Avago Techn</td><td>L 0 ologies</td><td># 134</td></editor>	ause from 91-9 to 91.5.4.3.>			<i>Cl</i> 80 Slavick. Je	SC 80.3		P 00 Avago Techn	L 0 ologies	# 134
C/ 30 SC 30.5.1.1.	15 P 24	L 44	# 132	Comment	 Tune T	Comment	Status X	elegiee	
Slavick, Jeff	Avago Techno	logies		Introdu	iction paragrar	oh of section 80.3	refers to 40G	BASE-R and 10	0GBASE-R Physical
Comment Type E	Comment Status X			Layers	, but not 100G	BASE-P.			
Clause 91 defines the	mandatory RS-FEC			Suggested	Remedy				
SuggestedRemedy				Add 10	00GBASE-P to	the list of Physic	al layers in 80).3 and 80.3.2	
Change "Clause 91 ma	andatory FEC" to "Clause 91 m	nandatory RS-FEC"		Proposed I	Response	Response S	tatus W		
Proposed Response	Response Status W			<edito< td=""><td>r changed sub</td><td>clause from 3 to</td><td>80.3.></td><td></td><td></td></edito<>	r changed sub	clause from 3 to	80.3.>		
<editor changed="" subcl<="" td=""><td>ause from 5.1.1.15 to 30.5.1.1</td><td>.15.></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></editor>	ause from 5.1.1.15 to 30.5.1.1	.15.>							

C/ 82 SO	C 82.2.8a	P 101	L 50	# 135	C/ 93A	SC 9	3A.1.1	P 315	L 53	# 138
Slavick, Jeff		Avago Technol	logies		Brown, Ma	tthew		APM		
Comment Type BIP statitics normal. In	TR s are only upd FW mode, we	Comment Status X dated when in RX_ACTIVE, a e never send RAMs.	and turn on afte	r receiving the first	Comment Refere	<i>Type</i> ence to T	E P0 and T	Comment Status X P5 should be WRT to a syste	m diagram.	
SuggestedRem Turning off "The BIP st first receive to	edy BIP statistics atistics will be d normal AM	is a way to save power so cl e first updated after transition ."	hange iing from RAMs	to normal AMs on the	Suggested Chang Proposed	Respons	o TP5" to se	"TP0 to TP5 (see Figure 93E Response Status 0	i-1)"	
The BIP sta first receive LPI_FW is	atistics will be ed normal AM TRUE.	first updated after transitioni when LPI_FW is FALSE and	ng from RAMs d on the second	to normal AMs on the I received AM when	C/ 93A Brown, Ma	SC 9 tthew	3A.1.4	<i>P</i> 319 APM	L 34	# 139
Proposed Resp	onse	Response Status W			Comment Need I	<i>Type</i> nyphen.	E	Comment Status X		
<editor cha<="" td=""><td>inges subclau</td><td>use from 2.8a to 82.2.8a.></td><td></td><td></td><td>Suggested</td><td>Remedy</td><td>/</td><td></td><td></td><td></td></editor>	inges subclau	use from 2.8a to 82.2.8a.>			Suggested	Remedy	/			
C/ 80 SC	C 80.5	P 88	L 27	# 136	Chang Fix mu	e "single Iltiple sin	e bit respo nilar insta	onse" to "single-bit response". ances in 93A.		
	тр		logies		Proposed	Respons	se	Response Status 0		
The RS-FE Maximum S SuggestedRem	C receive log Skew for 1000	GBASE-R lane should be bas	o the UI duratio sed on 25.7812	n used to estimate the 5GBd signaling rate.	C/ 93A Brown Ma	SC 9	3A.1	Р 316 АРМ	L 1	# [140
Change the to this numl	e estimated U ber denoting t	I count for "At RS-FEC reciev that 1 UI is based on a 25.78	ve" to 4641. Ac 125GBd signal	ld a footnote attached ing rate.	Comment	Туре	E	Comment Status X		
Proposed Resp	onse	Response Status W	-		As a s the su	ervice to oclause	future re that defin	eaders, make Table 93A-1 mo les each parameter set.	re readable by	providing references to
<editor cha<="" td=""><td>inged subclau</td><td>use from 80-4 to 80.5.></td><td></td><td># [107]</td><td>Suggested For ea</td><td>Remedy ch parar</td><td>/ neter set</td><td>(or row) provide a reference t</td><td>o the sub-clau</td><td>se that defines the</td></editor>	inged subclau	use from 80-4 to 80.5.>		# [107]	Suggested For ea	Remedy ch parar	/ neter set	(or row) provide a reference t	o the sub-clau	se that defines the
Slavick, Jeff	50.5.1.1.11	Avago Technol	logies	# 137	Proposed	Respons	se	Response Status O		
Comment Type	TR	Comment Status X								
Clause 91 a	also optinally	provides BIP counters.			C/ 93A	SC 9	3A.1.6	P 320	L 39	# 141
SuggestedRem Added the I	ist of BIP erro	or counters to include 45.2.1.	92h and chang	e "MDIO Interface to	Brown, Ma <i>Comment</i>	tthew Type	F	APM Comment Status X		
the PCS" to Proposed Resp	o "MDIO Interf onse	face to the PHY" Response Status W			Proced	dure here	e uses let	ttered list while procedures in	94 use numbe	r number lists.
<editor cha<="" td=""><td>inged subclau</td><td>use from 5.1.1.11 to 30.5.1.1.</td><td>.11.></td><td></td><td>Suggested In 93A</td><td><i>Remedy</i> , used n</td><td>/ umbered</td><td>lists for procedures.</td><td></td><td></td></editor>	inged subclau	use from 5.1.1.11 to 30.5.1.1.	.11.>		Suggested In 93A	<i>Remedy</i> , used n	/ umbered	lists for procedures.		
					Proposed	Respons	se	Response Status O		

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Comment ID

C/ 93A SC 93A.1.	7.3 P 323	L 9	# 142	C/ 93A	SC 93A.1.2	.3 <i>P</i> 318	L 35	# 145
Brown, Matthew	APM	-		Brown, Ma	tthew	APM		
Comment Type E	Comment Status X			Comment	Туре Т	Comment Status X		
word error				In equa	ation 93A-11, th	ne summation is for integer i fro	om integer 1 to I	ength value z_p. z_p is
SuggestedRemedy				Suggested	Romody			
Change "index a i" to	o "index as i".			Chang	e "zp is an inte	ger multiple of 1 mm" to "zp is	an integer multi	ple. N p. of 1mm".
Proposed Response	Response Status O			Chang	e Eq. 93A-11 s	ummation upper limit to N_p.		
C/ 93A SC 93A.1. Brown Matthew	1 <i>P</i> 316 APM	L 1	# [143	Alterna length mm".	ately, define len zp is an integer	gth as being z_p*1_mm, where r multiple of 1 mm" to "whose le	e z_p is an integ ength is an integ	ger. Change "whose ger multiple, zp, of 1
Comment Type EP	Comment Status V			Proposed I	Response	Response Status 0		
References to sever device resister/capa helpful to include sta and agressor paths.	ral components is not totally clea icitor, package txline/capacitor, art and end points for the variou	ar. A system dia etc., would be h s channel respo	Igram showing the elpful. It would be further onses such as victim path	<i>Cl</i> 93A Brown, Ma	SC 93A.1.2.	.4 <i>P</i> 318 APM	L 47	# 146
SuggestedRemedy				Comment	Type T	Comment Status X		
Add a system diagra the start and end po	am showing each of the elemen ints of the victim and agressor o	ts specified in T channels.	able 93A-1 and showing	l would specifi	d consider "devi cally to the die.	ice" to be the "package plus die	e", where "devid	ce" here refers
Proposed Response	Response Status O			Suggested Chang	<i>Remedy</i> e "device" to "d	lie".		
C/ 93A SC 93A.1. Brown, Matthew	1 <i>P</i> 316 APM	L 51	# 144	Proposed I	Response	Response Status O		
Comment Type T	Comment Status X			C/ 91	SC 91.5.1	P 135	L 47	# 147
"time step" should be	e "frequency step"			Brown, Ma	tthew	APM		
SuggestedRemedy				Comment	Туре Т	Comment Status X		
Change "time step"	to "frequency step".			In Figu	re 91-2, the not	te "optional for eee implementi	on" is incorrect	or at least misleading.
Proposed Response	Response Status 0			are no	t required. See	terminology used in 82.2.3.4.	lemented and n	legotiated and otherwise
				Suggested	Remedy			
				Chang	e note to "Optic	onal when EEE is negotiated."		
				Proposed I	Response	Response Status O		

CI 93 SC 93.11.4.2 P238 L 6 # 148 Town, Matthew APM APM Comment Status X Cadence Design Syste Grown, Matthew APM APM Comment Status X Cadence Design Syste Comment Status X Cadence Design Syste SuggestedRemedy 'GHz' 'GHz' Comment Type T Comment Status X Cadence Design Syste Comment Type T Comment Status X Cadence Design Syste Ci 80 SC 80.1.3 P76 L 41 # 152 Marris, Arthur Cadence Design Syste Ci 80 SC 80.1.3 P76 L 41 # 152 Comment Type T Comment Status X Cadence Design Syste Comment Type T Comment Status X SuggestedRemedy 'A Forward Error Correction subjers is available for all 40GBASE-R and 100GBASE-R 100GBASE-KP4 PHYs. The FC subjers can be placed in between the PCS and 100GBASE-KP4 and 100GBASE-KP4 and 100GBASE-CP4 100GBASE-KP4 and 100GBASE-KP4 and 100GBASE-KP4 and 100GBASE-CP4 100GBASE-KP4 and 100GBASE-KP4 PHYs. The EC sub									
Comment Type T Comment Status X capitalization SuggestedRemedy "GH2"" "GH2"" "GH2"" "GH2"" "GH2"" "GH2"" "GH2"" "G	C/ 93 SC 93.1 Brown, Matthew	1.4.2 P 238 APM	L 6	# 148	C/ 82 SC Marris, Arthur	82.6	P 117 Cadence Desig	L 22 an Syste	# 151
SuggestedRemedy	Comment Type T capitalization	Comment Status X			Comment Type Cannot dete	TR ermine the	Comment Status X state of received_tx_mode in F	igure 82–17 Ll	PI Receive state
Proposed Response Response Status O Cl 80 SC 80.2.3 P80 L # 149 Comment Type T Comment Status X Cadence Design Syste Comment Type T Comment Status X Cadence Design Syste SuggestedRemedy Change first paragraph to read: "A forward Error Correction sublayer is available for all 40GBASE-RR and 100GBASE-RR and 100GBASE-RR 400GBASE-KR4 40RA 40GEASE-KR4 40RA 40GEASE-KR4 40RA 40GEASE-KR4 proposed Response Response Status 0 Cl 94 SC 94.1 P241 L 8 # 150 Cl 94 SC 94.1 P241 L 8 # 150 Comment Type T Comment Status X SuggestedRemedy Comment Type T Comment Status X 80.1.3 says: Proposed Response Response Status 0 0 Marris, Arthur Cadence Design Syste 0 Comment Type T Comment Status X 80.1.3 says: Proposed Response Response Status 0 0 1) There is no electrical or mechanical specification of the MDI for backplane Physical to "Physical" to "Physical Layer" 1) There is no e	SuggestedRemedy "GHz"				diagram. SuggestedReme	ədy			
Cl 80 SC 80.2.3 P 80 L # 149 Marris, Arthur Cadence Design Syste Comment Type T Comment Status X Use of the words "most" and "certain" is too vague and not accurate enough. The y could be replaced with "some" and "other" but please consider proposed remedy below. Cl 80 SC 80.1.3 P 76 L 41 # 152 SuggestedRemedy Change first paragraph to read: "A Forward Error Correction subjayer is available for all 40GBASE-R and 100GBASE-R and 100GBASE-CR4 and 100GBASE-CR4 and 100GBASE-CR4 and 0BASE-CR4 and 0BASE-CR4 and 0BASE-CR4 and 100GBASE-CR4 and 100GBASE-CR4 and 100GBASE-CR4 and 100GBASE-CR4 and 100GBASE-CR4 and 10GBASE-CR4 and 10GBASE	Proposed Response	Response Status O			I understand	d that Hugh	h Barrass is proposing a remed	ly for this.	
Cl 80 SC 80.2.3 P 80 L # 149 Marris, Arthur Cadence Design Syste Comment Type T Comment Status X Use of the words "most" and "certain" is too vague and not accurate enough. The y could be replaced with "some" and "other" but please consider proposed remedy below. SuggestedRemedy Change first paragraph to read: ** "A Forward Error Correction sublayer is available for all 40GBASE-Ra and 100GBASE-Rd and 100GBASE-CR4 100HASE-CR4 and 100GBASE-CR4 not 10					Proposed Respo	onse	Response Status 0		
Marris, Arthur Cadence Design Syste Comment Type T Comment Status X Use of the words "most" and "certain" is to vague and not accurate enough. The y could be replaced with "some" and "other" but please consider proposed remedy below. Comment Type T Comment Status X SuggestedRemedy Change first paragraph to read: "A Forward Error Correction sublayer is available for all 40GBASE-R and 100GBASE-R and 100GBASE-R and backplane PHYs. It is optional for 40GBASE-KR4, 40GBASE-CR4 and 100GBASE-KR4 PHYs. The FEC Sublayer can be placed in between the PCS and PMA sublayers." I) There is no electrical or mechanical specification of the MDI for backplane Physical 100GBASE-KR4 PHYs. Its optional for 40GBASE-KR4 and 100GBASE-KR4 PHYs. The FEC Sublayer can be placed in between the PCS and PMA sublayers." I) There is no electrical or mechanical specification of the MDI for backplane Physical Layers." Proposed Response Response Status O Comment Type T Comment Status X Change "physical" to "Physical Layer" Tooment Status X Proposed Response Response Status O SuggestedRemedy Comment Type T Change "physical" to "Physical Layer" Tooment Status X Proposed Response Proposed Response Response Status O O	C/ 80 SC 80.2	.3 <i>P</i> 80	L	# 149					
Comment Type T Comment Status X Use of the words "most" and "certain" is too vague and not accurate enough. The y could be replaced with "some" and "other" but please consider proposed remedy below. Comment Type T Comment Status X SuggestedRemedy Change first paragraph to read: "A Forward Error Correction sublayer is available for all 40GBASE-R and 100GBASE-R 100GBASE-CR10 PHYs and mandatory for 100GBASE-CR4 and 100GBASE-CR4 and 100GBASE-KR4 and 100GBASE-CR4 in the PHYs. It is optional for 40GBASE-CR4, 100GBASE-CR4 and 100GBASE-CR4 and 100GBASE-CR4 in the PHYs. It is optional for 40GBASE-CR4, 100GBASE-CR4 and 100GBASE-CR4 in the PHYs. It is optional for 40GBASE-CR4, 100GBASE-CR4 and 100GBASE-CR4 and 100GBASE-CR4 and 100GBASE-CR4 and 100GBASE-CR4 and 100GBASE-KR4 and 100GBASE-KR4 and in Clause 94 for 100GBASE-KR4 in Clause 93 for 100GBASE-KR4 and 100GBASE-KR4 and in Clause 94 for 100GBASE-KR4, in Clause 93 for 100GBASE-KR4 and in Clause 94 for 100GBASE-KR4, in Clause 93 for 100GBASE-KR4, and in Clause 94 for 100GBASE-KR4, in Clause 93 for 100GBASE-KR4, and in Clause 94 for 100GBASE-KR4, in Clause 93 for 100GBASE-KR4, and in Clause 94 for 100GBASE-KR4, in Clause 93 for 100GBASE-KR4, and in Clause 94 for 100GBASE-KR4, in Clause 93 for 100GBASE-KR4, and in Clause 94 for 100GBASE-KP4 all use a 4 lane data path. Proposed Response Response Status O SuggestedRemedy Chanage "physical" to "Physical Layer"	Marris, Arthur	Cadence Des	sign Syste		C/ 80 SC	80.1.3	P 76	L 41	# 152
Use of the words "most" and "certain" is too vague and not accurate enough. The y could be replaced with "some" and "other" but please consider proposed remedy below. SuggestedRemedy Change first paragraph to read: "A Forward Error Correction sublayer is available for all 40GBASE-R and 100GBASE-R, 40GBASE-R and 100GBASE-R, 40GBASE-KR4 and 100GBASE-KR4, 100GBASE-KR4 and 100GBASE-KR4, 100GBASE-KR4 and 100GBASE-KR4, 100GBASE-KR4 and 100GBASE-KR4, 100GBASE-KR4 and 100GBASE-KR4, 100GBASE-KR4, 100GBASE-KR4 and 100GBASE-KR4, 100GBASE-KR4, 100GBASE-KR4, and 100GBASE-KR4, 100GBASE-KR4, 100GBASE-KR4, and 100GBASE-KR4, 100GBASE-KR4, and 100GBASE-KR4, 100GBASE-KR4, 100GBASE-KR4, and 100GBASE-KR4, 100GBASE-KR4, 100GBASE-KR4, and 100GBASE-KR4, and 100GBASE-KR4, 100GBASE-KR4, 100GBASE-KR4, and 100GBASE-KR4, and 100GBASE-KR4, 100GBASE-KR4, 100GBASE-KR4, and 100GBASE-KR4, and 100GBASE-KR4, 100GBASE-KR4, 1150 C/ 94 SC 94.1 P 241 L 8 # 150 Comment Type T Comment Status X Change "hysical" to "Physical Layer" SuggestedRemedy Change "hysical" to "Physical Layer" SuggestedRemedy Change "hysical" to "Physical Layer" Proposed Response Response Status O	Comment Type T	Comment Status X			Marris, Arthur		Cadence Desig	gn Syste	
Image: Classic of the point of outlability of the point of outlability of the point of the	replaced with "son SuggestedRemedy Change first parag "A Forward Error (copper and backp 100GBASE-CR10 100GBASE-KP4 F sublayers or betwe Proposed Response	ne" and "other" but please consid graph to read: Correction sublayer is available fo lane PHYs. It is optional for 40GB PHYs and mandatory for 100GB. PHYs. The FEC sublayer can be p een two PMA sublayers."	er proposed rer r all 40GBASE- ASE-KR4, 40G ASE-CR4, 1000 placed in betwee	nedy below. R and 100GBASE-R BASE-CR4 and BBASE-KR4 and en the PCS and PMA	80.1.3 says: "While this s implementat only excepti j) There is n Layers."	specificatio tions may ons are as o electrica not seem r	on defines interfaces in terms o choose other data-path widths s follows: Il or mechanical specification of relevant in this context.	f bits, octets, a for implementa f the MDI for ba	nd frames, tion convenience. The uckplane Physical
Cl 94 SC 94.1 P 241 L 8 # 150 Marris, Arthur Cadence Design Syste T Cadence Design Syste j: The PMDs as specificied in Clause 84 for 40GBASE-KR4, in Clause 93 for 100GBASE-KR4 and in Clause 94 for 100GBASE-KP4 all use a 4 lane data path. Comment Type T Comment Status X Proposed Response Response Status O Suggested Response Response Status O					SuggestedReme	ədy			
Comment Type T Comment Status X Proposed Response Response Status O Change "physical" to "Physical Layer" SuggestedRemedy Change "physical" to "Physical Layer" V </td <td>C/ 94 SC 94.1 Marris, Arthur</td> <td>P 241 Cadence Des</td> <td>L 8 sign Syste</td> <td># [150</td> <td>Change iten j: The PMDs KR4 and in</td> <td>n j) to read s as specifi Clause 94</td> <td>l: icied in Clause 84 for 40GBAS for 100GBASE-KP4 all use a 4</td> <td>E-KR4, in Clau 1 lane data patl</td> <td>se 93 for 100GBASE- n.</td>	C/ 94 SC 94.1 Marris, Arthur	P 241 Cadence Des	L 8 sign Syste	# [150	Change iten j: The PMDs KR4 and in	n j) to read s as specifi Clause 94	l: icied in Clause 84 for 40GBAS for 100GBASE-KP4 all use a 4	E-KR4, in Clau 1 lane data patl	se 93 for 100GBASE- n.
SuggestedRemedy Change "physical" to "Physical Layer" Proposed Response Response Status O	Comment Type T Change "physical"	Comment Status X			Proposed Respo	onse	Response Status O	·	
Proposed Response Response Status O	SuggestedRemedy Change "physical"	' to "Physical Layer"							
	Proposed Response	Response Status 0							

C/ 91	SC 91.5.2.6	P 138	L 3	# 153	C/ 93A	SC	93A.1.5	P 320	L 13	# 156	
Gustlin, Ma	ark	Xilinx			Healey, Ad	am		LSI Corporation	า		
Comment	Туре Т	Comment Status X			Comment	Туре	т	Comment Status X			
Currer AMs p locking replica quickly	ntly each FEC la er FEC lane. Or g to, and if you a tte the search lo / lock, such as fo	ne has a unique Alingment M n the receive side, where you re trying to quickly lock by do gic x4. This can be very expe or EEE.	arker pattern co don't know whic ing a parallel se nsive, especially	nsisting of 5 regular h FEC lane you are arch, you have to v when you have to	The fac for PAI consec Howev	ctor of M-L mo quently ver, this	1/(L-1) in E dulation. A As. causes the	equation (93A-21) accounts for a result, the reduction is but e separation loss to be doubl	or the loss of s uilt into the sing e-counted in a	eparation between levels gle-bit response and number of instances.	
Suggested	lRemedy				1 Equi	ation (C	134-26) inc	ludes the level senaration los	s and the valu	e of ISI variance diven	
Impler patterr	nent a single par ns in order to ide	ttern that is constant across the entify the given FEC lane. This	ne FEC lanes, a s will allow a rec	long with a unique evier to lock first to a	by Equ	ation (s	93A-25) is	incorrectly reduced.			
single lane. T A pres	pattern indepen This will significa entation will be	dent of the FEC lane, and the ntly reduce the logic especia made to detail the proposed s	n look at a uniq Ily for a fast lock solution.	ue pattern to identify the case.	2. Equa distribu	ation (9 utions a	93A-30) inc are compute	ludes the level separation los ed incorrectly e.g. the amplitu	s. The ISI and ide is scaled b	d crosstalk amplitude by 1/(L-1)).	
Proposed	Response	Response Status 0			3. The 27) and	variano d Equa	ce of the vo tion (93A-3	bltage error due to random jitt 32) incorrectly includes the los	er (As*sigma_ ss in level sepa	_RJ)^2 in Equation (93A- aration.	
C/ 94	SC 94.4.1	P 286	L 21	# 154	4. The incorre	distribu ect as it	ution of the includes th	voltage error due to dual-Dir ne level separation loss.	ac jitter in Equ	ation (93A-34) is also	
Healey, Ac	lam	LSI Corporati	on			-					
Comment	Type E	Comment Status X			Suggested	Remea	ly 				
The ro transm calcula	ws for "Transmine nitter device and ation of COM.	tter 3 dB bandwidth" were to l package model. These parar	be removed with meters are no lo	the inclusion of an nger used for the	Remove the factor of 1/(L-1) from Equation (93A-21). Define As to be h^(0)(0)/(L-1). Scale sigma_RJ and A_DD by h^(0)(0) rather than As.						
Suggested	IRemedy				Proposed I	Respon	se	Response Status 0			
Remov	ve the row.										
Proposed	Response	Response Status 0			<i>Cl</i> 93A Healey, Ad	SC am	93A.1.7.2	P 322 LSI Corporation	L 22	# 157	
CI 93A Healey, Ac	SC 93A.1.3 Iam	P 319 LSI Corporati	L 11 on	# 155	Comment The ap	<i>Type</i> proxim	T ation used	Comment Status X to derive the amplitude error	resulting from	n timing jitter is too	
Comment	Туре Т	Comment Status X			coarse	•					
The ed	quation for reflec	ction coefficient is incorrect. It	should be -1 wh	en Rd is 0.	A bette	er estim	ate employ	ys the first derivative of the si	ngle-bit respon	nse. The improved	
Suggested	IRemedy				compu	te is rea	of the noise	e amplitude distribution 93A.1	.7.2.	ion (93A-27) and the	
Chang GAMN	e the equation t 1A1(f) = GAMMA	o: A2(f) = (Rd-R0)/(Rd+R0)			Suggested	Remea	ly				
Proposed	Response	Response Status O			A conti	ribution	will be sub	omitted with the suggested ed	quations.		
·	-	, · · · · · · · · · · · · · · · · · ·			Proposed I	Respon	se	Response Status 0			

CL 02 4	SC 024 4 C	D 200	1 44	# 450	CL 02 A	SC 024 2 0			10 # 100		
Healey, Ac	30 93A.1.6 Iam	P 320	L 41	# 158	Healey, A	30 83A.3.2 dam	a P3 ISIC	orporation	16 # <u>160</u>		
Comment	Type T	Comment Status X			Comment	Type T	Comment Status	X			
It appe	ears that the choice	e of the sampling time ts is b	ased on the M	ueller and Muller phase	A phy	sical instance of	f XLAUI or CAUI does	not provide a m	eans to communicate the		
detect	or algorithm with th	e assumption that the decis	ion feedback e	qualizer almost	primiti	ives required for	r correct operation of th	ne optional EEE	deep sleep capability.		
compr					Suggestee	dRemedy	and a first of a first of a second				
Howev cancel	ver, the magnitude	of the first equalizer coeffici	ent is limited by	bmax and complete	A con	tribution will be	submitted with a sugge	ested remedy.			
					Proposed	Response	Response Status	0			
The sa	ampling time should	d satisfy the equation:									
h^(0)(t	s-T) = h^(0)(ts+T)-	min(h^(0)(ts+T), bmax*h^(0)(ts))		CI 92	SC 92.7.12	P1	70 L	18 # 161		
Suggested	Remedy				Slavick, Je	eff	Avage	o Technologies			
Chang	e the definition of t	s per the comment.			Comment	Type TR	Comment Status	х			
Proposed	Response	Response Status O			This to 100G- you ca of Lar	ext changes the -CR4 to be a un an have multiple ne 0 routed by La	PRBS sequence used qiue constant repeatin PMDs coming from the ane 0 from two differer	I in the PMD trai g PRBS sequen the same source the PMDs, both or	ining pattern for 100G-KR4 and ice for each lane. In systems and you will have the existance f which can be running training		
CI 93	SC 93.1	P 213	L 38	# 159	at the same time. Those two lanes will now be running PMD training with highly correl						
Healey, Ac	am T –		'n		reduc	e the correleate	d noise.	se for changing t	This from now 40G works is to		
The se from a	Comment Type T Comment Status X The second sentence states that the receiver bit error ratio is less than 1E-12 when signals from a compliant transmitter are received through "a channel with					This is also the only modification we've done for PMD training in Clause 92/93 (other then rate scaling).					
better	performance than	the worst-case specification	s in 93.9."		SuggestedRemedy						
"Bette	r performance" is n	ot sufficiently quantified. Ch	annel specifica	tions that enable a 1E-	Remove the text changing the PRBS sequences used during PMD trainig for Clause 92&93 Proposed Response Response Status W						
12 bit	error ratio should b	e added.									
Suggested	Remedy	for the colouistion of COM	bot corrospond	to the acce where the	-Edite	ar abangod aubr	alauna from 7 12 to 02	7 10 .			
RS-FE	C sublayer is conf	igured to bypass error corre	ction. The only	parameter to change		or changed subc	Jause 110111 7.12 to 92.	1.12.>			
from th	ne case where erro	r correction is not bypassed	is the target de	etector error ratio (1E-12	CI 92	SC 92.7.12	P1	70 L	# 162		
WHEIL		ypasseu).			Slavick, Je	eff	Avage	5 lechnologies			
Revise	e the paragraph in	93.1 to reference the added	channel specif	cation.	Comment	Type TR	Comment Status	X	S10"		
Proposed	Response	Response Status O			Laber	Seed, 510 to 3	SU IS DACKWARDS AND S		510.		
					Suggester Per co	dRemedy omment.					
					Proposed	Response	Response Status	w			
					<editor 92-5="" 92.7.12.="" changed="" from="" subclause="" to=""></editor>						

C/ 92 SC 92.7.12 P 170 L 31 # 163	Cl 92 SC 92.8.3.7.2 P178 L 27 # 165						
Slavick, Jeff Avago Technologies	Moore, Charles Avago Technologies						
Comment Type TR Comment Status X	Comment Type TR Comment Status X						
The start of the training pattern within the PMD training frame does not force a delineation of the Control Channel to the PRBS sequences. The currently selected seeds that are used at the start of every PRBS training pattern begin with a run of ones.	I have a several problems with the way jitter is specified, including: 1. The way TJ is defined is either unclear or it fails to use the						
SuggestedRemedy Advance each of the 4 initial seeds by 5 states to cause the Initial Output to begin with a 01. To induce a transition early in the sequence. S0 -> S10 Initial Output Lane 0 : 11111101011 : 7e3967d4 Lane 1 : 1111110010 : 763ccca8 Lane 2 : 01111011111 : b4fe7fb5 Lane 3 : 01111111101 : 5ff48d68	 difficult to measure. 2. Measuring Q9 is overkill for a system which only needs a BER of about 1e-5. 3. Data dependent jitter is treated as being a form of deterministic jitter but actually behaves a lot like RJ. SuggestedRemedy A presentation will be made on this subject 						
Proposed Response Response Status W	Proposed Response Response Status O						
<editor 92-5="" 92.7.12.="" changed="" from="" subclause="" to=""> C/ 92 SC 92.8.3.6 P 177 L 19 # 164</editor>	C/ 94 SC 94.3.13.3 P 280 L 9 # 166 Moore, Charles Avago Technologies						
Moore, Charles Avago Technologies	Comment Type TR Comment Status X						
Comment Type T Comment Status X This clause states incorrectly that Transmitter tests are made at TP2 or TP3. No Tx test are done at TP3 although Tx noise is measured at TP4.	Receiver interference tolerance test for 100GBASE_KP4 could be "gamed" by using a channel with a large amount of ISI which can be equalized by the DUT but is not equalized by COM reference channel, so no added broadband noise is needed. This would allow receivers with no actual margin for crosstalk to pass.						
SuggestedRemedy Change: "Transmitter measurements and tests defined in Table 92-6 are made at TP2 or TP3 using the test fixture of Figure 92-14, or its equivalent."	SuggestedRemedy In Table 94-17 add a line "COM before adding effects of broadband noise minimum" and set values to 4dB. A value greater that the nominal 3dB for channel spec is recommended since test channel has no crosstalk. Proposed Response Response Status O						
to							
Transmitter measurements and tests defined in Table 92-6, except Tx Noise measurement, are made at TP2 using the test fixture of Figure 92-14, or its equivalent Similarly, Receiver test are							
largely made at TP3."							

C/ 94 SC 94.3.13.3.1 P 282 L 1 # 167	C/ 94 SC 94.3.12.6.2 P 276 L 4 # 169					
Moore, Charles Avago Technologies	Petrilla, John Avago Technologies					
Comment Type TR Comment Status X Intent of specifying frequency variation in NSD used in ITOL test is to insure	Comment Type E Comment Status X There appears to be a space missing between vf and is.					
 Somewhat realistic broadband interference No one "games" the measurement by having a relatively high average NSD while at high frequencies, where the COM CTLE is peaked, NSD is lower, reducing the actual effect of the noise. 	SuggestedRemedy Replace "vfis" with "vf is" Proposed Response Response Status O					
Having a lower bound on NSD which decreases with frequencies, as equation 94.16 and Figure 94-16 do, runs counter to point 2 and is doubtless due to a typo in the comment which generated this clause.	C/ 92 SC 92.14.4.5 P 210 L 19 # 170 Petrilla, John Avago Technologies Avago Technologies Avago Technologies Avago Technologies					
SuggestedRemedy Either:	Comment Type ER Comment Status X CA6 references subclause 92.11.2 but there is no shall statement in 92.11.2.					
 Explicitly include noise generator frequency dependent NSD in the COM calibration of BBN and use fairly loose, flat NSD vs frequency spec. 	SuggestedRemedy Either add a shall statement into 92.11.2 or delete CA6					
or	Proposed Response Response Status O					
2. Specify:	Cl 92 SC 92 14 4 5 P 210 l 22 # 171					
10*log_10(NSD(f)/NSD_average) > -3 *(1-1.2*f/fb)	Petrilla, John Avago Technologies					
and re-draw or delete Figure 94-16.	Comment Type ER Comment Status X					
Proposed Response Response Status O	CA7 appears to have an incorrect reference 92.11.3.1 instead of 92.11.3 SuggestedRemedy					
C/ 92 SC 92.14.4.4 P 209 L 6 # 168 Petrilla, John Avago Technologies 4 168 <td< td=""><td>Proposed Response Response Status O</td></td<>	Proposed Response Response Status O					
Comment Type E Comment Status X Since RC1 is written for 92.11.1.1 but the relevant equation is in 92.11.3.2, it would be helpful to include the equation # in the Value/Comment field. Also it seems RC1 is redundant with CA9 (see page 210).	Cl 93A SC 93A.1.2.3 P 318 L 14 # 172 Petrilla, John Avago Technologies					
SuggestedRemedy	In Table 93A-2, the values given for "rho 0" and "gamma 0" are such that s-parameters will					
Change "Meets equation constraints" to "Meets equation (92-28) constraints"	have non-zero imaginary components at DC.					
Proposed Response Response Status O	SuggestedRemedy In Table 93A-2, adjust values given for "rho 0" and "gamma 0" such that s-parameters will not have non-zero imaginary components at DC					
	Proposed Response Response Status W					
	<editor 83a.1.2.3="" 93a.1.2.3.="" changes="" from="" subclause="" to=""></editor>					
TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general required T/technical E/editorial F/editorial F/editorial F/editorial F/editorial F/editorial	eneral Comment ID 172 Page 35 of 52 tten C/closed U/unsatisfied Z/withdrawn 2013/05/02 2:1					

SORT ORDER: Comment ID

2013/05/02 2:13:

CI 69	SC 69.1.2	P 51	L 17	# 173	C/ 99	SC 99	P1	L 10	# 176		
Booth, Brad	t	Dell			Booth, Bra	b	Dell				
Comment	Type TR	Comment Status X			Comment	Туре Е	Comment Status X				
Amend	ments generally	are intended to "do no harm	" to previous wo	k that has been	Shows	this as Amendi	ment X whereas line 13 on pag	ge 3 indicates it	is Amendment 1.		
is brea	king the "do no h	arm" rule. The previous objectives	ectives should no	t be stricken, especially	Suggested	Remedy					
conside	ering that 802.3-2	2012 was just ratified and pu	blished.		Chang	e title on page 1	to be Amendment 2.				
Suggested	Remedy				Same change for page 3 and 21.						
If the ta a mear	ask force does no ns to differentiate	ot agree with the objectives i the objectives based on da	n 802.3-2012, th a rate or some c	en they should provide ther means.	Proposed I	Response	Response Status O				
Proposed F	Response	Response Status O									
<u> </u>	SC 80 1 2	D 76	15	# 174	<i>Cl</i> 99 Booth, Bra	SC 99 d	<i>Р</i> 6 Dell	L 13	# 177		
Booth. Bra	d 00.1.2	Dell	23	# 174	Comment	Туре Е	Comment Status X				
Comment .	Type TR	Comment Status X			Chair a	and editor-in-chi	ef information needs to be upo	dated.			
Amend	ments generally	are intended to "do no harm	" to previous wo	k that has been	Suggested	Remedy					
docum	ented. Completel	ly eliminating the objectives	and converting the	nem to BER objectives	See co	mment.					
conside	ering that 802.3-2	2012 was just ratified and pu	blished.	t be stricken, especially	Proposed I	Response	Response Status O				
Suggested	Remedy										
If the ta	ask force does no	ot agree with the objectives i	n 802.3-2012, th	en they should provide	C/ 01	SC 1.4.50a	P 22	L 8	# 178		
a mear	is to differentiate	the objectives based on da	a rate or some o	ther means.	Booth, Bra	b	Dell				
Proposed F	Response	Response Status U			Comment	Type TR	Comment Status X				
					There	s only one 100	GBASE-P port type in the doc	ument; therefore	, it can be covered by		
CI 99	SC 99	P 1	L 2	# 175	the 10 really i	JGBASE-KP4 d sn't needed.	efinition. There isn't a new sub	player (other that	n the PMD) so this		
Booth, Brad	ł	Dell			Sugaested	Remedv					
Comment 7	Type E	Comment Status X			Delete	definition.					
First us	se of IEEE Std 80	02.3-2012 should have a tra-	demark.		Proposed I	Response	Response Status 0				
Suggested Chang	R <i>emedy</i> e to read: IEEE S	Std 802.3TM-2012									

C/ 01	SC 1.4.51a	P 22	L 14	# 179	C/ 92	SC	92.7.1	P 167	L 45	# 182
Booth, Brad	d	Dell			Dudek, Mil	ke		QLogic		
Comment	Type TR	Comment Status X			Comment	Туре	т	Comment Status X		
Definiti and the	ion contains mo e reach capabili	re information than is required. ties.	The clause spo	ecifies what is required	The w recom	ording i menda	mplies a tion.	mandatory requirement is in th	e subclause w	hile it is actually a
Suggested	Remedy				Suggested	Reme	ly			
Chang	e to read:				Chang	ge "The	maximur	n insertion loss" to "The recon	nmended maxi	mum insertion loss"
IEEE 8 four lar	802.3 Physical L nes of shielded l	ayer specification for 100 Gb/s balanced copper cabling. (See	using 100GBA IEEE Std 802.3	SE-R encoding over 3, Clause 92.)	Proposed	Respor	ise	Response Status 0		
Proposed I	Response	Response Status 0								
					C/ 92	SC	92.7.5	P 168	L 36	# 183
C/ 01	SC 1 4 522	D 22	/ 20	# 190	Dudek, Mil	ke		QLogic		
Booth Bra	3C 1.4.33a		L 20	# 180	Comment	Type	т	Comment Status X		
Comment	Type TR	Comment Status X			This se suppo	entence rted as	e is contra PMD_sig	adicting the following paragrap nal_detect_i needs to be set to	h for the situati b zero at some	on where EEE is times.
Definiti	ion contains mo	re information than required.			Suggested	Reme	ly			
Suggested	Remedy				Chang	ge the s	entence t	o "If training is disabled by ma	nagement, and	EEE is not supported,
Chang IEEE 8 Ievel p 802.3.	e to read: 802.3 Physical L ulse amplitude r Clause 94.)	ayer specification for 100 Gb/s nodulation over four lanes of a	using 100GBA n electrical bac	SE-R encoding and 4- kplane. (See IEEE Std	PMD_ Proposed	signal_ Respor	detect_i s nse	shall be set to one for i=0 to 3. <i>Response Status</i> 0		
Proposed I	Response	Response Status O						D		
,					C/ 92 Dudek, Mil	SC ke	92.8.4	P 179 QLogic	L 25	# 184
C/ 01	SC 1.4.53b	P 22	L 24	# 181	Comment	Type	т	Comment Status X		
Booth, Brad	d	Dell			There	is a co	ntradictio	n in the document. The summ	ary table 92-8	nas different values for
Comment .	Type TR	Comment Status X			the Dif	fferentia	al to Com	mon-mode input return loss the	an the reference	ed subsection 92.8.4.2.
Definiti	ion contains mo	re information than required.			Suggested	dRemed	ly			
Suggested	Remedy				Chang	ge the v	alue to "(Equation 92-6)		
Chang IEEE 8 Ievel p 802.3,	e to read: 302.3 Physical L ulse amplitude r Clause 93.)	ayer specification for 100 Gb/s nodulation over four lanes of a	using 100GBA n electrical bac	SE-R encoding and 2- kplane. (See IEEE Std	Proposed	Respor	ise	Response Status O		
Proposed I	Response	Response Status 0								

C/ 92A	SC 92A.5	P 313	L 4	# 185	C/ 92 SC 92.8.4.2	2 <i>P</i> 180	L 3	# 187
Dudek, Mike		QLogic			Dudek, Mike	QLogic		
Comment Ty	rpe T	Comment Status X			Comment Type TR	Comment Status X		

The value of ILcamax5m is not based on the maximum allowed values of the coefficients because as noted one cannot have all the maximum values simultaneously.

SuggestedRemedy

Change the definition to "is the maximum 5 m cable assembly insertion loss given in Table 92–12 for the maximum insertion loss at 12.8906 GHz."

Proposed Response	Response Status	ο
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C/ 92	SC 92.8.3	P 172	L 15	# 186
Dudek, N	like	QLogic		

Comment Type TR Comment Status X

There is a potential source of interfering signal that could cause high error rates that is not controlled. There is an allowed common mode output amplitude from the Tx. Also the cable is allowed to convert an uncontrolled amount of differential energy into common mode energy. The Rx has no common mode return loss specification so 100% of the energy can be reflected to the Tx, where 100% of this reflected common mode energy can be converted to interfering differential energy.

SuggestedRemedy

Add a cable specification for differential to common mode conversion (SCD21) of 10dB to section 92.10. Also add a specification for Common mode to differential conversion reflection for the Tx output (SDC22) to table 92-6 and a subsection to describe it. Suggested limit would be 3dB more relaxed than equation 92-6.

Proposed Response Response Status O

There is no specification for the mated compliance board common mode to differential return loss despite there being a specification for this for the receiver. With a realistic specification (that adopted by OIF VSR) at high frequencies the host product specification for the common mode to differential conversion is too close to that of the mated compliance boards making the specification almost impossible to meet. I will bring a presentation showing the effect to the Victoria meeting.

SuggestedRemedy

Add a specification for the mated compliance board common mode to differential return loss. Specification to be minimimum 30-5/7*f dB for 0.01<f<14 GHz and 25-5/14*f dB for 14<f<25 GHz. Change the product specification in equation 92-6 above 12.89Ghz from 12dB flat to -18 + 6/25.78*f which matches the specification OIF adopted for VSR at their last meeting.

Proposed Response Response Status **O**

CI 92	SC 92.10	P 183	L 45	# 188
Dudek, M	ike	QLogic		

Comment Type TR Comment Status X

The cable specifications in subclause 92.10 are not a good predictor of system performance as indicated using the Channel Operating Margin (COM). In particular a number of cables that have good COM when simulated with additional host traces fail the existing cable specifications. A presentation will be made Dudek_3bj_02_0513 describing the problem.

SuggestedRemedy

Replace the specification for the Insertion Loss Deviation, Integrated Crosstalk Noise, and fitted insertion loss coefficients with a single modified COM specification. The modification to the COM code would be to concatenate additional host trace loss on each end of the cable S parameters for this Cable test.

Proposed Response Response Status **O**

C/ 78	SC 78.1.3.3.1	1 P 61	L 49	# 189	CI 78 SC 7	8.1.3.3	P 61	L 51	# 192		
Bennett, N	lichael	LBNL			Bennett, Michael		LBNL				
Comment	Type E	Comment Status X			Comment Type	ER Col	nment Status X				
paren	thesis around the dRemedy	phrase (that implement EEE)) is not needed.		The definition of the transmitter	of "fast-wake" is continues to tra	s somewhat confusing ansmit signals during	 Fast wake refer the fast wake state 	rs to the mode for which te (between the sleep		
Remo	ve the parenthes	is. Its in a section titled PHY	LPI transit opera	tion - actually the	and wake state definition can b	es) so that the r be clarified by c	eceiver can resume o hanging the term "fas	peration with a sr	norter wake time. This ent.		
phras	e could be remov	ed. If you want to be explicit,	use the phrase	"for PHYs that	SugaestedRemedy	/	5 5 7 7				
Proposed	ment the optional Response	Response Status O			Replace "fast wake" with "quiescent" throughout the document. Replace acronym referring to "fast wake" (EW) with (Q)						
					Proposed Respons	re Res	nonse Status O				
C/ 82	SC	P 100	L 42	# 190							
Bennett, N	lichael	LBNL			C/ 99 SC		P 6	L 13	# 193		
Comment	Type ER	Comment Status X			D'Ambrosia, John		Dell				
The ir	the phrase RAM	I insertion - optional EEE func	tion, the word fu	nction should be	Comment Type	E Co	mment Status X				
capab	pility" in the docun	nent			Listing of Task	Force Chairs r	eeds to be modified,	as D'Ambrosia is	no longer Task Force		
Suggestee	dRemedy				Chair, and at N	lay meeting it is	s anticipated that Mr.	Healey will be cha	air and Matt Brown will		
replac	e function with ca	apability			Suggested Remedy	/					
Proposed	Response	Response Status 0			List John D'Arr	Ibrosia as Task	Force Chair. Phase	1			
					List Adam Hea	ley (assumed o	onfirmation) as Task	Force Chair, Pha	se 2		
CI 92	SC 93 6	D110	1 44	# 101	List Adam Hea	iley as Task Fo n as Task Force	e Editor-in-Chief, Pr	iase 1 se 2			
Bennett. N	/ichael	LBNL	L 41	# 191	Proposed Respons	se Res	ponse Status O				
Comment	Type FR	Comment Status ¥									
The n	ote is truncated ir	n Figure 82–10—Block lock st	ate diagram.				0.50		"		
Suggester	dRemedv	Ũ	Ū		C/ 80 SC 8	0.1.4		L 14	# 194		
replac	ce the truncated te	ext with the entire text				- 0.					
Proposed Response Response Status O					Comment Type E Comment Status X reference to 4-level pulse amplitude modulation. Other places pointing to clause 94 refer to greater than 2 levels modulation						
					SuggestedRemedy	/					
					use consistent Clause 94 sho clause.	terminology in uld use 4-level	reference to clause 9 pulse amplitude modu	4. It seems that a ulation, as that is	any references to what is specified in that		
					Proposed Respons	se Res	oonse Status O				

C/ 69	SC 69.1.1	P 51	L 12	# 195	C/ 80	SC 80.1.5	P 79	L 44	# 198		
D'Ambros	ia, John	Dell			D'Ambro	sia, John	Dell				
Comment	Type ER	Comment Status X			Commer	t Type T	Comment Status X				
Incon 100G	sistency in mann BASE-KP4 is inc	er in which PHYs are describe consistent with the definition of	ed. In addition, t 1.4 that implies	he description of that 100GBASE-P is	No ir Imple	dication for KP4	regarding Clause 83 PMA, w	hich is optional p	per Clause 94 (For CAUI		
anoth memb	er family of devic per of the 100GB	ces (which uses a 100GBASE ASE-R family)	R encoding, but	does not state it is a	Suggeste	edRemedy					
Suggeste	dRemedy				Make	e Clause 83 PM	A optional for KP4.				
1. add 2. Re	l "operates over place definition c	4 lanes" to the description of t of 100GBASE-P in 1.4 to:	he 100GBASE-F	R / 100GBASE-P family.	Proposed	d Response	Response Status O				
An IE	EE 802.3 family	of Physical Layer devices that	is a subset of th	e 100GBASE-R family	C/ 80	SC 80.2.4	P 80	L 28	# 199		
of dev	vices that uses 1	00GBASE-R encoding in com	pination with a p	hysical medium	D'Ambro	sia, John	Dell				
100 G	ib/s operation. (S	See IEEE Std 802.3 Clause 94	.)		Commer	t Type T	Comment Status X				
Proposed	Response	Response Status O			The of the	statement "the P e CAUI Interface	MA for 100GBASE-KP4 is spe will require the Clause 83 PM	ecified in Clause	94" as any instantiation		
					Suggeste	edRemedy					
Cl 80 D'Ambros	SC 80.1.4 ia, John	Р 77 Dell	L 45	# 196	add the F	ext that states " MA specified in	nstantiations of the CAUI inter Clause 83.	face will require	at least one instance of		
Comment	Type ER	Comment Status X			Proposed	d Response	Response Status 0				
there	is inconsistenter	ncy in the way definitions are g	iven. In 1.4, CR	4/ KP4 / KR4 refer to							
using codin	100GBASE-R ei n sublaver define	ncoding, while the 100GBASE	-P family refers	to using "physical ces made to Clause 82	C/ 80	SC 80.3.2	P 83	L 11	# 200		
PCS,	but this is define	ed as 100GBASE-R encoding			D'Ambro	sia, John	Dell	- • •			
Suggeste	dRemedy				Commer	t Type TR	Comment Status X				
chang	es references to	Clause 82 Physical COding S	Sublayer to eithe	r 40GBASE-R or	The	The flexibility of the 802.3ba architecture is based on the assumption that the service					
Proposed	Response	Response Status O			inter 3b.	interface is the same for all layers. This appears to have been broken by the diagram in 80 3b. The PMA above and below FEC sublayer has different service interfaces.					
					Suggeste	edRemedy					
CI 80	SC 80.1.4	P 78	L 13	# 197	It is r issue	not clear to me h e. At a minimun	ow to fix this - one could argue n some type of warning should	e that it is an opt be noted in the	ional mode, so not an text regarding this issue.		
D'Ambros	ia, John	Dell			Proposed	d Response	Response Status 0				
Comment refere	Type ER nce to 100GBAS	Comment Status X SE-KP4 using 100GBASE-P er s 100GBASE-R encoding	ncoding. 100GE	BASE-P is a family of							
Suggester	dRemedy	S TOODAGE IT Choosing									
chang	je 100GBASE-P	to 100GBASE-R									
Proposed	Response	Response Status O									

C/ 80 SC	80.5	P 87	L 15	# 201	C/ 91	SC 91.6.4	P 156	L 1	# 204
D'Ambrosia, Joh	n	Dell			D'Ambros	ia, John	Dell		
Comment Type	TR	Comment Status X			Comment	Type TR	Comment Status X		
Directly belo CAUI, this is directly unde	w the RS-FE noted as PM er the RS-FE	EC sublayer - there is a PM/ MD service interface. THere EC	A sublayer, but the shout	nis is not noted as a Id be no PMA sublayer	FEC i the us chanr	s necessary to r ser is taking a ris nel recommenda	neet the stated BER requireme k in meeting stated BER requir tions.	nt. If it is bypas ements based	ssed, it would seem that on insertion loss
SuggestedReme	∍dy				Suggeste	dRemedy			
Delete PMA	directly adja	acent and below to the RS-F	EC.		Add v	varning that whe	n FEC is bypassed, the ability	to meet stated I	BER requirements is
Proposed Respo	onse	Response Status O			chanr	nel dependent, a	nd that stated channel recomm	endations requ	ire FEC.
		,			Proposed	Response	Response Status O		
CI 82 SC	82.1.5	P 99	L 31	# 202					
D'Ambrosia, Joh	n	Dell			C/ 94	SC 94.6.3	P 291	L 10	# 205
Comment Type	TR	Comment Status X			Law, Davi	d	HP		
Optional sup impact the fl	port for EEE exibility of th	E has created service interfa le architecture	ices that differ fro	om each other that will	Comment Since	<i>Type</i> E the status of ite	Comment Status X m RS-FEC is M, since Table 94	4-1 lists Clause	94 RS-FEC as required,
SuggestedReme	∍dy				the su	ipport should be	just Yes [].		
add cautiona service inter	ary warning f	for all service interfaces that	are now differer	nt that 802.3ba defined	Suggeste Chan	<i>dRemedy</i> ge 'Yes [] No []'	to read 'Yes []'.		
Proposed Respo	onse	Response Status O			Proposed	Response	Response Status O		
C/ 91 SC	91.3	P 133	L 33	# 203	C/ 94	SC 94.2.1.1	.1 P 243	L 32	# 206
D'Ambrosia, Joh	'n	Dell			Law, Davi	d	HP		
Comment Type	TR	Comment Status X			Comment	Type E	Comment Status X		
PMA compa	tibility states	that the PMA service interf	ace upstream ar	nd downstream must be	Туро.				
set to 4 lane	s. However,	, there was supposed to be	something adde	d that stated a CAUI(-	Suggeste	dRemedy			
addressed b	y Annex 830	C, but the diagram only show	ws the proper C	AUI above the RS-FEC	The fu	ull stop in '(tx_bit	.start)' should be a comma '(tx	_bit,start)'.	
sublayer, an	d i could not	find any text that prevents t	this.		Proposed	Response	Response Status O		
SuggestedReme	<i></i> ydy						, _		
add text that	prevents im	plementation of a CAUI-10	below the RS-FI	EC sublayer.					
Proposed Respo	onse	Response Status O							

C/ 99 SC	P 6	L 13	# 207	C/ 80	SC 80.1.4	P 77	L 45	# 209
Law, David	HP			Law, David		HP		
Comment Type E	Comment Status X			Comment Typ	e ER	Comment Status X		
Please update th membership at th	e participant list based on the off ne start of the ballot.	icer changes and	the Working Group	Subclause family of F	e 80.1.4 'Nor Physical Laye	nenclature' states that '40GB/ er devices using the Clause 8	ASE-R or 100GE 2 Physical Codir	BASE-R represents a ng Sublayer and a
SuggestedRemedy [1] Update Task required:	Force officers list to read as follow	vs, add other Tasł	< Force officers as	PMD impl (see page for 100 Gl as subcla then 1000	ementing 2-l 22, line 20) b/s using 100 use 80.1.4 st BBASE-KP4	evel pulse amplitude modulat '100GBASE-KP4' states that 0GBASE-R encoding and 4 tates, 100GBASE-R represen can't be defined as using 100	tion (PAM).', how 'IEEE 802.3 Phy I-level pulse amp Its a PMD impler)GBASE-R.	vever subclause 1.4.53a vsical Layer specification blitude modulation'. If, menting 2-level PAM,
John D'Ambrosia Adam Healey, IE Adam Healey, IE Matt Brown, IEE [2] Include the vo	, IEEE P802.3bj Task Force Cha EE P802.3bj Task Force Chair, F EE P802.3bj Task Force Editor-ir E P802.3bj Task Force Editor-in-(ter list supplied by the IEEE 802.	ir, Phase 1 Phase 2 n-Chief, Phase 1 Chief, Phase 2 3 Working Group	Chair.	Further, If family of F 100 Gb/s modulatio of Physica	EEE Std 802 Physical Laye operation. (S n used, furth al Layer device	.3-2012 subclause 1.4.51 def er devices using the physical Gee IEEE Std 802.3, Clause 8 er subclause 1.4.50a defines ces using the physical coding	ines '100GBASE coding sublayer 22.).' and does no '100GBASE-P' a sublayer define	-R' as 'An IEEE 802.3 defined in Clause 82 for ot mention the as 'An IEEE 802.3 family d in Clause 82 and
Proposed Response	Response Status O	0 1		pulse amp reference	to 100GBAS	lation with more than 2 levels E-R encoding through a direct	for 100 Gb/s op ct reference to C	eration.' so avoids the lause 82.
Cl 45 SC 45. Law, David	2.1.92b.2 P 38 HP	L 11	# 208	Table 80- is a '100 (1.4.53a st Gb/s using	1 '40 Gb/s ar Gb/s PHY usi ates that 100 g 100GBASE	nd 100 Gb/s PHYs' however s ing 100GBASE-P encoding')GBASE-KP4 is a 'IEEE 802.: E-R encoding'.	states in the 1000 ' while, as noted 3 Physical Layer	GBASE-KP4 entry that it above, subclause r specification for 100
typo.				I think the	problem is t	hat we are trying to encode b	oth the PCS and	PMD modulation in the
SuggestedRemedy Suggets that 'FE ability (1.201.1)'. Proposed Response	C bypass correction ability (1.201	.1)' should read 'F	EC bypass indication	letter 'P' ir through th we should encoding uses 1000	100GBASE lese changes l define a ne defined in Cl GBASE-R en	-P and now add a PMD mode s. I therefore suggest that if w w term 100GBASE-R encodir ause 82, separate from a 100 coding with 2-level PAM PMI	ulation meaning we are to continue ng, which is the 6 OGBASE-R PHY D.	to 100GBASE-R e to use this approach 34B66B 100Gb/s , which is a PHY that
.,				We will al being cha implemen 100GBAS subclause	so need to m nged to defir ting 2-level F E-R PHYs ir 1.4. referen	hake a similar change to the d he both 40GBASE-R or 100G PAM. Fortunately I note that a l IEEE Std 802.3-2012 subcla ce either '40GBASE-R encod	lefinition of 40GE BASE-R as a far Ill the definitions ause 1.4, and IEI ling' or '100GBA	3ASE-R since 80.1.4 is mily of PHYs for 40GBASE-R and EE P802.3bj changes to SE-R encoding' already

A 100GBASE-P PHY would then be a PHY that uses 100GBASE-R encoding with a more than 2-level PAM PMD, although this still leaves the issue of 4 meaning 4 levels or 4 lanes in the case of 100GBASE-KP4. Personally, for consistency, I believe the 4 should mean 4 lanes with R now meaning 2-level PAM and P meaning 4-level PAM, and if another modulation scheme is selected in the future a new letter should be selected.

SuggestedRemedv

Based on my comment, suggest that:

and so will need no change.

[1] Change IEEE Std 802.3-2012 subclause 1.4.51 '100GBASE-R' to read An IEEE 802.3 family of Physical Layer devices using 100GBASE-R encoding and a PMD that employs 2level pulse amplitude modulation. (See IEEE Std 802.3, Clause 80.)

Comment ID 209

Page 42 of 52 2013/05/02 2:13:" [2] Add new subclause 1.4.51a that reads '100GBASE-R encoding: The physical coding sublayer encoding defined in Clause 82 for 100 Gb/s operation. (See IEEE Std 802.3, Clause 82.)'

[3] Change IEEE Std 802.3-2012 subclause 1.4.60 '40GBASE-R' to read 'An IEEE 802.3 family of Physical Layer devices using 40GBASE-R encoding and a PMD that employs 2-level pulse amplitude modulation. (See IEEE Std 802.3, Clause 80.)

[4] Add new subclause 1.4.60a that reads '40GBASE-R encoding: The physical coding sublayer encoding defined in Clause 82 for 40 Gb/s operation. (See IEEE Std 802.3, Clause 82.)'

[5] Subclause 1.4.50a '100GBASE-P' should be changed to read 'An IEEE 802.3 family of Physical Layer devices using 100GBASE-R encoding and a PMD that employs 4-level pulse amplitude modulation. (See IEEE Std 802.3, Clause 80.)

[6] Change the 100GBASE-P entry in subclause 30.3.2.1.2 'aPhyType' and 30.3.2.1.3 'aPhyTypeList' to read 'Clause 82 100 Gb/s multi-PCS lane 64B/66B using 4-level PAM'.
[7] Change the end of the first sentence of the 4th paragraph of subclause 80.1.4 to read '... a PMD implementing 4-level pulse amplitude modulation (PAM).'.

[8] Change the start of the description entry for 100GBASE-KP4 in table 80-1 from '100 Gb/s PHY using 100GBASE-P encoding ..' to read '100 Gb/s PHY using 100GBASE-R encoding ..'.

Proposed Response Response Status **O**

C/ 94	SC 94.6.3	P 291	L 12	# 210	
Law, David		HP			

Comment Type T Comment Status X

According to Table 94-1 the Clause 83 PMA is optional and the Clause 94 PMA is Mandatory yet there is only one entry in the PICS, item PMA, and this has the status of M.

SuggestedRemedy

Suggest that:

[1] In Table 94-1 change '83-PMA' to read '83-PMA for 100GBASE-R'.

[2] In Table 94-1 change '94-PMA' to read '94-PMA for 100GBASE-KP'.

[3] In subclause 94.6.3 change the status of PMA to read 'O' and the support to read 'Yes [] No []'

Note: I have submitted another comment that would delete the '94-PMA' entry from Table 94-1, I've include item [2] in case that comment is not accepted.

Proposed Response Response Status O

CI 94	SC 94.1	P 241	L 8	# 211
Law, David		HP		

Comment Type T Comment Status X

The first paragraph of the overview isn't of the usual format (see IEEE St 802.3-2012 subclause 84.1 and 85.1 as well as IEEE P802.3bj subclause 93.1), for example doesn't include the usual text that Clause 45 registers or equivalent should be supplied, has a typo in the statement in respect to how to form a PHY ('.. 100GBASE-KP4 physical shall ..'), and has self-references to the PMA and PMD in Table 94-1.

SuggestedRemedy

Suggets that:

[1] Delete the text 'A 100GBASE-KP4 physical shall include the required sublayers and may include the optional sublayers specified in Table 94–1.'.

[2] Add a new second paragraph that reads 'When forming a complete Physical Layer, a PMD and PMA shall be connected to the appropriate PMA or RS-FEC as shown in Table 94-1, to the medium through the MDI and to the management functions that are optionally accessible through the management interface defined in Clause 45, or equivalent.'.
[3] Delete the entries '94-PMA Required' and '94-PMD Required' from Table 94-1.

Proposed Response Response Status **0**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Comment ID

C/ 93	SC 93.1	P 213	L 37	# 212	C/ 93	SC 93.7.8	P 219	L 4	# 214
Law, David		HP			Law, David		HP		

Comment Type T Comment Status X

Subclause 93.1 states in the 5th paragraph that 'Differential signals received at the MDI from a transmitter that meets the requirements of 93.8.1 and have passed through the channel specified in 93.9 are received with a BER less than 10-5. When the receive path of the RS-FEC sublayer is configured to bypass error correction (see 91.5.3.3), differential signals received at the MDI from a transmitter that meets the requirements of 93.8.1 and have passed through a channel with better performance than the worst-case specifications in 93.9 are received with a BER less than 10-12.'

Reading the first paragraph it seems to state that with a PMD TX that meets 93.8.1 and a channel that meets 93.9, with no mention of the configuration of the RS-FEC, the BER is less than 10-5. Reading the second paragraph it seems to state that with a PMD TX that meets 93.8.1 and a channel 'with better performance than' 93.9 (which could be 0.0001% better), with the RS-FEC in bypass error correction, the BER is 10-12. That doesn't seem correct, and I understand that this isn't really the intent of the text, instead I believe the intent is to state that:

[1] If FEC is not bypassed, the link may operate at up to BER of 1E-5.

[2] If FEC is bypassed, the link has to operate at a BER of at least 1E-12.

SuggestedRemedy

Change the text to state that to meet the frame error ratio, if FEC is not bypassed, the link may has to operate at BER of 1E-5 or better, if FEC is bypassed, the link has to operate at a BER of 1E-12 or better.

Proposed Response	Response Status	0

 C/
 93
 SC
 93.11.4.1
 P 236
 L 10
 # 213

 Law, David
 HP
 H

Comment Type T Comment Status X

The Value/Comment field of item FS2 states 'Positive output voltage of corresponds to $tx_bit = one'$, a positive output voltage of what?

SuggestedRemedy

Suggest this be changed to read either 'Positive differential output voltage corresponds to $tx_bit = one' or$ 'Positive differential output voltage (SLi minus SLi<n>) corresponds to $tx_bit = one'$. A similar change should be made to item FS5.

Proposed Response Response Status O

Law, David		HP
Comment Type	т	Comment Status X
The third par	aranh	states that 'Control of the loonback function is specified in 45.2.1.1.5'

The third paragraph states that 'Control of the loopback function is specified in 45.2.1.1.5' but this is only correct if the optional PMA/PMD control 1 register described in subclause 45.2.1.1 is implemented. If this option is not implemented then equivalent management capabilities are required, as stated in subclause 93.1, '... and to the management functions that are optionally accessible through the management interface defined in Clause 45, or equivalent.'. Based on this I suggest that the approach used for other control registers be used here, map the bit to a variable in Table 93-2, and reference the variable in the text, not the register.

SuggestedRemedy

[1] Add entry to Table 93-2 that reads: PMA local loopback; PMA/PMD control 1; 1.0.0; PMA_local_loopback

[2] Change the second sentence of subclause 93.7.8 to read 'When the

PMA_local_loopback variable is set to one, transmission requests passed to each transmitter are sent directly to the corresponding receiver, overriding any signal detected by each receiver on its attached link.'.

[3] Delete the second paragraph that currently reads 'Control of the loopback function is specified in 45.2.1.1.5.'.

Proposed Response Response Status **0**

C/ 30	SC 30.5.1.1.2	P 24	L 11	# 215
Law, David		HP		

Comment Type TR Comment Status X

The existing enumeration '100GBASE-R' is to support the case of a pluggable PMDs port where no PMD is plugged in, or where the PMD is plugged in but does not support optional management. In these cases all that can be reported in the PCS type. As such the enumeration '100GBASE-R' can't be defined in reference to the PMD type, if the PMD type is known the correct enumeration such as '100GBASE-KR4' has to be returned, and the 100GBASE-P enumeration can't be added, again if the PMD type is known '100GBASE-KP4' has to be returned. All that can be returned when the PMD type is not known is '100GBASE-R'. This is another issue caused by the trying to encode both the PCS and PMD modulation in the letter 'P' and redefining the letter 'R' to also include modulation.

SuggestedRemedy

Suggest that:

[1] The enumeration '100GBASE-R' be restored to read 'Multi-lane PCS as specified in Clause 82 over undefined PMA/PMD'.

[2] The enumeration '100GBASE-P' be deleted.

[3] Change the text '.. 40GBASE-R, 100GBASE-R, and 100GBASE-P shall only be returned if the underlying PMD type is unknown.' to read '.. 40GBASE-R, and 100GBASE-R shall only be returned if the underlying PMD type is unknown.'.

esponse Status 0

CI 30	SC 30.5.1.1.15	P 24	L 46	# 216
Law, David		HP		

Comment Type TR Comment Status X

The optional MDIO Interface is defined for individual MDIO Manageable Devices (see subclause 45.2) such as PCS and PMA/PMD. As such there is no requirement to support the MDIO Interface defined for a PHY and it is permissible to have an implementation that support the optional Clause 45 MDIO Interface to a subset of MMDs within a PHY. Based on this I don't think a MIB attribute can have text that is predicated on 'Clause 45 MDIO Interface to the PHY is present'. If the MDIO Interface is present on the PCS MMD then this mapping is true.

SuggestedRemedy

Suggest that the text ' If a Clause 45 MDIO Interface to the PHY is present ..' be restored to read 'If a Clause 45 MDIO Interface to the PCS is present ..' here and in elsewhere in the Clause 30 changes.

Proposed Response Response Status O

C/ 93A	SC 93A		P 315	L 6	# <u>217</u>
Dawe, Piers			IPtronics		
	_	-			

Comment Type E Comment Status X

I was looking for the COM spec and I found "Characteristics of electrical backplanes" but that sounded like advice about how to make backplanes, or recommendations like Annex 69B - "informative" stuff, and I was looking for a normative specification. This annex needs a more assertive title that does justice to its contents.

SuggestedRemedy

Specification methods for electrical backplanes

Proposed Response Response Status **O**

CI 93	SC 93.9.1	P 230	L 15	# 218
Dawe, Pie	rs	IPtronics		
Comment	Туре Е	Comment Status X		
Give a	specific refere	ence.		

SuggestedRemedy

Change "the procedure in Annex 93A" to "the procedure in Annex 93A.1".

Proposed Response Response Status **0**

CI 92	SC 92.10.2	P 186	L 6	# 219
Dawe, Piers		IPtronics		

Comment Type E Comment Status X

Putting related information in separate graphs makes it harder for the reader to follow what's going on as well as adding to the bulk of the document.

SuggestedRemedy

Please combine Figure 92-9, Example maximum cable assembly insertion loss and Figure 92-10, Minimum cable assembly insertion loss.

Proposed Response Response Status **O**

CI 92	SC 92.8.3.3	P 173	L 53	# 220	CI 92	SC 92.8.3.7.2	2 <i>P</i> 178	L 29	# 223	
Dawe, Pie	rs	IPtronics			Dawe, Pie	rs	IPtronics			
Comment	Type E	Comment Status X			Comment	Туре Т	Comment Status X			
This s Table equali 72.6.1 cursor be set	ays "Transmit eq 45–60 and 45.2. zation means. S 0.2.3.1: "a state (k = +1) coefficie to its maximum	ualization may be disabled to 1.81.3." but neither of those ame problem with Table 92- where equalization is turned ents shall be set to a zero va value"	y asserting the p define what disat 6. It seems the p off the pre-cur lue and the main	reset control defined in oled transmit unch line is actually in sor ($k = -1$) and post- ($k = 0$) coefficient shall	This s measu might measu Suggestee	pec uses FEC so ired anyway but as well cut out th irable. <i>IRemedy</i>	a BER of 10^–12 is irrelevan found by extrapolation (92.8.3 e back-and-forth and specify	nt. Generally TJ 3.7.4 gives an e something more	J at 10^-12 isn't truly xample method), so we e relevant and more	
Suggester	Remedy				Repla	ce the spec for T	J-DDJ with one for J4-DDJ (r	nost relevant an	d measurable) or J5-	
Refer Transr and Ta assert	to 72.6.10.2.3.1, mit equalization r able 92-6 note b ing the preset co	e.g. here "when transmit eq nay" "Transmit equalization may l ntrol defined in Table 45–60	ualization is disat be disabled (see and 45.2.1.81.3.	led (see 72.6.10.2.3.1). 72.6.10.2.3.1) by	Proposed	Response	Response Status O	iy to find ERJ).		
Proposed	Response	Response Status O			C/ 92	SC 92.10.4	P 187	<i>L</i> 31	# 224	
		,			Dawe, Pie	rs	IPtronics			
					Comment	Туре Т	Comment Status X			
Dawe, Pie Comment Wrong	rs <i>Type</i> E g reference for Tr	IP 172 IPtronics Comment Status X ransition time.	L 16	# 221	Becau freque 18 to minim echoe	se of the (throug ncies: the cable I9 GHz. We kno um host loss (wh s are still a signif	h) loss of the MCB, this retur itself behind the MCB can ge w from plugfests that cables ich is less than 2 dB) will dar icant concern and there is no	n loss limit is ine t away with som do better than th np down echoes o cost saving to l	offective at high newhere around 1 dB at nat. Although a s from the host IC, leave such a weakness	
Suggested	Remedy				in the	overall spec.				
Chang	ge 92.8.3.4 to 92.	.8.3.3.			Suggester	Remedy	. f ua anna a chuir a chuir a dhuir a			
Proposed	Response	Response Status O								
					Proposed	Response	Response Status O			
C/ 92	SC 92.11.1	P 191	L 10	# 222	C/ 94	SC 94	P 241	<i>L</i> 1	# 225	
Dawe, Fle					Dawe, Pie	rs	IPtronics			
Comment Use w familia Also, u this pr	Type ER ell-established, r ar Host Complian using its usual na oiect.	Comment Status X recognizable names for thing ce Board. ame would reduce confusion	s. This "TP2 or ⊺ with the other tw	P3 Test fixture" is the o or three test fixtures in	Comment I have Marke standa	<i>Type</i> T n't noticed any 1 t Potential (multi ard?	Comment Status X DOGBASE-KP4 silicon. Does ble vendors and numerous us	s 100GBASE-KF sers) or is 100G	24 now have Broad BASE-KR4 the de facto	
Sugaester	lRemedv				Suggested	Remedy				
Chang TP1/T	ge "TP2 or TP3 T P4 or TP0a/TP5a	est fixture" or "test fixture" w a test fixtures, to "Host Comp	hen referring to the to the total th	nis test fixture not the	Show	Broad Market Po e the clause.	tential (commitment from mu	ltiple vendors a	nd numerous users) or	
Proposed	Response	Response Status O			Proposed	Response	Response Status O			

Cl 92	SC 92.8.3.3	P 173	L 53	# 226	C/ 92	SC	92.8.3.7	P 178	L	20	# 228
Dawe, Piers		IPtronics			Dawe, Pie	rs		IPtronics	6		
Comment Ty	vpe T	Comment Status X			Comment	Туре	т	Comment Status X			
The trans Thomsor 8 ps whe 72.6.10.2 cursor (k be set to	The transition times (per 92.8.3, at TP2 with the HCB of 92.11.1 and a fourth-order Bessel- Thomson low-pass response with 33 GHz 3 dB bandwidth) shall be greater than or equal to 8 ps when transmit equalization is disabled. 72.6.10.2.3.1 says "where equalization is turned off the pre-cursor ($k = -1$) and post- cursor ($k = +1$) coefficients shall be set to a zero value and the main ($k = 0$) coefficient shall be set to its maximum value". This appears to be at TP0. Notice that KR4 has an 8 ps limit at TP0a. For a host with significant PCB loss, the signal at TP0 can be as fast as it likes and the signal at TP2 will always exceed 8 ps - so this spec has effect only for hosts with						sumes that difference n large am IR, has to s this true I	DDJ is harmless, and between effective DJ nounts of true DCD (im be corrected in the rec DCD constrained enou	constrains th and DDJ. Ho balance betw eiver, and for gh by the ma	e differen owever, tl veen ones r a differe x RMS n	nce between TJ and he jitter specs allow the s and zeros), which ential driver output, is not ormalized error (linear
and the s	signal at TP2 wi	I always exceed 8 ps - so th	is spec has effe	ct only for hosts with	Suggestee	dRemea	ly				
very little nothing f	for those hosts but does	lf not, scope edges	add a ti menu i	rue DCD s tem called	pec. True DCD is easi "DCD", or from the DE	ly measured: J method by	from an compari	eye, by selecting the ing rising and falling			
SuggestedRemedy Options: Try to constrain the transition time at TP0 - not feasible? Delete this spec, as ineffective.					Proposed	Respor	ise	Response Status C			
Tighten t	Tighten this spec (more ps), to what an 8 ps IC behind a minimum-loss host PCB, good				CI 92	SC	92.10.2	P 184	L	19	# 229
connecto	or and HCB wou his spec - probab	Ild deliver at TP2.			Dawe, Pie	rs		IPtronics	6		
Other?		Jy Harriess.			Comment	Туре	т	Comment Status X			
Proposed Re	esponse	Response Status O			I was reading 93A.3 and had difficulty finding the values for fmax. 92.10.2, Cable assembly insertion loss, doesn't use the terms fmin or fmax.						
CI 92	SC 92.8.3.7	P 178	L 20	# 227	93.8.2	2.3, Rec	eiver interf	ference tolerance, men	tions them in	the text.	
Dawe, Piers		IPtronics			In 93.9 differe	9.1, Tab	ole 93–9, C	Channel operating marg	in parameter	rs, has ai	n fmin that's probably a
Comment Ty	vpe T	Comment Status X			anore						
These jitter metrics must be met regardless of the transmit equalization setting. For a maximum host channel with the transmitter at Preset, this might be challenging because the eve at TP2 is pretty closed up, but this is not relevant to real-world use with an equalizer.				on setting. For a hallenging because the se with an equalizer.	94.3.1 can't f	3.3, Re ind that	ceiver inte fmax by s	rference tolerance, me earching the pdf.	ntions them i	in a footr	ote to Table 94-17, but I
SuaaestedRe	emedv			·	94.4.2	2, Chanr	nel insertio	n loss, eqn 94-19, has	a conflicting	fmax.	
Consider if "regardless of the transmit equalization setting" is too wide, and the					SuggestedRemedy						
specifica Proposed Re	ations should ap esponse	ply above some threshold of <i>Response Status</i> O	emphasis.		Explic minim Use a	itly nam um cab more c	e fmin and le assemb onsistent la	d fmax in 92.10.2, e.g. ly insertion loss charac ayout in the three claus	with entries in teristics. ses.	n Table 9	2–12, Maximum and

Write fmax the same way each time so Acrobat sees them as the same.

Response Status **0**

93-9 e.g. by renaming one of each fmax and fmin.

Proposed Response

Resolve the discrepancy between 94.3.13.3 and 94.4.2, and between 93.8.2.3 and Table

C/ 92	SC 92.8	P 171	L 8	# 230	CI 92	SC 92.8.3.7.2	P 178	L 27	# 231
Dawe, Piers		IPtronics			Dawe, Piers		IPtronics		

Comment Type TR Comment Status X

The following items are needed for a viable spec (technical completeness):

Host common-mode output return loss

Absorbs common-mode energy

Host mixed-mode output return loss or termination mismatch

Limits conversion of reflected common-mode signal into interfering differential signal

Cable common-mode return loss

Absorbs common-mode energy

Integrated Common-Mode Conversion Noise or differential to common mode through loss Limits conversion into common mode that would otherwise exceed the AC common-mode output voltage spec and the AC common-mode tolerance of the receiver, and could cause EMI - relevant to low loss cables in particular

These items are present in the InfiniBand FDR spec. Comparison with 40GBASE-CR4 and 100GBASE-CR10 may be interesting but does not justify gaps in this spec.

SuggestedRemedy

Add specs:

Host common-mode output return loss, -2 dB, 50 MHz to 20 GHz

Host common mode to differential output return loss, 16-1.22f, 50 MHz to 20 GHz

Cable common-mode return loss, -2 dB, 50 MHz to 20 GHz

Integrated Common-mode Conversion Noise, 40 mV.

Integrated Common-mode Conversion Noise is defined analogously to Integrated Crosstalk Noise. If that isn't clear enough, see the InfiniBand FDR spec, part of InfiniBand Architecture Specification Volume 2 Release 1.3.

Proposed Response Response Status O

Comment Type **TR** Comment Status **X** TJ, DDJ and ERJ as used in this project are all proper nouns because they have definitions that are not the obvious meaning of the phrases: TJ is not all the jitter there is, DDJ is not all

the data-dependent jitter, ERJ could contain any fraction that's random, EDJ is probably far from all the deterministic jitter. Other clauses may have used similar but uncapitalized terms without definition (making them common nouns, if technically unsatisfactory), or may have simply ignored the rules on proper nouns in Merriam-Webster. But we aren't required to repeat or correct those problems: this clause has definitions (good!) Jitter terminology can be confusing enough without erroneous typesetting - let's do it right to help our readers.

SuggestedRemedy

Use Total Jitter, Data Dependent Jitter, Effective Random Jitter (ERJ) and Effective Deterministic Jitter (EDJ) (all with capitals) as these are undeniably proper nouns. Also, Even-odd Jitter can be treated as a proper noun because it has a definition, although its definition agrees with the meaning of the words.

Proposed Response Response Status **O**

CI 92	SC 92.8.4		P 179	L 22	# 232
Dawe, Pi	ers		IPtronics		
-		-			

Comment Type TR Comment Status X

This incorporates the overload spec in 72.7.2.4 which says "shall accept differential input signal peak-to-peak amplitudes produced by compliant transmitters connected without attenuation to the receiver, and still meet the BER requirement specified in 72.7.2.1." but that's not appropriate because:

1. There is a minimum loss for the cable and a recommended minimum loss for the host PCB traces - signals from less loss than that don't need to be supported;

2. In 72, training is not actually required; here I understand that it is, and

3. The BER in 72.7.2.1 is 1e-12.

In a scenario where training must be available, what the receiver has to do with an overload challenge is train it to what it likes THEN receive it.

SuggestedRemedy

We don't need to write a separate overload section. Delete this row in Table 92-8.

In Table 92-9, add a column for another test, with parameters for a minimum-loss cable and host channel (same as Test 1, I believe). Simplify the noise and jitter parameters for this new column if appropriate. Add a row for (initial and maximum) peak-to-peak voltage. For tests 1 and 2, 800 mV: refer to this row from 92.8.4.3.4. For the new column, the peak-to-peak voltage is 1200 mV at Initialize as attenuated by the minimum-loss cable, i.e. something less than 1000 mV (to be calculated).

Proposed Response Response Status O

Comment Type TR Comment Status X Comment Type T The ILD limit is near to double the 40GBASE-CR4 limit (scaled for signalling rate). I don't believe this draft spec works, even with FEC, unless the ICs are much better than needed for 100GBASE-KR4. Those who want a 100GBASE-CR4 need to do their homework to see whether this is viable. Comment Type T SuggestedRemedy SuggestedRemedy Device the second	R Comment Status X GBASE-KR4 port must be able to transmit and receive simultaneously and n FEXT and NEXT. Testing this would be impractical with separate
SuggestedRemedy	
Do the analysis of this draft spec and tighten ILD or reflection or maximum loss specs to make it work with KR4 grade ICs.	test fixtures. Specify test fixture NEXT and FEXT if it helps. <i>Response Status</i> O
Proposed Response Response Status O C/ 92 SC 92. C/ 93 SC 93.8.2.3 P.228 / 28 # [234] Dawe, Piers	11.3 P 196 L 22 # 236 IPtronics
Dawe, Piers IPtronics Comment Type TR Comment Status X 92.8.4.3.5, 100GBASE-CR4 Receiver interference tolerance test procedure, says: We need mated or to 3 dB better that 92.8.4.2. At the resome of them - n some of them - n During the tests, the disturbers transmit and all of the transmitters in the device under test transmit SuggestedRemedy This is normal practice, seen in many PMD clauses. Add mated comp dB better than the SuggestedRemedy 93.8.2.3, 100GBASE-KR4 Receiver interference tolerance, refers to Annex 69A, which says "The interfering signal can come from NEXT" but then forgets to require that the other input lanes of the port under test be active during BER measurement. Proposed Response	R Comment Status X compliance board Sdc11, Sdc22, Scd11, Scd22 specs that are at least 2.5 an the host receiver differential to common-mode input return loss spec in moment we have just through conversion: Sdc21, Sdc12, Scd21, Scd12 (c tot clear what "common-mode conversion loss" means exactly).
Suggesteakemedy Explain that there are three FEXT disturbers, and add (at the end of the subclause?): During the tests, the disturbers transmit at their calibrated level and all of the transmitters in the device under test transmit either scrambled idle or PRBS31, with the maximum compliant amplitude and equalization turned off (preset condition). Proposed Response Response Status O Comment Type T Are the 100GBAS SuggestedRemedy If not, make adju: Proposed Response	11 P 191 L 51 # 237 IPtronics IPtronics R Comment Status X SE-CR4 HCB, MCB PCB losses achievable in practice? stments, keeping consistency with the OIF/InfiniBand EDR specifications. Response Status O

Cl 92	SC 92.8.4.2	P 180	L 2	# 238	C/ 93	SC 9		
Comment 7		Comment Status X			Comment	Type		
The rec with Ta Suggested Correct	ceiver differentia ble 92-8, Recei Remedy whichever one	al to common-mode input retur ver characteristics at TP3 sum	n loss spec in Imary.	eqn 92-6 doesn't agree	The Sonon-eximplyin are no thinne	-parame xistent o ng that e ot consis		
Proposed F	Response	Response Status O			As the at 19 (For sc	S-para GHz. Do opes: a		
C/ 00	SC 0	P1	L 1	# 239	scope	s might		
Dawe, Piers	6	IPtronics			respor	nse with		
Comment 7	ype TR	Comment Status X			This is	and so t a TR c		
It's time	for the project	to move to the next stage. No	ow that we hav	e a near-complete	conse	quences		
proposa	al based on view	wgraphs and simulations, it ne	eds to be valio	lated as a specification	Suggested	SuggestedRemed		
To dem betwee Path to	n PMD of at lea	to f10^-12 over the rated distance is two vendors for each PMD is explained credibly.	ance; shown to type.	be interoperable	Chang leave respor measu	je 19 GH it at 19 f nse, thro ured in~		
Other b demons their pre	odies such as o strations. I don oducts anyway.	DIF and InfiniBand report on te t believe 802.3 needs to organ	est fests or intentise such ever	roperability its if vendors will show off	Proposed	Respon		
Also, th simulat	Also, there has been very little reported on 100GBASE-CR4 to the current draft, even in simulation.							
Suggested	Remedy				Law, David	-		
Assess For eac perform	Comment Sugge that w	Comment Type Suggest that '. that were not o						
two ver	IUUIS IUF EACH F	Despenses Status	приансе.	Suggested	Remed			
FIOPOSED	response	kesponse Status U				omment		
					Proposed	Respon		

C/ 93	SC 93.8.1.4	P 222	L 47	# 2	240
Dawe, Piers		IPtronics			

TR Comment Status X

eter specs go only as far as 19 GHz, implying that energy above 19 GHz is r harmless, yet time-domain signals are defined in a 33 GHz bandwidth, energy between 19 GHz and 33 GHz could be present and important. These tent. This issue applies more to KR4 than CR4, where one could always use if too much high frequency energy were an issue.

meter specs are frequency-aware limits, there is no particular reason to stop o some instruments stop at 20 GHz?

33 GHz bandwidth allows in frequencies and noise that a real receiver s not optimal. Worse, it probably costs more than a slower scope! Some slow degrade peak-to-peak and jitter measurements but the Bessel-Thomson its excellent phase response was chosen to avoid this while filtering irrelevant on.

omment because it may take a while for people to assure themselves of the s of either a change or no change.

Hz to 20 GHz for S-parameter ("loss") specs throughout (it may be fine to or insertion loss fitting). Consider changing 33 GHz to 25 GHz for scope bughout except for transition time. For comparison, an optical signal would be 19 GHz (3/4 of signalling rate).

Proposed	l Response	Response Status O		
C/ 91 SC 91.5.3.3		P 143	L 20	# 241
Law, David		HP		
~				

Comment Status X Е

.. or contains errors but was not corrected .. should read '.. or contains errors corrected ..'.

v

Response Status 0 se

C/ 91 SC 91.6.4	<i>Р</i> 156 НР	L 1	# 242	C/ 93	SC 93.11.4.2	Р 238 НР	L 31	# 245
Comment Type E Typo. SuggestedRemedy Suggest that 'FEC bype Proposed Response	Comment Status X ass indication ability' should re Response Status O	ead 'FEC_bypas	ss_indication_ability'.	Comment Typ As items should be SuggestedRe Change t Proposed Re	be E TC11, TC12 a e 'Yes [] N/A [emedy he support col sponse	Comment Status X nd TC12 are mandatory pred]'. umn to read 'Yes [] N/A []' f Response Status O	dicated on EEE t	the support column
Cl 93 SC 93.6 Law, David Comment Type E	P 215 HP Comment Status X	L 15	# 243	C/ 93 Law, David Comment Tvi	SC 93.11.4.2	P 238 HP Comment Status X	L 45	# 246
SuggestedRemedy Suggest the text 'The c variables that' should several regsiters that Proposed Response	pptional MDIO capability descr I read 'The optional MDIO cap '. <i>Response Status</i> O	ibed in Clause ability described	45 defines several d in Clause 45 defines	The supp SuggestedRe Add 'Yes Proposed Re	ort column is r emedy []' to the TC1 sponse	nissing a value for TC15. 5 support column. <i>Response Status</i> O		
C/ 93 SC 93.8.1.1 Law, David	<i>Р</i> 220 НР	L 49	# 244	C/ 93 Law, David Comment Typ	SC 93.11.4.2 De E	P 238 HP Comment Status X	L 48	# [247
Comment Type E Suggest reference to T	Comment Status X P0a be added in this paragra	ph.		Subclaus	e 93.8.1.4 spe	cifies Transmitter output retu	urn loss.	
SuggestedRemedy Suggest ' are made a	t the output of a test fixture as	shown' shoul	d be changed to read '	Suggested Re Suggest to loss' to re	that the feature ad 'Common-i	e column of item TC16 be ch node output return loss'.	anged from 'Cor	nmon-mode input return
are made at the output Proposed Response	Response Status O	own'.		Proposed Re	sponse	Response Status O		

CI 73	SC 73.5.1	P 56	L 25	# 248	CI 73	SC	P 56	L 5	# 251		
Law, David	t	HP			Geoff Tho	mpson	GraCaSI S.A.				
Comment	Туре Т	Comment Status X			Comment	Туре Е	Comment Status X				
The ex and 85	kisting text refenc	es the lane-by-lane transmit 100GBASE-KR4 refernce (9	disable in subcla 3.77) yet the glo	uses 71.6.7, 84.7.7, bal transmit disable is	The n the te	ormative text sta xt is not a note.	arts with the word "Note", yet thi The use of this terminology is u	s portion of unnecessary.			
referno	ce here should al	ways be to the lane-by-lane	transmit disable.	. Suggest that the	SuggestedRemedy						
Suggested	Remedy				Delete in "the	e the words "Not e". The resulting	e that although" at the beginnin text will not be confused with a	g of the sente note.	nce and capitalize the "t"		
Sugge 93.7.7	est that the text ' , or 94.3.6.7.'.	92.7.6, 93.7.7, or 94.3.6.6.'	should be change	ed to read ' 92.7.7,	Proposed	Response	Response Status W				
Proposed I	Response	Response Status 0									
				" []	C/ 93A Farhoodfa	SC 93A.1 r, Arash	P 315 Cortina-System	L 24 ns	# 252		
CI 83	SC 83.1.1	P 120	L 19	# 249	Comment	Туре Т	Comment Status X		late		
Comment	Type T	Comment Status X			TX SM mode	IDR is not mode	eled in COM. TX SNDR is define	ed in 94.3.12.9) for PAM4 but not		
This su	ubclause states th	hat 'The 100GBASE-R PMA	(s) can support a	ny of the 100 Gb/s	Suggestee	dRemedy					
the Cla CAUI b	ause 83 PMA as between the 1000	optional and wouldn't it be re GBASE-R PCS and the RS-F	equired for an imp EC (see figure 8	Sheet, Table 34-Thists blementation that used 3C-2b). Isn't the	Shoul combi	ad TX noise as ne this with Dua	a new noise PDF to the COM.	Need to resolv	ve the issue of how to		
restrict can't b	tion that the PMA be a Clause 83 PM	that provides the PMD serv MA.	ices interface in a	a 100GBASE-KP PHY	Proposed	Response	Response Status W				
Suggested Either as an o	<i>IRemedy</i> change the text in option in Table 94	n this subclause 83.1.1 to cla 4-1.	arify the restrictio	n or remove Clause 83	<this bindin</this 	comment was r g, the editor cha	eceived after the ballot closed. anged the comment type from T	Since the com R to T.>	ment is late and is non-		
Proposed I	Response	Response Status O									
C/ 93	SC 93.7.5	P 218	L 9	# 250							
Law, David	1	HP									
Comment Sugge	<i>Type</i> T est a cross referer	Comment Status X nce to how management disa	ables training.								
Suggested	Remedy										
Sugge disable	est that text 'If train ed by manageme	ning is disabled by managen nt variable mr_training_enab	nent,' be chang ble (see 93.6),'.	ed to read 'If training is							
Proposed I	Response	Response Status O									