IEEE P802.3cx D3.1 ITSA Task Force 1st Sponsor recirculation ballot comments

C/ 0	SC 0	Р	L	# R1-13	C/ 30	SC 30.13.1.12	2 P 22	L 50	# R1-20
Ran, Ad	ee	Cisco Systems	, Inc.		Kabra, Lo	kesh	Synopsys, Inc.		
Comme	nt Type G	Comment Status X			Comment	Type ER	Comment Status X		
The	draft does not inclu	de change bars; it is impossib	le to see wha	t areas have been	Туро/	copy-paste error			
char	nged without going f	to the CMP version.			Suggeste	dRemedy			
Suggest	edRemedy				Repla	ice "the maximum	transmit path data delay" with	"the minimur	n receive path data
Plea	ise generate the ne	xt draft with change bars.			delay				
Propose	d Response	Response Status O			Proposed	Response	Response Status O		
CI 30	SC 30.13.1.10) P 22	L8	# <u>R1-18</u>	C/ 30	SC 30.13.1.13	3 P 23	L 22	# R1-21
Kabra, L	okesh	Synopsys, Inc.			Kabra, Lo	kesh	Synopsys, Inc.		
Comme	nt Type ER	Comment Status X			Comment	Туре Е	Comment Status X		
Тур	o/copy-paste error				Cross	reference is giver	n to "register fields" and not jus	st "registers"	in the sentence
Suggest	edRemedy				Suggeste	dRemedy			
Rep dela	lace "the maximum y"	transmit path data delay" with	n "the minimur	n transmit path data	Repla Same	ce "the registers" correction applies	with "the register fields" or "the s for line 23, 25, 41, 43, 50, 52	e register bits 2 in Page 23 a	"; Ind line #1 in Page 24
Propose	d Response	Response Status O			Proposed	Response	Response Status O		
CI 30	SC 30.13.1.11	P 22	L 29	# R1-19	C/ 30	SC 30.13.1.14	P24	L1	# R1-22
Kabra, L	₋okesh	Synopsys, Inc.			Kabra, Lo	kesh	Synopsys, Inc.		
Comme	nt Type ER	Comment Status X			Comment	Туре Е	Comment Status X		
Тур	o/copy-paste error				The a	TimeSyncSelectio	nDdmp attribute can be config	gured to selec	t one of the capabilities
Suggest	edRemedy				and n	eed not be the "sa	me value" as the capabilities.		
Rep	lace "the maximum	transmit path data delay" with	n "the maximu	m receive path data	Suggeste	dRemedy			
dela	У"				Chan "The	ge first sentence to register bits 3 181) 3 13 and 5 1813 13 are expect	ted to he set (o a value that is
Propose	d Response	Response Status O			suppo	orted by the data d pility registers (see	elay measurement point abiliti 45.2.3.67 and 45.2.5.28);	es in the PCS	S and DTE XS TimeSync
					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: Clause, Subclause, page, line

C/ 30 SC 30.13.1.14 Page 1 of 16 11/12/2022 7:29:11 AM

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CI 30	SC 30.13.1.16	P 24	L17	# R1-23	C/ 45	SC 45.2.3.67	P 33	L 42	# R1-8
Kabra, Lo	okesh	Synopsys, In	с.		Ran, Ade	е	Cisco Syste	ms, Inc.	
Commen	t Type E	Comment Status X			Comment	Type TR C	Comment Status X		
Attrib	oute name is not co	nsistent with the renamed "	capability" now		In Tal	ble 45–293, the descr	iption of bits 13 and 12	suggests that the	y separately indicate
Suggeste	edRemedy				the su	pport of "start of SDF	R" and "start of the first	symbol after the S	FD".
Chan "aTim	nge "aTimeSyncCap neSyncCapabilityD	oabilityNumBitChange" to /namicPathDataDelay" for a	Ill such instances	in multiple pages.	This o	contradicts with the te	xt in 45.2.3.67.1 and 45	5.2.3.67.2 (as mod	lified in D3.1).
Proposed	l Response	Response Status O			For e the P point"	cample, per 45.2.3.67 CS supports the use of while in the table, 3	1.1, "when both bits 3.18 of the beginning of the 3 .1800.13, "0 = PCS doe	300.13 and 3.1800 SFD as the data d es not support the	1.12 are read as a zero, elay measurement beginning of the SFD
C/ 45	SC 45.2.2	P 29	L 47	# R1-52	astre	e data delay measure	ment point .		
Rodrigue	s, Silvana	Huawei Tech	nologies Co., Ltd		From	the text of the following	ng subclauses it seems	that the two bits a	actually form a single
Commen	t Type TR	Comment Status X			tield v 00 or	10 - the PCS support	ions: s only the beginning of	the SFD as the da	ata delav measurement
Chan	nge "TimeSync WIS	transmit path receive delay	/ in sub-ns" to "Ti	meSync WIS receive	point		,		
path	data delay in sub-n	s"			01 - ti delav	ne PCS supports only	the beginning of the fir	st symbol after the	SFD as the data
Suggeste	edRemedy				11 - ti	ne PCS supports eithe	er the beginning of the	SFD or the beginn	ing of the first symbol
Chan	ige per comment				after	he SFD as the data d	lelay measurement poir	nt.	
Proposed	l Response	Response Status O			The ta	able and the text shou	Ild be changed accordir	ngly.	
CL 45	SC 45 2 2	P 29	/ 47	# R1-24	Simila	arly in 45.2.5.28.1, exc	cept that it is a DTE XS	rather than a PCS	δ.
Kohro La	okoob	Superava In	<u> </u>	π ((1-24	Suggeste	dRemedy			
Comment Typo Suggeste	<i>t Type</i> ER /copy-paste error edRemedy	Comment Status X	J.		In Tal name x0 = 01 = 1 meas	ble 45–293, replace the d "Data delay measure of the delay measure of the PCS support only the PCS supports only the urement point	ne rows for bits 13 and rement point ability", an beginning of the SFD a beginning of the first s	12 with a two-bit fi d description as fo as the data delay i symbol after the S	eld 3.1800.13:12, bllows: neasurement point FD as the data delay
repla Proposed	ce "WIS transmit p d Response	ath receive delay" to "WIS r	eceive path data	delay"	11 = PCS supports either the beginning of the SFD or the beginning of the first symbol after the SFD as the data delay measurement point.				
					Repla	ce 45.2.3.67.1 and 4	5.2.3.67.2 with a single	subclause:	
					45.2.3 Bits 1 first s Wher Wher of the Wher SFD a meas	3.67.1 Data delay mea 3 and 12 indicate the ymbol after the SFD, bit 12 is read as zero bit 12 is read as one first symbol after the both bit 12 and bit 13 and the beginning of t urement point is select	asurement point ability PCS support of the beg or both, as the data del b, the PCS supports on and bit 13 is read as z SFD. 3 are read as one, the F he first symbol after the cted by bit 3.1813.13 (s	(3.1800.13:12) ginning of the SFE ay measurement ly the beginning o ero, the PCS supp PCS supports both e SFD. In that cass ee 45.2.3.69a.1).), the beginning of the point (see 90.7). i the SFD. ports only the beginning n the beginning of the e, the data delay
					Imple	ment the same chang	ges in 45.2.5.28.1 (Tabl	e 45–361) and su	oclauses 45.2.5.28.1
TYPE: TF	R/technical required	ER/editorial required GR/	general required	T/technical E/editorial G/	general		CI 4	15	Page 2 of 16

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SC 45.2.3.67 11/12/2022 7:29:11 AM SORT ORDER: Clause, Subclause, page, line

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and 45.2.5.28.2. substituting "DTE XS" for "PCS". C/ 45 SC 45.2.3.67.4 P35 L4 Proposed Response Response Status 0 Ran, Adee Cisco Systems, Inc. Comment Status X Comment Type TR P33 C/ 45 SC 45.2.3.67 L 50 # R1-68 PDPDD is defined here as "PCS Dynamic Path Data Delay", but it also exists for the DTE XS, and is actually a measure of the whole physical layer's dynamic data path delay (for Rodrigues, Silvana Huawei Technologies Co., Ltd example, when the PHY includes a FEC sublayer, or when the xMII is extended by an XS). Comment Type TR Comment Status X Figure 90-7 shows the path data delay inclusive of the xMII. It's good to make the definition clear, e.g., 0 means it does not support the reporting of It is suggested to define the acronym as "Physical layer Dynamic Path Data Delay" instead, delay per 90.7, 1 means it supports the report of delay per 90.7. but keep it common for the PCS and the DTE XS, with different register names. SuggestedRemedv Change It should be understood that the value indicates the dynamic delay of all the underlying sublayers (e.g. FEC is included in the PCS PDPDD, and PCS is included in the DTE XS "0 = PCS does not support the reporting of multiple PCS lane path data delay PDPDD). 1 = PCS supports the reporting of multiple PCS lane path data delay" SuggestedRemedy Change "PCS Dynamic Path Data Delay (PDPDD)" to "Physical layer Dynamic Path Data to Delay (PDPDD)", here (subclause heading and text) and in 90.4.3.1.1 and 90.4.3.2.1. "0 = PCS does not support the reporting of multiple PCS lane path data delay using the method recommended in 90.7 and 90A.4 In 90.4.1.2, change "PCS dynamic transmit path data delay" to "Physical layer dynamic 1 = PCS supports the reporting of multiple PCS lane path data delay using the method transmit path data delay" and change "PCS dynamic receive path data delay" to "Physical recommended in 90.7 and 90A.4" laver dynamic receive path data delay". Proposed Response Response Status 0 Change the last paragraph of 90.4.3.1.1 from: The PCS Dynamic Path Data Delay (PDPDD) is an optional parameter that supports high

accuracy dynamic transmit path data delay calculations. It provides a value ranging from -32768 to +32767 indicating the number of bit times (see 1.4.160) of dynamic transmit path data delay the DDMP experiences in the PCS within the PHY. A positive value represents an addition to the mean of the maximum and minimum PCS transmit path data delay values given by the PCS transmit path data delay registers (see 45.2.3.68). A negative value represents a reduction from the mean of the maximum and minimum PCS transmit path data delay values given by the PCS transmit path data delay registers. The PDPDD value is conveyed from the PHY to the gRS by the optional TX NUM BIT CHANGE<15:0> signals. See 90.5.3.

R1-11

To:

The Physical laver Dynamic Path Data Delay (PDPDD) is an optional parameter that supports high-accuracy dynamic transmit path data delay calculations. It provides a value ranging from -32768 to +32767 indicating the number of bit times (see 1.4.160) of dynamic transmit path data delay the DDMP experiences within the physical layer. A positive value represents an addition to the mean of the maximum and minimum transmit path data delay values given by the PCS transmit path data delay registers (see 45.2.3.68) or the DTE XS transmit path data delay registers (see 45.2.5.29). A negative value represents a reduction from the mean of the maximum and minimum transmit path data delay values. The PDPDD value is conveyed from the PHY to the gRS by the optional TX NUM BIT CHANGE<15:0> signals. See 90.5.3.

Change the last paragraph of 90.4.3.2.1 from:

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The PCS Dynamic Path Data Delay (PDPDD) is an optional parameter that supports high accuracy dynamic receive path data delay calculations. It provides a value ranging from -32768 to +32767 indicating the number of bit times (see 1.4.160) of dynamic receive path data delay the DDMP experiences in the PCS within the PHY. A positive value represents an addition to the mean of the maximum and minimum PCS receive path data delay values given by the PCS receive path data delay registers (see 45.2.3.69). A negative value represents a reduction from the mean of the maximum and minimum PCS receive path data delay values given by the PCS receive path data delay registers. The PDPDD delay is value conveyed from the PHY to the gRS by the optional RX_NUM_BIT_CHANGE<15:0> signals. See 90.5.4.

To:

The Physical layer Dynamic Path Data Delay (PDPDD) is an optional parameter that supports high-accuracy dynamic receive path data delay calculations. It provides a value ranging from -32768 to +32767 indicating the number of bit times (see 1.4.160) of dynamic receive path data delay the DDMP experiences within the physical layer. A positive value represents an addition to the mean of the maximum and minimum receive path data delay values given by the PCS receive path data delay registers (see 45.2.3.69) or the DTE XS receive path data delay registers (see 45.2.5.30). A negative value represents a reduction from the mean of the maximum and minimum receive path data delay values. The PDPDD value is conveved from the PHY to the gRS by the optional RX_NUM_BIT_CHANGE<15:0> signals. See 90.5.4.

Proposed Response Response Status 0

C/ 45 SC 45.2.3.67.4 L10

R1-53

Rodrigues, Silvana

Huawei Technologies Co., Ltd Comment Type T Comment Status X

The text in this paragraph is a bit different with the previous paragraph when the bit is one. I think it is good to keep consistency with the previous paragraph.

P35

SuggestedRemedy

Change

"When read as a zero, bit 3.1800.10 indicates that the PCS is not able to report the calculation of the TX_NUM_BIT_CHANGE and RX_NUM_BIT_CHANGE values."

to

"When read as a zero, bit 3.1800.10 indicates that the PCS is not able to report PCS Dynamic Path Data Delay (PDPDD) as TX NUM BIT CHANGE and RX_NUM_BIT_CHANGE values (see 90.5.3 and 90.5.4) to the gRS."

Proposed Response Response Status 0

C/ 45	SC 45.2.3.69a.1	P 38	L 21	# R1-54
Rodrigue	s, Silvana	Huawei Tech		
<i>Commen</i> The v	t Type T Comm word "used" at the end is un	nent Status X	could be deleted.	
Suggeste Chan	ed <i>Remedy</i> ge			
"Bit 3	.1813.13 is used to select	the data delay mea	surement point u	sed (see 90.7)."
to				
"Bit 3	.1813.13 is used to select	the data delay mea	surement point (s	ee 90.7)."
Proposed	l Response Respo	nse Status O		,
C/ 45	SC 45.2.3.69a.1	P 38	L 23	# <u>R</u> 1-55
Rodrigue	s, Silvana	Huawei Tech	nologies Co., Ltd	
Comment Some	t Type E Comm e editorial changes for the t	nent Status X ext starting at line 2	23.	
Suggeste Chan	ed <i>Remedy</i> ge			
"Whe	en this bit is set to 0 the beg	ginning of the SFD i	s used as the dat	a delay measurement

When set to 1 the beginning of the first symbol after the SFD is used as the data delay measurement point."

to

"When this bit is set to 0, the beginning of the SFD is used as the data delay measurement point.

When this bit is set to 1, the beginning of the first symbol after the SFD is used as the data delay measurement point."

If this is accepted, do the same change for the second and third paragraph of 45.2.5.31.1 at page 46

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: Clause, Subclause, page, line

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	SC 45.2.3.69a.1	P 38	L 27	# R1-56	C/ 45	SC 45.2.5.28.	I P 43	L 5	# <u>R1-25</u>
Rodrigue	es, Silvana	Huawei Tech	nologies Co., Ltd		Kabra, Lo	kesh	Synopsys, Ir	nc.	
Commen	t Type TR Cor	nment Status X			Comment	Type ER	Comment Status X		
The o	data delay measurement	point ability bits are r	ead-only, and the	y should not be set.	Туро/	copy-paste error			
Suggeste	edRemedy				Suggeste	Remedy			
Char	ige				Repla	ce "PCS" with "DT	E XS" in line #5 & line #9		
"This the T	bit has an effect only if b imeSync PCS capability	ooth data delay measu register (see 45.2.3.6	urement point abi 7)."	ity bits are set to 1 in	Proposed	Response	Response Status O		
То					C/ 45	SC 45.2.5.28.	I P 43	L 5	# R1-57
"This	bit has an effect only if h	oth data delay measi	irement point abi	ity bits are read as	Rodrigues	, Silvana	Huawei Tech	hnologies Co., Ltd	
one i	n the TimeSync PCS cap	ability register (see 4	5.2.3.67)."		Comment	Type TR	Comment Status X		
					This s should	ub-clause specifie be replaced by "l	s for DTE XS, and the wor DTE XS".	d "PCS" at line 5 ar	nd 9 of this page
If this	s is accepted, do the simi	lar change for the fou	rth paragraph of	45.2.5.31.1 at page 47	Suggeste	Remedy			
Proposed	l Response Resp	oonse Status O			Chan	ge "PCS" at line 5	and 9 of page 43 to "DTE 2	XS".	
					Proposed	Response	Response Status O		
C/ 45	SC 45.2.5.28.1	P 43	L 5	# R1-9					
Ran, Ade	e	Cisco Syster	ns, Inc.						
Commen	t Type E Cor	nment Status X							
DTF	XS was incorrectly change	ged to PCS in this dra	ft.						
(may	be covered by another c	omment)							
(may) Suggeste Char	be covered by another c edRemedy nge "PCS" to "DTE XS" tv	omment) vice.							
(may Suggeste Char Proposed	be covered by another c edRemedy ge "PCS" to "DTE XS" tv d Response Resp	omment) vice. ponse Status O							
(may Suggeste Chan Proposed	be covered by another of edRemedy age "PCS" to "DTE XS" tw d Response Resp SC 45.2.5.28.1	omment) vice. ponse Status O	L5	# R1-3					
(may Suggeste Chan Proposed C/ 45 Tse, Rich	be covered by another of edRemedy age "PCS" to "DTE XS" tv d Response Resp SC 45.2.5.28.1 hard	omment) vice. <i>ponse Status</i> O P43 Microchip Te	L 5 chnology, Inc.	# <u>R1-3</u>					
(may Suggeste Char Proposed Cl 45 Tse, Rich Commen	be covered by another of edRemedy age "PCS" to "DTE XS" tw d Response Resy SC 45.2.5.28.1 hard t Type T Cor	omment) vice. ponse Status O P43 Microchip Te nment Status X	L 5 chnology, Inc.	# <u>R1-3</u>					
(may Suggeste Char Proposec Cl 45 Tse, Rich Commen There comr There	be covered by another of edRemedy age "PCS" to "DTE XS" tw d Response Response Response SC 45.2.5.28.1 hard t Type T Cor e appears to have been t nent #I-30 for P802.3cx/I wo occurrences of "PCS	omment) vice. ponse Status O P 43 Microchip Te mment Status X wo cut-and-paste erro D3.0 that was not cau " in 45.2.5.28.1 shoul	L 5 chnology, Inc. ors in the suggest ght by any review d instead be "DTE	# <u>R1-3</u> ed remedy for rers. E XS".					
(may Suggeste Char Proposec Cl 45 Tse, Rich Commen There comm The t	be covered by another of edRemedy age "PCS" to "DTE XS" tw d Response Resp SC 45.2.5.28.1 hard t Type T Cor e appears to have been t ment #I-30 for P802.3cx/I wo occurrences of "PCS edRemedy	omment) vice. ponse Status O P43 Microchip Te mment Status X wo cut-and-paste erro D3.0 that was not cau " in 45.2.5.28.1 should	<i>L</i> 5 chnology, Inc. ors in the suggest ght by any review d instead be "DTE	# <u>R1-3</u> ed remedy for ers. E XS".					
(may Suggeste Chan Proposed Cl 45 Tse, Rich Commen Ther Suggeste Repla	be covered by another of edRemedy age "PCS" to "DTE XS" tw d Response Resp SC 45.2.5.28.1 hard t Type T Cor e appears to have been t ment #I-30 for P802.3cx/I wo occurrences of "PCS edRemedy ace the two occurrences	omment) vice. ponse Status O P43 Microchip Te mment Status X wo cut-and-paste erro D3.0 that was not cau " in 45.2.5.28.1 shoul- of "PCS" in 45.2.5.28	<i>L</i> 5 chnology, Inc. ors in the suggest ght by any review d instead be "DTE .1 with "DTE XS".	# <u>R1-3</u> ed remedy for rers. E XS".					

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: Clause, Subclause, page, line

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					•					
C/ 45	SC 45.2.5.28.	6 P 43	L 50	# R1-58	C/ 90	SC 90	Р	L	# R1-17	
Rodrigue	es, Silvana	Huawei Teo	hnologies Co., Ltd		Ran, Ade	e	Cisco Sys	tems, Inc.		
Commen	nt Type T	Comment Status X			Comment	Type TR	Comment Status X			
This para ns re	sub-clause specifie graphs of previous esolution". For this	es for receive path data de sub-clause 45.2.5.28.5 for sub-clause 45.2.5.28.6, it r	lay with ns resolution transmit path data nay also have that.	on. The two I delay have words "in	As a " "can" and is	esult of comme but in most ca thus inappropr	ent I-1, many instances of the ses the word "can" does no iate.	ne word "may" have t indicate a capabil	e been changed to ity (equal to "is able to")	
Suggeste Char	edRemedy				"Can'	should not be	used when a reader or an ir	nplementer is expe	cted to be capable of	
Onai	nge				some	thing - only whe	en a compliant implementati	on results in a cap	adility.	
"Whe path Whe recei	en read as a one, b data delay register en read as a zero, b ive path data delay	it 5.1800.0 indicates that t s (5.1805 through 5.1808) it 5.1800.0 indicates that t registers (5.1805 through	he DTE XS suppor he DTE XS does no 5.1808)."	ts DTE XS receive ot support the DTE XS	The v result stand	vord "can" is mu ing in unconver ard.	ich more frequent in this an itional language - the amen	nendment than in th dment looks more	ne base document, like a white paper than a	
to					The s	uggested reme	dy lists the offending cases	l found.		
to	to				SuggestedRemedy					
"Whe path Whe recei	en read as a one, b data delay register en read as a zero, b ive path data delay	it 5.1800.0 indicates that t s, in ns resolution (5.1805 it 5.1800.0 indicates that t registers, in ns resolution	he DTE XS suppor through 5.1808). he DTE XS does no (5.1805 through 5.	ts DTE XS receive ot support the DTE XS 1808)."	90.3: "The path data delay in this standard is illustrated in Figure 90–7 and can be associated with the timestamping mechanisms in IEEE Std 1588 and IEEE Std 802.1AS" - it is an option for readers to associate it with these; they do not have to. The path data delay has no capability. ==> Change "can" to "may".					
Propose	d Response	Response Status O			90.5: optior	"an optional bu nal feature, and	ndle of sixteen logical trans these are always indicated	mit signals <> ca with "may". ==> Cl	n be output" - it is an nange "can" to "may".	
					90.7: be ac only t	"The use of the hieved by a tim he second is ab	beginning of the SFD as th e synchronization protocol" out capability. ==> Change	e DDMP can impa - the first "can" is a "can impact" to "in	ct the accuracy that can a fact, not a capability; npacts".	
					90.7: togetl MMD subla error path o descr some obtair	"A single quarte ner the values, i . The uncertaint yer can also be of the sublayer data delay value ibe capabilities; implementation ned", "may be d	et of values for the PHY pat f available, of each corresp y of the transmit and receiv determined from this quart can be achieved by using th se as its path data delay val the first two are optional w ns may not be capable) and etermined", "is achieved".	h data delay can be onding member of e path data delays et of values. The m he mean of its max ue." - the three inst ays to use the value the third is a fact.	e obtained by summing both quartets for each of the corresponding inimum path data delay imum and minimum tances of "can" do not es (it is not required and ==> change to "may be	
					00.7			and the second data taken		

90.7: "Lane skew can be present on a transmitter with multiple lanes when the PMA/PMD lanes have different static latencies such that their alignment markers appear staggered as they depart the device at the MDI output. Since transmit skew in series with medium skew is not strictly additive, transmit skew can contribute to time synchronization error by obscuring the actual latency of the medium." - the first "can" is about possibility, not capability; the second one is a statement of fact. ==> change to "Lane skew is possible on a transmitter" and "transmit skew contributes to time synchronization error".

90.7: "the path data delay for the FEC sublayer can be included in either the PCS delay

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registers or the PMA/PMD delay registers" - this was changed from "should" to "can" - but it is not an ability, it is a recommendation (or a choice between two options - which should be stated as "may either"). ==> change "can" back to "should".

90A.1: "This timestamping can be used for time synchronization protocols including IEEE Std 1588 and IEEE Std 802.1AS" - it is optional to use; some implementations will not. ==> change to "may be used"

90A.2: "Timestamping accuracy can be impaired when two TimeSync clients do not account for variation" and "Timestamping accuracy can also be impaired when two TimeSync clients do not use the same data delay measurement point" - these are statements of facts, not capabilities. ==> change to "is impaired", "is also impaired".

Table 90A–1, footnote a: "See Annex 90A.3 for other factors that can affect some of these values" and footnote c: "The path data delay of a packet can be affected" - these are statements of facts and not capabilities. ==> change to "other factors that affect", "is affected".

90A.5: "Each of these path data delay variations can be accounted for", "how TX_NUM_BIT_CHANGE and RX_NUM_BIT_CHANGE can be used" - these interfaces are optional to use, even if the functionality is available. ==> change to "Each of these path data delay variations may be accounted for" and "may be used".

90A.5.3: "the effect of the timestamp accuracy impairments that result from these events can be evaluated to determine if they cause significant degradation in the TimeSync system's performance" - optional. ==> change to "may".

90A.6: "the transmit skew in series with the medium skew can be additive or subtractive", "transmit skew can contribute to time synchronization error" - these are statements of facts, not capabilities. ==> change to "is either additive or subtractive", "contributes".

Proposed Response Response Status **O**

C/ 90	SC 90.3	P 51	L 34	# R1-26
Kabra, L	okesh	Synopsys, Inc.		

Comment Type E Comment Status X

Is the term "PHY RX" & "PHY TX" defined or allowed ?

SuggestedRemedy

Replace "delay of the PHY RX and the PHY TX" with "delay of the PHY receiver and the PHY transmitter"; Similar update required in other places like Figure 90-2, ,any figures in 90A

Proposed Response Response Status **O**

C/ 90	SC 90.4.1.2	P 53	L 50	# R1-73
Law, Davi	d	Hewlett Pack	ard Enterprise	

Comment Type **TR** Comment Status **X**

Subclause 90.3 'Relationship with other IEEE standards' says that 'The definition of the TimeSync Client, its capabilities, and its functions, is outside the scope of this standard.'. As a result, I'm uncomfortable with the change from the '... TimeSync Client can use ..' to '... TimeSync Client uses the indication ...', and other equivalent changes. Implementers are free to implement the TimeSync Client in any way they choose, we are just providing guidance that may or may not be followed, hence changing 'can use' to the more definitive 'uses' seems incorrect.

SuggestedRemedy

[1] On page 53, line 50, change the text 'The TimeSync Client uses the indication ...' to read ' The TimeSync Client may use the indication ...'.

[2] On page 54, line 5, change the text 'When the TimeSync Client captures the egress time of a relevant packet at the xMII, it is used along with ...' to read 'When the TimeSync Client captures the egress time of a relevant packet at the xMII, it may be used along with ...'. Make the same changes on page 54, line 11.

[3] On page 54, line 8, change the text '... if available, is used by the TimeSync Client ...' to read '... if available, may be used by the TimeSync Client ...'. Make the same changes on page 54, line 14.

[4] On page 63, line 30, change the text 'The TimeSync capability uses egress and ingress times captured at the xMII and makes use of transmit and receive path data delay measurements ...' to read 'The TimeSync Client may use the egress and ingress times captured at the xMII and the transmit and receive path data delay measurements ...'.

As an aside, on page 63, line 30, the word 'uses' in 'The TimeSync capability uses egress and ingress ...' is newly inserted text so should have been underlined.

[5] On page 64, line 26, change the text '... the TimeSync Client adjusts the ...' to read '... the TimeSync Client may adjust the ...'.

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: Clause, Subclause, page, line

C/ 90 SC 90.4.1.2 Page 7 of 16 11/12/2022 7:29:11 AM

C/ 90	SC 90.4.1.2	P 53	L 53	# R1-10	C/ 90	SC	90.4.2	P 54	L 26	# R1-2
Ran, Adee		Cisco S	Systems, Inc.		Regev, Alc	n		Keysight Te	echnologies	
Comment T	Гуре Е	Comment Status X	(Comment	Гуре	TR	Comment Status X		
The tex "outside "outside	t was changed e the scope" is e the scope". A	from "beyond the scope arguably poor English. Also, "beyond the scope	e" to "outside the scop Things may be "out of " has 137 instances in	e" (comment I-5). scope", but not the base document,	The use of "symbol" and "first symbol after SFD" is unfortunately unclear, and the latest changes make this even more so. First of all I want to apologize for bringing up this issue relatively late, but I believe this is in					
while "c	outside the sco	pe" has only 78.			scope	as ther	e have be	en significant changes to t	ext discussing this	
Suggested	Remedy				In IEEI	E Std 1	588-2019	A "message timestamp p	oint" is defined in a	clause 73.4.1 as:
Change	e to "beyond th	e scope".			"Unles	s other	wise spec	ified in a transport-specific	annex to this stan	dard, the message
Proposed F	Response	Response Status C	0		timesta PTP ev delimit	amp po /ent me er."	int for a essage sh	all be the beginning of the	first symbol after t	he start of frame
					This se	ems to	o match th	e definition used in P802.3	Bcx D3.1.	
					But in IEEE Std. 802-3-2018 defines "Symbol" as "1.4.466 symbol: Within IEEE 802.3, the smallest unit of data transmission on the medium Symbols are unique to the coding system employed. For example, 100BASE-T4 and 100BASE-T1 use ternary symbols; 10BASE-T uses Manchester symbols; 100BASE-X uses binary symbols or code-bits; 100BASE-T2 and 1000BASE-T uses quinary symbols. For 1000BASE-X PMDs operating at 1.25 GBd, a symbol corresponds to a code-bit after the 8B/10B encoding operation i.e., has the duration of 0.8 ns. For 10GBASE-R PMDs operating at 10.3125 GBd, a symbol corresponds to a code-bit after the 64B/66B encodin- operation i.e., has					
					Note th 1. A sin SFD. J the SF the 64H symbo 2. Not 802.3-1 to 2 PA we treat we avoid last bit symbo	ne follow ngle sy An exa D and 1 366B s I follow all sym 2018 cl M3 sy ated the id the I of SFE I be us	wing: mbol may mple is a i the first oc symbol tha ing this sy bols can i lause 97), mbols. Ev e 2 PAM3 half-bit dis D and the f ed?	contain both the SFD and 64B66B encoded data, wh tets of the data. It is not of t includes both the SFD an mbol. nclude an entire octet. Fo uses a 3B2T encoding, su very PAM3 symbol contain symbols together as a sing cussion, it is possible for a irst bit of the octet after the	the first nibble/oct ere the same symi lear if the "first syr d the following oct r an example, in 10 ch that every 3 bit s the equivalent of gle entity correspo single 3B2T symi e SFD. Should thi	et/bit/etc. after the bol may contain both nbol after the SFD" is ets or the 64B66B 000BASE-T1 (see s of data get converted 1.5 bits. Let's assume nding to 3 bits so that bol to contain both the s symbol or the next
					The tex denote	kt in cla s the fi	ause 90.4. irst octet a	2 of P802.3cx indicating "T fter the SFD when referen	The term 'first syml cing an xMII" make	ool after the SFD' es this even more

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ambiguous (and potentially inconsistent with IEEE Std 1588 and IEEE Std 802.3) as the xMII may contain symbols that are 4-bits wide, 10 bits wide, 66 bits wide, etc.

To disambiguate this, I propose changing "first symbol after SFD" to "the symbol containing the first data bit after the SFD". I am sure this will be debated and better text can be written.

As this issues stems from the definition currently in IEEE Std 1588 and IEEE Std 802.1AS and I plan to bring this up to them as well.

SuggestedRemedy

change every instance of "first symbol after SFD" to "the symbol containing the first data bit after the SFD".

Add text to annex 90A explaining how to interpret this for different types of symbols (for example for a 3B2T symbol, I propose that the timing always be based on the first of the 2T symbols corresponding to the 3 bits that contain the fist bit of data). I will try to write such text in a generic fashion and present in the November 2022 plenary.

Proposed Response Response Status **O**

C/ 90	SC 90.4.2	P 54	L 27	# R1-27
Kabra, Lo	okesh	Synopsys, In	с.	
Comment	t Type E	Comment Status X		
The r	eference is given	for register bits and not regis	ters.	
Suggeste	dRemedy			
Repla	ace "selected by I	egisters" with "selected by the	e register bits"	
Proposed	l Response	Response Status 0		
CI 90	SC 90.4.2	P 54	L 28	# R1-75
Law, Dav	id	Hewlett Pack	ard Enterprise	
Commen	t Type TR	Comment Status X		
As no imple regist alterr	oted in my previou mentation of feat ters. After all, Cla native register inte	us 'must be satisfied' commer ures without requiring the imp use 45 is optional. As an exa erface to a PHY so long as the	nt I-43, it is normable blementation of the mple, why would be feature was con	al to permit the ne related Clause 45 not allow an rrectly supported.

SuggestedRemedy

See suggested remedy in comment I-43.

Proposed Response Response Status **O**

C/ 90	SC 90.4.2	P 54	L 28	# R1-1
Regev, Alo	on	Keysight Teo	chnologies	
Comment	Туре т	Comment Status X		
xMII de serial. bit afte	oes not necessa Some interface er the SFD" inste	arily use octets. MII uses nib as encode I suggest that we r ead of the "first octet after the	bles. Some xMII refer to the "MII o e SFD" to avoid a	I interfaces may be data containing the first ambiguity
Suggestea	lRemedy			
Chang "The te an xMI To "The te SFD w	e erm 'first symbo II." erm 'first symbo rhen referencing	I after the SFD' denotes the f I after the SFD' denotes the I g an xMII."	irst octet after th MII data containin	e SFD when referencing ng the first bit after the
Proposed	Response	Response Status O		
C/ 90	SC 90.4.2	P 57	L 31	# R1-74
Law, David	d	Hewlett Pack	kard Enterprise	

Comment Type TR Comment Status X

The addition of the text 'The term 'first symbol after the SFD' denotes the first octet after the SFD when referencing an xMII' to subclause 90.4.2 does not fully address my previous 'must be satisfied' comment I-42. I still believe that this addition needs to define the scope of the terminology as local to the whole of Clause 90.

SuggestedRemedy

Suggest that this text is moved to subclause 90.4 and that 'The term ...' be changed to read 'Within the scope of this clause, the term ...'.

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: Clause, Subclause, page, line

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CI 90	SC 90.4.3.1.1	P 55	L 8	# R1-70	CI 90	SC 90.4.3.1	.1 P 55	L 21	# R1-59
Law, Dav	id	Hewlett Packa	rd Enterprise		Rodrigue	s, Silvana	Huawei Te	echnologies Co., Lto	k
Comment	Туре Т	Comment Status X			Commen	t Type TR	Comment Status X		
Subcl gRS a subcla	ause 90.4.3.1.1 sa and the PCS (see ause, the subclaus	ays that ' the DDMP requires 45.2.3.69a) for correct operat se 45.2.5.31 Data Delay Meas	s consistent co ion.' If a PHY is surement Point	nfiguration of both the ncludes a DTE XS bit (5.1813.13) will also	lt see 802.3 Suggeste	ems that the refe Bcx is based on 8	rence clause 1.4.160 for bit 02.3-2022, and the correct	time is based on 8 number is 1.4.215.	02.3-2018. However,
need	to be configured c	onsistently.			Chan	arcenicay are "see 1 4 160'	' to "see 1 4 215"		
Suggeste	dRemedy				Dropopor	d Boononno			
Sugg (see 4 confic	est that the text ' 45.2.3.69a) for cor auration of both the	requires consistent configura rect operation.' should be cha a gRS and the PHY (see 45.2	ition of both the nged to read '. .3.69a and 45.	e gRS and the PCS requires consistent 2.5.31) for correct	Proposec	response	Response Status 0		
opera	tion.' in both subc	ause 90.4.3.1.1 (page 55, line	e 8) and 90.4.3	5.2.1 (page 56, line 8).	CI 90	SC 90.4.3.2	.3 P 56	L 36	# R1-60
Proposed	Response	Response Status 0			Rodrigue	s, Silvana	Huawei Te	echnologies Co., Lto	k
					Commen	t Type T	Comment Status X		
C/ 90	SC 90.4.3.1.1	P 55	L12	# R1-28	It is o define	correct that the beed by 802.3cx, a	ehavior of the receiptof this nd it could state "outside th	primitive by the Tir e scope of this star	neSync Client is not ndard"
Kabra, Lo	kesh	Synopsys, Inc.			Suggeste	edRemedy			
Comment Incom	<i>Type</i> E	Comment Status X			Chan	ige			
Suggeste	dRemedy				"The	receipt of this pr	imitive by the TimeSync Cli	ent is undefined."	
Add "	value" after "SMD	E (SFD)"; Same comment ap	plies for line #	#12 in Page 56	to				
Proposed	Response	Response Status 0			"The	receipt of this pr	imitive by the TimeSync Cli	ent is outside the s	cope of this standard "
					Proposed	Response	Response Status O		
C/ 90	SC 90.4.3.1.1	P 55	L17	# R1-29			· · · · · · · · · · · · · · · · · · ·		
Kabra, Lo	kesh	Synopsys, Inc.			C/ 90	SC 90.5	P 56	L 5 1	# R1-30
Comment	Туре Е	Comment Status X			Kabra Lu	okesh	Synopsys	Inc	
The T DDMI implyi	S_TX indication is P = SFD or FIRST ing that it is possib	not generated for continuation _SYMBOL; This sentence species of the sentence species of the sentence species of the sentence s	on fragment irre ecifies for only	espective of whether the one of the cases	Commen Figur	<i>t Type</i> E e 90-2 is referen	Comment Status X ced first in this page but is	placed in page 59	
Suggeste	dRemedy				Suggeste	edRemedy			
Chan applie	ge "DDMP=FIRST es for line #17 in P	SYMBOL" to " MM=PMAC" age 56.	in this sentenc	e. Same comment	Move	e Figure 90-2 just	before 90.5.1		
Proposed	Response	Response Status 0			Proposed	i rresponse	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: Clause, Subclause, page, line

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CI 90	SC 90.5.1	P 57	L 21	# R1-4	CI 90	SC S	0.5.1		P 57	L 28	# R1-5
Tse, Rich	nard	Microchip Te	chnology, Inc.		Tse, Ricl	nard			Microchip Te	echnology, Inc.	
Comment	t Type E	Comment Status X			Commen	t Type	Е	Comment S	Status X		
"Begi	iinning of" is missin	g for SMD-E and for SMD-S	S in the sentence		"begi	inning of	the first s	symbol after" is	missing for S	SMD-S in the ser	ntence.
Suggeste	edRemedy				Suggeste	dRemed	/				
Chan	ige				Char	ige					
"The packe signa	TS_TX.indication p et or the SMD-S for ils of the xMII."	primitive shall be generated r a preemptable packet (see	only when the SI 99.3.3) is detec	MD-E for an express ted on the transmit	"The symb 99.3.	TS_TX.ir ool after th 3) is dete	ndication ne SMD-E cted on t	primitive shall E for an expres he transmit sig	be generated s packet or th nals of the x	only when the b ne SMD-S for a p MII."	eginning of the first preemptable packet (see
to					to						
"The for ar is det Proposed	TS_TX.indication p n express packet of tected on the trans of Response	r the beginning of the SMD- mit signals of the xMII." Response Status 0	only when the be S for a preempta	eginning of the SMD-E ble packet (see 99.3.3)	"The symb SMD xMII.	TS_TX.ir ool after th -S for a p "	ndication ne SMD-E reemptat	primitive shall E for an expres ble packet (see	be generated s packet or tl 99.3.3) is de	only when the b ne beginning of tl etected on the tra	eginning of the first he first symbol after the insmit signals of the
					Proposed	l Respon	se	Response S	tatus O		
CI 90	SC 90.5.1	P 57	L 21	# R1-61		00.0			0.5-	/ 07	# <u>D4.04</u>
Rodrigue	s, Silvana	Huawei Tech	nologies Co., Ltd	1	CI 90	50 5	0.5.1		P51	L37	# R1-31
Comment	t Type TR	Comment Status X			Kabra, L	okesh			Synopsys, Ir	IC.	
The " "certa replac	of certain Start mP ain"? If the text war ced by "SMD-E and	Packet Delimiters (SMD)" is to refer only to the SMD- d SMD-S"	unclear, and wha E and SMD-S, th	at is the meaning of this text should be	<i>Commen</i> This alrea	<i>t Type</i> caveat is dy contai	E already s ns a "sha	Comment S specified in pre Ill be generated	Status X vious section d only when S	. Moreover, the p SMD-E or SMD-S	previous paragraph
Suaaeste	dRemedv				Suaaeste	, dRemed	/	0	,		
Chan	ige				Dele line #	e senten 16 in Pa	, ce/paragr pe 58	raph startiing w	<i>i</i> ith "When DI	OMP="; Same	comment applies for
"Whe the D certai	en the MAC Merge DMP, the TS_DDM in Start mPacket D	sublayer is instantiated and /IP_Detect_TX function dete elimiters (SMD)."	the beginning of ects the occurrent	the SFD is selected as ce of the beginning of	Proposed	l Respon	se	Response S	tatus O		
to											
"Whe the D SMD-	en the MAC Merge DMP, the TS_DDN -E or SMD-S."	sublayer is instantiated and IP_Detect_TX function dete	the beginning of the beginning of the beginning of the occurrent	the SFD is selected as ce of the beginning of							
If this lines	s is accepted, do s 27 and 53 of page	imilar replacement for "ceri 57, and line 6 of page 58.	tain SMDs" with "	SMD-E or SMD-S" at							
Proposed	l 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: Clause, Subclause, page, line

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C/ 90	SC 90.5.2	P 57	L 53	# R1-6	C/ 90	SC 90.5.2	P 58	L18	# R1-32		
Tse, Rich	hard	Microchip Te	chnology, Inc.		Kabra, Lo	kesh	Synopsys, In	IC.			
Comment "Begi	<i>t Type</i> E inning of" is missing	Comment Status X for SMD-E and for SMD-S	S in the sentence		Comment Incorr	<i>Type</i> E ect instruction	Comment Status X				
Suggeste Chan	dRemedy ge				Suggested Chang	<i>dRemedy</i> ge to "Replace F	igure 90-2 with Figure 90-2 a	s shown below"			
"The packe xMII.'	TS_RX.indication pretent or the SMD-S for the second second second second second second second second second se	imitive shall be generated a preemptable packet is d	only when the SM etected on the rec	ID-E for an express eive signals of the	Proposed	Response	Response Status O				
1-					CI 90	SC 90.5.3	P 60	L16	# R1-12		
το					Ran, Adee	Ð	Cisco System	ns, Inc.			
"The	TS_RX.indication pr	imitive shall be generated	only when the be	ginning of the SMD-E	Comment	Туре Т	Comment Status X				
for ar on th	n express packet or e receive signals of	the beginning of the SMD- the xMII."	S for a preemptal	ble packet is detected	Figure these	e 90-4 is about x cases, so the la	MIIs with active rising and fall bel "(GTX_CLK for GMII)" is ı	ling TX_CLK edge redundant in this	es; GMII is not one of figure.		
Proposed	l Response	Response Status O			Suggested Delete	dRemedy e "(GTX_CLK for	GMII)".				
CI 90	SC 90.5.2	P 58	L 6	# R1-7	Proposed	Response	Response Status 0				
Tse, Rich	hard	Microchip Te	chnology, Inc.								
Commen	t Type E	Comment Status X			CI 90	SC 90.6	P 62	L16	# R1-69		
"begi	inning of the first syr	mbol after" is missing for S	SMD-S in the sent	ence.	Law, Davi	d	Hewlett Pack	ard Enterprise			
Suggeste	dRemedy				Comment	Туре Т	Comment Status X				
Chan	ge				The la	st paragraph of	subclause 90.6 says that Cla	use 45 registers '	provide TimeSync		
"The TS_RX.indication primitive shall be generated only when the beginning of the first symbol after the SMD-E for an express packet or the SMD-S for a preemptable packet (see						status information for the PMD, as shown in Table 90–1'. While correct, Clause 45 (as illustrated by Table 90-1) also provides TimeSync capability, and configuration information, and not just for the PMD.					
99.3.	3) is delected on the	e receive signals of the xivi	11.		Suggested	dRemedy					
to "The	TS RX.indication or	imitive shall be generated	only when the be	ainnina of the first	Suggest that the text ' provide TimeSync status information for the PMD, as shown in Table 90–1' should be changed to read ' provide TimeSync status, capability, and configuration information for the PHX, as shown in Table 90.1'						
symb SMD xMII.	ol after the SMD-E f -S for a preemptable	for an express packet or the packet (see 99.3.3) is de	tected on the rece	e first symbol after the eive signals of the	Proposed	Response	Response Status O				
Proposed	l Response	Response Status O									

CI 90 SC 90.6 Page 12 of 16 11/12/2022 7:29:11 AM

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C/ 90	SC 90.7	P 63	L 28	# R1-14	C/ 90	SC 90.	7	P 63	L 29	# R1-16
Ran, Ade	е	Cisco Syster	ms, Inc.		Ran, Adee	e		Cisco System	ns, Inc.	
Comment	Type ER	Comment Status X			Comment	Туре Е	R	Comment Status X		
Subcl insert integr	ause 90.7 in th ed words and s ated into a new	is draft includes some amende entences; the result is extreme revision.	ed text with inters ely difficult to rea	persed deleted and d, until this text is	90.7 is topics aspec	s a very lon . It would b ts of the pa	ng and penefit ath dat	I wordy subclause, and the co the reader if it were broken to ta delay measurement (as wa	ontent and NOTE o subclauses de as done in 90A).	Es alternate between aling with specific
It is a	uite different fro	om the original content of 90.7.	and is practically	v a rewrite.	Suggestee	dRemedy				
Suggester	dRemedy		, -	,	Create	e a new sub	bclaus	se 90.7.1, titled "PCS and FE	C dynamic delay	", to hold the content
Prefe and a	rably, mark the dd the new text	whole text of the original subc	lause with striket	hrough (in one block),	startin alignm PCS a	g in NOTE tent marke and FEC fu	a 3 (P6 er <>	 P65 L33), and ending in the para (P65 L33), and NOTE 6; the nality. NOTE 3 and NOTE 6 s 	agraph "The dyn ese are about de hould be at the e	amic delay variance of elay changes caused by end of this subclause.
If this	is not consider	ed appropriate, make the follo	wing changes as	an alternative	Create receiv	e a new sub er of a PH	bclaus Y with	se 90.7.2, titled "Multi-lane PH multiple lanes" (P65 L35) an	HYs", to hold the dending in NOT	content starting in "The E 5.
In par strike	agraph 1 (P63 through and ad	L30) and NOTE 2 (P64 L43), r d the new content as a new ur	mark the entire panderlined paragra	aragraph as ph.	Proposed	Response		Response Status O		
Elsewhere in this subclause, make the deleted words and the newly inserted words separated by spaces and grouped as full expressions or phrases; as an example, change					C/ 90	SC 90.	7	P63	L 33	# R1-72
the pa	aragraph follow	ing NOTE 3 from	us and/or a PCS	lana distribution	Law, Davi	d		Hewlett Pack	ard Enterprise	
functi	on, the trar	nsmit and receive path data de	alays <s>may</s>	<u>can</u> show	Comment	Туре Т	•	Comment Status X		
significant variation depending <s>upon the position of the within the FEC</s> <u>on how the packet's DDMP aligns to an FEC codeword and/or to a PCS lane distribution sequence</u> " To "For a PHY that includes <s>an FEC function </s> <u>an FEC and/or a PCS lane distribution function</u> , the transmit and receive path data delays <s>may show</s>					Since subcla DTE > SFD is ', wo 'select	subclause ause 45.2.3 (S configur s used as the buldn't it be ted' or 'coni	90.7: 3.69a ration he DD bette figure	[1] includes the text 'The cho TimeSync PCS configuration registers; and [3] has a note to DMP' and 'The use of the b r to the say that the path data d' Data Delay Measurement I	ice of the DDMF and subclause 4 that says ' the eginning of the S a delay measure Point.	2'; [2] references the 45.2.5.31 TimeSync first symbol after the GFD as the DDMP can ments are based on the
significant variation depending upon the position of the within the FEC <u>can show significant variation depending on how the packet's DDMP aligns to an FEC codeword and/or to a PCS lane distribution sequence</u> "						dRemedy				
						Suggest that 'The path data delay measurements are based on the DDMP in the packet.' should be changed to read ' The path data delay measurements are based on the selected				
Apply	elsewhere in th	nis clause where readability ca	in be improved.		DDMF	P.'.				
Proposed	Response	Response Status 0			Proposed	Rasnonsa		Response Status 0		

C/ 90 SC 90.7

IEEE P802.3cx D3.1 ITSA Task Force 1st Sponsor recirculation ballot comments

Law, David Hewlett Packard Enterprise Comment Type TR Comment Status X Im not sure that the text, and does not change until PHY is reset or powered down.' in relation to the DDMP is correct. I don't see any restriction in the specification of the subclause 45.2.3.690 Data Delay Measurement Point bit (5.1813.13) that says they can't be change at any time, and as many times as desired. In addition, the default for both of these bits is 0, setting the DDMP to the beginning of the SFD. It is a status if the PHY is reset or powered down the DDMP is always set to the beginning of the SFD. It is a status if the PHY is reset or powered down the SFD. as the DDMP to the beginning of the SFD. It is a status of the SFD. It is a status of the SFD. or the beginning of the first symbol after the SFD. as the DDMP to correct operation.' SuggestedRemedy SuggestedRemedy Comment Type TR Comment Status X SuggestedRemedy SuggestedRemedy Comment Status X The multilane ability (3.1800.11) is read-only, and cannot be set. Propose a few changes for the sentence. Rod (gues, Silvana Huawei Technologies Co., Ltd Comment Type TR Comment Status X Rod of SC 90.7 P64 L28 # [1:15] Comment Status X The multilane ability (3.1800.11) bit is east of the PCS iane distribution sequence (when the multilane ability (3.1800.11) bit is east of the PCS iane distribution sequence (when the multilane ability (3.1800.11) bit is east of the PCS iane distribution sequence (C/ 90	SC 90.7	P63	L 38	# R1-71	C/ 90	SC 90.7	P64	4 L 40	# R1-33
Comment Type TR Comment Status X Im not sure that the text and does not change until PHY is reset or powered down 'in relation to the DDMP is correct. I don't see any restriction in the specification of the subclause 45.2.3.63@ Data Delay Measurement Point bit (3.181.3) that says they can't be subclause 45.2.3.63@ Data Delay Measurement Point bit (3.181.3) that says they can't be ubclause any time, and as many times as desired. The sentence starting with "The minimum part data delay error" looks incorrect; The mean does not give the "minimum error" but only reduces the peak value of absolute error. Status PL, Maesurement Point bit (3.181.3) that says they can't be beginning of the SFD. Final Lage Measurement Point bit (3.181.3) that says they can't be beginning of the SFD. Finally, as noted in subclause 90.4.3.1.1 and subclause 90.4.3.2.1 'semantics', The use of the beginning of the SFD. Finally, as noted in subclause 90.4.3.1.1 and subclause 90.7.3.2.1 'semantics', The use of the beginning of the SFD. Suggested/Remedy Suggested/Remedy Comment Status X Suggested/Remedy Comment Status X Proposed Response Response Status O C1 90 SC 90.7 P64 L28 # R1-15 Ran, Adee Cisco Systems, Inc. Comment Status X The minimum part data delays be reported as if the DDMP is at the start of the FCS codeword and/or at the start of the PCS lane distribution sequence (when the multilane ability (3.1800.11) is read-as on e - see 45.2.3.67.3)." Cof	Law, David	d	Hewlett Pack	ard Enterprise		Kabra, Lo	kesh	Syno	osys, Inc.	
In active that the text, and does not change until PHY is rest or powered down. In relation to the DDMP is correct. I don't see any restriction in the specification of the subclause 45.2.3.65a Data Delay Measurement Point bit (3.1813.13) that says they can't be change at any time, and as mary times as desired. The sentence starting with "The minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the "minimum path data delay error " looks incorrect. The mean does not give the SED. Finally, as noted in subclause 90.4.3.1.1 and subclause 90.4.3.2.1 'Semantics'. The use of the SED. SuggestedRemedy SuggestedRemedy SuggestedRemedy Correct of	Comment	Type TR	Comment Status X			Comment	Туре Е	Comment Status	X	
In addition, the default for both of these bits is 0, setting the DDMP to the beginning of the SFD. As a result, if the PHY is reset or powered down the DDMP is always set to the beginning of the SFD. The set of powered down the DDMP is always set to the beginning of the SFD. The set of powered down the DSMP is always set to the beginning of the SFD. The set of powered down the DSMP is always set to the beginning of the SFD. The set of powered down the DSMP is always set to the beginning of the SFD. The set of the DSMP is implementation-dependent but requires consistent configuration of both the gRS and the PHY for correct operation.'. The operative of the DSMP is implementation-dependent but requires consistent configuration of both the gRS and the PHY for correct operation.'. Proposed Response Response Status O The Comment Type E Comment Status X The parentheticals "if available" and "if supplied" appear twice in this paragraph. They create a distraction and make the text hard to read. SuggestedRemedy Delete "if available" and "if supplied" (and the enclosing commas) in the last sentence. Proposed Response Response Status O The period and make the text hard to read. SuggestedRemedy Conducted that the transmit and receive path data delays be reported as if the DDMP is at the start of the FEC codeword and/or at the start of the PCS lane distribution sequence (when the multilane ability (3.1800.11) bit is read as one - see 45.2.3.67.3). Proposed Response Response Status O	l'm no relatio subcla 45.2.5 any tin	t sure that the tex n to the DDMP is use 45.2.3.69a D .31 Data Delay M ne. and as many	tt ' and does not change un correct. I don't see any rest bata Delay Measurement Po leasurement Point bit (5.181 times as desired.	ntil PHY is reset of riction in the spect int bit (3.1813.13) 3.13) that says th	r powered down.' in ification of the or the subclause ey can't be change at	The s mean <i>Suggeste</i> Chan	entence startir does not give d <i>Remedy</i> ge the sentenc	ng with "The minimum p the "minimum error" bu ce to " The path data del	ath data delay erro t only reduces the ay error of the sub	or " looks incorrect; The peak value of absolute error. layer can be minimised by
Finally, as noted in subclause 90.4.3.1.1 and subclause 90.4.3.2.1 'Semantics', 'The use of the beginning of the first symbol after the SFD, as the DDMP requires consistent configuration of both the gRS and the PCS (see 45.2.3.69a) for correct operation.'. SuggestedRemedy Suggest that the last sentence of the first paragraph of subclause 90.7 be changed to read 'The choice of the DDMP is implementation-dependent but requires consistent configuration of both the gRS and the PHY for correct operation.'. Proposed Response Response Status O Cl 90 SC 90.7 P64 L28 # R1-15 Ran, Adee Cisco Systems, Inc. SuggestedRemedy SuggestedRemedy SuggestedRemedy SuggestedRemedy The choice in the JDMP is implementation-dependent but requires consistent configuration of both the gRS and the PHY for correct operation.'. Proposed Response Response Status O Cl 90 SC 90.7 P64 L28 # R1-15 Ran, Adee Cisco Systems, Inc. Comment Type E Comment Status X The parentheticals 'if available' and "if supplied" appear twice in this paragraph. They create a distraction and make the text hard to read. To To SuggestedRemedy Delete 'if available' and "if supplied" (and the enclosing commas) in the last sentence. Proposed Response Response Status O Proposed Response Respons	In add SFD. / beginr	ition, the default f As a result, if the hing of the SFD.	ior both of these bits is 0, se PHY is reset or powered do	tting the DDMP to wn the DDMP is a	o the beginning of the Ilways set to the	using value Proposed	the mean of it " <i>Response</i>	s maximum and minimu Response Status	m path data delay	values as its path data delay
Requires consistent configuration of both the gRS and the PCS (see 45.2.3.69a) for correct operation.". SuggestedRemedy Suggest that the last sentence of the first paragraph of subclause 90.7 be changed to read The choice of the DDMP is implementation-dependent but requires consistent configuration of both the gRS and the PHY for correct operation.". Proposed Response Response Status Cl 90 SC 90.7 P64 L 28 # <u>R1-15</u> Ran, Adee Cisco Systems, Inc. SuggestedRemedy SuggestedRemedy if is recommended that the transmit and receive path data delays be reported as if the DDMP is at the start of the FEC codeword and/or at the start of the PCS lane distribution sequence (when the multilane ability (3.1800.11) bit is set - see 45.2.3.67.3)." The parentheticals "if available" and "if supplied" appear twice in this paragraph. They create a distraction and make the text hard to read. To SuggestedRemedy The start of the FEC codeword and/or at the start of the PCS lane distribution sequence (when the multilane ability (3.1800.11) bit is read as one - see 45.2.3.67.3)." To "it is recommended that the transmit and receive path data delays be reported as if the DDMP is at the start of the FEC codeword and/or at the start of the PCS lane distribution sequence (when the multilane ability (3.1800.11) bit is read as one - see 45.2.3.67.3)." BuggestedRemedy The parentheticals "if available" and "if supplied" (and the enclosing commas) in the last sentence. Proposed Response Response Status 0	Finally	, as noted in sub	clause 90.4.3.1.1 and subcla	ause 90.4.3.2.1 'S	emantics', 'The use of	C/ 90	SC 90.7	P6	5 L7	# R1-62
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Suggest that the last sentence of the first paragraph of subclause 90.7 be changed to read The choice of the DDMP is implementation-dependent but requires consistent configuration of both the gRS and the PHY for correct operation. ¹ . Proposed Response Response Status O It is recommended that the transmit and receive path data delays be reported as if the DDMP is at the start of the FEC codeword and/or at the start of the PCS lane distribution sequence (when the multilane ability (3.1800.11) bit is read-only, and cannot be set. Propose a few changes for the sentence. Suggest dRemedy It is recommended that the transmit and receive path data delays be reported as if the DDMP is at the start of the FEC codeword and/or at the start of the PCS lane distribution sequence (when the multilane ability (3.1800.11) bit is read-only, and cannot be set. Propose a few changes for the sentence. Suggest dRemedy To SuggestedRemedy To Delete "if available" and "if supplied" (and the enclosing commas) in the last sentence. The last sentence. Proposed Response Response Status O	Suggested	Remedy				Comment	Type TR	Comment Status	X	
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Configuration of both the gRS and the PFH for contect operation. Proposed Response Response Status O	'The c	hoice of the DDM	IP is implementation-depend	lent but requires o	consistent	Suggeste	dRemedy			
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Ran, Adee Cisco Systems, Inc. To Comment Type E Comment Status X The parentheticals "if available" and "if supplied" appear twice in this paragraph. They create a distraction and make the text hard to read. To SuggestedRemedy Delete "if available" and "if supplied" (and the enclosing commas) in the last sentence. To Proposed Response Response Status O	C/ 90	SC 90.7	P64	L 28	# R1-15	"it is r DDMi seque	ecommended P is at the star ence (when the	that the transmit and red t of the FEC codeword a multilane ability (3.180	ceive path data de nd/or at the start o 0.11) bit is set - se	lays be reported as if the of the PCS lane distribution e 45.2.3.67.3)."
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The parentheticals "if available" and "if supplied" appear twice in this paragraph. They create a distraction and make the text hard to read. "it is recommended that the transmit and receive path data delays be reported as if the DDMP is at the start of the FEC codeword and/or at the start of the PCS lane distribution sequence (when the multilane ability (3.1800.11) bit is read as one - see 45.2.3.67.3)." SuggestedRemedy Proposed Response Response Status O	Comment	Type E	Comment Status X			10				
SuggestedRemedy Delete "if available" and "if supplied" (and the enclosing commas) in the last sentence. Proposed Response Response Status O	The pa create	arentheticals "if a a distraction and	vailable" and "if supplied" ap I make the text hard to read.	pear twice in this	paragraph. They	"it is r DDMI	ecommended P is at the star	that the transmit and red t of the FEC codeword a multilane ability (2.180)	ceive path data de nd/or at the start o	lays be reported as if the of the PCS lane distribution
Delete "if available" and "if supplied" (and the enclosing commas) in the last sentence. Proposed Response Response Status O Proposed Response Response Status O	Suggested	Remedy				Proposod				011E - SEE 40.2.3.07.3).
Proposed Response Response Status O	Delete	"if available" and	d "if supplied" (and the enclo	sing commas) in	the last sentence.	FTOPOSEU	Nesponse	Response Status	0	
	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: Clause, Subclause, page, line

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IEEE P802.3cx D3.1 ITSA Task Force 1st Sponsor recirculation ballot comments

C/ 90	SC 90.7	P 65	L35	# R1-64	CI 90	SC 90.7	P 66	L 9	# R1-66
Rodrigue	s, Silvana	Huawei Tech	nologies Co., Ltd		Rodrigue	s, Silvana	Huawei Tech	nologies Co., Lto	1 L
Commen	t Type TR	Comment Status X			Commen	t Type ER	Comment Status X		
For "I PMA	multiple lanes" in /PMD lanes.	the paragraph from line 41 to	line 50, my unders	tanding is it's	The M may I	NOTE 6 is relevant to move	ant to TX_NUM_BIT_CHANGE re NOTE 6 after the paragraph	and RX_NUM_l of line 31 to line	BIT_CHANGE, and it 33 of page 65.
Suggeste Chan	dRemedy ge				Suggeste Propo	dRemedy ose to move NC	DTE 6 at page 66 after the para	agraph of line 31	to line 33 of page 65.
"Lane have	e skew can be pr different static la	esent on a transmitter with mu ttencies"	ultiple lanes when th	ne PMA/PMD lanes	If this curre	is accepted, the nt NOTE 4 and	e NOTE 6 should be revised as 5.	s the NOTE 4, a	nd renumber the
То					Proposed	l Response	Response Status O		
"Lane PMA	e skew can be pr /PMD lanes have	esent on a transmitter with mu different static latencies"	ultiple PMA/PMD la	nes when the	C/ 90	SC 90.7	P66	L11	# R1-67
Proposed	l Response	Response Status O			Rodrigue Comment	s, Silvana t Type T	Huawei Tech Comment Status X	nologies Co., Lto	t construction t
C/ 90	SC 90.7	P 65	L35	# R1-63	"to re "the r	duce the numbe	er of timestamping accuracy im be unnecessary, propose to de	elete it.	Annex 90A).", the word
Rodrigue	s, Silvana	Huawei Tech	nologies Co., Ltd		Suggeste	dRemedy			
Commen	t Type TR	Comment Status X	-		Chan	ae			
For "I for P	multiple lanes" in CS lane or PMA/	the paragraph from line 35 to PMD lane.	line 40, it's better t	o clarify whether it's	"to re	duce the numbe	er of timestamping accuracy im	pairments (see	Annex 90A)"
Suggeste	dRemedy				То				
Repla	ace "multiple lane	es" with "multiple PCS lanes" i	in the paragraph fro	m line 35 to line 40	10				
Proposed	l Response	Response Status O			"to re <i>Proposed</i>	duce timestamp I Response	ing accuracy impairments (see <i>Response Status</i> 0	e Annex 90A)"	
C/ 90	SC 90.7	P 65	L 42	# R1-65	CL 00 A	SC 004 5 2	P 7 2	/ 20	# [24]
Rodrigue	s, Silvana	Huawei Tech	nologies Co., Ltd		Ci JUA	30 30A.J.Z		L 2 3	# KT-34
Commen	t Type E	Comment Status X			Kabra, Lo	t Turne	Synopsys, Ind	С.	
The p requi line 3 recei	baragraph from li res the transmit s 5 to line 40 is for ver.	ne 41 to line 50 and the note 4 skew to be minimized, ideally r the receiver. I would like to fi	4 are specified for t to zero. The previou rstly specify for the	ne transmitter, which us paragraph from transmitter, then the	Adjus Suggeste	sted arrival time	shold be T2 - PDPDD		
Sugaeste	dRemedv				Chan	ge "T2 + " to "T	2 - "		
Prop	ose to move the	texts from line 41 to 52 at befo	ore the previous par	agraph	Proposed	l Response	Response Status O		
Proposed	l Response	Response Status O							
TYPE: TF	R/technical requir	red ER/editorial required GR/	general required T	/technical E/editorial G/g	jeneral		C/ 90	A	Page 15 of 16

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 90A SC 90A.5.2

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C/ 90A	SC 90A.7	P 74	L 38	# R1-76
de Koos, An	dras	Microch	ip Technology	

Comment Type T Comment Status X

The characteristics of the varying intrinsic delays when multiple PHY functions are cascaded may be incomplete. Thinking about the 802.3df/dj idea of concatenated FECs for 800GE over 200Gbps physical links, it is possible that the phase of the cascaded functions may play a part. The example in 90A.7 shows the functions being completely inphase, i.e. their minima and maxima coincide. If the minima and maxima never coincide, then I believe the conclusion still holds, i.e. that the total delay is a constant : [sum(function Tx delays) + sum(function Rx delays)] = [sum(function Tx delay + Rx delay)].

HOWEVER, it will look strange, as the variation of the sum of functions may no longer be equal to the sum of the variations observed for each function. The peak-to-peak delay variation would thus depend on the relative phase of the delay functions. It becomes difficult to distinguish intrinsic PHY delay from variable PHY delay in such a case.

SuggestedRemedy

The PHY function delay example should be updated to show that the maxima and minima of the delay functions need not ever coincide.

Proposed Response Response Status O

C/ 90A SC 90A.7