C/ FM	SC F	м	P <b>13</b>	L <b>47</b>	# I-38	C/ 1	SC	1.4.35b	P <b>23</b>	L <b>8</b>	# I-51
Issenhuth	n, Tom		Issenhuth	Consulting, LLC,H	uawei Technologies Co.,	Dawe, P	iers J G		NVIDIA		
<i>Comment</i> Amen	t <i>Type</i> ndment or	E rdering ha	Comment Status A as been changed with 802	2.3ct preceeding 80	bucket )2.3cp	Commer 1.4.7	nt Type 70 10GB	<b>T</b> ASE-W: A	Comment Status R An IEEE 802.3 physical coding	sublayer for	serial 10 Gb/s operation
Suggester Remo	dRemedy ove 802.3	/ scp from tl	he list			that Clau 1.4.3	is data-ra ıse 49.) 31 100GB	ate and fo BASE-P: <i>I</i>	rmat compatible with SONET An IEEE 802.3 family of Physi	STS-192c. (S cal Layer dev	See IEEE Std 802.3, vices using 100GBASE-R
Response ACCE	e EPT.		Response Status C			enco (See 1.4.3	oding and EEEE St 32 100GE	d a PMD tl td 802.3, 0 BASE-R: /	hat employs pulse amplitude r Clause 80.) An IEEE 802.3 family of Physi	modulation wi	th more than 2 levels. /ices using 100GBASE-R
C/ FM	SC F	M	P <b>14</b>	L <b>8</b>	# 1-39	enco 802.	oding and 3, Clause	d a PMD tl e 80.)	hat employs 2-level pulse amp	plitude modula	ation. (See IEEE Std
Issenhuth	n, Tom		Issenhuth	Consulting, LLC,H	uawei Technologies Co.,	1.4.3	33 100GE	BASÉ-R e	ncoding: The physical coding	sublayer enc	oding defined in Clause
Comment Amen	t <i>Type</i> ndment or	E rdering ha	Comment Status A as been changed with 802	2.3ct preceeding 80	bucket )2.3cs	DQF	PSK has ayer doe	a similarit s is much	y with 100GBASE-P (2 bits/U the same as what the Clause	l), but what the 50 WAN Inte	e Clause 153 SC-FEC erface Sublayer does: it
Suggeste Remo	dRemedy ove 802.3	/ scs from th	he list			take quite dom	s a 64B/6 e differen ain. It do	66B encoo It to the "K oesn't wor	ded stream and puts it in a tel (R4" or "KP4" FEC.Also, this k by "using 100GBASE-R end	ecoms style v PHY uses a coding". Whil	vrapper. The SC-FEC is telecoms style clock le it may carry a 64B/66B
Response ACCE	e EPT.		Response Status C			strea "BAS with issue	am, what SE-R" an breakout e.	it actually d should l t options a	v uses is SC-FEC framing. Al be named appropriately so that are not confused. Straw polls	l in all, it's sig at future proje two years ag	nificantly different to cts and implementations o don't alter the technical
						Suggest	edReme	dy			
						Cha	nge the r	name to 10	00GBASE-ZW		
						Respons REJ	se ECT.		Response Status C		
						A sir (http page prev reaff	milar com s://www. e 3) whicl ious com firmed wi	nment was ieee802.o h was reje nment resp thout oppo	s brought forward in D2.1, con org/3/ct/comments/D2P1/8023 acted due to lack of support to ponse, the -ZR nomenclature osition.	nment 10 ct_D2p1_con make a char was adopted	nments_final_by_ID.pdf, ige. As stated in the by the task force and

C/ 1 SC 1.4.35b

C/ 1	SC 1.4.35b	P <b>23</b>	L <b>9</b>	# 1-50	C/ 1	SC 1.4.160a	P <b>23</b>	L15	# 1-87
Dawe, Pie	ers J G	NVIDIA			Ran, Ade	9	Intel Corpor	ation	
Comment	t Type <b>TR</b>	Comment Status R			Comment	Type E	Comment Status A		
What WAN telecc this P 100G FEC 1	the Clause 153 S Interface Sublaye oms style wrapper PHY uses a telecol BASE-R encoding framing, and is sid	C-FEC sublayer does is mu er does: it takes a 64B/66B e . The SC-FEC is quite diffe ms style clock domain on th g". While it may carry a 64B unificantly different to all in-fo	ch the same as encoded stream erent to the "KR4 e line. It doesn't /66B stream, wh orce BASE-R (or	what the Clause 50 and puts it in a " or "KP4" FEC. Also, work by "using nat it actually uses is SC- BASE-P) PHYs.	TP2 a A me In add and n	nd TP3 are undefine hodology should not lition, the endpoints a nay not exist in any lir	d terms that make this of be bound by such spec are defined for measure nk. The transmission is	lefinition meaning fic names. ment purposes af between PHYs.	pless out of its context. t the end of patch cord
Suaaeste	dRemedy		, , , , , , , , , , , , , , , , , , ,	,	Suggeste	aremeay			
Chan	ae "using 100GBA	ASE-R encoding DP-DQPS	K modulation" to	"using 100GBASE-R	Chan	ge "between TP2 and	I I P3" to "between two I	PHYS".	
encod	ding, GMP mappir	ng, SC-FEC framing, and DF	P-DQPSK modul	ation".	Response	F F	Response Status C		
(If the that w	e group is ashame vould be more disi	ed of using all those things, it ruptive.)	could change h	ow the PHY works, but	ACCE	PT IN PRINCIPLE.			
Response	9	Response Status U			See r	esponse to comment	I-1.		
REJE	ECT.				Resp	onse to comment I-1	was:		
The c draft.	commentor has no The same comm	ot demonstrated how changin nent was submitted as techn	ng it would impro ical, not required	ove the quality of the I in D2.0, comment 139	Modif	y black link defintion	to:		
(see https: f, pag	//www.ieee802.or je 5) and the work	g/3/ct/comments/D2P0/8023 ing group modified the word	3ct_D2p0_comm ing to the curren	ents_final_by_clause.pd t definition.	transf given	er characteristics of t	he uni-directional transr specified, without specif	nethodology whe nission path betw ying how the trar	re the input, output, al reen TP2 to TP3 for a ismission path is
C/ 1	SC 1.4.160a	P <b>23</b>	L <b>14</b>	# [ <u>-</u> 1	imple	mented. (See, for exa	ample, IEEE Std 802.3,	Clause 154, Figu	re 154-3)"
Rolfe, Be	njamin	Blind Creek	Associates		-				
Comment	t Type E	Comment Status A							
The te 10.6]	erm should not be	e used in its own definition. [l	EEE Standards	Style Manual, clause					
Suggeste	dRemedy								
An ap transr how t	pproach where the mission path betw he transmission p	e input, output, and transfer over the transfer of the term of ter	characteristics of d, without specif	f the uni-directional fying					
Response	e	Response Status C							
ACCE	EPT IN PRINCIPL	E.							
Modif	fy black link definti	ion to:							
"blac transf given imple	k link: A multi-cha fer characteristics DWDM channel a mented. (See, for	annel link specified using a n of the uni-directional transm are specified, without specify example, IEEE Std 802.3, (	nethodology whe lission path betw /ing how the tran Clause 154, Figu	ere the input, output, and /een TP2 to TP3 for a /smission path is re 154-3)"					
	R/technical require	d FR/editorial required GR	/deperal required	d T/technical E/editorial	G/general				Page 2 of 27

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/ 1 SC 1.4.160a Page 2 of 27 1/15/2021 10:03:01 AM

C/ 1

C/ 1	SC 1.4.181a	P <b>23</b>	L <b>20</b>	# I-3
Rolfe, B	enjamin	Blind Creek A	Associates	

#### Comment Type **GR** Comment Status **R**

Should not re-define "channel spacing". The usual (commonly used) definition is adequate for use in this standard, and redefining the term to be WDM specific is a bad idea. All terms defined in IEEE standards are incorporated into the IEEE-SA Standards Definitions Database. Which does not need further polluting with this sort of incorrect use of the definitions clause of a standard. If you really must have a DWM specific definition of channel spacing, create a new term such as "DWM channel spacing" or "DWDM channel spacing" which is also more consistent with the definition of DWDM channel, DMDM link, etc. However, "channel spacing" is a commonly used term generally understood by anyone skilled in the art of communications in multi-channel mediums, understood to be the spacing between channels, which is how you have defined it here. SO really, you don't need it, as you are restating (slightly obscurely) the obvious.

### SuggestedRemedy

Delete term from clause 1.4.

Response Response Status U

REJECT.

editoral license.

The commentor has not shown how the definition is inconsistent with in-force ITU-T standards and industry usage.

C/ 1	SC	1.5	P <b>2</b> :	3	L5	# 1-53	
Dawe, F	Piers J G		NVID	A			
<i>Comme</i> Abb	<i>nt Type</i> reviation	E that ne	Comment Status eeds expanding	A			bucket
S <i>ugg</i> esi Add	edReme entry for	<i>dy</i> · OSNF	R, here or in 154.8				
Respon ACC	se CEPT IN	PRINC	Response Status IPLE.	С			
Add mod	"OSNR lify headi	- optica	al signal-to-noise ratio" at ead "Transmitter in-band	ter N optic	IFAS in sublcause 1 cal signal-to-noise ra	l.5 and in 154.8.1 atio (OSNR)" with	1 1

 Rolfe, Benjamin
 Blind Creek Associates

 Comment Type
 E
 Comment Status
 A

 IFEC as used in the draft text is an abbreviation for inverse RS-FEC (without "sublayer").
 E. g. "Inverse RS-FEC decoder", "Inverse RS-FEC Reed-Solomon decoder", "Inverse RS-FEC align status" and so on. Also, the abbreviation is not used consistently. In many places the full term is used. In other places IFEC is used. An abbreviation is not really needed if the full term is used everywhere (which I prefer). But if you have it, use it.

 SuggestedRemedy
 Remove abbreviation IFEC and use the term "Inverse RS-FEC" consistently throughout.

P24

L4

# 1-8

Page 3 of 27

Response Response Status C

#### Adopt option 1 from

SC 1.5

https://www.ieee802.org/3/ct/public/20\_11/trowbridge\_3ct\_01a\_201116.pdf slides 5-13.

Replace the current abbreviation of IFEC in 1.5 with "inverse RS-FEC"

Trowbridge, Stephen Nokia	C/ 30	SC 30	P <b>25</b>	L19	#	I-30
÷ .	Trowbridge, S	Stephen	Nokia			

Comment Type TR Comment Status A

Significant material is missing from clause 30 where corresponding material is present in other projects or amendments. Material relating to clause 152 may not be necessary as this does not directly affect behavior at the external interface, but clause 153-related registers likely need to be added. A key decision is what needs to be visible in clause 30 for the case of clause 91 RS FEC on the host board running across the C2M interface, with clause 152 Inverse RS-FEC and clause 153 SC-FEC on the module side.

### SuggestedRemedy

Add the following (or equivalent) attrubites:

aFECCorrectedBlocks (may need both Clause 152 and 153 equivalent) aFECUncorrectableBlocks (may need both Clause 152 and 153 equivalent) aRSFECBIPErrorCount (may need clause 152 equivalent) aRSFECBypassAbility (may need clause 152 equivalent) aRSFECBypassIndicationAbility (may need clause 152 equivalent) aRSFECBypassEnable (may need clause 152 equivalent) aRSFECBypassIndicationEnable (may need clause 152 equivalent) aRSFECBypassIndicationEnable (may need clause 152 equivalent) aRSFECLaneMapping (may need clause 152 and 153 equivalent)

Response Response Status C

ACCEPT IN PRINCIPLE.

Implement slides 3 through 13 of https://www.ieee802.org/3/ct/public/tf\_interim/20\_1214/issenhuth\_3ct\_02\_201214.pdf with editorial license.

C/ 30

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 SC 30 1/15/2021 10:03:01 AM SORT ORDER: Clause, Subclause, page, line

C/ 30	SC 30.5.1.1.2	P <b>25</b>	L <b>12</b>	# I-40	C/ <b>45</b>	SC 45.2	.1.133e.2	P <b>33</b>	L <b>39</b>	# <u>I-90</u>
Issenhuth,	, Tom	Issenhuth Cons	sulting, LLC,Hu	awei Technologies Co.,	Ran, Ade	е		Intel Corpora	ition	
Comment	Туре Е	Comment Status A		bucket	Comment	Туре Е	Comm	ent Status A		
States DR aft	insert after 100GE ter 100GBASE-ER4	BASE-ER4 but 802.3cd insert 4.	ed 100GBASE	-CR2, KR2, SR2 and	"supp regist	orted" is not ers use "cor	the right word f respond" which	or the meaning of is more appropria	an index numbe te.	r. Descriptions of other
Suggested	Remedy				Suggeste	dRemedy				
Chang	ge to "insert after 10	00GBASE-DR as inserted by	IEEE Std 802	.3cd-2018."	Chang	ge "indicates	the optical free	quencies that are s	supported" to "ind	licates the
Response		Response Status C			corres	sponding op	tical frequencies	5".		
ACCE	PT.				Chang index	ge "supporte number".	ed for each char	nnel index number	" to "correspondi	ng to each channel
C/ <b>45</b>	SC 45.2.1.133a	a.1 P29	L <b>30</b>	# <u>1-</u> 88	Response	•	Respon	se Status C		
Ran, Adee	e	Intel Corporation	n		ACCE	PT.				
Comment	Type E	Comment Status A				00.45.0	4 490 4	0.27	1.20	
"suppo	orted" is not the rig	ht word for the meaning of ar	n index number	r. Descriptions of other	C/ 43		.1.10088.1	P31	L 32	# 1-7
Currenter	dDomodu	a which is more appropriate.			Rolfe, Bel	njamin	0	Blind Creek /	Associates	
Chanc	Remeay	tical frequencies that are sur	ported" to "inc	licates the	Comment	Iype E	Comm	ent Status R		udor"
corres	ponding optical free	quencies".			niver		decodel should			JUEI
Chana				an ta anah ahannal	Suggester	dRemedy				
index i	je supported for ea	ach channel index number to	corresponal	ng to each channel	as inc	icated in the	comment	_		
Response		Response Status C			Response	о <b>т</b>	Respon	se Status C		
ACCE	PT.				REJE	CI.				
				<i>//</i>	See r	esponse to o	comment I-8. A	fter implementing	the proposed res	sponse, control register
C/ <b>45</b>	SC 45.2.1.1336	P33	L19	# 1-89	1.220 and n	0 is changed of an exnan	d to "IFEC contr dable acronym	ol register". In this	s context IFEC is	s part of a register name
Ran, Adee	e 	Intel Corporatio	n		and n	ot an expans				
Comment	Type E	Comment Status R			Respo	onse to com	ment I-8 was:			
"IX RX	c different optical cr	nannel ability"			Adopt	option 1 fro	m			
It is oc	dd that a bit name i	n the "Rx optical channel cor	ntrol register" s	tarts with "Tx". The	https:/	//www.ieee8	02.org/3/ct/publ	ic/20_11/trowbridg	ge_3ct_01a_201	116.pdf slides 5-13.
meani	ng of this bit can be	e maintained with swapping	Fx and Rx.		Repla	ce the curre	nt abbreviation	of IFEC in 1.5 with	n "inverse RS-FE	C"
Suggested	Remedy									
Chang	ge "Tx Rx" to "Rx T	x", in Table 45.102o and in 4	5.2.1.133e.1							
Response REJE	CT.	Response Status C								
Signal for a T	Tiow is always from X or RX register.	n the transmitter to the receiv	ver so ⊤X to RX	( is an accurate name						

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/ 45 SC 45.2.1.186aa.1 Page 4 of 27 1/15/2021 10:03:01 AM

C/ 45	SC 45.2.1.186ah.2	P <b>42</b>	L38	# 1-6	C/ 51	SC FM	P <b>3</b>	L <b>8</b>	# 1-66
Rolfe, Ber	njamin	Blind Creek	Associates		D'Ambros	sia, John	Futurewei&n	bsp;Technologi	es, U.S. Sub
Comment Abbre	<i>Type</i> <b>E</b> Comm viations/acronyms should b	<i>ent Status</i> <b>A</b> be spelled out at fir	st use, which ap	<i>bucket</i> bears to be here.	Comment The te	<i>Type</i> <b>E</b> erm "black link" o	Comment Status A lescribes the methodology to	describe the D	<i>bucket</i> WDM channel. Given its
S <i>ugg</i> estee spelle	dRemedy d out at first use				impor Suggeste	tance in this spe dRemedy	cificatinon, it should be added	d to the list of ke	eywords
Response ACCE	Respor	se Status C			Response ACCE	piack link to list PT.	Response Status <b>C</b>		
Chang	ge "has achived FAS lock" t	o "has achieved fr	ame alignment s	ignal (FAS) lock"	CI 78	SC 78.1.4	P <b>49</b>	L17	# 1-32
C/ <b>45</b>	SC 45.2.1.186ao	P <b>48</b>	L <b>12</b>	# I-91	Trowbride	le, Stephen	Nokia		
Ran, Adeo Comment Regis "name	e <i>Type</i> <b>T</b> Comm ter name says "corrected b ss" column has "uncorrecte	Intel Corpora ent Status <b>A</b> its" as does the va d codewords" inste	ition iriable name in 15 ead.	<i>bucket</i> 53.2.5.4, but the	Comment Additi Suggeste	<i>Type</i> <b>TR</b> onal clauses ma dRemedy	Comment Status A y be used for 100GBASE-ZR	PHYs	
Suggestee Chang	dRemedy ge "uncorrected codewords	" to "corrected bits	" (4 times).		Add o Table	lauses 91, 135 a 78-1	nd 152 to the list of relevant	clauses for 100	GBASE-ZR PHYs in
Response	Respor	ose Status C			ACCE	, EPT.	Response Status C		
See re	esponse to comment I-31.				<i>Cl</i> <b>80</b> Rolfe, Be	SC <b>80.1.4</b> njamin	Р <b>50</b> Blind Creek /	L <b>54</b> Associates	# 1-4
Respo	onse to comment I-31 was:				Comment	Туре Е	Comment Status A		bucket
ACCE	PT.				Abbre 153.3	viations/acronyn .2.2.2 where it is	ns should be spelled out at fir spelled out.	rst use, which a	opears to be here (not
C/ <b>45</b>	SC 45.2.1.186ao	P <b>48</b>	L <b>12</b>	# I-31	Suggeste	dRemedy			
Trowbridg	e, Stephen	Nokia			spelle	d out at first use			
<i>Comment</i> Table	TypeERComm45–150am is for FEC corre	ent Status A ected bits		bucket	Response ACCE	9 EPT IN PRINCIP	Response Status <b>C</b> LE.		
Suggestee Chang four ro	dRemedy ge "FEC uncorrected codev ows of the table	vords" to "FEC cor	rected bits" in the	Name column of all	In 80. keyin	1.4 modify "DP-I g (DP-DQPSK)"	DQPSK" to read "dual polariza	ation differential	quadrature phase shift
Response ACCE	Respor	se Status C							

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/ 80 SC 80.1.4 Page 5 of 27 1/15/2021 10:03:01 AM

C/ 80	SC 80.1.4	P <b>51</b>	L <b>1</b>	# I-33	C/ 152	SC 152.7.1	P <b>77</b>	L <b>6</b>	# I-10
Trowbridg	je, Stephen	Nokia			Rolfe, Ber	njamin	Blind Cr	eek Associates	
Comment	Туре Т	Comment Status A			Comment	Type <b>TR</b>	Comment Status R		
All 10 91 RS	0GBASE-Z Physi S-FEC and clause	ical Layer devices use clause 152 Inverse RS-FEC	153 SC-FEC. (	Only some use clause	This s confor	tatement is (still) m to Clause 152	wrong: "The supplier o , Inverse RS-FEC subla	a protocol implem yer, shall complete	entation that is claimed to the following protocol
Suggestee	dRemedy				Implen This is	nentation confor	mance statement (PICS	) protorma." standard It is not	stating a requirement for
Chang modul PMD i "Some Invers	ge " over multip lation." to " ove implementing DP e 100GBASE-Z F se RS-FEC of clar	ble PCS lanes (see Clause82) or multiple PCS lanes (see Cla -DQPSK modulation." Chang Physical Layer devices also us use 152."	and a PMD im nuse82), the FE e the following s e the FEC of C	plementing DP-DQPSK C of Clause 153, and a sentence to read: lause 91 and the	the im outside been v You sl sayin'.	plementation, but e the scope of the wrong. And BTV hould stop repeated Alternately I su	it for the implementer. T is standard. I know, it h V totally unnecessary as ting this invalid use of sl ppose we could amend	he behavior of the as always been tha 80.7 says he same hall in the individual the scope of the sta	implementer is (still) it wayand it has always thing, but correctly. PICS clauses. Just andard to include human
Response ACCE	e PT.	Response Status C			behav Also (s FYI: th	ior, but I would s still) wrong in 15 ne correct resolu	trongly recommend aga 3.4.1 and 154.11.1. tion detail when vou reie	nst that solution . ct this comment is '	"this amendment
C/ 80	SC 80.1.4	P <b>51</b>	L <b>4</b>	# I-18	confor waving	ms to the style o g your hands in t	of the base standard bein he air and shouting "it' ti	g amended" which adition".	is the IEEE-SA way of
Huber, Th	nomas	Nokia			Suggested	Remedy			
Comment The e	<i>Type</i> <b>E</b> diting instruction	Comment Status <b>A</b> is missing the word 'Table'		bucket	Delete to Clar impler	the paragraph " use 152, Inverse nentation confor	The supplier of a protoc RS-FEC sublayer, shal mance statement (PICS	ol implementation the complete the follow proforma." here, i	hat is claimed to conform wing protocol in 153.4.1 and 154.11.1.
Suggestee	dRemedy				and ar	nywhere else it a	ppears in this draft.	·, ·	
Chang Insert (uncha showr	ge the editing inst a new row at the anged rows not າ):	truction to read as follows: end of Table 80–1 (as inserte	ed by IEEE Std	802.3cu-xx) as follows	Response REJE This is	CT. boiler-plate text	Response Status <b>C</b> that appears in front of	essentially every Pl	ICS table in the entire
Response ACCE	, EPT.	Response Status C			base s This d are cla	standard. oes not put a rec aiming they confo	quirement on every imple orm to this clause.	ementer, only on the	ose implementers that
C/ 80	SC 80.3.2	P53	L <b>44</b>	# 1-34	C/ 153	SC 153.1.2	P81	L <b>34</b>	# <b>I-67</b>
Trowbridg	je, Stephen	Nokia			D'Ambrosi	ia, John	Futurew	ei Technolog	ies, U.S. Sub
Comment	Type TR	Comment Status A			Comment	Туре Е	Comment Status A		bucket
By ea	rlier convention, t	his should be called 100GBA	SE-Z		As this diagra	s clause is speci m in 153-1.	fic to 100GBASE-ZR PH	Ys, this should be r	noted at the bottom of the
Suggested Chang	<i>dRemedy</i> ge 100GBASE-R	to 100GBASE-Z in the title of	Figure 80-4a		Suggester	Remedy	helow the box labeled "n	edium" in Fig 153	1
Response ACCE	ept.	Response Status C			Response ACCE	PT.	Response Status C	ieuiuiii iii riy 153-	1.

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/ 153 SC 153.1.2

C/ 153	SC 153.2.1	P <b>82</b>	L <b>7</b>	# I-19	C/ 153	SC 15	53.2.3.2.4	P <b>84</b>	L <b>22</b>	# I-60
Huber, The	omas	Nokia			Dawe, Pie	rs J G		NVIDIA		
Comment	Туре Т	Comment Status A		bucket	Comment	Туре	TR Co	mment Status A		
The de RS-FE consis	escription of the sc C, or PMA) and th tent.	ources from which the SC Fl ne destinations to which it se	EC receives infe ends informatio	ormation (PCS, Inverse n (PCS or PMA) are not	The G high c	MP mapp onfidence	er and SC-FE based on on	EC encoder are far too ly these sections, G.70	complicated to 9 and G.709.2	be implemented with Annex A.
Suggested	Remedy				Suggested	iRemeay	. <b>f</b>			an ta anna datan <b>f</b> an a
Revise destina The FI	the last sentence ation: EC:IS_UNITDATA	of the paragraph to include _i primitives are defined for	e the Inverse RS i = 0 to 19. The	S-FEC as a potential PCS, Inverse RS-FEC,	As red downle to pub omitte	badable fi lish the b d really is	efore, please le if it is large eginning and obvious.	provide a sample SC-F r than one would want end of the frame, omitt	in the standard. ing most of the	re is provision for a It may be acceptable payload if what is
or PM/ contini	م Jously sends 20 p	arallel bit streams to the SC	C-FFC sublaver	each at a nominal	Response		Res	sponse Status U		
signali 5.1562 PCS, I lane, e	ng rate of 25 GBd. The SC-F nverse RS-FEC, c each at a nominal s	EC sublayer continuously so or PMA, one per signaling rate of 5.15625 GE	ends 20 paralle Bd.	l bit streams to the	ACCE An exa http://s 2021_	PT IN PR ample SC standards downloac	RINCIPLE. -FEC codewo /ieee.org/dow ls.zip.	ord is expected to be generated to be generated to be generated and the second se	enerated and pr e expected filen	ovided in the ame 802.3ct-
Response ACCE	PT.	Response Status C			Add to "NOTI http://s	the end E-A file co standards	of clause 153 ontaining an ei .ieee.org/dow	.2.3.2.5 SC-FEC Enco xample SC-FEC codev nloads/802.3/."	der the following vord is available	j: ⊧at
C/ 153	SC 153.2.1	P <b>82</b>	L12	# I-20	C/ 153	SC 1	32324	P84	/ 45	# 1-9
Huber, The	omas	Nokia			Rolfe Ber	iamin		Blind Creek A		" "
Comment In the "The"	<i>Type</i> <b>E</b> description of whe rather than "That"	Comment Status <b>A</b> n the SIGNAL_OK is set to for consistency.	FAIL, the sente	<i>bucket</i> ence should begin with	Comment Abbre	<i>Type</i> viations/a	E Co cronyms shou	amment Status A uld be spelled out at first	st use, which ap	pears to be here (?)
Suggested	Remedy				Suggested	Remedy				
Revise	the 3rd sentence	, replacing 'That' with 'The':			spell o	out the ab	breviation at t	he first use.		
The SI	GNAL_OK param	eter of the FEC:IS_SIGNAL	indication prim	itive can take one of	Response		Res	sponse Status C		
or FAI bound indicat receive unable	L. The value is set aries as ed by fec_align_st e function is to reliably establi	to OK when the FEC receiv tatus equal to TRUE. The values and the transformed boundaries as	ve function has alue is set to FA indicated by fe	identified codeword NL when the FEC c align status equal to	ACCE Chang "The F To: "The	PT IN PR je: AS is the frame alig	RINCIPLE. e frame alignm gnment signal	nent signal. This is sim (FAS) is similar in con	ilar in concept .' cept"	
FALSE			-		For po	int 2 in th	ie same list, C	hange:	iold counts from	, "
Response		Response Status C			To:	IFAS IS 8	i mulu-marne a	angriment signar. This i	ieiu courits from	Ι.
ACCE	PT.				"The r	nulti-fram	e alignment s	ignal (MFAS) is a field	that counts from	n ."

C/ 153 SC 153.2.3.2.4

C/ 153	SC 153.2.3.2.4	4 P85	L <b>2</b>	# I-56	C/ 153	SC 153.2.3.2.	6 P88	L <b>7</b>	# I-21
Dawe, Pie	rs J G	NVIDIA			Huber, Th	iomas	Nokia		
Comment	Туре Е	Comment Status A			Comment	Type <b>TR</b>	Comment Status A		
"as de	scribed in 153.2.3	.2.4": we are in 153.2.3.2	.4; where do you r	nean?	Figure	e 153-5 does not d	learly indicate the flow i	nto the 'XOR' fund	ctions at the top of the
Suggested	Remedy				figure G.709	. There should be ), on which this fig	arrowheads on the tops ure is based, includes).	of the vertical line	es (as figure 11-3 of ITU-T
Give a	i more specific refe	erence			Suggestee	dRemedy			
Response		Response Status C			Add a	rrowheads pointin	g into the three XOR fur	nctions on the ver	tical lines
ACCE	PT IN PRINCIPLE				Response	•	Response Status <b>C</b>		
"as de	je: scribed in 153.2.3	.2.4"			ACCE	PT IN PRINCIPL	E.		
lo: "as sh	own in Figure 153	-3"			See s	uggested remedy	to accepted comment I-	-35.	
C/ 153	SC 153.2.3.2.	6 P88	L <b>4</b>	# I-47	Respo	onse to comment	I-35 was:		
Dawe, Pie	rs J G	NVIDIA			Add ri	ght facing arrows	before the squiggles on	the two bottom lin	nes. Add upward arrows to
Comment	Туре Е	Comment Status A			the th	ree vertical lines t	o the XOR (circled plus)	at the top	·
Some lines g	lines that pass thr joing up to (+) don	ough squiggle-breaks hav 't have arrows.  The arrow	ve arrowheads the v pointing to p15 i	ere, others don't. Three s not quite horizontal.	C/ 153	SC 153.2.3.2.	7 P88	L <b>27</b>	# 1-49
Suggested	Remedy				Dawe, Pie	ers J G	NVIDIA		
Tidy u	р				Comment	Type E	Comment Status A		bucket
Response		Response Status C			Not th	e usual font for fig	gures		
ACCE	PT IN PRINCIPLE	E			Suggested Chang	dRemedy de to Arial			
See su	uggested remedy	to accepted comment I-38	5.		Response		Response Status C		
Respo	onse to comment I	-35 was:			ACCE	PT.			
Add rig the thr	ght facing arrows l ee vertical lines to	pefore the squiggles on the tork (circled plus) at	e two bottom line t the top	s. Add upward arrows to					
C/ 153	SC 153.2.3.2.	6 P88	L <b>5</b>	# I-35					
Trowbridge	e, Stephen	Nokia							
<i>Comment</i> Missin	<i>Type</i> <b>ER</b> g arrowheads on I	<i>Comment Status</i> <b>A</b> Figure 153-5							
S <i>uggested</i> Add rig the thr	r IRemedy ght facing arrows I ree vertical lines to	pefore the squiggles on th the XOR (circled plus) at	e two bottom line t the top	s. Add upward arrows to					
Response ACCE	PT.	Response Status C							

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

Cl 153 SC 153.2.3.2.7 Page 8 of 27 1/15/2021 10:03:01 AM

-											
C/ 153	SC 153	.2.3.2.7	P <b>88</b>	L <b>40</b>	# I-22	C/ 153	SC	153.2.3.3.2	P <b>89</b>	L <b>21</b>	# I-25
Huber, Th	omas		Nokia			Huber, The	omas		Nokia		
Comment	Туре Е		Comment Status A		bucket	Comment	Туре	Е	Comment Status A		bucket
It wou frame	ld be better doesn't do	to write the distri	the sentence below figure bution; its contents are di	e 153-6 in the paristributed)	ssive voice (the FEC	The m used, i	ain poi modulo	int of the se o 20. This w	cond sentence in the p vould be more clear if t	baragraph is that the the indication that th	6th octet of the FAS is e FAS was inserted
Suggested	dRemedy					based detrac	on 153 t from	3.2.3.2.7 wa the main ide	is in parentheses. The ea.	e cross-reference is l	nelptul but should not
Replac The el	ce: ntire FEC fr	ame con	sisting of 4080 × 4 octets	distributes 51 a	roups of 16 octets to	Suggestea	Reme	dy			
each c lanes. With: 51 gro each c	of the 20 FE oups of 16 o of the 20 FE	EC octets are EC lanes.	distributed from the FEC	c frame (consistir	ng of 4080 x 4 octets) to	Revise shown The re order t the FA	e the se ceive s he rec S (inse	econd sente SC-FEC sha erived FEC l erted as	ence to add a comma a all anes according to the	after 'lane number' a FEC lane number, v	nd add parentheses as vhich is the 6th octet of
Response			Response Status C			per 15	3.2.3.2	2.7) 1100000	20.		
ACCE	ACCEPT.					Response	пт		Response Status C		
C/ 153	SC 153	.2.3.2.7	P88	L <b>44</b>	# 1-23	ACCE	ΓΙ.				
Huber. Th	omas		Nokia			C/ 153	SC	153.2.3.3.5	P89	L <b>49</b>	# I <u>-</u> 26
Comment	Type El	R	Comment Status A		bucket	Huber, The	omas		Nokia		
There 153-6 A hypl	is ambiguit as to wheth hen will mal	y in the p ner it is d ke the int	parsing of the first sentend iscussing groups of 16 oc ended meaning clear.	ce of the second ctets (as intended	paragraph after figure d) or 16 "octet groups".	<i>Comment</i> The fir after 6	<i>Type</i> st sent 6B blo	E tence of the ocks.	Comment Status A paragraph would be m	nore clear if it include	<i>bucket</i> ed the words 'that was'
Suggested	dRemedy					Suggestea	Reme	dy			
Add a At eac	hyphen as ch FEC fram	shown: ne bound	ary, the assignment of 16	δ-octet groups to	FEC lanes is rotated	Add 'th The G	nat was MP de	s' as shown: mapper extr	acts the deskewed an	d serialized stream o	of 66B blocks that was
Response	DT	1	Response Status C			inserte proces	ed acco ss deso	ording to the cribed in 153	3.2.3.2.4 from the SC-I	EC frame	
AUCE	ΗΙ.					Response ACCE	PT.		Response Status C		

C/ 153 SC 153.2.3.3.5

C/ 153	SC 153.2.4	P <b>91</b>	L <b>32</b>	# 1-27	C/ 153	SC 153.2.4.2	P <b>92</b>	L <b>4</b>	# I-11
Huber, Thor	nas	Nokia			Rolfe, Benja	imin	Blind Creek Assoc	ciates	

Comment Type TR Comment Status A

The restart lock variable references a "5 BAD" state. The state diagram on p93 includes a 15 BAD state and transitions based on fas bad count being equal to or less than 15.

### SuggestedRemedy

Correct the text in the definition of restart lock to reference 15 BAD.

Response Response Status C

ACCEPT IN PRINCIPLE.

See suggested remedy to the accepted comment I-37.

Response to comment I-37 was:

Change 2nd sentence of restart lock description from: "It is set to TRUE when 5 FASs in a row fail to match (5 BAD state)" to "It is set to TRUE when 15 FASs in a row fail to match (15 BAD state)".

### Comment Type **TR** Comment Status A

"However, an implementation shall ensure that all possible frame alignment positions are evaluated." is an incorrect use of "shall". This is not stating a verifiable requirement: the "all possible" is an unbounded (infinite) set. There would need to be (likely is) a finite set of frame alignment positions that should be evaluated. To be a valid requirement, you would need to change "possible" to "defined" and then provide a reference to where the defined set of frame alignment positions is enumerated and defined. Then at least you have a valid statement of a requirement. Tho the prior sentence suggests such specification is out of scope of this standard (kind of what "not specified" means). Also, does the SLIP function evaluate every defined position every time, or as suggested by the first sentence, only the next one in the (undefined) list of valid positions? I can see why y'all decided to leave this "implementation dependent" :-).

# SuggestedRemedy

Delete "However, an implementation shall ensure that all possible frame alignment positions are evaluated."

Response Response Status C

ACCEPT IN PRINCIPLE.

While significant freedom is allowed regarding how an implementation finds the FAS pattern, and there is no expectation that an implementation test additional positions after the FAS pattern has been located, there is a requirement that an implementation can find FAS pattern in any possible position.

Change:

"However, an implementation shall ensure that all possible frame alignment positions are evaluated."

To:

"An implementation shall ensure that the FAS pattern can be detected in any possible position."

C/ 153 SC 153.2.4.2

C/ 153	SC 153.2.4.3	P <b>92</b>	L <b>20</b>	# I-12	C/ 154	SC 154.1	P <b>101</b>	L <b>9</b>	# I-72		
Rolfe, Be	njamin	Blind Creek	Associates		D'Ambros	ia, John	Futurewei&nb	sp;Technologie	es, U.S. Sub		
Comment	tType <b>TR</b>	Comment Status A			Comment	Type <b>TR</b>	Comment Status A				
"The some detern some	synchronization st thing, it can illustra mine anything. A c thing, which is wh	ate diagram determines" rea ate something, it can even i liagram an specify how the at I suspect you mean.	ally isn't correct <sup>-</sup> ndicate somethir synchronization	The diagram specifies ng, but it can not process determines	It is stated that the DWDM channel is specified using black link methodology, which specifies the parameters in Table 154-10. This table, however targets a DWDM channel with amplification. While this meets the objective of the project, it does not adequaltely address the reach requirements of the Cable/MSO distribution networks noted in the project's CSD programmer for Braced Market patential.						
Suggeste	dRemedy				projec https:/	/www.ieee802.or	e for Broad Market potential. rg/3/B10K/public/18_05/schmi	Data submitted	1 In 1518 odf highlights the		
chang location	ge to: The synchro on of the frame ali PMA service inte	nization process determine gnment sequence in the rec face	s when the SC-F eived bit stream	EC has detected the for a given lane	reach	needs (citing dat that in the surve	ta for <30km, <40km, <60km, ey that a significant amount of	<80km, and <7 optical channe	120km), as well as Is were not amplified.		
Posponec		Deenenee Statue			Suggested	dRemedy					
ACCE	EPT IN PRINCIPL	E.			Develo amplif	op black link spe iers.	cifications that would address	DWDM chann	els that do not include		
Nume any ri	erous other clause isk to implementat	s use similar wording, so in ions.	principle, it could	d be left as is without	Response ACCE	PT IN PRINCIPI	Response Status C E.				
"The source of the second seco	synchronization st on of the frame ali service interface." SC-FEC sublayer ence in the receive	ate diagram determines who gnment sequence in the rec uses this process to detect ed bit stream on each lane c	en the SC-FEC h eived bit stream the location of th f the PMA service	has detected the for a given lane of the ne frame alignment se interface."	The re Impler https:/ editori	esolution to comment slides 14, 1 //www.ieee802.or al license.	nent i-42 was: 5, 16, and 17 in rg/3/ct/public/tf_interim/20_120	03/stassar_3ct_	_02b_201203.pdf with		
C/ 153	SC 153.4.1	P <b>91</b>	L32	# I-37	Create	e informative ann	nex 154A from the examples ir	1			
Lewis, Da	avid	Lumentum Ir	IC.		https:/	/www.ieee802.or	rg/3/ct/public/tf_interim/20_120	03/stassar_3ct	_01_201203.pdf with		
Comment	t <i>Туре</i> <b>Т</b>	Comment Status A			euton	ai license.					
The d	lescription of resta	rt_lock says it is set to true	when 5 FASs fai	I to match (5_BAD	C/ 154	SC 154.1	P <b>101</b>	L <b>11</b>	# I-13		
state) when	). However, the st fas bad count =	ate diagram in Fig 153-7 sh 15.	ows a transition	to the 15_BAD state	Rolfe, Ber	njamin	Blind Creek A	ssociates			
Suaaeste	dRemedv				Comment	Type <b>TR</b>	Comment Status R				
Chan	ge 2nd sentence o	of restart_lock description fro	om: "It is set to T	RUE when 5 FASs in a	The st statem	atement "shall b nent of fact relev	e connected" is inappropriate ant to the purpose of the overv	in an overview /iew, which is p	subclause. This is a providing context.		
(15 E	BAD state)".			s in a row rail to match	Suggested	lRemedy					
Response	9	Response Status C			Chang	ge "shall" to "is".					
ACCE	EPT.				Response		Response Status C				
					REJE The cu	CT. urrent wording is	consistent with the wording in	other in-force	optical clauses.		

C/ 154 SC 154.1

C/ 154	SC 154.1	P <b>101</b>	L <b>46</b>	# 1-74	C/ 154	SC 154.5	.4 <i>P</i> 106	L <b>33</b>	# I-28
D'Ambrosi	ia, John	Futurewei&nb	sp;Technologie	s, U.S. Sub	Huber, Th	omas	Nokia		
Comment	Type <b>TR</b>	Comment Status R			Comment	Туре Е	Comment Status A		
The fo provid	llowing is stated - ed on how the linl	- The black link is intentionall k is constructed,	y "black", implyi	ng that no details are	The N differe	OTE above the nce being the	ne table and the footnote to the e first sentence in the note.	table are largely	redundant, with the only
config	ured or operated	so that the end-to-end param	eter requireme	nts are met.	Suggested	Remedy			
lt is no	oted that the DWD	OM channel may contain one	or more optical	amplifiers.	Include	e the first sen	tence from the NOTE in the foo	otnote to the table	e and delete the NOTE.
Suggested	dRemedy				Response		Response Status C		
Delete	e text indicating th	at the DWDM channel may c	ontain one or m	nore optical amplifiers.	ACCE	PT IN PRINC	IPLE.		
Response		Response Status C			Replac	the current	t content of clause 154.5.4 with	the following new	v text:
REJE	CT.				to a fix	ed OK level.	Fixing the value of		
the cu the po the rea charac	urrent wording is a pssibility of optical ader to understan cteristics are defin	appropriate because the emp amplifiers inside the black lin d the application spaces and hed.	nasis is on "ma nk, which is of c the background	y contain", reflecting rucial importance for d of how the black link	a valid NOTE amplifi	signal is beir -Average inpu ed system."	rrom the PMD sublayer at OK a ng received, e.g., according to f ut power is not a reliable indicat	the ability to acqu tion of signal failu	's to determine whether lire frame alignment. lire in an optically
C/ 154	SC 154.1.1	P <b>102</b>	L <b>40</b>	# I-14					
Rolfe, Ber	njamin	Blind Creek A	ssociates						
Comment	Type TR	Comment Status R							
At line precise assure clause the ph	e 40 and 44, "suffic e definition of "suf es sufficient rando e is trying to speci hysical world in wh	ciently random" is cited in a r fficiently random" nor do I un omness of bit errors on the m fy a minimum performance re nich it will operate. However I	equirement. I c derstand how a edium. I am n equirement for t how this is verifi	an't seem to find a n implementation ot sure but I *think* the he implementation, not ied is not at all clear.					
Suggested	dRemedy								
Provid Alterna	le a reference to v atively, remove th	where sufficiently random is one subclause.	defined and how	sufficiency is verified.					
Response		Response Status C							
REJE The cu	CT. urrent wording is o	consistent with the wording in	other in-force o	optical clauses.					
The te "suffic 6.2 × 2	erm "sufficiently ra iently random tha 10-10 for 64-octet	ndom" is precisely specified t this results in a frame loss r frames with minimum interp	in clause 154.1 ratio (see 1.4.27 acket gap when	.1: /5) of less than additionally processed					

by the FEC (Clause 153) and PCS (Clause 82). If the error statistics are not sufficiently random to meet this requirement, then the BER shall be less than

that required to give a frame loss ratio of less than  $6.2 \times 10-10$  for 64-octet frames with minimum interpacket gap."

C/ 154 SC 154.5.4

CI 154 SC 154.5.4 P106 L43 # 1-57	C/ 154 SC 154.5.4 P106 L45 # [-59					
Dawe, Piers J G NVIDIA	Dawe, Piers J G NVIDIA					
Comment Type <b>T</b> Comment Status <b>A</b> Requiring a receiver in an amplified link to declare signal detect OK when it's up to 14 dB below sensitivity is a bad requirement.	Comment Type <b>TR</b> Comment Status <b>A</b> A table with only one row isn't a table.					
SuggestedRemedy The limit in the "Receive conditions" column should be the minimum average input power	Suggesteakemeay Reinstate the row "All other conditions Unspecified" then it makes sense as a table and works the same way.					
can say that we tell that to the PMD through the management interface or otherwise, or we ask the receiver to report that the signal is above each of the limits (when it is) separately, without having to know. As the higher sublayers formally don't know either, the first way seems better. If unamplified ability becomes optional, SD for unamplified would be optional with it. With this change, implementers can do just as this draft allows, or do better if they	Response     Response Status     U       ACCEPT IN PRINCIPLE.     See resolution to comment #i-28.					
Wisht.         Response       Response Status       C         ACCEPT IN PRINCIPLE.       See resolution to comment #i-28.         Response to comment i-28 was:       Response to comment i-28 was:         Replace the current content of clause 154.5.4 with the following new text:       "The PMD global signal detect function shall set the state of SIGNAL_DETECT parameter to a fixed OK level. Fixing the value of         SIGNAL_DETECT from the PMD sublayer at OK allows upper layers to determine whether a valid signal is being received, e.g., according to the ability to acquire frame alignment. NOTE-Average input power is not a reliable indication of signal failure in an optically amplified system."	Replace the current content of clause 154.5.4 with the following new text: "The PMD global signal detect function shall set the state of SIGNAL_DETECT parameter to a fixed OK level. Fixing the value of SIGNAL_DETECT from the PMD sublayer at OK allows upper layers to determine whether a valid signal is being received, e.g., according to the ability to acquire frame alignment. NOTE-Average input power is not a reliable indication of signal failure in an optically amplified system."					

C/ 154 SC 154.5.4

C/ 154	SC 154.6	P <b>107</b>	L <b>38</b>	# I-5	C/ 154	SC 154.6		P <b>107</b>	L <b>46</b>	# 1-73		
Rolfe, Benj	jamin	Blind Creek A	ssociates		D'Ambrosi	a, John		Futurewei&n	bsp;Technologie	es, U.S. Sub		
Comment 7 DWDM	<i>Type</i> <b>E</b> I should be spelled	Comment Status <b>A</b> out at first use. Which ap	pears to be her	е.	Comment The fo	<i>Type</i> <b>TR</b> llowing is stated	<i>Comment</i> S d - The black link	<i>tatus</i> <b>A</b> is intentiona	lly "black", imply	ing that no details are		
S <i>uggestedi</i> expand	<i>Remedy</i> I acronym at first u	se			provided on how the link is constructed, configured or operated so that the end-to-end parameter requirements are met.							
Response ACCEF	PT IN PRINCIPI F	Response Status C			This is contradicted in the draft by reference to "amplified" and "unamplified" channels / parameters.							
, lool					Suggested	lRemedy						
Per the first use the doo Modify wavele	22020 SA style ma e of the full term (th cument, and then th 1.4.35b to read "IE ngth division multip	nual "Within text, the acror ne first time in the introduct ne first time in any annexes EE 802.3 Physical Layer sole plexing (DWDM) PHY using	nym or abbrevia tion, then the fir s in which the a specification for g 100GBASE-R	ition should follow the st time in the body of cronym appears)." 100 Gb/s dense encoding, DP-DQPSK	1. Dev to Pag Preser scenar relation include	elop a generic e 10 of https://n ntation to be su rios are implied nship of parame ed in noted pres	black model, bas www.ieee802.org bmitted with prop by the noted OS eters to amplified sentation.	ed on Black /3/ct/public/1 oosed values. NR specifica I and unampli	Link Output pow 9_07/stassar_3o Note - unampli tions. Generic ified scenarios s	er versus OSNR, similar ct_02_0719.pdf. ified and amplified text to describe hould be added. Will be		
modula	ation, and coherent	detection with reach up to	at least 80 km.	(See IEEE Std 802.3,	Response		Response Si	tatus C				
Clause	154.)				ACCE	PT IN PRINCIF	PLE.					
Modify togethe wavele amplifie	the first sentence of er with the associat ngth division multipers and is specified	of 154.1 to read "This claus ed medium, which is a sing plexing (DWDM) channel w I using black link methodol	100GBASE-ZR PMD based dense in one or more optical ."	See resolution to comment #i-42. The resolution to comment i-42 was:								
C/ 154	SC 154 6	P107	/ 42	# 1-75	Implen	nent slides 14.	15. 16. and 17 in					
D'Ambrosia	a, John	Futurewei&nb	sp;Technologie	s, U.S. Sub	https://www.ieee802.org/3/ct/public/tf_interim/20_1203/stassar_3ct_02b_201203.pdf with editorial license.							
Comment 1	Type <b>TR</b>	Comment Status R										
The fol provide configu	lowing is stated - T ed on how the link i ired or operated so	he black link is intentionall s constructed, that the end-to-end param	y "black", imply neter requireme	ing that no details are nts are met.	Create https:// editoria	e informative an /www.ieee802.o al license.	nex 154A from th org/3/ct/public/tf_	ne examples interim/20_12	in 203/stassar_3ct_	_01_201203.pdf with		
It is not	ted that the DWDM	I channel may contain one	or more optical	amplifiers.	C/ 154	SC 154.6		P <b>108</b>	L <b>34</b>	# I-2		
Suggested	Romody	<b>,</b>			Rolfe, Ben	ijamin		Blind Creek /	Associates			
Delete	text indicating that	the DWDM channel may (	ontain one or n	nore optical amplifiers.	Comment	Type <b>GR</b>	Comment S	tatus R				
Response	Ū	Response Status <b>C</b>			G.694.	1 should listed	in the bibliograp	hy (informativ	ve reference).			
					Suggested	lRemedy						
REJEC	anhaala la an "may	contain", which correctly r	eflects the poss	ibility that there may be	Add G	.694.1 to the bi	ibliography					
REJEC The em	ipnasis is on may	optical amplifiers inside the black link, which is crucial for the reader to understand and				Response Response Status C						
REJEC The em optical	amplifiers inside th	e black link, which is cruci			I CODUINC							

 TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
 C/
 154
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 COMMENT STATUS: D/dispatched A/accepted R/rejected
 RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
 SC
 154.6
 1/15/2021 10:03:01 AM

 SORT ORDER: Clause, Subclause, page, line
 SC
 154.6
 1/15/2021 10:03:01 AM

C/ 154	SC	154.6		P <b>109</b>	L <b>41</b>	<b>#</b> I-84	C/ 154	SC	154.7		P <b>109</b>	L <b>52</b>	# <mark>I-77</mark>
D'Ambros	ia, Johr	ı		Futurewei&n	bsp;Technologie	s, U.S. Sub	D'Ambros	ia, Joh	n		Futurewei&n	bsp;Technologi	ies, U.S. Sub
Comment	Туре	TR	Commen	t Status R			Comment	Туре	TR	Comment	Status A		Bucket
The ne NOTE ZR PM	ote state -Coexis /ID over	es - stence of D the same	WDM optication opticat	al signals with c not covered by	haracteristics oth this standard.	ner than the 100GBASE-	It is no Table operat up to a	oted - 154-7 ion on at leas	and Table unamplifi t 80 km of	e 154-8 contain ed links, which <sup>f</sup> single-mode fi	several paran are not neces iber.	neters that have sary to support	e been added to allow t amplified DWDM links
This n the sa Also, i	ote is u me DW it is not	nclear, as ′DM syster clear whet	the "black lin m is similar o ther this star	nk" is just a me or not. ndard covers the	thodology, and w	hat is contained within	Two is 1. To i suppo	sues neet b rted.	road mark	ket potential of	project - unar	plified DWDM	channels need to be
signal	ing targ	eting the t	wo OSNRs.				2. This	s speci	fication is	for a single Pl	HY, yet this sta	tement appear	s to indicate that the rx
Suggestee	dRemec	ly					Questi			t certain paran		ent instances.	
Chang Coexis	ge Note stence l	to between D ber optical	WDM links	supporting 1000	BASE-ZR PMD	s and DWDM links	Delte	noted t	text				
Resnonse			Response	Status C		S Standard.	Response			Response S	Status C		
REJE It's est than than than than than than than than	CT. sential 1 he 1000	to state that BBASE-ZR	at "Coexister R PMD over 1	nce of DWDM o the same black	ptical signals wit link is not covere	h characteristics other ed by this standard.",		PT IN	PRINCIPI	LE.	D440	/ 20	# 1.04
Impler	menting	the sugge	ested remed	y reduces the q	uality of the draft		Zhong Pa	. 30	154.7.1		r IIV	LJU	# 1-01
CI 154	SC	154 7		P48	/ 48	# 1-76	Comment	, Type	F	Comment			
D'Ambros	ia lohr	104.7		Futurewei&n		* <sup>1-70</sup> s &nben:11 S &nben:Sub	The ce	ell read	L s 'The fre	equency in Tab	le 154-6 corres	sponding to the	variable
Comment	Type	E	Commen	t Status R	bsp, i eciliologie	3,&11039,0.0.&11039,000	Tx_op	tical_c	hannel_in	dex'. However	, there is no va	riable named T	[x_optical_channel_index
Follow	<i>i</i> ng is n	oted -					has no	ot prop	erly cross	referenced it.			154-2 nowever the cen
A PMI	D that e	xceeds the	e operating r	ange requireme	ent while meeting	all other optical	Suggested	Reme	dy				
100GE require	BASE-Z ement c	R PMD that of 2 m to 80	at could ope 0 km).	erate over 90 km	n would meet the	operating range	Sugge variab freque	st cha le Cha ncies :	nge the ce nnel cente shown in T	ell sentence to er frequency'. 1 Table 154-6'.	'The frequency	y in Table 154- n is to simplify	6 corresponding to the the cell to 'The
This is	s obviou	is and add	ls no value				Response			Response \$	Status C		
Suggester	Remed	ly text					ACCE	PT IN	PRINCIPI	LE.			
Response	noted		Response	Status C			Chang variab	le to "T le Tx o	The freque	ency in Table 1 annel index."	54–6 where th	e channel inde	x number equals the
REJE The ci optica	CT. urrent w I clause	vording is c s.	consistent wi	ith the wording i	n other in-force I	EEE Std 802.3-2018							

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/ 154 SC 154.7.1 Page 15 of 27 1/15/2021 10:03:01 AM

C/ 154	SC 154.7.1	P <b>110</b>	L <b>33</b>	# 1-63	C/ 154 S	C 154.7.1	P <b>110</b>	L <b>43</b>	# I-65
Zhang, Bo		Inphi Corporat	ion		Zhang, Bo		Inphi Corporat	ion	
Comment Param cell.	<i>Type</i> <b>E</b> eter side-mode s	Comment Status <b>A</b> uppression ratio (SMSR) has	an extra comr	<i>Bucket</i> na in the Description	<i>Comment Type</i> Transmitte defined fre	e <b>T</b> r in-band OSN quencies. I se	<i>Comment Status</i> <b>A</b> NR is a Tx parameter that neve in the 154.8 definition sect	eds to be gua tion 154.8.11	ranteed across the subsection a note
Suggested Sugges other p	<i>Remedy</i> st remove the con arameters in the	mma after (SMSR) and before table.	e (min), to mak	e it consistence with all	mentioning single wav relevant fre	the reference elength for thi equencies.	e frequency of 193.6 THz. Ho s parameter. Instead, this pa	wever, it can irameter shou	not be only specified at a Ild be specified for all
Response		Response Status <b>C</b>			SuggestedRen	nedy			
ACCEI	PT.				in section not add va	move (193.6) 154.8.11 by re lue.	in the parameter description moving (193.6) in several pla	aces. Remov	corresponding changes e the 'NOTE' as it does
C/ 154	SC 154.7.1	P <b>110</b>	L <b>42</b>	# 1-82	Response		Response Status C		
D'Ambrosi	a, John	Futurewei&nbs	sp;Technologie	s, U.S. Sub	ACCEPT I		, 		
Comment OSNR Suggested add de	<i>Type</i> <b>TR</b> not defined in 80 <i>Remedy</i> finition for OSNR	Comment Status A 2.3ct D3.0 or 802.3-2018			The part (1 point of the Concerns 802.3 stan	93.6) in the p requirement have been rais dard. Adding	arameter name is intended to and not that it is only applica sed that 193.6 could refer to THz on the other hand could 3.6 THz channel (even it's pr	c convey 193 able at 193.6 a future, not even enforce	.6 THz is the calibration THz. yet existing, clause of the the impression that it's d channel)
Response		Response Status C						Ji even a use	u channen).
ACCEI The cu band C editoria	PT IN PRINCIPLE rrent definition fo )SNR(193.6). Ma al license.	E. r OSNR and OSNR(193.6) is ke it more generic to apply to	currently in 15 other OSNR r	4.8.11 Transmitter in- elevant definitions, with	Instead ch OSNR rela instead of With editor	ange the mea ted paramete "dB (0.1 nm)" ial license to	surement bandwidth of 0.1 n rs. Thus the unit in the releva update related other subclau	m to 12.5 GH ant cells would ses.	lz and remove 193.6 from d be "dB (12.5 GHz)"
See als abbrev	so resolution to c iation in its first u	omment #i-42 and I-53 which se in the body in the body of	adds OSNR to the document	o 1.5 and spells out in 154.8.11.	See also r	esolution to co	omment # i-42.		
The re-	solution to comm	ent I_42 was			I he resolu	tion to comme	ent I-42 was:		
Implen https://	nent slides 14, 15 www.ieee802.org	5, 16, and 17 in J/3/ct/public/tf_interim/20_120	)3/stassar_3ct_	_02b_201203.pdf with	Implement https://www editorial lic	slides 14, 15 v.ieee802.org ense.	, 16, and 17 in /3/ct/public/tf_interim/20_120	)3/stassar_3c	t_02b_201203.pdf with
Create https:// editoria	informative anne www.ieee802.org al license.	ex 154A from the examples in g/3/ct/public/tf_interim/20_120	)3/stassar_3ct_	_01_201203.pdf with	Create info https://ww editorial lic	ormative anne v.ieee802.org ense.	x 154A from the examples in /3/ct/public/tf_interim/20_120	)3/stassar_3c	t_01_201203.pdf with
The re	solution to comm	ent I-53 was:							
Add "C modify editora	SNR - optical sig heading to read l license.	nal-to-noise ratio" after MFA "Transmitter in-band optical s	S in sublcause ignal-to-noise	1.5 and in 154.8.11 ratio (OSNR)" with					
									Dana 40 at 27

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/ 154	SC 154.7.1	P <b>110</b>	L <b>43</b>	# I-78	C/ 154	SC 154.7.2	P111	L16	# 1-62	
D'Ambrosia	a, John	Futurewei&nb	sp;Technologie	s, U.S. Sub	Zhang, Bo	)	Inphi Corporat	tion		
Comment T	Type <b>TR</b>	Comment Status A			Comment	Туре Е	Comment Status A			
No exp	lanation of the un	it dB (0.1nm).			The va Rx on	alue cell reads 'T	he frequency in Table 154-6 c	corresponding	to the variable Table 154-6	
Suggested	Remedy				Suggester	lRemedy				
Editor	should add refere	nce to ITU-T G.698.2 Clause	e 7.4.2.		Suggested	est change the ce	I sentence to 'The frequency	in Table 154-	6 corresponding to the	
Response		Response Status C			variab	le Channel cente	er frequency' or simplify to 'The	e frequencies	shown in Table 154-6'.	
ACCEF	PT IN PRINCIPLE				Response		Response Status C			
This ha	as been changed	by comment I-42 to 12.5GH	Z.		ACCE	PT IN PRINCIPL	.E.			
The res	sponse to comme	nt I-42 was:			Chang variab	je to "The freque le Rx_optical_ch	ncy in Table 154–6 where the annel_index."	channel index	κ number equals the	
Implem https://	nent slides 14, 15, www.ieee802.org	, 16, and 17 in /3/ct/public/tf_interim/20_12	03/stassar 3ct	02b 201203.pdf with	C/ 154	SC 154.7.2	P <b>111</b>	L <b>20</b>	# 1-46	
editoria	al license.	•		'	Schmitt, N	latthew	Cable Televisi	ion Laboratorie	es Inc. (CableLabs)	
Create	informative anne	x 154A from the examples ir	ı		Comment	Туре <b>т</b>	Comment Status A			
https:// editoria	www.ieee802.org	/3/ct/public/tf_interim/20_12	03/stassar_3ct	_01_201203.pdf with	In looking at Table 154-9, it's not clear that "Average receive power [amplified] (min)" is intrinsically linked to "Receiver OSNR(193.6) [amplified] (min)"; you only learn about the linkage by looking at clause 154.8.12. The same situation exists with "Average receive power [unamplified] (min)" and "Receiver OSNR(193.6) [unamplified] (min)", whose linkage					
Ghiasi, Ali	30 154.7.2	Ghiasi Quantu	<i>L</i> 4 Im LLC,Inphi C	orporation	is only	clarified by clau	se 154.8.13. This could lead	to confusion w	vith the actual	
Comment 7	Type <b>TR</b>	Comment Status A			Suggostor	/Pomody				
The co	nditions for receiv	er stress test such the targe	et BER must be	met is not defined.	Consid	ter adding a note	e or notes to Table 154-9 to cl	arify these link	cares Alternately	
Suggested	Remedy				consid	ler replacing or s	upplementing the table with a	graph that sh	ows what is required and	
Recom	end adding a nev	v section defining stress tres	t conitions suc	n as:	what is	sn't.				
- EVM	23%				Response		Response Status C			
- at Mi	n OSNR receiver	must operate			ACCE	PT IN PRINCIPL	_E.			
- a sin 20 dB/0	osidal jitter mask dec) assuming SJ	with 2 MHz corner frequency can be added to the test in	y (5UI@20 KHz strumentaiton.	2-0.05UI@ 2 MHz with-	See re	esolution to comr	ment # i-42.			
Response		Response Status C			Impler	ment slides 14, 1	5, 16, and 17 in			
ACCE	PT IN PRINCIPLE				https:// editori	/www.ieee802.or al license.	rg/3/ct/public/tf_interim/20_120	03/stassar_3c	t_02b_201203.pdf with	
There was ag met wit	was no consensus reed that the draf th worst case EVN	s to add a stressed received t should be clarified to state //.	senstivity required that the OSNR	irement. However it tolerance has to be	Create https:// editoria	e informative ann /www.ieee802.or al license.	ex 154A from the examples ir g/3/ct/public/tf_interim/20_120	n 03/stassar_3c	t_01_201203.pdf with	

C/ 154 SC 154.7.2 Page 17 of 27 1/15/2021 10:03:01 AM

C/ 154	SC 154.7.2	P <b>111</b>	L <b>22</b>	# I-58	C/ 154	SC 154.7.2	P <b>111</b>	L <b>23</b>	# 1-64
Dawe, Pie	ers J G	NVIDIA			Zhang, Bo	)	Inphi Corpora	ation	
Comment In this there "7 3 2	<i>Type</i> <b>TR</b> s draft, the black link is no corresponding s Maximum and minin	Comment Status <b>R</b> must comply with chroma spec on the receiver. Con num (residual) chromatic	itic dispersion (m mpare G.698.2: dispersion	nax) and (min), but	Comment Param more	<i>Type</i> <b>E</b> neter Receiver ( parameters in th	Comment Status <b>A</b> DSNR (193.6) is missing the u he same Rx table.	nit after 193.6. <sup>-</sup>	This applies to also two
These	e parameters define the the transmission that the term of	he maximum and minimu he system shall be able t	im value of the o o tolerate."	ptical path end-to-end	Suggested Sugge	<i>Remedy</i> est add the unit	'THz' after 193.6 in three para	meters in the R:	x table.
This o tolera	draft has lost somethi nce to chromatic disp	ng very important in trans persion is contrary to all 8	slation. Not spec 02.3 SMF specs	cifying the receiver for since 2002.	Response		Response Status C		
Suggeste	dRemedy				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Add a to the	a requirement for the stressed sensitivity s	receiver to tolerate the ra spec in any 802.3 SMF cl	nge of chromatic ause.	dispersion, e.g. similar	See re	esolution to com	nment # i-65.		
Response	e F	Response Status U			The re	esolution to com	nment i-65 was:		
REJE The fi chron None to chr chanr requir	CT. inal sentence of the c natic dispersion is cor of recent in-force and omatic dispersion. In- nel requirements. The rements in the black l	comment reads "Not spec ntrary to all 802.3 SMF sp d draft receiver specificat stead chromatic dispersio erefore it is very appropria ink specifications.	ifying the receive becs since 2002. ions contain a re on requirements te to include the	er for tolerance to " quirement for tolerance are provided in the chromatic dispersion	The pa point of Conce 802.3 only a Instea OSNR	art (193.6) in the of the requirement erns have been standard. Addir pplicable at the d change the m t related parame d of "dB (0.1 m	e parameter name is intended ent and not that it is only applic raised that 193.6 could refer to ng THz on the other hand could 193.6 THz channel (even it's n neasurement bandwidth of 0.1 eters. Thus the unit in the releven	to convey 193.6 able at 193.6 T a future, not ye d even enforce not even a used nm to 12.5 GHz vant cells would	6 THz is the calibration Hz. et existing, clause of the the impression that it's I channel). z and remove 193.6 from I be "dB (12.5 GHz)"
					With e	ditorial license	to update related other subcla	uses.	
					See a	lso resolution to	o comment # i-42.		
					Impler https:/ editori	ment slides 14, //www.ieee802.o al license.	15, 16, and 17 in org/3/ct/public/tf_interim/20_12	203/stassar_3ct	_02b_201203.pdf with

Create informative annex 154A from the examples in https://www.ieee802.org/3/ct/public/tf\_interim/20\_1203/stassar\_3ct\_01\_201203.pdf with editorial license.

C/ 154 SC 154.7.2

C/ 154	SC 154.7.2	P <b>111</b>	L <b>25</b>	#	I-55
Dawe, Piers	JG	NVIDIA			

### Comment Type TR Comment Status R

This draft lacks a sensitivity or stressed sensitivity spec, but has a spec for receiver OSNR tolerance(193.6), defined in 154.8.16 by reference to G.698.2, where 7.4.3 defines it as at: worst EVM\_RMS, IQ offset, optical return loss at point SS, receiver connector degradations and measurement tolerances, but excluding chromatic dispersion, non-linear effects, reflections from the optical path, PMD, PDL and optical crosstalk. This would need a great deal of interpretation to turn into an actual measurement, with too much opportunity for alternative choices and disagreement. 802.3 doesn't put measurement tolerances in parameter values like that; they are the measurer's problem not the standard's. Not specifying the receiver for tolerance to chromatic dispersion is contrary to all 802.3 SMF specs since 2002. Not having a specific stressed sensitivity spec is contrary to all 802.3 SMF specs since 1998. It is not clear that receiver OSNR tolerance(193.6) enforces the right receiver sensitivity for the unamplified link.

#### SuggestedRemedy

Add clear, specific receiver sensitivity criteria, addressing signal strength, sinusoidal jitter, EVM\_RMS, IQ offset, chromatic dispersion, and for the amplified case, OSNR. Make the unamplified case a "major option" if it's more onerous than the amplified case. If it makes sense to specify tolerance to OSNR and some other things in one spec item, and chromatic dispersion and some others in another spec item, as G.698.2 does, do so. Because this PMD has its own clock domain, the sinusoidal jitter won't be the usual amount. Add associated PICS.

Response

Response Status U

REJECT.

The comment does not provide a specific proposal or provide evidence that the suggested change will improve the quality of the draft.

Furthermore it is very similar to previously submitted comments #15 to D2.1

(https://www.ieee802.org/3/ct/comments/D2P1/8023ct\_D2p1\_comments\_final\_by\_ID.pdf, page 4) and #140 to D2.0

(https://www.ieee802.org/3/ct/comments/D2P0/8023ct\_D2p0\_comments\_final\_by\_ID.pdf, page 28) which were both rejected.

Straw poll: I support not making any changes to the draft based on this comment.

Y	-	1	9
			v

N - 5

A - 3

There was no consensus to make a change to the document at this time.

C/ 154	SC 154.7.2	P <b>111</b>	L <b>29</b>	# I-15
Rolfe, Benja	amin	Blind Creek A	ssociates	

#### Comment Type TR Comment Status R

A table note (a note to a table) is informative. Thus "shall be able to tolerate" (stating a requirement) can not appear in a note to a table. The rquirement (3 dBm) is stated in the table (correctly). The note appears (I'm guessing) to be explanatory text (informative) explaining "damage threshold". For sure, "shall" in a table note is wrong.

## SuggestedRemedy

Change to "Damage threshold is the average optical signal average power level that is tolerated without damage."

Response Response Status C

REJECT.

The current wording is consistent with the wording in other in-force optical clauses. This is a Table Footnote rather than a Table Note, which according to IEEE-SA Style Guide is normative so "shall be able to tolerate" is correct verbage.

C/ <b>154</b>	SC 154.7.2	P <b>111</b>	L <b>31</b>	# I-41
Stassar, Pe	eter	Huawei	Technologies Co	o., Ltd

Comment Type TR Comment Status A

Note b suggests that there are actually 2 PMDs, one for amplified and one for unamplified. Note b was included to express that the unamplified parameters are "informative" and not necessary for the 80 km DWDM project objective. It needs to be anambiguously clear that there is only one PMD specification for the Tx/Rx. If the unamplified receiver parameters become mandatory, we need to re-examine that the values are not too restrictive for the primary objective, potentially reducing yield.

### SuggestedRemedy

Delete Note b.

Response Response Status C

ACCEPT IN PRINCIPLE.

See resolution to comment I-42.

The resolution to comment I-42 was:

Implement slides 14, 15, 16, and 17 in https://www.ieee802.org/3/ct/public/tf\_interim/20\_1203/stassar\_3ct\_02b\_201203.pdf with editorial license.

Create informative annex 154A from the examples in https://www.ieee802.org/3/ct/public/tf\_interim/20\_1203/stassar\_3ct\_01\_201203.pdf with editorial license.

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/ 154	SC 154.7.2	P <b>111</b>	L <b>31</b>	# 1-43	C/ 154	SC 154.7.2	P <b>111</b>	L <b>32</b>	# <u>1</u> -79		
Schmitt, I	Matthew	Cable Televis	ion Laboratories	Inc. (CableLabs)	D'Ambrosi	a, John	Futurewei&	nbsp;Technologi <sup>,</sup>	es, U.S. Sub		
Comment The in defini also r	t Type <b>T</b> nclusion of note "b ing two PHYs or th not necessary to co	Comment Status <b>A</b> " in table 154-9 might be inter- at both data points are not n onvey the requirements accu	erpreted to imply nandatory, which urately, and there	that we're either was not the intent. It's fore could be removed.	Comment Type       TR       Comment Status       A         Note B appears to imply that a Rx may not need to support certain parameters for unamplified scenarios and appears to create a potential interoperability problem         SuggestedRemedy						
Suggeste	e note "b" from Ta	ble 154-9			Delete	Note B					
Response		Response Status C			Response Response Status C ACCEPT IN PRINCIPLE.						
See r	resolution to comm	nent # i-42.			See resolution to comment I-42. The resolution to comment I-42 was:						
The r	esolution to comm	ent I-42 was:			Imploy	aant alidaa 14 1	E 16 and 17 in				
Imple https: editor	ement slides 14, 15 ://www.ieee802.org	5, 16, and 17 in g/3/ct/public/tf_interim/20_12	03/stassar_3ct_	02b_201203.pdf with	Implement slides 14, 15, 16, and 17 in https://www.ieee802.org/3/ct/public/tf_interim/20_1203/stassar_3ct_02b_201203.pdf wit editorial license.						
Creat https: editor	te informative anne ://www.ieee802.org rial license.	ex 154A from the examples i g/3/ct/public/tf_interim/20_12	n 203/stassar_3ct_0	01_201203.pdf with	Create informative annex 154A from the examples in https://www.ieee802.org/3/ct/public/tf_interim/20_1203/stassar_3ct_01_201203.pdf with editorial license.						

C/ 154 SC 154.7.2

									•					
C/ <b>154</b>	SC	154.7.3		P <b>111</b>	L	# 1-42	C/ 154	SC	154.7.3	P <b>111</b>	L <b>45</b>	# 1-52		
Stassar,	, Peter			Huawei Tech	nologies Co., Ltd		Dawe, Pie	ers J G		NVIDIA				
Comment Type       TR       Comment Status A         The black link characteristics in Table 154-10 are specifically to satisfy the project objective of 80 km over a DWDM link. This can only be done on by defining a black link "appropriate for the inclusion of one or more optical amplifiers" (thus without actually requiring it). Then fiber loss is not specified. The specification methodology is based upon that principle. Because of the intent to serve unamplified applications it would be useful to add one or more table(s) with an illustrative (thus informative) power budget for unamplified applications operating over shorter distances than 80 km. This illustrative power budget could contain an example of a fiber loss specification and the addition of an optical path (e.g. dispersion) penalty, without "destroying" the fundamental principle of black link specification methodology.         SuggestedRemedy       A proposal for a new Table and associate informative content will be made in a presentation (pending)         Response       Response Status       C         ACCEPT IN PRINCIPLE.       C							<ul> <li>802.3 writes interoperability specifications. The definitions of transmitter, receiver and channel must each be independently complete enough so that any compliant transmitter receiver and channel will interoperate. The transmitter and receiver have specified pow ranges; the channel must have specifications that control the loss or gain for compliant transmitted signals so that the power window at TP3 is met. In G.698.2, 7.4.1 Maximum and minimum mean input power:</li> <li>"This parameter (together with the maximum and minimum mean channel output power also places a requirement on the maximum and minimum channel insertion loss (or gai of the black link.</li> <li>The requirement is that while the mean channel output power at point SS is within the specified limits, the channel insertion loss (or gain) of the black link for that channel must be such that the power level at point RS is within the maximum and minimum mean input power limits."</li> <li>So in G.698.2, there is a channel insertion loss (or gain) requirement. Here, with the this pieces specified separately, the channel insertion loss (or gain) spec has got lost in translation, and a channel can be compliant with any amount of loss, even when obviou unusable.</li> </ul>							
Implement slides 14, 15, 16, and 17 in https://www.ieee802.org/3/ct/public/tf_interim/20_1203/stassar_3ct_02b_201203.pdf with editorial license. Create informative annex 154A from the examples in https://www.ieee802.org/3/ct/public/tf_interim/20_1203/stassar_3ct_01_201203.pdf with editorial license.						2b_201203.pdf with 1_201203.pdf with	SuggestedRemedy Add black link specifications in 154.7.3, preferably in Table 154-10, so that a black link v deliver the right power at TP3, giving effect to what G.698.2 says, "while the mean chan output power at point SS [TP2] is within the specified limits, the channel insertion loss (of gain) of the black link for that channel must be such that the power level at point RS [TP is within the maximum and minimum mean input power limits". Different for amplified an non-amplified cases. Add associated PICS.							
							Response ACCE	e Pt in	PRINCIPL	Response Status <b>C</b> .E.				
							See r	espons	e to comm	nent I-42.				
							The resolution to comment I-42 was:							
							Imple https: editor	ment sl //www.i ial licen	ides 14, 1 eee802.or ise.	5, 16, and 17 in g/3/ct/public/tf_interim/20_12	203/stassar_3ct_	_02b_201203.pdf with		
							Creat https: editor	e inforn //www.i ial licen	native ann eee802.or ise.	ex 154A from the examples i g/3/ct/public/tf_interim/20_12	n 203/stassar_3ct_	_01_201203.pdf with		

C/ 154 SC 154.7.3 Page 21 of 27 1/15/2021 10:03:01 AM

C/ <b>154</b>	SC 154.8.9	P <b>114</b>	L13	# <mark>1</mark> -85	C/ <b>154</b>	SC 154.8.11	P <b>114</b>	L <b>22</b>	# I-83					
Ghiasi, Ali		Ghiasi Quant	um LLC,Inphi C	orporation	D'Ambros	a, John	Futurewe	i Technolog	ies, U.S. Sub					
Comment 1	Type <b>TR</b>	Comment Status R			Comment Type ER Comment Status A									
Error ve sampes results	ector magnitude s are aquired wi than longer.	references ITU 698.2, where th real time scope. A shorter	e N pairs of in-pl capture will pro	nase and quadratures ivde more optimistic	The us future	The use of "(193.6)" as part of the name of a parameter is potentially problematic in the future when a future Clause 193.6 is expected to come into existence								
Sunnesterl	Remedy													
Jt hoo h		that reaciver reaciver will be	o 2 MUz trockin	a PW if one occurred	Modify	r (193.6) to be (1	193.6 THz) in parameter n	ames						
2 MHz defiend	tracking BW an as 13976.	d Baudrate of 27.9525 GBd t	hen number of s	amples N should be	Response ACCE	Response Response Status C ACCEPT IN PRINCIPLE.								
Response	·T	Response Status U			See re	See resolution to comment # i-65.								
The continuis	mment is not cle tic results than	ear, especially the statement longer.".	"A shorter captu	ire will proivde more	The re	The resolution to comment i-65 was:								
ITU-T (	G.698.2 clearly s	specifies a sample block size	of 1000.		The pa point o	The part (193.6) in the parameter name is intended to convey 193.6 THz is the calibration point of the requirement and not that it is only applicable at 193.6 THz. Concerns have been raised that 193.6 could refer to a future, not yet existing, clause of the 802.3 standard. Adding THz on the other hand could even enforce the impression that it's only applicable at the 193.6 THz channel (even it's not even a used channel).								
The rer sugges	nedy is in the fo tion without any	orm of a statement instead of evidence that it would impro	a proposal inclu ve the quality of	ding a speculative the draft.	802.3 only a									
Straw p	ooll:				Instea	d change the mo	easurement bandwidth of	0.1 nm to 12.5 GF	Iz and remove 193.6 from					
l suppo	ort rejecting the	comment as proposed.			instea With e	USING related parameters. Thus the unit in the relevant cells would be "dB (12.5 GHz)" instead of "dB (0.1 nm)".								
Yes - 6 No - 4					See al	See also resolution to comment # i-42.								
Abstair	ı - 5				The re	solution to com	ment i_12 was:							
There v	vas no consens	us to make a change to the d	Iraft.		There									
					Implement slides 14, 15, 16, and 17 in https://www.ieee802.org/3/ct/public/tf_interim/20_1203/stassar_3ct_02b_201203.pdf with editorial license.									
					Create	e informative ani	nex 154A from the exampl	les in						

https://www.ieee802.org/3/ct/public/tf\_interim/20\_1203/stassar\_3ct\_01\_201203.pdf with editorial license.

C/ 154 SC 154.8.11

C/ <b>154</b>	SC 154.8.11	P <b>114</b>	L <b>24</b>	# 1-54	C/ <b>154</b>	SC 154.8.12		P <b>114</b>	L <b>30</b>	# I-68				
Dawe, Pie	ers J G	NVIDIA			D'Ambros	ia, John	F	<sup>-</sup> uturewei&n	bsp;Technologie	es, U.S. Sub				
Comment	t Type TR	Comment Status A			Comment	Type ER	Comment St	atus A						
Inade Reco (OSN	equately defined terr mmendation ITU-T IR) is the value o	n. This says "OSNR and C G.698.2. G.698.2, 7.4.2, s f the ratio of the signal pow	DSNR(193.6) are ays "optical sign er in the wanted	e defined in al-to-noise ratio channel to the noise	Title o Suggeste	f subclause does dRemedy	s not match the r	name of the	parameter in Tal	ble 154-9				
powe	er density (referred to	0.1 nm)" Not "to the	noise power in (	).1 nm". So it's power /	Add "	receive" to subtitle	e after "average	•						
G.698 see th mathe EVM,	8.2 mean by "signal hat 7.2.12, Maximur ematical manipulation , so that's probably a	power"? Is it the average n error vector magnitude, h on from a measurement, bu a different thing.	power, the OMA has a "signal pov ut I believe that (	, or something else? I ver" derived after some DSNR existed before	Response ACCE See re	EPT IN PRINCIPL	<i>Response St</i> _E. ment # i-42.	atus C						
Suggeste	edRemedy				The re	esolution to comm	ment i-42 was <sup>.</sup>							
Provi	de an unambiguous	definition of OSNR												
Response ACCE	e EPT IN PRINCIPLE	Response Status C			Implement slides 14, 15, 16, and 17 in https://www.ieee802.org/3/ct/public/tf_interim/20_1203/stassar_3ct_02b_201203.pdf wi editorial license.									
In this	s context signal pow	ver means average signal p	ower.		Creat	Create informative annex 154A from the examples in								
See r	resolution to comme	ent # i-82.			editor	ial license.	rg/3/ct/public/tt_l	nterim/20_1	203/stassar_3ct	_01_201203.pdf with				
The r	resolution to comme	nt I-82 was:												
The c band editor	current definition for OSNR(193.6). Mak rial license.	OSNR and OSNR(193.6) i e it more generic to apply t	s currently in 15 o other OSNR re	4.8.11 Transmitter in- levant definitions, with										
See a abbre	also resolution to co eviation in its first us	mment #i-42 and I-53 whic e in the body in the body o	h adds OSNR to f the document i	1.5 and spells out n 154.8.11.										
The r	resolution to comme	nt I-42 was:												
Imple https: editor	ement slides 14, 15, ://www.ieee802.org/ rial license.	16, and 17 in 3/ct/public/tf_interim/20_12	203/stassar_3ct_	02b_201203.pdf with										
Creat https: editor	te informative anne» ://www.ieee802.org/ rial license.	x 154A from the examples i 3/ct/public/tf_interim/20_12	n 203/stassar_3ct_	01_201203.pdf with										
The r	resolution to comme	nt I-53 was:												
Add " modif editor	'OSNR - optical sigr fy heading to read " ral license.	nal-to-noise ratio" after MFA Transmitter in-band optical	AS in sublcause signal-to-noise r	1.5 and in 154.8.11 atio (OSNR)" with										
TYPE: TF	R/technical required	ER/editorial required GR/	general required	T/technical E/editorial	G/general			C/ 1	54	Page 23 of 27				

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/ 154 SC 154.8.12 Page 23 of 27 1/15/2021 10:03:01 AM

C/ 154	SC	154.8.12	P <b>114</b>	L <b>31</b>	# I-80	C/ 154	SC 154.	8.13	P <b>114</b>	L <b>37</b>	<b>#</b> I-69			
D'Ambros	sia, Joh	n	Futurewei&	nbsp;Technologies	, U.S. Sub	D'Ambrosi	a, John		Futurewei&nt	osp;Technologies	s, U.S. Sub			
Comment 154.8 receiv	<i>Type</i> .12 and e input	<b>TR</b> I 154.8.13 b power, but	Comment Status <b>A</b> oth identify ampflied and the references to these s	non-amplfied scena tates should be del	arios for the average eted and instead point	Comment Title of	<i>Type</i> <b>EF</b> subclause	Comment does not match th	t Status <b>A</b> ne name of the p	parameter in Tab	ole 154-9			
to the	minim dReme	um OSNR ti dv	hat is being targeted			Add "re	eceive" to s	ubtitle after "avera	ge"					
Rewo The a avera requir black	rd 154. verage ge inpu ement link.	8.12 receive inp t power [am must be me	ut power shall be within th pplified] defines the input ( et at the minimum OSNR (	ne limits given in Ta power range over w defined by the OSN	ble 154-9. f. The /hich the BER IR(193.6) of the target	Response     Response Status     C       ACCEPT IN PRINCIPLE.     See resolution to comment # i-42.								
Response	<b>;</b>		Response Status C			The rea	solution to	comment i-42 was	:					
ACCE See re	EPT IN esolutio	PRINCIPLE	ent # i-42			Implement slides 14, 15, 16, and 17 in https://www.ieee802.org/3/ct/public/tf_interim/20_1203/stassar_3ct_02b_201203.pdf with editorial license.								
The resolution to comment i-42 was: Implement slides 14, 15, 16, and 17 in https://www.ieee802.org/3/ct/public/tf_interim/20_1203/stassar_3ct_02b_201203.pdf with						Create https:// editoria	informative www.ieee8 Il license.	e annex 154A from 02.org/3/ct/public/t	the examples i tf_interim/20_12	n 203/stassar_3ct_	01_201203.pdf with			
editorial license.						C/ 154	SC 154.	8.14	P <b>114</b>	L <b>46</b>	# I-70			
Create https:/ editor	Create informative annex 154A from the examples in https://www.ieee802.org/3/ct/public/tf_interim/20_1203/stassar_3ct_01_201203.pdf with editorial license.						a, John <i>Type</i> <b>EF</b> subclause	Comment does not match th	Futurewei&nl t Status <b>A</b> he name of the p	osp;Technologies parameter in Tab	s, U.S. Sub ole 154-9			
						SuggestedRemedy Add "Receiver" before "OSNR"								
						Response     Response Status     C       ACCEPT IN PRINCIPLE.     See resolution to comment # i-42.								
						The resolution to comment i-42 was:								
						Implement slides 14, 15, 16, and 17 in https://www.ieee802.org/3/ct/public/tf_interim/20_1203/stassar_3ct_02b_201203.pdf with editorial license.								
						Create informative annex 154A from the examples in https://www.ieee802.org/3/ct/public/tf_interim/20_1203/stassar_3ct_01_201203.pdf with editorial license.								
TYPE: TR COMMEN	/techni IT STA	cal required TUS: D/disp	ER/editorial required G patched A/accepted R/re	R/general required jected RESPON	T/technical E/editorial G/ SE STATUS: O/open W/w	general rritten C/closed	U/unsatist	fied Z/withdrawn	C/ 15 SC 15	54 54.8.14	Page 24 of 27 1/15/2021 10:03:01 A			

SORT ORDER: Clause, Subclause, page, line

C/ 154	SC 154.8.14	P <b>114</b>	L <b>46</b>	# 1-44	C/ 154	SC 154.8	3.14	P114	L <b>47</b>	# <mark>I-81</mark>
Schmitt, M	latthew	Cable Televis	ion Laboratorie	s Inc. (CableLabs)	D'Ambros	ia, John		Futurewei&n	bsp;Technologie	es, U.S. Sub
Schmitt, M Comment T In claus without is listed the tex Suggested Change [amplif Response ACCEF See res The res Implen https:// editoria	latthew <i>Type</i> <b>E</b> se 154.8.14 the p t indication that it d as "Receiver OS t in Table 154.9. <i>IRemedy</i> e the name of the red of the name of the red of the name of the red of the name of the solution to comment solution to comme	Cable Televis <i>Comment Status</i> <b>A</b> arameter in question is calle is a receiver requirement. H SNR(193.6) [amplified]", whi parameter (including the se latch Table 154-9. <i>Response Status</i> <b>C</b> ent # i-42. ent i-42 was: , 16, and 17 in /3/ct/public/tf_interim/20_12 x 154A from the examples i /3/ct/public/tf_interim/20_12	sion Laboratorie ed out as "OSNI However, in Tab ch makes that o ection title) to "F 203/stassar_3ct_ n	s Inc. (CableLabs) R(193.6) [amplified]", le 154-9, the parameter clear but does not match Receiver OSNR(193.6) _02b_201203.pdf with	D'Ambros Comment 154.8. receiv to the Suggested Rewon The ar the res Response ACCE See re The re Impler https:/ editori	ia, John <i>Type</i> <b>TR</b> 14 and 154.8 e input powe average received <i>dRemedy</i> rd 154.8.12 verage receive spective OSM EPT IN PRINCE esolution to c esolution to c ment slides 1 <i>//www.ieee80</i> ial license. e informative <i>//www.ieee80</i> ial license.	Comm 3.15 both iden r, but the refer eive input pow ver OSNR (19: NR being targe <i>Respor</i> CIPLE. comment # i-42 v 4, 15, 16, and 02.org/3/ct/pub	Futurewei&n nent Status <b>A</b> tify amplfied and n rences to these sta- rer that is being tar 3.6 THz) shall be we beted by the black linese Status <b>C</b> 2 was: 1 17 in blic/tf_interim/20_1. rom the examples blic/tf_interim/20_1.	bsp;Technologie on-amplfiied sce ites should be de geted vithin the limits g nk. 203/stassar_3ct_ in 203/stassar_3ct_	es, U.S. Sub enarios for the average eleted and instead point iven in Table 154-9 for _02b_201203.pdf with

C/ 154 SC 154.8.14

C/ 154	SC 154.8.15	P <b>115</b>	L <b>1</b>	# I-45	C/ 154	SC 154.8.15	P <b>115</b>	L115	# I-71			
Schmitt,	Matthew	Cable Televi	sion Laboratories li	nc. (CableLabs)	D'Ambrosi	a, John	Futurewei&nb	sp;Technologie	s, U.S. Sub			
Commen In cla witho is list matc	<i>t Type</i> <b>E</b> suse 154.8.15, the out indication that it ed as "Receiver O h the text in Table	Comment Status A parameter in question is ca t is a receiver requirement. SNR(193.6) [unamplified]", 154.9.	lled out as "OSNR( However, in Table which makes that c	193.6) [unamplified]", 154-9, the parameter lear but does not	Comment Type ER Comment Status A Title of subclause does not match the name of the parameter in Table 154-9 SuggestedRemedy Add "Receiver" before "OSNR"							
Suggeste	edRemedy				Response		Response Status <b>C</b>					
Char OSN	nge the name of the R(193.6) [unamplit	e parameter including the fied]" in order to match Tabl	section title to "F e 154-9.	Receiver	ACCEPT IN PRINCIPLE.							
Respons	е	Response Status C			See re	solution to comm	ent # i-42. Editor's note, sho	ould be line 1.				
ACC	EPT IN PRINCIPL	E.			The re	solution to comm	ent i-42 was:					
See i The r	resolution to comm resolution to comm	nent # i-42. nent i-42 was:			Implement slides 14, 15, 16, and 17 in https://www.ieee802.org/3/ct/public/tf_interim/20_1203/stassar_3ct_02b_201203.pdf with editorial license.							
Imple https edito	ement slides 14, 15 ://www.ieee802.org rial license.	5, 16, and 17 in g/3/ct/public/tf_interim/20_1	203/stassar_3ct_02	b_201203.pdf with	Create informative annex 154A from the examples in https://www.ieee802.org/3/ct/public/tf_interim/20_1203/stassar_3ct_01_201203.pdf with editorial license.							
Crea	te informative anno	ex 154A from the examples	in	004000 15 11	C/ 154	SC 154.8.22	P <b>115</b>	L <b>45</b>	# I-29			
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					Comment Type <b>T</b> Comment Status <b>R</b> In ITU-T G.698.2, maximum Interferometric crosstalk only takes the value of -25 dB in Table 8-7 and Table 8-8 for class DP-DQPSK applications. In tables 8-1 through 8-6, the value is -40 dB for NRZ signals. Hopefully people won't look at the wrong section in the ITU doc							
					Suggested	IRemedy						
					As wa "Reco	s done in other pl mmendation ITU-	aces in this draft, change "Re T G.698.2 for DP-DQPSK sig	ecommendatior gnals" on line 4	n ITU-T G.698.2" to 5.			
					Response Response Status C							
						REJECT. The requirements for the values for crosstalk are directly provided in Subclause 154.7. So there is no need to make more specific references to the relevant values in G.698.2						

C/ 154 SC 154.8.22

										<u> </u>			
C/ <b>154</b>	SC 154.9.1	P <b>116</b>	L <b>7</b>	# I-16	CI A	SC A		P <b>123</b>	L	# 1-24			
Rolfe, Ber	njamin	Blind Creek A	Associates		Huber, T	nomas		Nokia					
Comment	Type E	Comment Status A		Bucket	Commen	t Type ER	Comment S	tatus A		bucket			
Oops. to P80	"Editor's Note (te 2.3cr.". Welcom	o be removed prior to SA ba e to SA ballot. Stuff happen	llot): Text must s - blame it on 2	be aligned with changes 2020 :-)	Anne 153.2	x A does not c 2.3.3.1 is makir	contain an editing ir ng a reference to it	struction to a	add G.798, but th	e NOTE in clause			
Suggestee	dRemedy				Suggeste	dRemedy							
Remo	ve note Editor's n	ote that was meant to be rer	noved before S	A ballot	Add an editing instruction to insert a reference for [Bxx] ITU-T G.798, Characteristics of								
Response	•	Response Status C			optical transport network hierarchy equipment functional blocks								
ACCE	PT.				Response ACCI	∍ EPT IN PRINC	Response S VIPLE.	tatus C					
C/ 154	SC 154.9.5	P <b>116</b>	L <b>46</b>	# <u>I-</u> 17									
Rolfe, Ber	njamin	Blind Creek A	Associates		Add a	Std 802.3ca-2	2020 "IBxx1 ITU-T	G.798 - Chara	acteristics of opti	cal transport network			
Comment	Type <b>TR</b>	Comment Status R			hiera	rchy equipmen	nt functional blocks						
"A sys	tem integrating a	100GBASE-ZR PMD shall of	comply with app	licable local and	CI A	SC A		P <b>123</b>	L11	# 1-36			
nation out of	scope of this star	mitation of electromagnetic in adard It is the implementer	nterference." is s responsibility	stating a requirement to assure that the	Trowbride	ne. Stephen		Nokia					
syster	n complies with a	pplicable codes, regulations	, and laws. All	of which are subject to	Commen	t Type ER	Comment S	tatus A		bucket			
chang	e after the publica	ation of this standard and all	of which are ou	itside the control of	Missi	ng addition of	bibliographic refere	ence to ITU-T	G.798				
Suggester	dRemedy				Suaaeste	dRemedv							
Chan	ne to: It is the im	plementers responsibility to a	assure a system	n integrating a	Insert [Bxx] ITU-T G.798-Characteristics of optical transport network hierarchy equipment								
100G	BASE-ZR PMD co	omplies with applicable local	and national co	odes for the	functional blocks								
limitat	ion of electromag	netic interference.			Response	9	Response S	tatus C					
Response		Response Status C			ACCI	EPT IN PRINC	SIPLE.						
REJE	CI.				See r	esponse to co	mment I-24.						
This is	s identical with tex	t that appears in every optic	al PMD clause	in the in-force base	Deer								
standa	ard.				Resp	onse to comm	ient I-24 was:						
C/ 154	SC 154.11.4.	6 P <b>122</b>	L <b>1</b>	# I-48	Add a	an editing instr	uction to insert the	following refe	erence before [B	48a] as inserted by			
Dawe, Pie	ers J G	NVIDIA			IEEE hiera	sta 802.3ca-2 rchv equipmen	t functional blocks	G.798 - Chara ".	acteristics of opti	cal transport network			
Comment Black	<i>Type</i> <b>E</b> Link	Comment Status A		Bucket		5 1 1							
Suggested black	dRemedy link												
Response ACCE	PT.	Response Status C											

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/ A SC A Page 27 of 27 1/15/2021 10:03:01 AM