

IEEE P802.3ct D3.0 100 Gb/s over DWDM systems Initial Sponsor ballot comments

Cl 1 SC 1.4.181a P23 L20 # I-3

Rolfe, Benjamin Blind Creek 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.

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

Cl 1 SC 1.4.35b P23 L9 # I-50

Dawe, Piers J G NVIDIA

Comment Type TR Comment Status R

What the Clause 153 SC-FEC sublayer does is much the same as what the Clause 50 WAN Interface Sublayer does: it takes a 64B/66B encoded stream and puts it in a telecoms style wrapper. The SC-FEC is quite different to the "KR4" or "KP4" FEC. Also, this PHY uses a telecoms style clock domain on the line. It doesn't work by "using 100GBASE-R encoding". While it may carry a 64B/66B stream, what it actually uses is SC-FEC framing, and is significantly different to all in-force BASE-R (or BASE-P) PHYs.

SuggestedRemedy

Change "using 100GBASE-R encoding, DP-DQPSK modulation" to "using 100GBASE-R encoding, GMP mapping, SC-FEC framing, and DP-DQPSK modulation".
(If the group is ashamed of using all those things, it could change how the PHY works, but that would be more disruptive.)

Response Response Status U

REJECT.

The commentor has not demonstrated how changing it would improve the quality of the draft. The same comment was submitted as technical, not required in D2.0, comment 139 (see https://www.ieee802.org/3/ct/comments/D2P0/8023ct_D2p0_comments_final_by_clause.pdf, page 5) and the working group modified the wording to the current definition.

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CI 154 SC 154.7.2 P111 L25 # I-55

Dawe, Piers J G

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 - 19
N - 5
A - 3

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

CI 154 SC 154.7.2 P111 L22 # I-58

Dawe, Piers J G

NVIDIA

Comment Type TR Comment Status R

In this draft, the black link must comply with chromatic dispersion (max) and (min), but there is no corresponding spec on the receiver. Compare G.698.2:
"7.3.2 Maximum and minimum (residual) chromatic dispersion
These parameters define the maximum and minimum value of the optical path end-to-end chromatic dispersion that the system shall be able to tolerate."
This draft has lost something very important in translation. Not specifying the receiver for tolerance to chromatic dispersion is contrary to all 802.3 SMF specs since 2002.

SuggestedRemedy

Add a requirement for the receiver to tolerate the range of chromatic dispersion, e.g. similar to the stressed sensitivity spec in any 802.3 SMF clause.

Response Response Status U

REJECT.
The final sentence of the comment reads "Not specifying the receiver for tolerance to chromatic dispersion is contrary to all 802.3 SMF specs since 2002."
None of recent in-force and draft receiver specifications contain a requirement for tolerance to chromatic dispersion. Instead chromatic dispersion requirements are provided in the channel requirements. Therefore it is very appropriate to include the chromatic dispersion requirements in the black link specifications.

CI 154 SC 154.5.4 P106 L45 # I-59

Dawe, Piers J G

NVIDIA

Comment Type TR Comment Status A

A table with only one row isn't a table.

SuggestedRemedy

Reinstate the row "All other conditions Unspecified" then it makes sense as a table and works the same way.

Response Response Status U

ACCEPT IN PRINCIPLE.

See resolution to comment #i-28.

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."

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Cl 153 SC 153.2.3.2.4 P84 L22 # I-60

Dawe, Piers J G NVIDIA

Comment Type TR Comment Status A

The GMP mapper and SC-FEC encoder are far too complicated to be implemented with high confidence based on only these sections, G.709 and G.709.2 Annex A.

SuggestedRemedy

As requested before, please provide a sample SC-FEC frame. There is provision for a downloadable file if it is larger than one would want in the standard. It may be acceptable to publish the beginning and end of the frame, omitting most of the payload if what is omitted really is obvious.

Response Response Status U

ACCEPT IN PRINCIPLE.

An example SC-FEC codeword is expected to be generated and provided in the <http://standards.ieee.org/downloads/802.3/>, with the expected filename 802.3ct-2021_downloads.zip.

Add to the end of clause 153.2.3.2.5 SC-FEC Encoder the following:
"NOTE-A file containing an example SC-FEC codeword is available at <http://standards.ieee.org/downloads/802.3/>."

Cl 154 SC 154.8.9 P114 L13 # I-85

Ghiasi, Ali Ghiasi Quantum LLC, Inphi Corporation

Comment Type TR Comment Status R

Error vector magnitude references ITU 698.2, where N pairs of in-phase and quadratures samples are acquired with real time scope. A shorter capture will provide more optimistic results than longer.

SuggestedRemedy

It has been suggested that receiver receiver will have 2 MHz tracking BW, if one assumes 2 MHz tracking BW and Baudrate of 27.9525 GBd then number of samples N should be defined as 13976.

Response Response Status U

REJECT.

The comment is not clear, especially the statement "A shorter capture will provide more optimistic results than longer."

ITU-T G.698.2 clearly specifies a sample block size of 1000.

The remedy is in the form of a statement instead of a proposal including a speculative suggestion without any evidence that it would improve the quality of the draft.

Straw poll:

I support rejecting the comment as proposed.

Yes - 6
No - 4
Abstain - 5

There was no consensus to make a change to the draft.