Cl **91** *SC* **91.5.3.3** *P* **143** *L* **37** # 2

Ran, Adee Intel

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

The text in this paragraph results from resolution of comment #18 on D1.3, but the response wasn't implemented correcly.

According to ran_3bj_01a_0113 slide 11, symbol errors should be counted in blocks of 2^13 codewords, and the threshold should be 417 errors (instead of a period of 1 ms and a threshold of 870 used in D1.4; these values were taken from an earlier version of the presenation).

The behavior of the error monitoring function is very sensitive to the number of symbols in the observation window. Specifying a period instead of an exact number of symbols might cause confusion or implementations with varying behavior (e.g. false alarm rates, "guaranteed" MTTFPA).

Using a symbol count instead is unambiguous and easy to implement.

The thershold was calculated so as to trigger at a SER of 6.6e-5, which translates to a UCR of 4.95e-17 and an MTTFPA of 1.5e9 years.

Suggested remedy includes definition of the threshold as a parameter K, to facilitate using a different value for KP4 (subject of another comment).

SuggestedRemedy

Change "in consecutive non-overlapping 1 ms intervals" to "in consecutive non-overlapping blocks of 8192 codewords".

Change "If the number of symbol errors in a 1 ms interval exceeds 870" to "If the number of symbol errors in a block of 8192 codewords exceeds the threshold K=417".

In PICS item RF8 (91.7.4.2), change "When the number of symbols errors in a 1 ms interval exceeds 870" to "When the number of symbols errors in a block of 8192 codewords exceeds the threshold K".

Proposed Response *Response Status* **O**

Cl **91** *SC* **91.5.3.3** *P* **143** *L* **37** # 1

Ran, Adee Intel

Comment Type **T** *Comment Status* **X**

The error monitoring calculations are based on the 100GBASE-CR4/KR4 RS-FEC. Bypassing error indication is also possible in 100GBASE-KP4, but in that case a higher SER is tolerable (for the same MTTFPA and frame error rate).

To achieve MTTFPA of 15e9 years in KP4, the SER should be below 1.31e-3; with that SER, the _expected_ number of errors in a window of 8196 codewords is 5820 - much higher than the K=417 suggested for CR4/KR4.

For technical completeness, in order to prevent frequent disconnections of perfectly safe links, the threshold for 100GBASE-KP4 should be higher. The value in the suggested remedy was selected to have a mean-time-to-disconnect of just over a century.

SuggestedRemedy

Change "If the number of symbol errors in a 1 ms interval exceeds 870" to "If the number of symbol errors in a block of 8192 codewords exceeds a threshold K".

Insert a new paragraph after this one, reading
"When used to form a 100GBASE-CR4 or 100GBASE-KR4 PHY, the threshold K=417 will be used. When used to form a 100GBASE-KP4, the threshold K=6380 will be used".

Proposed Response *Response Status* **O**

Cl **91** *SC* **91.5.3.3** *P* **143** *L* **39** # 3

Cideciyan, Roy IBM

Comment Type **ER** *Comment Status* **X**

Notation in rx_coded<0:1> is not consistent with notation that has been used.

SuggestedRemedy

Replace rx_coded<0:1> by rx_coded<1:0>

Proposed Response *Response Status* **O**

Cl **93A** *SC* **93A.1.2.3** *P* **318** *L* **30** # 4

Healey, Adam LSI Corporation

Comment Type **T** *Comment Status* **X**

Draft 1.3 comment #36 was not correctly implemented. In Table 93A-2, the imaginary part of rho_2 should be -0.04093 and the imaginary part of gamma_2 should be -0.03914.

SuggestedRemedy

Correct the typos.

Proposed Response *Response Status* **O**