8802-3/802.3 REVISION REQUEST 1178

DATE: 11th Sep, 2006
NAME: Pat Thaler
COMPANY/AFFILIATION: Broadcom
E-MAIL: pthaler@broadcom.com

REQUESTED REVISION:
STANDARD: IEEE Std 802.3-2005
CLAUSE NUMBER: 48.2.4.2.3
CLAUSE TITLE: 10GBASE-X PCS

PROPOSED REVISION TEXT:

Replace item a) with" Idle insertion or deletion occurs in groups of four consecutive Idle characters.
Replace item d) with "The four characters following a Terminate control character shall not be deleted."

RATIONALE FOR REVISION:

Subclause 48.2.4.2.3 allows deletion of a set of 4 idles that will result in loss of a packet. Consider the following sequence of columns

```
Column    1 2 3 4 5
Lane0.... D I O I I
Lane1.... T I O I I
Lane2.... I I O I I
Lane3.... I I O I I
```

Column 1 contains a terminate, column 3 contains an sequence ordered_set. Deletion of column 2 appears to be allowed by all the criteria in 48.2.4.2.3: it is a group of 4 Idle characters and deleting it will leave a greater than five character IPG even if the ordered set is not counted. If column 2 is deleted, the check_end function (48.2.6.1.4) will insert E in lanes 2 and 3 of the column before 1 and in lanes 0 and 1 of column 1 because the column after the ||T|| column contains code groups other than /A/ or /K/.

The change to rule d ensures that the minimum IPG will still be 5 (the T character plus the 4 idles follow it). The combination of rule d) and the change to a to requirement that the idles removed be consecutive ensures that the column after the T will contain idles and deals with the lack of column boundaries in the unencoded domain. Without the change to a) the last to Is in column 2 and the first to idles in column 4 could be deleted which would cause the packet to be lost and render the ordered set unencodeable.

The style of d) chosen seemed to fit best with the current style of the description. If we agree that even the unencoded data stream is column aware, then one could have said: "When deleting idles, the idle

ordered_set following a Terminate ordered_set is not deleted." or "The ordered_set following a Terminate ordered_set is not deleted." I would still add "consecutive" to a) because it ensures that one can't do something like add two idles in front of a sequence ordered_set and two after - they should always be added consecutively.

IMPACT ON EXISTING NETWORKS:

Should be none. If any existing device is not following these rules, it can be causing packet loss.

Please attach supporting material, if any		
Submit to:- Bob Grow, Chair IEEE 802.3		
E-Mail: Bob.Grow@intel.com		
+------- For official 802.3 use ----------+		
REV REQ NUMBER: 1178		
DATE RECEIVED: 11th Sep, 2006		
~~EDITORIAL~~/TECHNICAL		
ACCEPTED/DENIED		
BALLOT REQ'D YES/~~NO~~		
COMMENTS: 14-May-07 Ver: D1.2 Status: V		
For information about this Revision Request see -		
http://www.ieee802.org/3/maint/requests/revision_history.html#REQ1178		