IEEE 802.3
802.3cb Task Force Minutes – Ad Hoc Call - 5-Oct-2017

Webex teleconference; details on the Ad Hoc page.
Prepared by Dan Smith, chairman and acting secretary

Attendees:

Name	Affiliation	Attended 10/5/2017
Estes, David	Spirent	x
Horner, Rita	Synopsys	x
Kabra, Lokesh	(unknown)	x
Kim, Yong	Broadcom	x
Law, David	HPE	x
Marris. Arthur	Cadence	x
McClellan, Brett	Marvell	x
McMillan, Larry	Western Digital	x
Smith, Dan	Seagate	x
Wu, Peter	Marvell	x
Attendee Count:		10

Agenda:

- Continued discussion regarding SFD alignment difference between 2.5GBASE-X and 1000BASE-X (speed-up of 1 Gb/s to 2.5 Gb/s).

Call to Order and Remarks:

- Meeting started: Thursday, 5-Oct-2017, 11:01 am, MDT.
- Patent Statement and Meeting Participation requirements were shown with no response from the participants.

Presentation/Discussion:

- Briefly discussed the point that 802.3cb will not be able to submit to RevCom until April 2018
- The slide set called "IEEE 802.3cb PCS compatibility to 1000BASE-X PCS" was presented.

  (*Find the revised slide set as "802.3cb_PCS_compatibility_to_1000BASE-X_V1b.pdf" on the 802.3cb Ad Hoc page. The chairman recommends opening the slides while reading the minutes.*)

- Major points reviewed during the presentation and ensuing discussion:
  - Problem statement:
    1000BASE-X transmit puts SFD on lane 2 or lane 3, causing a conflict with a 2.5GBASE-X receiver, which expects SFD in lane 3. (presentation slide #6, lower right corner)
  - Draft 3.0, comment i-125, was intended to add a note to CL 46.3.3.3 to add informative information about the possibility of incompatibility. (A possible "trap" to unwary implementers.)
  - Draft 3.1, comment r01-10 was in response to comment i-125 stating that this must be "normative". TF disagreed, rejecting the comment, but discussion led to an alternative.
  - Text is proposed to state that 2.5G/5G SEI standard (802.3cb) does not behave the same way as Clause 46.3.3.3, which only applies to 10 Gb/s MAC/RS/XGMII. The proposed text can be added to our Annex 127A to accept SFD on lane 2 or lane 3 to prevent any assumption that 2.5GBASE-X is compatible with 1000BASE-X that is running 2.5 times faster.
  - A comment could be created to force lane 3 alignment but the current comment does not address that.
  - Any wording we add to correct this, should not be localized to error handing (CL 46.3.3.3); it should also be added to the receive function in 46.3.2 that the SFD could be on lane 2 in addition to lane 3.
  - Text in Annex 127A works well. Note in 46.3.3.3 should remain because it adds clarity. But we don't want to set any traps for the implementer.
  - Proposed solution:
    - In 46.3.2.3 RXD (receive data)
      At the end of the 1st paragraph "…RXD<8> the least significant bit of lane 1, RXD<16> the least significant bit of lane 2, and RXD<24> the least significant bit of lane 3. Figure 46–8 shows the behavior of RXD<31:0> during frame reception."
      Propose to add "Error free 10 Gb/s operation will not change the transmitted SFD alignment in lane 3. Error free 2.5 Gb/s operation with 2.5GBASE-X Operation described in CL127A may result in received SFD alignment in lane 2 or lane 3." Objection was made that a compliant transmitter will not result in SFD alignment in lane 2.
    - Use the above change as an 'Accept in Principle' for Draft 3.1, comment r01-10. (see slide 12)
  - 3 possible solutions:
    1. No change to current Draft: this allows the text to remain as is.
    2. Apply suggested changes in comment r01-10.
    3. 2.5GBASE-X PCS receive could add the extra preamble when it is missing. Complications: Can this be done without examining the packet? Does it end in TR or TRR? How many IDLES? This examines the packet but it is a total layer violation.

- The standard 802.3cb draft should help to prevent the conflict with the installed base. Best option is to mitigate the trap.
- We can't call out a singular (special case) PMD inside the RS clause. It has to remain the same for all speeds. People will stack the PCS layers. If this isn't allowed, we'll have an issue.
  Counter argument: we are just stating the behavior and how to eliminate the trap.
- It was suggested we delete 127A and not allow speed-up from 1G. it's an interoperability problem. But the market has already taped out 1G speed-up. We have interoperability issues, one way or another.
- 802.3cb cannot exclude 2.5GBASE-T in Clause 46.
- We can add the statement on slide 12 into 127A, and not touch Clause 46, but we still don't solve the "trap" issue.
- 127A is an informative Annex: maybe we could put disclaimers that do not allow the trap.
- What we have now, in black and white (as a strict interpretation), will require a new comment to be written to mitigated the trap issue.

- 2.5GBASE-T PHY Shim Layer does address this and may have more information to address this issue. See the Ad Hoc discussion of 802.3bz.

- Further 802.3cb Task Force Business
  The deadline for RevCom entry is Friday, 13-Oct-2017. 40 or 50 days lead time is required. This prevents us from getting in before the end of the year. The next opportunity to pass our draft to RevCom is April, when the 802.3 revision is submitted to RevCom (when all the drafts go into the big spec). We will have to amend our draft to meet that revision, at that point. At the March Plenary, we can request RevCom. But all of this is based on recirculation and closure. We will probably be finished in January, but the revision of the 2018 spec will be in Sponsor Ballot and we have to wait for that to complete.

- Adjourned 12:56 pm MDT.
- Next Meeting, Ad Hoc call on 12-Oct-2017.