802.3 Maintenance Task Force September 2008

Wael William Diab

Maintenance Task Force Chair

Instructions for the WG Chair

The IEEE-SA strongly recommends that at each WG meeting the chair or a designee:

- **Show slides #1 through #4 of this presentation**
- **Advise the WG attendees that:**
  - The IEEE's patent policy is consistent with the ANSI patent policy and is described in Clause 6 of the *IEEE-SA Standards Board Bylaws*;
  - Early identification of patent claims which may be essential for the use of standards under development is strongly encouraged;
  - There may be Essential Patent Claims of which the IEEE is not aware. Additionally, neither the IEEE, the WG, nor the WG chair can ensure the accuracy or completeness of any assurance or whether any such assurance is, in fact, of a Patent Claim that is essential for the use of the standard under development.

- **Instruct the WG Secretary to record in the minutes of the relevant WG meeting:**
  - That the foregoing information was provided and that slides 1 through 4 (and this slide 0, if applicable) were shown;
  - That the chair or designee provided an opportunity for participants to identify patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) of which the participant is personally aware and that may be essential for the use of that standard
  - Any responses that were given, specifically the patent claim(s)/patent application claim(s) and/or the holder of the patent claim(s)/patent application claim(s) that were identified (if any) and by whom.

- The WG Chair shall ensure that a request is made to any identified holders of potential essential patent claim(s) to complete and submit a Letter of Assurance.
- It is recommended that the WG chair review the guidance in *IEEE-SA Standards Board Operations Manual* 6.3.5 and in FAQs 12 and 12a on inclusion of potential Essential Patent Claims by incorporation or by reference.

  Note: **WG** includes Working Groups, Task Groups, and other standards-developing committees with a PAR approved by the IEEE-SA Standards Board.

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(Optional to be shown)

Participants, Patents, and Duty to Inform

All participants in this meeting have certain obligations under the IEEE-SA Patent Policy. Participants:

- "Shall inform the IEEE (or cause the IEEE to be informed)" of the identity of each "holder of any potential Essential Patent Claims of which they are personally aware" if the claims are owned or controlled by the participant or the entity the participant is from, employed by, or otherwise represents
    - "Personal awareness" means that the participant "is personally aware that the holder may have a potential Essential Patent Claim," even if the participant is not personally aware of the specific patents or patent claims
- "Should inform the IEEE (or cause the IEEE to be informed)" of the identity of "any other holders of such potential Essential Patent Claims" (that is, third parties that are not affiliated with the participant, with the participant's employer, or with anyone else that the participant is from or otherwise represents)
- The above does not apply if the patent claim is already the subject of an Accepted Letter of Assurance that applies to the proposed standard(s) under consideration by this group

    Quoted text excerpted from IEEE-SA Standards Board Bylaws subclause 6.2

- **Early identification of holders of potential Essential Patent Claims is strongly encouraged**
- **No duty to perform a patent search**

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Patent Related Links

All participants should be familiar with their obligations under the IEEE-SA Policies & Procedures for standards development.

Patent Policy is stated in these sources:

IEEE-SA Standards Boards Bylaws

http://standards.ieee.org/guides/bylaws/sect6-7.html#6

IEEE-SA Standards Board Operations Manual

http://standards.ieee.org/guides/opman/sect6.html#6.3

Material about the patent policy is available at

http://standards.ieee.org/board/pat/pat-material.html

If you have questions, contact the IEEE-SA Standards Board Patent Committee Administrator at patcom@ieee.org or visit http://standards.ieee.org/board/pat/index.html

This slide set is available at http://standards.ieee.org/board/pat/pat-slideset.ppt

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Call for Potentially Essential Patents

- If anyone in this meeting is personally aware of the holder of any patent claims that are potentially essential to implementation of the proposed standard(s) under consideration by this group and that are not already the subject of an Accepted Letter of Assurance:
  - Either speak up now or
  - Provide the chair of this group with the identity of the holder(s) of any and all such claims as soon as possible or
  - Cause an LOA to be submitted

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Other Guidelines for IEEE WG Meetings

- **All IEEE-SA standards meetings shall be conducted in compliance with all applicable laws, including antitrust and competition laws.**

  - **Don't discuss the interpretation, validity, or essentiality of patents/patent claims.**

  - **Don't discuss specific license rates, terms, or conditions.**

    - Relative costs, including licensing costs of essential patent claims, of different technical approaches may be discussed in standards development meetings.

      - Technical considerations remain primary focus

  - **Don't discuss or engage in the fixing of product prices, allocation of customers, or division of sales markets.**

  - **Don't discuss the status or substance of ongoing or threatened litigation.**

  - **Don't be silent if inappropriate topics are discussed … do formally object.**

  See *IEEE-SA Standards Board Operations Manual*, clause 5.3.10 and "Promoting Competition and Innovation: What You Need to Know about the IEEE Standards Association's Antitrust and Competition Policy" for more details.

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Proposed Agenda

- Review patent slide set
- Review and approve agenda
- Approve previous minutes
- Update on .3ax / .3ay
- Ad-hoc report on .3 MAC services
- New maintenance requests
- Move of 802.1AB Annex F to 802.3
- Request from 802.1 on timestamp / sync
- 802.3.1 discussion and PAR review
  - Impact / Coordination of .1AB Annex F to .3

Proposed Agenda Time Allocation

Agenda Item	Time	Owner
Review patent slide set	5m	Diab
Review and approve agenda	5m	Diab
Approve previous minutes	5m	Diab
Update on .3ax / .3ay	5m	Diab/Law
Ad-hoc report on .3 MAC services	40m	Mandin
New maintenance requests	20m	Diab
Move of 802.1AB Annex F to .3	20m	Diab
.1 request on timestamp / sync	20m	Diab
802.3.1 PAR review	1hr	Frazier

802.3ax and 802.3ay Update

- On the RevCom agenda for the SASB consideration next week

- LOA request letters sent out

MAC Services Straw Poll

- Absent anything else, do you think this should be a Cor

  – Y:7　　　　　N:4

- If maintenance has any of the other significant items to do (like the ones being discussed today), do you think this should be a standalone Cor

  – Y:　　　　　N:

Maintenance Request Status

- 38 Open Maintenance requests
- 2 new request since July
  - Timing considerations for PAUSE
  - Capitalization convention
- Current status of open requests:

Balloting	20
Ready for ballot	10
Awaiting clarification	0
To be categorised	8

Notes:

All 'Balloting' requests included in IEEE 802.3ax draft

All 'Ready for Ballot' assigned to IEEE P802.3at

New requests

Request	Standard	Subclause	Subject
1197	IEEE Std 802.3-2005	31B.3.7	PAUSE Timing for 10G
1198	IEEE Std 802.3-2005	Figs 15/49/60/61/64/65-1	Capitalization

New Requests Summary

- 1197
  - PAUSE timing for 10G and above allows for a maximum delay of 60 pause quanta
  - Original calculation was sufficient for initial 10G PMDs but doesn't work for newer additions:
    - 16   MAC, RS and MAC Control
    - 8   an XGXS pair plus XAUI
    - 7   10GBASE-R PCS
    - 28   WIS
    - 1   clause 52, 53 or 54 PMD not LRM
    - Total: 60

- 1198
  - Inconsistent use of CAPS for sublayer refs in 802.3

New Maintenance Request 1197

- REQUESTED REVISION:
  - STANDARD: 802.3-2005 / CLAUSE: 31B.3.7   Timing considerations for PAUSE operation
- PROPOSED REVISION TEXT:

  I don't have exact proposed text. There is more than one option.

  A) Increase the round trip delay allowed for 10 Gig ports to 74. Note that this assumes that WIS is not allowed over LRM. I couldn't find any place where the standard explicitly said the combination was not allowed but it doesn't include a port type for it (i.e. there is no 10GBASE-LRMW). Possibly an explict statement should be added. If WIS over LRM was allowed, the maximum round trip is 77.

  B) State that the maximum delay is 74 PHYs 10 Gig PHY types that support maximum link lengths of 100 m.

  C) State that maximum delay is 74 for 10GBASE-T and 10GBASE-KR plus FEC. Maximum delay for all other 10 Gig PHYs is 61 pause_quantum bit times.

New Maintenance Request 1197

- RATIONALE FOR REVISION:

There is an inconsistency in 802.3. The PAUSE reaction delay in 31B.3.7 is not sufficient for all PHYs. A corrigenda should be considered for fixing this because it is fairly common for people allocating the buffers needed for non-drop operation with PAUSE to rely on the value they read in 31B.3.7

31B.3.7 Timing considerations for PAUSE operation allows 60 pause_quantum bit times for the reaction to the reception of PAUSE:

"At operating speeds of 10 Gb/s and above, a station shall not begin to transmit a (new) frame more than sixty pause_quantum bit times after the reception of a valid PAUSE frame that contains a non-zero value of pause_time, as measured at the MDI."

That was the maximum when we completed the first 10 Gig addition to 802.3. That reflected the delays in Table 44-2 for a MAC plus the longest delay PHY at that time: a pair of XGXS sublayers, 10GBASE-R PCS, WIS and PMD.

But since then we have added other PHYs and PMDs and some have a higher delay.

The 10GBASE-T PHY is allowed a delay of 50. Add 16 for the MAC, RS and MAC Control and 8 for XGXS and the delay is 74.

10GBASE-KR without FEC also slightly breaks the 60 pause quanta - its PMD allows 2 pause_quantum bit times of round trip delay. Given how short the medium delay is for this PHY, the extra pause_quantum isn't going to break any upper layer implementation that is built for 100 m links over other PHYs.

FEC adds another 12 pause quanta (6144 bit times) so 10GBASE-KR with FEC can have 73 pause_quantum bit times of delay - almost the same as 10GBASE-T.

New Maintenance Request 1197

- RATIONALE FOR REVISION:

Another instance occurs if one runs WIS over LRM. In that case one has a PMD with 18 pause quanta of delay replacing one with 1 so the totoal delay would be 77, but I think this can be ignored as outside the standard. There isn't a WIS PMD type for LRM and LRM specifies only the signaling rate for 10GBASE-R without a WIS.

Option A is the smallest modification of the text and it is consistant with the approach taken for the slower speed PHYs - one delay per speed.

Option B rationale is that the two PHYs with longest delay (assuming that WIS plus LRM is not a valid PHY) are used with short media. Specifying the extra delay as only applying to PHYs that support physical media up to 100 m allows a PHY independent upper layer implementation can use the same buffering to cover slower PHYs with shorter link delays and faster PHYs with longer link delays. If we increase the delay for all PHYs an implementation independent upper layer design might need to assume that it can have that greater PHY delay plus long link delays.

Option C is more specific about which two are slower so those upper layer implementors not supporting those lower PHYs would know they could use the shorter number. But the list would have to be maintained if any new PHYs with delay over 61 are added. The change from 60 to 61 is to support the 10GBASE-KR delay without FEC.

New Maintenance Request 1197

- IMPACT ON EXISTING NETWORKS:

There may be some existing networks that use PAUSE with too small a buffer because they relied on the 60 pause_quant bit times. But since the higher delay PHYs are already in the standard, such implementations already may not have enough buffering for no drop. This doesn't change that situation. The change will help those doing future configuration to choose the right buffering levels. In many cases, the buffer thresholds are configurable so existing networks may be able to change configuration to allow for the additional delay.

New Maintenance Request 1197: Revision Text

Replace

"At operating speeds of 10 Gb/s and above, a station shall not begin to transmit a (new) frame more than sixty pause_quantum bit times after the reception of a valid PAUSE frame that contains a non-zero value of pause_time, as measured at the MDI."

With

"At an operating speed of 10 Gb/s, a station with a 10GBASE-T or a 10GBASE-KR with FEC PHY shall not begin to transmit a (new) frame more than seventy-four pause_quantum bit times after the reception of a valid PAUSE frame that contains a non-zero value of pause_time, as measured at the MDI. A station using any other 10 Gb/s PHY shall not begin to transmit a (new) frame more than sixty pause_quantum bit times after the reception of a valid PAUSE frame that contains a non-zero value of pause_time, as measured at the MDI."

Motion (1197)

Move:

- Accepting proposed resolution (c) as shown in diab_1_0908.pdf to maintenance request 1197 and

- Task the Maintenance Task Force Chair to prepare a draft Corrigendum PAR with scope to address maintenance request 1197 for consideration at the November plenary

Moved: Booth   Second: Barrass

Y: 14   N:0   A:0

Motion Passes 11.34am

New Maintenance Request 1198

- REQUESTED REVISION:
  - STANDARD: 802.3-2005 / CLAUSES: 15, 49, 60, 61, 64, 65
- PROPOSED REVISION TEXT:
  - See Figures 15-1, 49-1, 60-1, 61-1, 64-2, and 65-1
  - Figures should use all CAPS for text that is in reference to sublayer or interface.
  - For example, in Fig 15-1, the LLC, MAC, and PLS blocks use a mixture of CAPS and lower case, which is not done in any other figures throughout 802.3.
- RATIONALE FOR REVISION:
  - Per 16.1, point a "All capital letters or mixed uppercase and lowercase letters may be used, depending on the amount of text, as long as the presentation is consistent throughout the document.
  - The above figures are done in an inconsistent manner with other similar diagrams in 802.3, and need to be corrected.
- IMPACT ON EXISTING NETWORKS:
  - None

Move of Annex F from .1AB to .3

- Issues to be discussed
  - Who does the move in 802.3
  - When is the move done
  - How is it coordinated with 802.1ABREV

- Impact on 802.3 projects
  - 802.3at
  - 802.3az
  - 802.3.1

Move of Annex F from .1AB to .3: Process & Recommendation to 802.3

- Limited scope project (802.3bc) that moves all of 802.1AB Annex F except the SNMP portion into 802.3 (a new Clause and perhaps related Annex)
  - .3at and .3az become contingent on this
    - Modify .3at and .3az PARs to be contingent on 802.3bc
  - .3at and .3az add their TLVs to the new Clause
  - .3at and .3az add the Clause 30 material (including Annexes)
- SNMP Portion of Annex F into 802.3.1

Motion (Annex F Move)

Move:

- 802.3 Maintenance Task Force adopt the process in diab_1_0908.pdf for dealing with the move of 802.1AB Annex F to 802.3

- Present the process in diab_1_0908.pdf as a recommendation to 802.3 at the November plenary

- Maintenance Task Force Chair to generate an 802.3bc PAR in time for the WG Chair to meet the 30-day deadline for 802.3 and EC consideration at the November plenary

Moved: Barrass   Second: Frazier

Y: 17 N:0   A:0

Tech – 75%

Motion Passes 12.09pm

Sync and Timestamp:
Questions for Joint Meeting with 802.1

- Suggestion A
  - Free running time-stamping register in the PHY that can be read via the management interface

- Need bodies to come to 802.3
  - Consensus is to ask for an 802.3 PAR to do the work