802.3bn EPoC Ad-hoc
Multiple Modulation Profile (MMP)

F2F Meeting during January Interim

January 23, 2013

Jorge Salinger, Comcast
Ad-hoc Chair

Attendance

- Joe Solomon – Comcast
- Jorge Salinger - Comcast
- Juergen Seidenberg, BK Tel
- Curtis Knitle, CableLabs
- Kevin Noll, TWC
- Michel Allard, Cogeco
- Duane Remein, Huawei
- Hesham ElBakoury, Huawei
- Alan Brown, Aurora
- Dave Baran, Entropic
- Ed Boyd, Broadcom
- Mike Darling, Shaw
- Mike Emmendorfer, Arris
- Andrea Garavaglia – Qualcomm
- Saif Rahman, Comcast

- Bill Powell – ALU
- Juan Montojo, Qualcomm
- Nicola Varanese, Qualcomm
- Christian Pietsch, Qualcomm
- Eugene Dai, Cox
- Tom Staniec, Cohere
- Sanjay Kasturia, Qualcomm
- Guangshen Wu, Huawei
- Thushara Hewavithana, Intel
- John Ulm, Motorola
- Victor Hou, Broadcom
- Marek Hajduzcenia, ZTE
- Edwin Mallette, BrightHouse
- Leo Montreuil, Broadcom
- Tim Brophy, Cisco

- Steve Shellhammer, Qualcomm

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 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 [Note: Quoted text excerpted from IEEE-SA Standards Board Bylaws subclause 6.2]:
    - "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
- 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/develop/policies/bylaws/sect6-7.html#6

IEEE-SA Standards Board Operations Manual

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

Material about the patent policy is available at

http://standards.ieee.org/about/sasb/patcom/materials.html

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

This slide set is available at
https://development.standards.ieee.org/myproject/Public/mytools/mob/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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Objective and Goal

- This ad-hoc will be a forum to discuss the merits and draw-backs of MMP for EPoC

- The ad-hoc will to try to arrive to a recommendation on whether MMP should be used or not in EPoC for the next EPoC F2F meeting.

- While we may discuss approaches for implementing MMP for EPoC to facilitate the discussion on its merits or draw-backs, it is not the purpose of this ad-hoc to arrive to a recommendation on how MMP would be implemented even if it is deemed appropriate to use it.

Agenda

- Attendance
- Review IEEE Patent Policy – all participants acknowledged understanding of the IEEE Patent Policy and no
- Review Ad-hoc Status slides to be presented at the Interim meeting
- Conduct a series of straw-polls to validate the current status of the task force

MMP Ad-hoc Activities

- Large number of meetings held as conference calls during November, December and January
  - Met every week on Tuesdays at 9:00 AM ET
  - Held one or two additional meetings most of the weeks
  - Held our last meeting as a F2F this morning

- Minutes of the meeting have been sent to the Email reflector and posted to the EPoC TF Web site.

- Received and reviewed multiple presentations, including materials to show the benefit of MMP, ways in which it could be implemented, and problems with its implementation

- Great effort from the team to achieve the objective and goal of the Ad-hoc

Status

- Considered realistic use cases, held multiple open discussions and took straw-man polls to establish the potential consensus

- Four possible approaches discussed:
  1. Exclude MMP from the EPoC Standard
  2. Make MMP an optional feature in the EPoC Standard
  3. Make MMP required for TDD and not required for FDD
  4. Include MMP in the EPoC Standard

- The Ad-hoc has made significant progress on the evaluation of the benefits of MMP and the issues with its implementation
  - The benefits of MMP have been established without question
  - The issues with including MMP in EPoC/EPON are clearly understood
  - Solutions for including MMP in the EPoC Standard are being discussed

- Despite the serious effort from the Ad-hoc, the team is close to making a recommendation, but did not achieve 75% consensus

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Recommendations from the Ad-Hoc

- Continue the Ad-hoc and its current objective until the 802 Plenary in March, 2013
  - Make a decision on whether to include MMP or not into the EPoC Standard
- If the Ad-hoc agrees that MMP should be implemented in some or all use cases, then expand the objective of the Ad-Hoc to achieve consensus on how MMP would be implemented
  - This would save time in the overall goal of completing the standard as per the current schedule

12

Next Steps

- If the recommendations are approved by the TF:
  - Continue with teleconference meetings as needed
  - Achieve consensus on whether MMP should or not be supported in EPoC (original goal)
    - Goal will be to achieve consensus in ~2 weeks
  - If the consensus from the ad-hoc is to recommend that MMP should be supported in EPoC in some way, review proposals on how MMP could be supported
  - Discuss pros/cons of proposals and achieve consensus on which approach to recommend to the TF
  - Bring recommendations to the next plenary meeting

13

Straw-poll #1: Exclude MMP from the EPoC Standard

- Yes: 8

- No: 14

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Straw-poll #2: Make MMP an optional feature in the EPoC Standard

- YES: 13
- No: 9

Straw-poll #3: Make MMP required for TDD

- Yes: 10
- No: 12

16

Straw-poll #4: Make MMP required for FDD

- Yes: 10
- No: 14

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Straw-poll #5: Include MMP as a requirement in the EPoC Standard

- Yes: 11
  No: 12

18

Straw-poll #6: Assuming that we were working on a separate PHY for TDD, make MMP required for the TDD PHY

- Yes: 5

- No: 6

Conclusions

- It is clear from the vote that:
  - A large group of participants would like to include MMP, but that the number does not achieve a 75% majority
  - A large group of participants would prefer to exclude MMP from the EPoC standard
  - Therefore, the straw-polls show that the assertion that we are not reaching consensus in the Ad-hoc is correct
- We will also compose a list of the additional information needed to make a decision

20