Agenda and General Information

IEEE P802.3bj 100 Gb/s Backplane and Copper Cable Task Force

John D’Ambrosia
Dell
Chicago, IL, USA, Sept 13 -14
Agenda

- Appointment of Recording Secretary
- Confirmation of Chair
- Welcome and Introductions
- Approve Agenda
- Approve July 2011 Minutes
- Goals for this meeting
- Reflector and Web
- Ground Rules
- IEEE
  - Structure
  - Bylaws and Rules
  - Call for Patents
  - IEEE Standards Process
- Liaisons and Communications
- Review of Action Items
- Presentations
- Motions and Closing Business
- Future Meetings
Task Force Decorum

- Photography or recording by permission only (2010 SASB Op Manual 5.3.3.4)
- Cell phone ringers off
- Press (i.e., anyone reporting publicly on this meeting) are to announce their presence (5.3.3.5)
- Wear your badges at all times in meeting areas
  - Help the hotel security staff improve the general security of the meeting rooms
  - PCs HAVE BEEN STOLEN at previous meetings
  - DO NOT assume that meeting areas are secure
- Please observe proper decorum in meetings
Goals for the meeting

- Task Force Formation
- Hear Technical Presentations
- Adopt Project Schedule

- Lay the groundwork for the next meeting
Reflector and Web

• To subscribe to the 100GCU reflector, send an email to:

   Listserv@ieee.org

   with the following in the body of the message (do not include “<>”):

   subscribe stds-802-3-100GCU <yourfirstname> <yourlastname>

   end

• Send 100GCU reflector messages to:

   STDS-802-3-100GCU@listserv.ieee.org

• Study Group web page URL:

   http://www.ieee802.org/3/100GCU/index.html
Task Force Private Area

- URL: http://www.ieee802.org/3/100GCU/private/index.html
  - Username: xxxxxxx
  - Password: xxxxxxxx

- Write it down...

- Note - The draft, and any other content, is posted for your review only, and neither the content nor access information should be copied or redistributed to others in violation of document copyrights.
Ground Rules

• Based upon IEEE 802.3 Rules
  – Foundation based upon Robert’s Rules of Order
  – Anyone in the room may speak
  – Anyone in the room may vote

• **RESPECT** … give it, get it

• NO product pitches

• NO corporate pitches

• NO prices!!!
  – This includes costs, ASPs, etc. no matter what the currency

• NO restrictive notices
Attendance

• Tutorial Material on attendance tool

• URL (Valid for this meeting only)
  – URL: http://seabass.ieee.org/imat
  – Password will be provided
IEEE Structure

IEEE-SA Standards Association

IEEE-SA Standards Board

RevCom
Review Committee

NesCom
New Stds. Committee

IEEE 802
Sponsor Group

IEEE 802.3
Working Group

IEEE 802.3
P802.3bj Task Force

Approval Process

Standards Process

Technical Activities
Important Bylaws and Rules


- IEEE-SA Standards Board Bylaws


- IEEE 802 LAN/MAN Standards Committee (LMSC) Policies and Procedures
  http://standards.ieee.org/about/sasb/audcom/pnp/LMSC.pdf

- IEEE 802 LAN/MAN Standards Committee (LMSC) Operations Manual

- IEEE 802 LAN/MAN Standards Committee (LMSC) Working Group (WG) Policies and Procedures

- IEEE 802.3 Working Group Operating Rules
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.

25 March 2008 (updated 29 March 2011)
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
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

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

25 March 2008 (updated 29 March 2011)
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
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.
Overview of IEEE 802.3 Standards Process (1/5)- Study Group Phase

Idea

Call for Interest

802.3 Form SG

Yes

Check Point

802 EC Form SG

No

Check Point

Yes

Study Group Meetings

HERI

Objectives

5 Criteria

PAR

802.3 Approve

No

Check Point

Yes

NesCom Approve

No

Check Point

Yes

SASB Approve

No

Check Point

Yes

Approved PAR

Note: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.
Overview of IEEE 802.3 Standards Process (2/5) – Task Force Comment Phase

1. Approved PAR
   - Task Force Meetings
     - Objectives
       - Proposals Selected
         - Yes: D1.0
         - No: To 802.3 WG Ballot
2. Task Force Review
   - D1.(n+1)
     - Yes: TF Review Done
     - No: D2.0
   - To 802.3 WG Ballot
     - Yes: A
     - No: D2.0
Overview of IEEE 802.3 Standards Process (3/5) – Working Group Ballot Phase

- **D2.(n+1)**
  - Yes: 802.3 WG BALLOT
    - TF Resolves Comments
      - Yes: Substantive Changes
      - No: In Scope New Negatives
        - No: Greater than or equal to 75%
        - Yes: Check Point
  - No: 802.3 Forward to Sponsor Ballot
    - Yes: 802 EC Forward to Sponsor Ballot
    - No: D3.0

**Notes:** At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

See 802.3 Operating Rules 7.1.4 and listed references for complete description.
Overview of IEEE 802.3 Standards Process (4/5) - Sponsor Ballot Phase

D3.(n+1)

LMSC Sponsor BALLOT

TF Resolves Comments

Substantive Changes

Yes

In Scope New Negatives

Yes

≥ 75%

Check Point

802.3 Forward to RevCom

802 EC Forward to RevCom

Notes: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.

See 802.3 Operating Rules 7.1.5 and listed references for complete description.
Overview of IEEE 802.3 Standards Process (5/5) – Final Approvals / Standard Release

Notes: At "Check Point", either the activity is ended, or there may be various options that would allow reconsideration of the approval.
Liaisons and Communications

• OIF
  – Inform OIF of creation of Task Force
  – See proposed response
dambrosia_02_0911.pdf
# Action Items

<table>
<thead>
<tr>
<th>Volunteer</th>
<th>Action</th>
<th>Date Assigned</th>
<th>Status As of 9/8</th>
</tr>
</thead>
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<tr>
<td>Adam Healey</td>
<td>Create spreadsheet related to simulation details</td>
<td>Mar-15-11</td>
<td>Completed 9/7</td>
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As of 9/8
IEEE P802.3bj 100 Gb/s Backplane and Copper Cable Task Force Project Documents

• PAR
  – http://www.ieee802.org/3/100GCU/par_a_0511.pdf

• 5 Criteria

• Objectives
  – Approved by IEEE 802.3 WG 7/11
IEEE P802.3bj Task Force Objectives

- Support full-duplex operation only
- Preserve the 802.3 / Ethernet frame format utilizing the 802.3 MAC
- Preserve minimum and maximum FrameSize of current 802.3 standard
- Support a BER of better than or equal to $10^{-12}$ at the MAC/PLS service interface
- Define a 4-lane 100 Gb/s backplane PHY for operation over links consistent with copper traces on “improved FR-4” (as defined by IEEE P802.3ap or better materials to be defined by the Task Force) with lengths up to at least 1m.
- Define a 4-lane 100 Gb/s PHY for operation over links consistent with copper twin-axial cables with lengths up to at least 5m.
Proposed Timeline

2010

SG Formed

TASK FORCE Formed

PAR

TF Review

WG Ballot

Sponsor Ballot

STD!!!

2011

2012

2013

2014

PAR Approved 802.3

Last New Proposal Mod. Choice

Last Feature

Last Technical Change

Plenary

Interim

PAR Approved LMSC
## Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Presenter</th>
<th>Affiliation</th>
<th>Title</th>
<th>File Name</th>
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<tr>
<td>9:05 AM</td>
<td>John D'Ambrosia</td>
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<td>agenda_01_0911.pdf</td>
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<td>Adam Healey</td>
<td>LSI</td>
<td>Simulation parameters and results template with example</td>
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<td>Roy Cideciyan</td>
<td>IBM</td>
<td>512B/513B Transcoding and FEC for 100 Gb/s Backplane and Copper Links</td>
<td>cideciyan_01_0911.pdf</td>
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<td>10:45 AM</td>
<td>Jitendra Mohan</td>
<td>National Semi</td>
<td>Measurements and Simulation Results in Support of IEEE 100GCU Objective</td>
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<td>IBM</td>
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<td>patel_01a_0911.pdf</td>
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<td>Qlogic</td>
<td>PAM-2 on a simulated 1 Meter Backplane Channel including manufacturing tolerance</td>
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<td>Howard Frazier</td>
<td>Broadcom</td>
<td>Characteristics of Installed Backplane Channels</td>
<td>frazier_01_0911.pdf</td>
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<td>Mounir Meghelli</td>
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<td>Line Signaling and FEC Performance Comparison for 25Gb/s 100GbE</td>
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<td>SI Analysis of 25Gb/s Transmission over Backplane and Copper Cables Links</td>
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<td>Applied Micro</td>
<td>100G backplane PHY: NRZ and PAM4</td>
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<td>Will Bliss</td>
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<td>A Preliminary Proposal for PAM-4 TX Specification</td>
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<td>Enabling Improved DSP Based Receivers for 100G Backplane</td>
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<td>Discussion &amp; Strawpolls</td>
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<td>Break for the Day</td>
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Note –Times listed are subject to change.
## Presentations

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<tr>
<th>Time</th>
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Note –Times listed are subject to change.
# Meeting Map

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</table>
Future Meetings

• See: http://www.ieee802.org/3/interims/index.html

• Nov 2011 Plenary
  – Date: Week of Nov 7, 2011
  – Location: Hyatt Regency Atlanta, Atlanta, GA, USA

• Jan 2012 Interim
  – Date: week of Jan 23, 2012
  – Location TBD

• March 2012 Plenary
  – Date: week of March 11
  – Location: Hilton Waikoloa Village, Waikoloa, HI USA

• Anyone interested in hosting a meeting contact me.
Thank You!