IEEE 802.3WG
Opening Plenary Report

IEEE P802.3bj

100 Gb/s Backplane and Copper Cable Task Force

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Big Island, Hawaii, USA, March 2012

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

- Task Force web page URL:

  http://www.ieee802.org/3/bj/index.html

Project Documentation

- PAR
  - http://www.ieee802.org/3/bj/PAR_approved_0911.pdf
- 5 Criteria
  - http://www.ieee802.org/3/bj/5C_0911.pdf
- Objectives
  - http://www.ieee802.org/3/bj/objectives_0711.pdf
- Adopted Timeline
  - http://www.ieee802.org/3/bj/timeline_0911.pdf

Task Force Private Area

- URL: http://www.ieee802.org/3/bj/private/index.html
  - Username: XXXXXX
  - Password: XXXXXXXX
- Write it down…
- Note - The drafts within are posted for your review only, and neither the drafts nor access information should be copied or redistributed to others in violation of document copyrights.

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.
- To define optional Energy-Efficient Ethernet operation for 100G Backplane and Twinaxial cable PHYs specified in P802.3bj

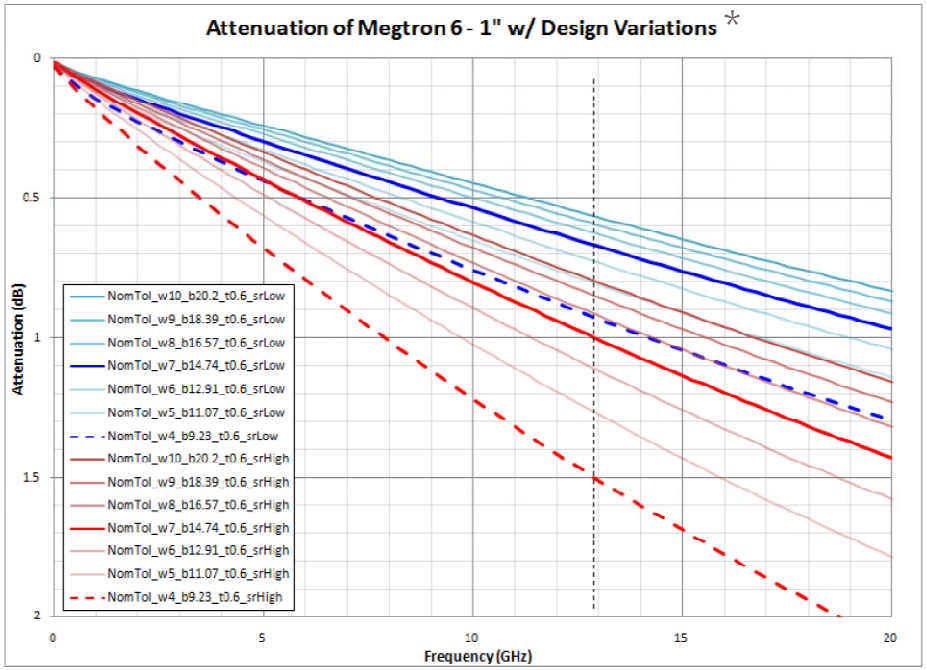
Activities Since Nov 2011 Plenary

- Jan 2012 Interim
  - Thanks to Ethernet Alliance!
  - 38 Presentations
    - EEE
    - Autonegotiation
    - PCB Materials
      - Variation
      - Overview of DkDf tool
    - NRZ / PAM-4 / PAM-4C (4-D TCM Coded as per 802.3ab, 1000BASE-T)
    - FEC
    - Two PHY / Channel Approach
    - Test Points
    - Chief Editor's Report

Jan 12 Interim

- Motion #3: Motion to support use of Algebraic Tool (found in http://www.ieee802.org/3/bj/public/tools.html) and material loss parameters (proposed in kochuparambil_01a_0112) for channel consensus building.
  - Results All (y/n/a): 48 / 14 / 21 Motion Passed

Reasonable Designs – Nominal Material



*using Algebraic Tool v2.02a – see backup slides for nominal Meg6 Dk/Df values

Attenuation* (dB/in) at:	1 GHz	6.5 GHz	7 GHz	12.89 GHz	14 GHz
Meg6_LowSR – Wide	0.0951	0.4159	0.4433	0.7562	0.8127
Meg6_LowSR – Narrow	0.1466	0.5849	0.6205	1.0152	1.0847
Meg6_HighSR – Wide	0.1175	0.5960	0.6367	1.0891	1.1688
Meg6_HighSR – Narrow	0.1856	0.8971	0.9557	1.5924	1.7020
ImpFR4_LowSR – Wide	0.1202	0.6096	0.6541	1.1772	1.2734
ImpFR4_LowSR – Narrow	0.1717	0.7794	0.8323	1.4410	1.5512
ImpFR4_HighSR – Wide	0.1427	0.7904	0.8484	1.5158	1.6367
ImpFR4_HighSR – Narrow	0.2106	1.0930	1.1692	2.0283	2.1813

*using Algebraic Model v2.02a – see backup slides for values entered in M

Source: kochuparambil_01a_0112.pdf

Jan 12 Interim

- **Motion #4:** Move to adopt the baseline proposal described in slides 4-11 “diminico_01a_0112” for the first draft of 802.3bj. All table values are TBD.
  - Results: All (y/n/a): 75 / 0 / 10
  - Note: Chair clarified with the mover that the “first draft” referred to in the motion is not D1.0.

- **Straw Poll #1:**
- I support the adoption of FEC for 100GBASE-CR4
- Option 1: Optional Results All (y/n): 49 / 6
- Option 2: Mandatory Results All (y/n): 24 / 21

Jan 12 Interim

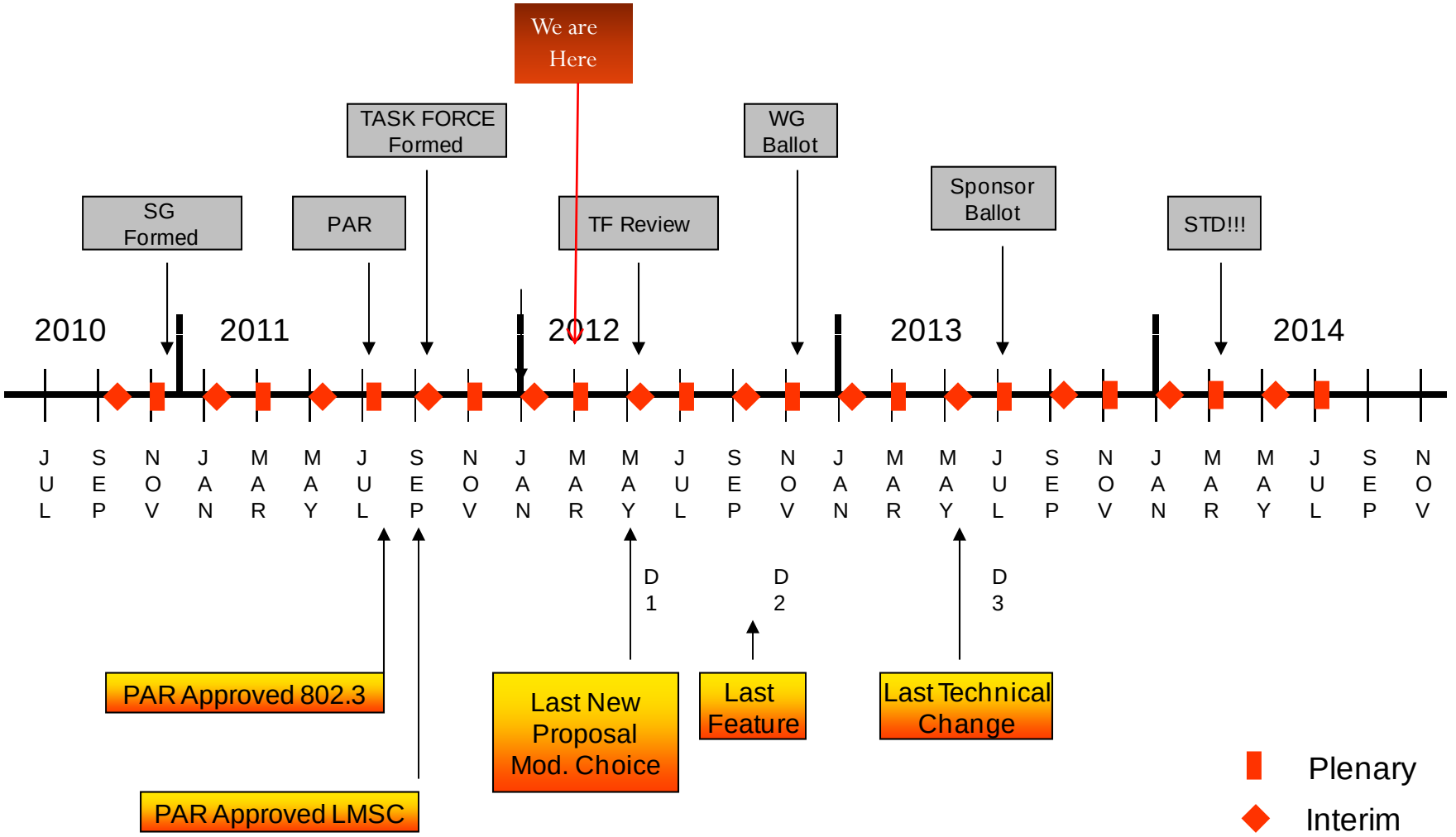
- **Motion #5:** Replace the current backplane reach objective:
  - Define a 4-lane 100 Gb/s backplane PHY for operation over links consistent with copper traces on “improved FR-4” (as defined by IEEE P802.3ap or better materials to be defined by the Task Force) with lengths up to at least 1m.

    With:
  - Define a 4-lane 100 Gb/s PHY for operation over backplane channels with an insertion loss of <= 33 dB at 7 GHz
  - Define a 4-lane 100 Gb/s PHY for operation over backplane channels with an insertion loss of <= 35 dB at 12.9 GHz
  - **Results: All (y/n/a): 44/15/32 Motion Failed**
- **Motion #6:** Move to adopt dudek_01a_0112 as the baseline for a 100GbE backplane PHY (100GBASE-KR4)
  - **Results: All (y/n/a): 25/34/29 Motion Failed**
  - (Note that Motion #7 was made during discussion on #6. After #7 failed, vote on #6 occurred.)
- **Motion #7:** Motion to amend Motion #6: Move to adopt dudek_01a_0112 and brown_01a_0112 as the baseline for a dual mode 100GbE backplane PHY (100GBASE-KR4)
  - **Results: All (y/n/a) 23 / 42 / 20 Motion Failed**
- **Motion #8:** Replace the current backplane reach objective:
  - 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.

    With:
  - Define a 4-lane 100 Gb/s PHY for operation over backplane channels with an insertion loss of <= 35 dB at 12.9 GHz
  - **Results: Motion #8 withdrawn after Motion 10 passes**
- **Motion #9:** Move to amend motion #8: Replace the current backplane reach objective:
  - 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.

    With:
  - Define a 4-lane 100 Gb/s PHY for operation over backplane channels with an insertion loss of <= 33 dB at 7 GHz
  - **Results: Motion becomes moot after Motion #8 withdrawn**
- **Motion #10: Motion to table motion #9**
  - **Results: All (y/n) 23 / 20 Motion Passes**

Adopted Timeline



http://www.ieee802.org/3/bj/timeline_0911.pdf

Goals for the meeting week

- Hear 21 Technical Presentations
- Make Baseline Proposal Decisions!

- Lay the ground work for Draft 1.0 and the next meeting

Meeting Map

	Mon	Tues	Wed	Thur
8:00				
8:30				
9:00	Next Gen 100G Optics (Common Time with P802.3bj TF)	All	All	All
9:30				
10:00				
10:30				
11:00				
11:30				
12:00	Lunch	Lunch	Lunch	Lunch
12:30				
13:00	IEEE 802.3WG Opening Plenary			IEEE 802.3WG Closing Plenary
13:30		All	All	
14:00				
14:30				
15:00				
15:30				
16:00				
16:30				
17:00				
17:30		Break	Break	
18:00	Break			
18:30			Social	
19:00	Call-For-Interest #1	Call-For-Interest #3		
19:30				
20:00				
20:30	Call-For-Interest #2	Call-For-Interest #4		
21:00				
21:30				

Liaisons and Communications

- None

Thank You!