

Approved Minutes  
IEEE 802.3 Next-Gen 40 Gigabit and 100 Gigabit Optical Ethernet Study  
Group  
Interim meeting  
May 15 – 16, 2012  
Minneapolis, MN, USA

Prepared by: Kapil Shrikhande

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**May 15, 2012**

The meeting was called to order at 9 a.m., on 15 May, 2012 by Dan Dove, Study Group Chair.

Kapil Shrikhande volunteered as Recording Secretary for this meeting.

Documentation for the Minneapolis meeting can be found at:  
<http://www.ieee802.org/3/100NGOPTX/public/may12/index.html>

Review of unapproved minutes from the March 2012 interim and plenary meetings. There was no opposition to approving the minutes.

Agenda and General Information

By: Dan Dove, SG Chair

See: dove\_01\_0512\_optx (revised presentation uploaded later in the meeting)

The Chair presented the agenda. There was no opposition to approving the agenda.

The Chair asked if there are any reporters in the room. Dan Dove, Chair said he may be approached by the press in his role as Chair.

The Chair presented the Study Group decorum.

The Study Group was reminded that photographs or recordings are not allowed without permission.

The Chair presented the rest of the Agenda and General Information presentation

Start of presentations was at 9:30 a.m.

Presentation # 1

Title: Proposed 5 Criteria Responses

By: Dan Dove, APM

See: dove\_02\_0512\_optx

Presentation # 2

Title: PAM MPI: Overview & Recommendations

By: Vipul Bhatt, Cisco

See: bhatt\_01\_0512\_optx

Break 10:30 a.m.

Reconvened at 10:45 a.m.

Presentation # 3

Title: Performance Studies of 100 Gigabit Ethernet Enabled by Advanced Modulation Formats

By: Jonathan Ingham, University of Cambridge

See: ingham\_01\_0512\_optx

Presentation # 4

Title: Update on Bandwidth Requirements for PAM

By: David Lewis, JDSU

See: lewis\_01a\_0512\_optx

Presentation # 5

Title: PAM-8 Optical Simulations

By: Ali Ghiasi, Broadcom

See: ghiasi\_01\_0512\_optx

Break at 12:05 p.m.

Reconvened at 1:15 p.m.

Presentation # 6

Title: Cabled Fiber Connectivity Relative Costs

By: Chris Cole, Finisar

See: cole\_01a\_0512\_optx

Presentation # 7

Title: 100GE-nR4 ("MR4") Parallel SMF PMD Economic Feasibility

By: Chris Cole, Finisar

See: cole\_02\_0512\_optx

Presentation # 8

Title: Cabling Cost-Centroid Lengths for Simplified Total Cost Comparisons

By: Paul Kolesar, Commscope

See: kolesar\_01a\_0512\_optx

Presentation # 9

Title: PAM-16 Implementation Update

By: Gary Nicholl, Cisco

See: nicholl\_01\_0512\_optx

Break at 3:05 p.m.

Reconvened at 3:30 p.m.

Presentation # 10

Title: Multiple reflected MPI analysis for 100G-PAM8 Transmission

By: Taichi Kogure, Opnext

See: kogure\_01\_0512\_optx

Presentation # 11

Title: Multiple Optical Modulation Format and Direct Detection Schemes for the Single-Carrier PMD

By: Song Shang, Semtech

See: shang\_01a\_0512\_optx

Presentation # 12

Title: PAMx specs and penalties

By: Francois Tremblay, Semtech

See: tremblay\_01a\_0512\_optx

Presentation # 13

Title: PSM4 technical feasibility and relative cost updates

By: Tom Palkert, Luxtera

See: palkert\_01\_0512\_optx

Presentation # 14

Title: Measurements Results of 25.78 GBd VCSEL Over OM3 with and without Equalization

By: Ali Ghiasi, Broadcom

See: ghiasi\_02\_0512\_optx

Meeting recessed for the day at 4:55 p.m.

Meeting to resume at 9 a.m. May 16<sup>th</sup>

**May 16, 2012**

Meeting resumed by the Chair at 9 a.m.

Round of introductions

The chair presented the agenda for the day.

The chair covered study group decorum and ground rules.

There was no one reporting publicly at the meeting.

Presentation # 15

Title: Issues and Progress Toward a Commonly Accepted MMF Link Model

By: Robert Lingle, OFS Optics

See: lingle\_01\_0512\_optx

Presentation # 16

Title: Comparing standard and revised MPN treatment in 10G Ethernet spreadsheet models, benchmarking to 10GBASE-SR

By: Jonathan King, Finisar

See: king\_01\_0512\_optx

Break at 10:13 a.m.

Reconvened at 10:30 a.m.

#### Presentation # 17

Title: Energy-Efficient Ethernet for 40G/100G Next Generation Optics

By: Wael Diab, Broadcom

See: bennett\_01\_0512\_optx

A straw poll was conducted following the presentation by Wael Diab.

#### Straw Poll # 1

Do you support the consideration of EEE in this project?

Y: 56

N: 3

A: 10

The Chair presented the proposed Informal Communication to the OIF. The Chair asked if there is any opposition to sending the IC to the OIF. There was a comment to include a reference to the objectives adopted by the Study Group in the letter. The Chair agreed to include a link to the objectives. No opposition from the Study Group to make the changes and send the IC to the OIF. A revised IC to the OIF has been posted on the Study Group May 2012 web-page.

#### Presentation # 18

Title: Presentation on Cost Discussions to IEEE 802.3 Working Group

By: Michael A. Lindsay

See: lindsay\_01\_0512\_optx

Break at 12:30 p.m.

Reconvened at 1:15 p.m.

#### Presentation # 19

Title: 40GBASE-ER4 PMD Specification Baseline - Working View

By: Jon Anderson, Opnext

See: anderson\_01\_0512\_optx

#### Presentation # 20

Title: Proposed Project Authorization Request

By: Dan Dove, Applied Micro

See: dove\_03\_0512\_optx

The Chair opened the Five Criteria Response file dove\_02\_0512\_optx for review and editing by the Study Group. The revised document was saved as dove\_02a\_0512\_optx and has been uploaded to the May 2012 web-page.

Break at 3:15 p.m.

Reconvened at 3:45 p.m.

The Chair re-opened the revised document dove\_02a\_0512\_optx for additional comments. No edits performed.

The Chair opened the document dove\_03\_0512\_optx with text created for PAR submission, for editing by the Study Group. The edited document was saved as dove\_03a\_0512\_optx and has been uploaded to the May 2012 web-page.

### Motions

#### Motion 1

Move that the Study Group adopt the Compatibility response in slide 6 of dove\_02a\_0512\_optx

Moved: Mike Dudek

Second: Jonathan King

Y: 60

N: 0

A: 4

Passes

#### Motion 2

Move that the Study Group adopt the Technical Feasibility response in slide 9 of dove\_02a\_0512\_optx

Moved: Steve Trowbridge

Second: Piers Dawe

Y: 59

N: 0

A: 4

Passes

#### Motion 3

Move that the Study Group adopt the Economic Feasibility response in slide 10 of dove\_02a\_0512\_optx

Moved: Jonathan King

Second: Kapil Shrikhande

Y: 58

N: 0

A: 5

Passes

#### Motion 4

Move that the Study Group adopt the Distinct Identity response in slides 7 and 8 of dove\_02a\_0512\_optx

Moved: Robert Lingle

Second: Mike Li

Y: 56

N: 0

A: 6

Passes

#### Motion 5

Move that the Study Group adopt the Broad Market Potential response in slide 5 of dove\_02a\_0512\_optx

Moved: John Petrilla

Second: Paul Kolesar

Y: 61

N: 0

A: 4

Passes

Motion 6

Move that the Study Group adopt dove\_03a\_0512\_optx for our SG PAR submittal

Moved: Pete Anslow

Second: Peter Stassar

Y: 62

N: 0

A: 4

Passes

Motion 7

Move that the Study Group:

Submit the project documentation to the 802.3 Working Group for approval.

Request that the 802.3 Working Group chair pre-submit the PAR and 5 criteria responses to the 802 Executive Committee for consideration at the July 2012 Plenary Session. Should the IEEE 802.3 Working Group not approve the submission at its July 2012 meeting, it will be removed from the IEEE 802 Executive Committee agenda.

Moved: Steve Trowbridge

Second: Kapil Shrikhande

Y: 60

N: 0

A: 3

Passes

802.3 voters only

Y: 51

N: 0

A: 1

Seeing that there was no additional business for the group to consider at this time, the Chair called for the meeting to adjourn. The meeting was adjourned at 4:55 p.m.

Next-gen 100G Optics Study Group -- Attendee List  
 Interim meeting, May 2012, Minneapolis, MN

Last Name	First Name	Affiliation	May 15	May 16
Abbott	John	Corning Inc	Y	Y
Abbott	Justin	Semtech	Y	Y
Anderson	Jon	Opnext	Y	Y
Anslow	Pete	Ciena	Y	Y
Balasubramanian	Venu	Cortina	Y	Y
Baldwin	Thananya	Ixia	Y	Y
Barrass	Hugh	Cisco	Y	
Ben-Artzi	Lian	Marvell	Y	Y
Bernstein	Gary	Leviton	Y	Y
Bhatt	Vipul	Cisco	Y	Y
Bhoja	Sudeep	Inphi	Y	
Bliss	Will	Broadcom	Y	
Breuer	Dick	Duetsche Telekom	Y	Y
Brown	Matt	Applied Micro	Y	Y
Burt	Kevin	Semtech	Y	Y
Chalupsky	David	Intel	Y	Y
Chen	Jianyao	Gigoptix	Y	Y
Cheng	Wheling	Juniper Networks	Y	
Choudhury	Mabud	Commscope	Y	Y
Cole	Chris	Finisar	Y	Y
D'Ambrosia	John	Dell	Y	
Dabiri	Darius	APM	Y	
Dawe	Piers	IPtronics	Y	Y
Dove	Dan	Applied Micro	Y	Y
Dudek	Mike	Qlogic	Y	Y
Filip	Jan	Maxim Int. Prod	Y	
Flatman	Alan	LAN Technologies	Y	
Ghiasi	Ali	Broadcom	Y	Y
Goell	Jim	Nano Precision Products	Y	Y
Gustlin	Mark	XILINX	Y	Y
Hall	Eric	Aurion	Y	Y
Hamano	Hiroshi	Fujitsu Labs	Y	Y
Healey	Adam	LSI	Y	Y
Ho	Francois	Inphi	Y	
Ingham	Jonathan	University of Cambridge	Y	Y
Irwin	Scott	Mosys	Y	
Isono	Hideki	Fujitsu Optical Components	Y	Y

Jacobsen	Scott	Cadence Design	Y	Y
Kai	Cui	Huawei	Y	Y
Keeley	James	LSI	Y	Y
King	Jonathan	Finisar	Y	
Kipp	Scott	Brocade	Y	Y
Kochuparambil	Beth	Cisco		Y
Kogure	Taichi	Opnext	Y	Y
Kolesar	Paul	Commscope	Y	
Kono	Masahi	Hitachi	Y	Y
Kvist	Bengt	Ericsson		Y
Latchman	Ryan	Mindspeed	Y	Y
LeCheminant	Greg	Agilent Technologies	Y	Y
Lewis	Dave	JDSU	Y	Y
Li	Mike	Altera	Y	Y
Lingle	Robert	OFS	Y	Y
Lucas	Rob	Bandwidth IO	Y	Y
Maki	Jeffery	Juniper	Y	
Malkiman	Yonatan	Mellanox	Y	
Marshman	Jarrold			Y
Martin	Arlon	Kotura	Y	Y
McClay	Phil	TE Connectivity	Y	Y
McDonough	John	NEC America	Y	Y
McSonley	Greg	Amphenol	Y	Y
Mohajeri	Hessam	Ensphere Solutions	Y	Y
Muth	Karl	Texas Instruments	Y	
Nicholl	Gary	Cisco	Y	
Nielson	Allan	TE Connectivity	Y	Y
Nishimura	Takeshi	Yamaichi	Y	Y
Nowell	Mark	Cisco	Y	
Ofelt	David	Juniper	Y	Y
Pepper	Jerry	Ixia		Y
Perrie	Randy	Onechip Photonics	Y	Y
Petrilla	John	Avago Technologies	Y	Y
Pillai	Velu	Broadcom	Y	Y
Pimpinella	Rick	Panduit Corp	Y	Y
Rabinovich	Rick	Alcatel Lucent	Y	
Ressl	Michale	Hitachi Cable America	Y	Y
Salunke	Vineet	Cisco	Y	Y
Sambasivan	Sam	AT&T	Y	Y
Sela	Oren	Mellanox	Y	
Shang	Song	Semtech	Y	Y



Shrikhande	Kapil	Dell	Y	Y
Sparacin	Daniel	Aurrion	Y	Y
Stassar	Peter	Huawei	Y	Y
Stevens	Daniel	Fujitsu Semiconductor Europe	Y	Y
Swanson	Steve	Corning Inc	Y	Y
Tracy	Nathan	TE Connectivity	Y	Y
Tremblay	Francois	Semtech	Y	Y
Trowbridge	Steve	Alcatel Lucent	Y	Y
Vanderlaan	Paul	Nexans Inc		Y
Wang	Zhongfeng	Broadcom	Y	Y
Warren	David	HP	Y	Y
Way	Winston	Neophotonics	Y	Y
Wong	CK	FCI Mergeoptics	Y	Y
Yu	Xu	Huawei	Y	Y