

**Minutes – 10G EPON Study Group Interim Meeting,
Austin, TX
May 24-25, 2006**

Recorded by Lowell Lamb (+1 707 665 0400 x139 lowell.lamb@teknovus.com)

24 May 2006

For attendee list please refer to

http://www.ieee802.org/3/10GEPON_study/public/may06/10gepon_attendance_0506.pdf

- 08:30 – Glen Kramer called the meeting to order & introduced the agenda.
- 08:35 – Bob Grow introduced venue, IEEE rules, and confirmed Glen Kramer as Chair.
- 08:40 – Lowell Lamb volunteered to act as Secretary.
- 08:45 – Glen Kramer reviewed IEEE standardization process & rules, appropriate discussion topics, role of Study Group, meeting objectives, and meeting schedule. Presentations will be followed by questions for clarification, with discussion deferred to Thursday afternoon. All presentations and other meeting material available at
http://www.ieee802.org/3/10GEPON_study/public/may06/index.html
- 08:55 – The IEEE Patent Policy was read.
- 09:00 – **Motion to approve the agenda**
Moved: David Law
Seconded: Lowell Lamb
- Motion to amend agenda**
Moved: Jeff Mandin
Seconded: Roger Merel
Discussion of coexistence with 1G EPON, optical-system model, applications of 10G.
- Question was called** (Howard Frazier), no objections
- Vote on amendment is taken
For: 16, Against: 22.
- Motion to amend failed**
- Vote on main motion (Motion to approve agenda) is taken
For: 27, Against: 0
Motion passed.

Presentations are given according to the agenda:

- 09:15 – Eric Lynskey / *Overview of 802.3ae 2003 10G interfaces.*
 - 09:30 – Sergey Ten / *Nonlinear Impairments in High Data Rate Transmission Systems.*
 - 10:25 – Hiroshi Murata / *Considerations for 10G EPON.*
 - 10:50 – Motoyuki Takizawa / *Multicast Logical Link for 10G EPON.*
 - 11:05 – Motion to skip coffee break (Dean Jackson) Seconded (Duane Remein). Motion passed, for 30, against 1.
 - 11:10 – Toshiaki Mukojima / *Technical Feasibility 10Gb/s PHY for 10G EPON.*
 - 11:15 – Akihiro Otaka / *Requirements for 10G EPON.*
 - 11:35 – Onn Haran / *10GE-PON Broad market potential and economic feasibility.*
 - 12:00 – 13:30 – Lunch
 - 13:30 – Haim Ben-Amram / *Serial 10G EPON Downstream Considerations.*
 - 13:50 – Jeff Mandin / *Protocol stack for 10G EPON.*
 - 14:05 – Ryan Hirth / *MPCP compatibility with 10Gb/s PHY.*
 - 14:15 – Mitsunobo Kimura / *10G EPON Obstacles.*
 - 14:35 – Shoichiro Seno / *Reconsideration on 10Gb/s EPON Standardization.*
 - 14:45 – 15:15 – Coffee break
 - 15:15 – Tatsuya Kobota / *Comments on “10Gb/s PHY for EPON.”*
 - 15:30 – Keiji Tanaka / *Backward Compatibility.*
 - 15:40 – Howard Frazier / *Asymmetric MAC options.*
 - 16:00 – Piers Dawe / *The 10G Ethernet Link Model.*
 - 16:20 – Lowell Lamb / *10G EPON: Market Requirements & Economic Feasibility.*
 - 16:45 – **Motion to recess**
Passed by voice vote without opposition.
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25 May 2006

For attendee list please refer to

http://www.ieee802.org/3/10GEAPON_study/public/may06/10gepon_attendance_0506.pdf

- 08:50 – Glen Kramer called the meeting to order & introduced the previously approved agenda. Discussed PAR purpose, format and process.

08:55 – Glen Kramer read relevant sections of proposed draft PAR to the audience.

09:00 – Glen Kramer opened a version of the PAR document suitable for editing and opened the session for motions.

09:00 – **Motion to accept the title**

Moved: Howard Frazier

Seconded: Ryan Hirth

Discussion of adding FTTH to the title, no motion made. Discussion of adding asymmetric rates to the title.

Motion to amend the title

Modify the title to read “*up to 10Gb/s.*”

Moved: John Kikidis

Seconded: Frank Chang

For: 6, Against: 37

Motion to amend failed.

Vote on motion to accept title:

For: 46, Against: 0, Abstain: 4

Motion passed.

09:15 – Discussion of Scope. “2005” removed from Scope during discussion.

Motion to accept the scope

Moved: Howard Frazier

Seconded: Duane Remein.

Discussion of adding text regarding Full-Duplex, FEC & MPCP to scope, no motion made.

Motion to amend

Modify scope to read “at up to 10 Gb/s”

Moved: Howard Frazier

Seconded: Frank Chang

Motion to amend

Further modify scope to read “*symmetric and/or asymmetric operation at up to 10Gb/s.*”

Moved: Piers Dawe

Accepted as a friendly amendment.

Motion to amend

Further modify scope to read “*symmetric and/or asymmetric operation at 10Gb/s.*”

Moved: Roger Merel

Accepted as a friendly amendment.

Accepted as a friendly amendment.

Vote on motion to accept the scope

For: 48, Against: 1, Abstain: 2

Motion passed.

09:50 – Discussion of Purpose of the Project field in the PAR. Questions on the Purpose field. Question on difference between Purpose and Need for Standard. Bob Grow described functions of two sections.

Motion to accept the Purpose of the Project

Moved: Howard Frazier

Seconded: Roger Merel

Discussion of modification of text to read “*to support bandwidth-intensive services.*” No motion made.

Motion to amend

Modify the text to read “... *operation, upgrade, and ...*”.

Moved: Geoff Thompson

Accepted as a friendly amendment.

Motion to amend

Modify the text to read “... *while considering...*”.

Moved: Ali Ghiasi

Accepted as a friendly amendment.

Vote on motion to accept Purpose of the Project

For: 49, Against: 0, Abstain: 5.

Motion passed.

10:10 – Discussion of Need for the Project.

Motion to accept the Need for the Project

Moved: Howard Frazier

Seconded: Frank Chang

Motion to amend

Remove word “*wireless.*”

Moved: Shane Eleniak

Accepted as a friendly amendment.

Discussion on text refinement

Multiple motions to amend (Ali Ghiasi, David Law, Glen Kramer, others) are **accepted as friendly**

The text is modified to read:

“... *while*

- *reducing footprint and power consumption of central office equipment*
- *minimizing service upgrade cost*
- *minimizing fiber deployment costs.*”

Motion to amend

Replace the text “*will enable*” with “*is needed to enable*”

Moved: Roger Merel

Seconded: Shane Eleniak

Accepted as a friendly amendment.

Vote on motion to accept Need for Project

For: 49, Against: 0, Abstain: 4

Motion passed.

10:30–10:50 – Coffee Break

10:50 – Glen Kramer called the meeting to order.

10:50 – Jeff Mandin distributed presentation on alternate text for “Distinct Identity.”

10:55 – Discussion of Criterion 1: Broad Market Potential

Motion to accept Criterion 1

Moved: Shane Eleniak

Second: Ryan Hirth.

Vote on motion to accept Criterion 1

For: 42, Against: 0, Abstain: 4.

Motion passed.

11:00 – Discussion of Criterion 2: Compatibility.

Text was modified to read “*defined for symmetric and/or asymmetric operation.*”

Motion to accept Criterion 2

Moved: Frank Chang

Seconded: Lowell Lamb.

Motion to amend

Modify text to read “*...cable topologies. Uplink operation in case of asymmetric mode will be based on IEEE Std. 802.3-2005.*”

Moved: Onn Haran

Seconded: Jeff Mandin.

Motion to amend

Change “*uplink*” to “*upstream.*”

Moved: Howard Frazier

Accepted as a friendly amendment.

Motion to amend

Delete text “*In a manner...IEEE Std. 802.3-2005.*”

Accepted as a friendly amendment.

Vote on motion to amend

For: 37, Against: 0, Abstain: 4.

Motion passed.

Motion to amend

Change text to read “*...existing overlaying...*”.

Accepted as a friendly amendment.

Motion to amend

Modify text to read "...*sublayer interfaces...*".

Accepted as a friendly amendment.

Vote on motion to accept Criterion 2

For: 37, Against: 1, Abstain: 4.

Motion passed.

11: 35 – Discussion of Criterion 3: Distinct Identity.

Jeff Mandin presented alternative text for "Distinct Identity."

Motion to accept alternative text for Distinct Identity response

Moved: Jeff Mandin

Seconded: Tsutomu Tatsuta.

Motion to amend

Change text to "*different optical power classes.*"

Accepted as a friendly amendment.

Motion to amend

Change text to read "*optical link budgets.*"

Moved: Shane Eleniak

Seconded: Ryan Hirth

Accepted as a friendly amendment.

Motion to amend

Change text to read "...*1 Gbps upstream....*"

Moved: Howard Frazier

Seconded:

Accepted as a friendly amendment.

Motion to amend

Replace last two sentences of 2nd bullet with "*The optimal solution may include more than one physical layer specification.*"

Moved: Howard Frazier

Seconded: Shane Eleniak

Motion to amend

Restore 3rd sentence from Jeff's original text, "*The solution may include ...upstream solution.*"

Moved: Roger Merel

Seconded: Jeff Mandin

Vote on Motion

For: 36, Against: 2, Abstain: 13

Motion passed.

Motion to amend

Remove word "*optimal*" from second sentence.

Accepted as a friendly amendment.

Vote on Motion to amend
For: 18, Against: 16, Abstain: 15.
Motion to amend failed.

Vote on motion to accept alternative text for Distinct Identity response
For: 28, Against: 8, Abstain: 14.
Motion passed.

12:15–1:30 Lunch

13:30 – Glen called meeting to order

13:30 – Discussion of Criterion 4: Economic Feasibility. Text “*identical*” is replaced with “*similar*”.

Motion to accept text of Economic Feasibility response (Page 1 “Economic Feasibility” from 5crit_econ_1_0506)

Moved: Keiji Tanaka,
Seconded: Ryan Hirth.

Vote on motion
For: 38, Against: 0, Abstain: 1
Motion passed.

13:40 – Discussion of Criterion 5: Technical Feasibility

Motion to accept text of Technical Feasibility response

Moved: Robert Lingle, Jr.
Seconded: Bin Yeong Yoon.

Motion to amend

Strike “*The only new technology ... burst mode interface.*”

Moved: Matt Traverso
Seconded: Frank Chang

Accepted as a friendly amendment.

Motion to amend

Add “*The project will extend burst mode technology to 10 Gb/s*”

Moved: Pat Thaler
Seconded:

Accepted as a friendly amendment.

Motion to amend

Change “*end user*” to “*service provider*”

Moved:
Seconded:

Accepted as a friendly amendment.

Motion to amend

Delete “*otherwise unchanged*”

Moved:

Seconded:
Accepted as a friendly amendment.

Motion to amend
Delete “.ah” from “802.3ah”

Moved:
Seconded:
Accepted as a friendly amendment.

Vote on motion to accept text of Technical Feasibility response:
For: 23, Against: 15, Abstain: 5.
Motion Failed.

14:30 - Discussion of feasibility of 10Gb/s symmetric with 29 dB power budget.

15:00–15:15 Coffee Break

15:20 – **Motion to make technical discussion on 10Gb/s symmetric EPON with 29 dB optical link the first order of business at July meeting.**

Moved: Lowell Lamb
Seconded: Ryan Hirth.
Vote by show of hands is taken
For: 30, Against: 2 Abstain: 6.
Motion passed.

15:25 – **Motion to reconsider Criterion 5: Technical Feasibility**

Moved: Tsutomu Tatsuta (voted on prevailing side)
Seconded: Akihiro Otaka
Vote by show of hands is taken
For: 35, Against: 1, Abstain: 5.
Motion passed.

15:30 – **Motion to accept text of Technical Feasibility response**

Moved: Howard Frazier
Seconded: Ryan Hirth
For: 24, Against: 0, Abstain: 19.
Motion passed.

15:30 – Glen reviewed PAR contents.

15:35 – **Motion:**

Approve the draft PAR incorporating the Title, Scope, Purpose, and Need

statements as adopted at this meeting. Grant Study Group Chair the authority to make editorial changes as needed. Request that the Working Group Chair forward the Draft PAR and 5 Criteria to the 802 EC for consideration at the July 2006 Plenary session.

Moved: Howard Frazier,

Seconded: Lowell Lamb

15:45 – Following discussion, motion divided into two motions by Chair.

15:50 – **Motion 1:**

Approve the draft PAR incorporating the Title, Scope, Purpose, and Need statements as adopted at this meeting. Grant Study Group Chair the authority to make editorial changes as needed.

Moved: Howard Frazier,

Seconded: Lowell Lamb

Vote: For: 43, Against: 0, Abstain: 6.

Motion passed.

15:55 – **Motion 2:**

Request that the Working Group Chair forward the Draft PAR and 5 Criteria to the 802 EC for consideration at the July 2006 Plenary session.

Moved: Hugh Barrass,

Seconded: Howard Frazier

Motion to postpone to a certain time

Postpone consideration of Motion 2 until 17:00

Moved: Piers Dawe,

Seconded: Duane Remein

Vote: For: 11, Against: 0, Abstain: 31.

Motion passed.

Motion 2 is postponed till 17:00

15:55 – Presentation by Frank Chang / *Address 10G EPON Tech. Feasibility and Economics Using Advanced 10G PHY*

16:15 – Discussion of Draft Objectives. Multiple changes are suggested from the floor.

Motion to approve the first objective.

Moved: Howard Frazier,

Seconded: David Law

Motion passed by voice vote without opposition.

Motion to approve the second objective.

Moved: Onn Haran,

Seconded: Marek Hajduczenia

Motion passed by voice vote without opposition.

Motion to approve the third objective.

Moved: Wael Daeb,

Seconded: Howard Frazier

Vote by show of hands

For: 34, Against: 0, Abstain: 2.

Motion passed.

Motion to approve the fourth objective.

Moved: Onn Haran,

Seconded: Piers Dawe.

Motion to amend.

Amend the fourth objective to read “*Define up to 3 classes of PMD. Define PMD(s) to operate with split ratios of 16 and 32, and with distances of 10 or 20 km. Investigate split ratios of 64 and 128.*”

Moved: Onn Haran,

Seconded: Piers Dawe.

Vote by show of hands

For: 34, Against: 0, Abstain: 5.

Motion passed.

Vote on motion to approve the fourth objective

For: 39, Against: 0, Abstain: 1.

Motion passed.

17:30 – Vote on postponed Motion 2: “Request that the Working Group Chair forward the Draft PAR and 5 Criteria to the 802 EC for consideration at the July 2006 Plenary session.

Moved: Hugh Barrass,

Seconded: Howard Frazier

Vote is taken by show of hands

For: 20, Against: 0, Abstain: 19.

Motion passed.

17:35 – **Motion to adjourn**

Motion passed by voice vote without opposition.