

Unapproved Minutes
IEEE 802.3ba Task Force Interim and Plenary Meeting
July 12 - 16, 2009
San Francisco, CA USA

Prepared by: Steve Trowbridge

Meeting convened at 2:00 pm, Sunday, July 12, 2009.

Agenda & General Information

By – John D’Ambrosia

See – agenda_01_0709.pdf

- Introductions – Everyone introduced themselves and stated their affiliation.
- Chair asked if there were any reporters in the room. No one responded. Chair reminded everyone that photographs or recordings are not allowed without permission.
- Motion to approve the agenda
 - Motion moved to accept the agenda by Mark Gustlin, 2nd by Goergen Oganessyan.
 - Meeting agenda was approved by voice vote without objection.
- Motion to approve the May Interim minutes
 - The following changes per Pete Anslow were noted.
 - On Page 1 - Chair went through his introduction presentation “agenda_01_0309.pdf” should be “agenda_01_0509.pdf”
 - On Page 2 - (kolesar_05_0509.pdf) is followed by two “.” And (ho_01_0509;.pdf) has a spurious “;” before the .pdf
 - Motion moved to accept minutes with the correction to the file name by Pete Anslow, 2nd by Mark Gustlin.
 - May Interim Meeting Minutes were approved by voice vote without objection.
- Chair went through his introduction presentation “agenda_01_0709.pdf”
- Goals for the week
 - Progress Towards Generating Draft 2.2
 - Comment Resolution of Draft 2.1
 - Lay groundwork for the next meeting.
 - Big Ticket Items
 - Resolution of 40GBASE-CR4 / 100GBASE-CR10 Reach / Budget Allocation
 - Nomenclature
- Ground Rules
- Review of Task Force objectives
- IEEE Structure, Bylaws & Rules
 - Piers Dawe read and presented the IEEE Patent Policy slide set.
 - Chair did call for patents. No one identified any patents.
 - Inappropriate Topics for IEEE meetings read to the body by Piers Dawe.
 - Chair advised the Task Force:
 - 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 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.
- Presented Task Force Schedule and Timeline, meeting map and items to be addressed this week.
- Chair also received late presentations from Chris DiMinico (diminico_04_0709 and diminico_05_0709), providing further data on –CR cabling and measurements. The Chair asked if there were any objections to hearing Chris’s presentations. There were no objections.
- Meeting attendance
 - The interim meeting is adjacent to and co-located with the IEEE 802 Plenary. Attendance today will not count toward’s requirements for the week. The sign-in sheets need to be completed by attendees for the interim meeting.
 - During the Plenary Meeting, Must use the IEEE-SA Meeting Attendance Tool as it will be the basis of the official attendance record for this meeting.
- Reviewed Voting Privileges
 - Attendance at interim and plenary meetings is important
 - Chair reminded everyone that they must vote on draft ballots to maintain their 802.3 voting rights.
 - There are currently several working group ballots underway and it is anticipated that p802.3az will be going to WG ballot after this meeting.
- Chair reminded everyone to declare his or her affiliation.
- It was noted that there was an update to healey_03_0709 based on a recent teleconference with some useful results. There was no objection to hearing this presentation as updated.

Presentation #1

Title – Chief Editor’s Opening Report

By – Ilango Ganga, Intel

See – ganga_01_0709.pdf

Discussion

- Several late comments were received, some related to the IEC liaison statement about optical cable terminology. There was no objection to considering these comments.
- Clarifying questions were asked and answered.

Presentation #2

Title – Logic Sub-Task Force Opening Report

By – Mark Gustlin, Cisco

See – gustlin_01_0709.pdf

Discussion

- The task force chair asked if there were any big ticket items for the Logic Sub-Task Force. The response was that they were mostly small, but the BIP comment may require some discussion.

Presentation #3

Title – Copper Sub-Task Force Opening Report
By – Chris DiMinico, MC Communications
See – diminico_01_0709.pdf

Discussion

- There was general discussion regarding Clause 85, which was deferred to its allocated time on the agenda.
- The task force chair noted that if the reach of the CR4/10 interfaces is to be reduced, this will require a change to the objectives and a motion before the working group. General discussion regarding budget allocation and impact on cable reach.

Presentation #4

Title – Optical Sub-Task Force Opening Report
By – Pete Anslow, Nortel
See – anslow_01_0709.pdf

Discussion

- There was general discussion regarding if there were any big ticket issues, in particular the SRS testing. It was not felt that any of the issues would result in undue difficulty.

Presentation #5

Title – Liaison letter from ISO/IEC JTC1/SC 25/WG 3 to IEEE 802.3 regarding optical fibre terminology
By – John D'Ambrosia, Force 10 on behalf of Alan Flatman
See – 0709_ISO_IEC_WG3_to_802_3_N897.pdf

Discussion

- Comments to incorporate the suggested "cabled fiber" terminology will be considered.
- Discussion regarding how a maintenance activity would address this concerning the standard as a whole.

Break at 3:14 PM

Reconvened at 3:23 PM

After the break, Chief Editor, Ilango Ganga, chaired the Task Force comment resolution session.

Presentation #6

Title – Combined Tracks Comment Resolution
By – Pete Anslow
See – anslow_0709.pdf

Discussion

The remaining discussion on Sunday, July 12 and combined tracks discussion on Tuesday morning, July 14, were conducted according to the comments as listed in these slides.

Presentation #7

Title – Synchronizing Transmitter Jitter Testing with Receiver Jitter Tolerance

By – Ali Ghiasi

See – ghiasi_02_0709.pdf

Discussion

General discussion regarding the presentation.

Presentation #8

Title – Proposed update to BIP-8 mechanism

By – Steve Trowbridge

See – trowbridge_01_0709.pdf

Discussion

- General technical discussion regarding the BIP-8 mechanism and its relation to finding burst errors, complexity to implement, and length of time for measurements.

Presentation #9

Title – Properties of interleaved PRBS31

By – Pete Anslow

See – anslow_05_0709.pdf

Discussion

- The conclusions were that interleaved PRBS31 was a considerably more stressful test pattern (since 32 bits offset is not sufficient to remove all of the low frequency correlation) but similar clock content.

Break for dinner at 6:06pm.

Reconvene at 7:08pm.

Presentation #10

Title – 802.3ba CR4/10, SR4/SR10 loss budgets

By – Mark Gustlin

See – gustlin_04_0709.pdf

Discussion

- General discussion regarding the budget allocation, tradeoff of loss between cable reach and PCB trace.
- There was considerable discussion about the procedural aspects of this kind of a change. The objectives are a contract between the task force and the working group, and do not need EC approval for a change. However, it needs to be verified that the objectives change would not affect any of the 5-criteria responses. It would be far more practical to make an objectives change at this plenary than at the same plenary where the task force was planning to move to sponsor ballot.
- General discussion regarding the broad market potential of a CR solution between 5 to 7m for inter-rack connectivity.
- Discussion regarding loss budget and need to re-examine it as there may be double counting.
- The Cu SubTask Force was given guidance to use gustlin_04_0709 as reach objective guidance for insertion loss allocation, and will come back on Thursday with recommendation to Task Force. The optical track will provide relevant input concerning Annex 86A.

Presentation #11

Title – Additional Concerns on CR4/CR10 Specifications

By – Ali Ghiasi

See – ghiasi_01_0709.pdf

Discussion

- General discussion regarding loss budget.

Break at 8:45pm

Reconvene at 9:03pm

Comment resolution continued

Break for the day at 10:00pm.

The task force reconvened as part of the IEEE plenary week on Tuesday, July 14 at 8:04am. The patent slides were shown, a call was made for patents, and no one came forward. The discussion on the nomenclature issue will continue until 9:00am, followed by resolution of the remaining combined tracks comments.

Presentation #12

Title – Past PHY naming - some thoughts

By – David Law

See – law_01_0709.pdf

Discussion

The presentation kipp_01_0709 was not presented in deference to the discussion resulting from law_01_0709.pdf. Numerous comments were made for and against the various proposals.

Straw Poll #1:

The task force was asked to indicate a preference between the options:

- Leave the nomenclature unchanged;
- Change the nomenclature to one of 100GBASE-LRE4, 100GBASE-LR4E, 100GBASE-LR4-E

Results

All in the room:

Unchanged - 25

Change - 25

802.3 voters:

Unchanged - 26

Change - 26

Combined tracks meeting break at 10:21am on July 14.

Logic Sub-Task Force minutes:

Meeting convened at 10:45am on July 14.

Meeting chaired by Mark Gustlin

Farhad Shafai volunteered to be recording secretary.

The Chair set the agenda for the meeting.

The Patent Policy slides were reviewed. The chair 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) that the participant believes may be essential for the use of that standard. No one came forward.

Comment review started

Meeting break at 11:59am
Meeting reconvened at 1:30pm

Comment review continued

Meeting break at 3:00pm
Meeting reconvened at 3:25pm

Comment review continued

Meeting break for day at 6:06pm

Meeting reconvened at 9:10am on Wednesday, July 15.
Meeting chaired by Mark Gustlin
Farhad Shafai is the recording secretary

Comment review continued.

The logic sub-task force adjourned at 10:08am on Wednesday, July 15.

Optical Sub-Task Force Minutes:

Minutes Optical Sub-Task Force Meeting July 14, 2009
Prepared by Pete Anslow
Meeting convened at 10:40 am chaired by Pete Anslow

Introductions – Everyone introduced themselves and stated their affiliation
The Agenda was reviewed.

The Patent Policy slides were reviewed. The chair 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) that the participant believes may be essential for the use of that standard. No one came forward.

Comment review on Clauses 87 & 88 T/TR

Break for lunch at 12:20 pm
Reconvened at 1:25 pm

Comment review continued

Break at 2:58 pm
Reconvened at 3:20 pm

Comment review on Clauses 87 & 88 T/TR completed
Comment review on Clauses 86 & 86A T/TR

Optical Sub-Task Force meeting broke for the day at 6:30 pm.

Minutes Optical Sub-Task Force Meeting July 15, 2009
Prepared by Pete Anslow
Meeting convened at 8:30 am chaired by Pete Anslow

Pete reminded the sub-task force of the IEEE Patent Policy and 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) that the participant believes may be essential for the use of that standard.

No one came forward.

Comment review on Clause 86 & 86A T/TR continued

Break at 10:28 am
Reconvened at 10:48 am

Comment review on Clause 86 & 86A T/TR continued

Break for lunch at 12:00 pm
Reconvened at 1:17 pm

Comment review on Clause 86 & 86A T/TR continued

Break at 2:25 pm
Reconvened at 2:45 pm

Comment review on Clause 86 & 86A T/TR completed
Comment review on Clauses 86, 87 & 88 ER
Comment review on Clauses 86, 87 & 88 ER completed
Comment review on selected Clauses 86, 87 & 88 E
Comment review on selected Clauses 86, 87 & 88 E completed

Optical Sub-Task Force meeting adjourned at 6:10 pm.

Copper Sub-Task Force Minutes:

802.3ba Copper Sub Task Force, Tuesday, July 14, 2009

Meeting called to order at 10:45, July 14, 2009, by Chris Di Minico, sub task force Chair, and Ryan Latchman.

Opening Information: Chair went through his introductory presentation.

diminico_02_079.pdf

- Introductions – everyone introduced themselves and stated their affiliation
- David Chalupsky was appointed recording secretary.
- Chair reviewed the ground rules.
- Chair displayed the Patent Policy and made a call for patents. No response to call for patents.

- Chair reviewed the agenda for the sub task force and goals for the meeting
- 172 total comments to be resolved against the Copper Track clauses. 84 TR, 47 T.

Chair reports status of key items to be resolved for Clause 85:

- CR IL budget partitioning between PCB and cable.
- IL cable assembly fit
- Cable assembly IL & FEXT
- TP2 & TP3 specification

Ryan Latchman reports status of key items to be resolved for Annexes 83A and 83B:

Comment resolution begins at 11:15am with Clause 84, led by Arthur Marris

Clause 84 complete. Comment resolution moves to Clause 85 at 11:25am.

Presentation

Title – 40GBASE-CR4 and 100GBASE-CR10 802.3ba Draft 2.1 cable assembly specifications

By – Chris DiMinico

See – diminico_05_0709.pdf

Discussion

Significant discussion ensues regarding the cable insertion loss value used for the max channel. Discussion regarding loss budget and relative cost of cabling. agreement that 1.9dB would increase the relative cost by 10% over 2.2 dB cabling

Break for lunch at 12:10pm, reconvene at 1:10pm.

Presentation

Title – Insertion loss budget for 40/100GBASE-CR4/10

By – Adam Healey

See – healey_03a_0709.pdf

Discussion

Discussion regarding loss budget. Subsequent input of budget presented in gustlin_04 is that budget is to MDI, not TP2. accounting for 0.5dB per side disagreement between healey_03a and Gustlin_04.

Break at 2:25pm, reconvene at 2:40pm

Discussion continues on budget methodology and numbers.

Straw Poll: Proposal to Adopt healey_03a_0709.pdf slide 14 as the methodology and assumptions for the channel budget, with the following changes:

TP0 to TP2, and TP3 to TP5 change to 6.5dB.

TP0 to TP5 changes to 24.44dB

No objection in the room (25 people)

3:00pm John D'Ambrosia interjects for polls on September Interim attendance.

Comment resolution continues

Discussion continues on healey_03a_0709.pdf

Discussion regarding support of adopting a polynomial fit for cable IL fit. Method adopted, but coefficients still needed. Presenter to provide further input.

Presentation

Title – Noise considerations for 40/100GBASE-CR4/10

By – Adam Healey

See – healey_02_0709.pdf

Discussion

Straw poll taken on adopting the ICN method as a replacement for ICR. There was no objection in the room.

Break for dinner at 6:00pm. Attendees instructed to return by 7:30pm.

At 7:43pm Chair reconvenes meeting.

Comment resolution resumes with Annex 83A/B led by Ryan Latchman.

10:55pm Meeting breaks for day. Cu SubTask Force tbbbbbo reconvene at 8:00am.

802.3ba Copper Sub Task Force, Wednesday, July 15, 2009

Meeting called to order at 8:03am, July 15, 2009, by Chris Di Minico, sub task force Chair.

Brian Misek appointed recording secretary

Reviewed the patent policy and ground rules.

Call for patents made by the Chair and no one came forward with patents.

Agenda review:

Only clause 85 comments remain. Comment resolution begins.

8:20am – David Chalupsky assumes recording duty.

Discussion of Clause 85 reach objective change and potential impact on 5 Criteria. Consensus in the room that a change of reach objective to 7m would not materially affect 5 criteria. See Gustlin_04_0709.pdf for supporting material

10:02 – Meeting Break

10:30 – Resume from break.

Comment resolution continues.

Break for lunch at 12:00pm

Meeting called to order at 1:00pm.

Comment resolution continues.

Related to comment 139, Adam Healey presents healey_05_0709.pdf. This is a late contribution. Chair asks if there is any objection to accepting the material. No objection. Discussion follows on the fitted insertion loss method and coefficients.

Presentation

Title – Transmitter requirements for 40/100GBASE-CR4/10

By – Adam Healey

See – healey_01_0709.pdf

Discussion

healey_04_0709 provides suggested remedy text.

Meeting break at 3:17pm:

Reconvene at 3:29pm

Jon Beckwith assumes recording duty.

Comment resolution continues.

Related to comment #141 (Integrated Crosstalk Noise) Adam Healey presents text from healey_06_0709.pdf as supporting material for healey_02_0709.pdf. The chair asked if there was any objection to accepting the late material. No objection.

Break announced at 6:40, to reconvene at 8:15.

Meeting reconvened at 8:22pm

Comment resolution continues.

The loss allocation comment (96) was reviewed: the proposed response will be sent to the task force.

There was discussion regarding setting up a conference call to discuss follow-up items. Brian Misek offered to send call information.

Cu Subtask force adjourned at 10:13pm.

The full P802.3ba task force reconvened on Thursday, July 16 at 8:40am.

The patent slides were shown. A call was made for potentially essential patents, and noone came forward.

Discussion resumed with the report of the Copper sub-task force regarding Comment #96 where the task force had instructed them to investigate the 7m reach proposal for the copper cable assembly interfaces. The conclusion is that the link loss budget accommodates at least 7m reach and an IL of 6.5 dB between TP0-TP2.

Motion #1: Move that the IEEE P802.3ba Task Force modify the following Physical Layer Specification objective for 40 Gb/s and 100 Gb/s operation from

"at least 10m over a copper cable assembly"
to
"at least 7m over a copper cable assembly"

M: C. Diminico S: Brian Misek
Technical $\geq 75\%$

All in the room: 802.3 voters
Y: 53 Y: 45
N: 0 N: 0
A: 4 A: 3

Motion Passes

The proposed resolution to Comment #96 was accepted based on the revised objectives. Resolution continued with the few remaining comments. After resolution of the final 6 T/TR/ER comments, a call was made to ask if there were any other comment responses. A question was asked and answered about editorials, but no concerns were expressed.

Break at 9:49am.
Reconvene at 10:06am

Presentation #13

Title – Logic Sub-Task Force Closing Report
By – Mark Gustlin
See – gustlin_03_0709.pdf

Presentation #14

Title – Copper Sub-Task Force Closing Report
By – Chris DiMinico
See – diminico_03_0709.pdf

Discussion

General discussion regarding status of Clause 85 and potential impact on project schedule.

Presentation #15

Title – Optical Sub-Task Force Closing Report
By – Pete Anslow
See – anslow_03_0709.pdf

Presentation #16

Title – Chief Editor's Closing Report
By – Ilango Ganga
See – ganga_02_0709.pdf

Motion #2: Move that the Task Force:

- Accept comment resolutions from D2.1 as recorded in the comment database.
- Directs the IEEE P802.3ba editorial team to generate Draft 2.2, based on Draft 2.1 and the resolution of comments against Draft 2.1.
- Request Working Group Chair to Conduct an IEEE 802.3 WG recirculation ballot for P802.3ba/D2.2.

M: Ilango Ganga
Technical ($\geq 75\%$)

S: Pete Anslow

All in the room:

Y: 72

N: 0

A: 1

Motion Passes

Motion #3: Move that the IEEE 802.3ba Task Force submit the modified copper cable reach objectives as agreed in Motion #1 to the 802.3 Working Group for approval.

M: C. Diminico
Technical $\geq 75\%$

S: H. Barass

All in the room: 802.3 voters

Y: 71

Y: 61

N: 0

N: 0

A: 3

A: 0

Motion Passes

Presentation #17

Title – IEEE P802.3ba Task Force Informal Communication (to ITU-T Q6 and Q11 of Study Group 15)

By – Steve Trowbridge

See – trowbridge_02_0709.pdf

Motion #4: Move that 802.3ba approve the text in trowbridge_02_0709.pdf, attaching IEEE P802.3ba Draft 2.2, with editorial license granted to the Chair (or his appointed agent) as an informal communication by the Chair to ITU-T Study Group 15

M: S. Trowbridge
Procedural $> 50\%$

S: P. Anslow

Motion Passes by voice vote without opposition

Pete Anslow, the appointed Liaison Rapporteur from ITU-T Study Group 15 to IEEE 802.3 on the topic of P802.3ba, expressed his appreciation on behalf of ITU-T Study Group 15 for the continued timely sharing of information by the P802.3ba task force.

Motion to adjourn:**M: H. Barrass; S: S. Trowbridge;****Motion passes by voice vote without opposition**

Meeting adjourned at 11:22am on July 16, 2009.

Attendee List for IEEE 802.3ba Interim and Plenary Meeting held July 12 – July 16, 2009 according to the 802.3ba Task Force attendance sheets/books:

				7/12	7/14	7/15	7/16
Last Name	First Name	Employer	Affiliation	Sun	Tues	Weds	Thurs
Abbas	Ghani	Ericsson, UK	Ericsson, UK		X	X	X
Abbott	John	Corning	Corning	X	X	X	X
Anslow	Pete	Nortel	Nortel	X	X	X	X
Balasubramanian	Vittal	FCI	FCI		X	X	X
Baldwin	Thananya	Ixia	Ixia	X	X	X	X
Bandyopadhyay	Jaya	Juniper Networks	Juniper Networks		X	X	
Barrass	Hugh	Cisco	Cisco	X			X
Beckwith	Jon	UNH - IOL	UNH - IOL	X	X	X	X
Booth	Brad	AMCC	AMCC		X		
Braun	Ralf-Peter	Deutsche Telekom	Deutsche Telekom		X	X	X
Breuer	Dirk	Deutsche Telekom, T-Systems	Deutsche Telekom, T-Systems	X			
Brown	Matt	AMCC	AMCC		X	X	X
Cady	Ed	Siemon	Siemon		X	X	X
Carroll	Martin	Verizon	Verizon		X	X	X
Chalupsky	David	Intel	Intel	X	X	X	X
Chang	Frank	Vitesse	Vitesse		X	X	X
Cobb	Terry	Systimax	Systimax				X
Cole	Chris	Finisar	Finisar	X	X	X	X
Coleman	Doug	Corning	Corning		X	X	X
D'Ambrosia	John	Force 10 Networks	Force 10 Networks	X	X	X	X
Dawe	Piers	Avago Technologies	Avago Technologies	X	X	X	X
DeMuth	Brian	U.S. Government	U.S. Government	X	X	X	X
Diab	Wael	Broadcom	Broadcom	X			
DiMinico	Christopher	MC Communications/LEONI	MC Communications/LEONI	X	X	X	X
Dineen	Thomas	Self	Self	X	X	X	X
Dove	Dan	Procurve by HP	Procurve by HP			X	
Drolet	Patrick	EXFO	EXFO	X	X		

Dudek	Mike	Independent	Clariphy		X	X	X
Dupuis	Mark	Madison Cable	Madison Cable	X	X	X	X
Estes	Dave	UNH - IOL	UNH - IOL	X	X	X	X
Firoozmand	Farzin	SMI	SMI		X	X	X
Flatman	Alan	LAN Technologies	LAN Technologies		X	X	X
Frazier	Howard	Broadcom	Broadcom	X	X		
Fromm	Galen	Molex	Molex	X			
Ganga	Ilango	Intel	Intel	X	X	X	X
Ghiasi	Ali	Broadcom	Broadcom	X	X	X	X
Giannakopoulos	Dimitris	AMCC	AMCC		X	X	X
Green	Larry	Ixia	Ixia		X	X	X
Grimwood	Michael	Broadcom	Broadcom			X	
Grow	Bob	Intel	Intel				X
Gustlin	Mark	Cisco	Cisco	X	X	X	X
Gyugyi	Paul	Google	Google		X		x
Hammond	Bernie	ADC Telecommunications	ADC Telecommunications		X		
Healey	Adam	LSI	LSI	X	X	X	X
Horner	Rita	Avago Technologies	Avago Technologies	X	X	X	X
Ishida	Osamu	NTT	NTT		X	X	X
Iwadata	Hirotake	Sumitomo Electric	Sumitomo Electric	X	X	X	X
Jiang	Wenbin	WJ Tech	WJ Tech		X	X	
Jiang	Qiaofeng	Nokia Siemens Network	Nokia Siemens Network		X	X	X
Jimenez	Andrew	Anixter Inc.	Anixter Inc.		X		
Jorgensen	Thomas	Vitesse	Vitesse		X	X	X
Kawatsu	Yasuaki	Hitachi-Cable	Hitachi-Cable		X	X	X
Kim	Seung-Hwan	ETRI	ETRI		X		
King	Jonathan	Finisar Corp.	Finisar Corp.		X	X	
Kipp	Scott	Brocade	Brocade	X	X	X	X
Kolesar	Paul	CommScope	CommScope		X		
Kumamoto	Tadashi	Fujitsu Component America	Fujitsu Component America		X		
Lackner	Hans	QoSCom	QoSCom		X	X	X
Lapak	Jeff	UNH-IOL	UNH-IOL	X			
Latchman	Ryan	Gennum	Gennum	X	X		
Law	David	3Com	3Com	X	X		
Lewis	David	JDSU	JDSU		X	X	X
Li	Mike	Altera	Altera		X	X	
Lindsay	Tom	Clariphy Communications	Clariphy Communications	X		X	X
Lutz	Sharon	US Conec LTD.	US Conec LTD.		X	X	X

Maguire	Valerie	Siemon	Siemon\TIA				X
Maki	Jeffery	Juniper Networks	Juniper Networks	X	X	X	X
Marris	Arthur	Cadence	Cadence	X	X	X	X
McDonough	John	NEC America	NEC America		X	X	X
McSorley	Greg	Amphenol	Amphenol	X	X	X	X
Misek	Brian	Avago Technologies	Avago Technologies	X	X	X	X
Moeller	Merrick	Cinch Connectors	Cinch Connectors	X	X	X	
Moore	Charles	Avago Technologies	Avago Technologies	X	X	X	X
Muller	Shimon	Sun	Sun		X	X	X
Nicholl	Gary	Cisco	Cisco		X	X	X
Noh	George	Vitesse Semiconductors	Vitesse Semiconductors	X	X	X	X
Noseworthy	Bob	UNH - IOL	UNH - IOL	X			
Obara	Satoshi	Fujitsu	Fujitsu		X	X	X
Ofelt	David	Juniper Networks	Juniper Networks	X	X	X	X
Oganessyan	Gourgen	Quellan	Quellan	X	X	X	X
Ojha	Raj	GigFire Microsystems	GigFire Microsystems	X	X	X	
Palkert	Tom	Xilinx, Luxtera	Xilinx, Luxtera	X	X	X	X
Patel	Shashi	Brocade	Brocade		X	X	X
Pepeljugoski	Petar	IBM	IBM	X	X	X	X
Pepper	Gerald	Ixia	Ixia	X	X	X	
Petrilla	John	Avago Technologies	Avago Technologies	X	X	X	X
Pimpinella	Rick	Panduit Corp.	Panduit Corp.		X	X	
Rabinovich	Rick	Alcatel-Lucent	Alcatel-Lucent	X	X	X	X
Ressl	Mike	Hitachi Cable America	Hitachi Cable America		X	X	X
Sambasivan	Sam	AT&T	AT&T		X	X	X
Shafai	Farhard	Sarance	Sarance	X	X	X	X
Shen	Lin	Cisco	Cisco	X	X		
Sheth	Siddharth	Netlogic Microsystems	Netlogic Microsystems		X	X	X
Singleton	Greg	Breaking Point Systems	Breaking Point Systems	X	X	X	
Sparrowhawk	Bryan	Leviton	Leviton		X	X	X
Storaasli	Olaf	Draka Comteq	Draka Comteq	X	X		
Swanson	Steve	Corning	Corning		X	X	X
Swenson	Norm	Clariphy Communications	Clariphy Communications		X	X	X
Takahashi	Hidenori	KDDI R&D Laboratories Inc.	KDDI R&D Laboratories Inc.	X	X	X	X
Thiagarajan	Sashi	Ciena	Ciena		X	X	X
Torza	Anthony	Xilinx	Xilinx	X			
Toyoda	Hidehiro	Hitachi	Hitachi	X	X	X	X
Tracy	Nathan	Tyco Electronics	Tyco Electronics	X	X	X	X

Traverso	Matt	Opnext	Opnext	X	X	X	
Trowbridge	Steve	Alcatel-Lucent	Alcatel-Lucent	X	X	X	X
Turner	Brad	Juniper	Juniper		X	X	X
Vaden	Sterling	SMP	SMP		X	X	
Vanderlaan	Paul	Nexans	Nexans	X	X	X	X
Wise	Jeffrey	Emerson Network Power EC	Emerson Network Power EC	X	X	X	
Young	George	AT&T	AT&T		X	X	X