

Minutes
Control Protocols Working Group

Thursday, 19 March 2009
Hilton Cincinnati Netherland Plaza
Cincinnati, OH

Chairmen: Michael Lay; Philips Strand Lighting (Royal Philips Electronics); P; MP
Tracy Underhill; Electronics Diversified LLC; P; MP

Recording secretary: Karl G. Ruling

Members attending:

Jean-Francois Canuel; Spectrum Manufacturing Inc. (A.C. Lighting Ltd.); P; CP
Paul Kleissler; City Theatrical, Inc.; P; MP
Edward A. (Ted) Paget; Vortek Rigging Division of Daktronics Inc. ; P; G
Ulrich Kunkel; E3 Engineering & Education for Entertainment GmbH, representing DIN, NVBF Committee;
P; U
Doug Fleenor; Doug Fleenor Design, Inc.; P; MP
Edward R. Condit; O; G
Daniel W. Antonuk; Electronic Theatre Controls, Inc.; P; MP
Shawn Coughlin; Harting Inc, North America (Harting KGAA); P; G
Alan Martello; Horizon Control Inc.; P; MP
Edwin S. Kramer; I.A.T.S.E. Local 1; P; U
Roger Lattin; I.A.T.S.E. Local 728; P; U
Ken Vannice; Leviton Manufacturing Co., Inc.; P; MP
Stuart Cotts; Oregon Shakespeare Festival; P; U
Kevin Loewen; Pathway Connectivity Inc.; P; MP
Ron Bonner; PLASA; P; G
Hans Lau; Sand Network Systems, Inc.; P; MP
Kimberly Corbett; Schuler Shook; P; G
Mitch Heffer; Entertainment Technology (Royal Philips Electronics); USITT; P; U

Visitors: Some were present, but none signed the attendance sheet

1 Opening remarks

Tracy Underhill called the meeting to order at 09:01.

2 Attendance

2.1 Introductions of those present and circulation of attendance sheet

A yellow attendance sign-in sheet was circulated while those present introduced themselves.

2.2 Determination of a quorum

Tracy Underhill asked for a show of hands of voting members. He counted the raised hands and then announced that a quorum was present.

2.3 Recognition of alternate voting members

There were none to recognize.

3 Membership

3.1 Requirements for membership

The following statement was read aloud to the assembly by Tracy Underhill:

"Membership is open to all who are affected by the work of the group. People and companies that would be in any interest category other than a manufacturer interest category are at this time particularly encouraged to apply for membership. Voting members are required to attend meetings and to vote on letter ballots. Voting members and their alternates may not miss three consecutive meetings without a loss of voting status."

3.2 Changes to observer status due to lack of attendance

Voting members who have missed the previous two meetings and will be moved to observer status if this meeting also is missed:

John (Javid) D. Butler and Michael (Mike) Whetstone; Integrated Theatre, Inc.

Butler and Whetstone were not present, so they were moved to observer status.

3.3 Processing of new membership requests and reaffirmation of members with new companies

As of 03 March 2009 the following application had been received:

Jody Williquette; Harting Inc., North America (Harting); alternate; G
 Shawn Coughlin; Harting, principal, G
 Ken Vannice; Leviton; P; MP

Ted Paget moved that the applications be accepted, with the exception that the Harting applicants be given observer status because they were not present, and voters are required to attend meetings. The motion was seconded and then approved with a show of hands.

Shawn Coughlin arrived a few minutes later. At that time, Ted Paget moved that he be accepted as a principal and Jody Williquette be accepted as an alternate. The motion was seconded and then approved with a show of hands.

3.4 Consensus body

The full consensus body during this meeting, including those not present, was:

Name	Company	Representing	Voting status	Int. cat.
Jean-Francois Canuel	Spectrum Manufacturing Inc.	A.C. Lighting Ltd.	P	CP
Scott M. Blair	High End Systems Inc.	Barco	P	MP
Tom Grimes	High End Systems, Inc.	Barco	A	MP
Paul Kleissler	City Theatrical, Inc.	City Theatrical, Inc.	P	MP
Edward A. (Ted) Paget	Vortek Rigging Division	Daktronics Inc.	P	G
Ulrich Kunkel	E3 Engineering & Education for Entertainment GmbH	DIN, NVBF Committee	P	U
Doug Fleenor	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	P	MP
Milton Davis	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Daniel W. Antonuk	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	P	MP
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	A	MP
Tracy Underhill	Electronics Diversified LLC	Electronics Diversified LLC	P	MP
Philip Nye	Engineering Arts	Engineering Arts	P	G
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	MP
Shawn Coughlin	Harting Inc, North America	Harting KGAA	P	G

Name	Company	Representing	Voting status	Int. cat.
Jody Williquette	Harting Inc, North America	Harting KGAA	A	G
Alan Martello	Horizon Control Inc.	Horizon Control Inc.	P	MP
Robert Bell	Horizon Control Inc.	Horizon Control Inc.	A	MP
Gary Douglas	Horizon Control Inc.	Horizon Control Inc.	A	MP
Peter Willis	Howard Eaton Lighting Ltd.	Howard Eaton Lighting Ltd.	P	CP
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U
John Huntington	City Tech, Ent Tech Department	I.A.T.S.E. Local 1	A	U
Roger Lattin	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	P	U
Dennis Grow	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Alan M. Rowe	IATSE Local 728	I.A.T.S.E. Local 728	A	U
Ken Vannice	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	P	MP
Tyrone Mellon Jr.	Lex Products Corp.	Lex Products Corp.	P	CP
Stuart Cotts	Oregon Shakespeare Festival	Oregon Shakespeare Festival	P	U
Kevin Loewen	Pathway Connectivity Inc.	Pathway Connectivity Inc.	P	MP
Dave Higgins	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	MP
Robert Armstrong	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	MP
Ron Bonner	PLASA	PLASA	P	G
Charles Reese	Production Resource Group	Production Resource Group	P	DR
Robert Tooker	Production Resource Group	Production Resource Group	A	DR
Michael Lay	Strand Lighting	Royal Philips Electronics	P	MP
Hans Lau	Sand Network Systems, Inc.	Sand Network Systems, Inc.	P	MP
Yngve Sandboe	Sand Network Systems, Inc.	Sand Network Systems, Inc.	A	MP
Kimberly Corbett	Schuler Shook	Schuler Shook	P	G
Phillip M. Gallo	TMB	TMB	P	DR
Mitch Hefter	Entertainment Technology (Royal Philips Electronics)	USITT	P	U
		Total votes possible	26	
		Votes by interest category	3	CP
			11	MP
			2	DR
			5	U
			5	G

4 Approval of the minutes from the previous meeting

Eddie Kramer moved that the draft minutes of the January 2009 meeting be approved as they are written. The motion was seconded and then accepted by a majority with a show of hands.

Eddie Kramer left at this time to attend a rigging task group meeting.

5 Reading of the call for patents

The following statement was read aloud to the assembly by Tracy Underhill:

"ESTA intends not to publish any standard that contains protected intellectual property, unless that information can be licensed by anyone for a reasonable fee. ESTA uses a process of open patent and copyright disclosures to implement its intent. ESTA does not conduct patent or copyright searches and does not warrant that its standards contain no protected intellectual property.

"In keeping with the open disclosures policy, I ask if anyone present wishes to notify this working group of the existence of a patent or copyright or other intellectual property that might protect material in a standard being developed by this working group. You need not be the holder of the patent or copyright to notify this working group of its existence."

No protected intellectual property was brought to the attention of the assembly at this meeting.

6 Reading of the anti-trust statement

The following statement was read aloud to the assembly by Tracy Underhill:

"The ESTA Board of Directors, the Technical Standards Committee, and the leadership of this working group will reject or nullify any actions that unlawfully restrain trade. Anyone who feels that such an action is being or has been taken is requested to bring that matter to the attention of the chair immediately. Anyone who feels that actions in restraint of trade have been taken and not properly annulled is requested to notify the TSC chair or ESTA president immediately.

"ESTA legal counsel has informed us that violations of the anti-trust laws can have serious consequences. Individuals engaged in certain unlawful conduct can be found criminally liable. An individual convicted of a criminal violation of the Sherman Act may be fined as much as \$1,000,000 and imprisoned for up to ten years. An easy to read pamphlet describing restraint of trade issues is available from the Technical Standards Manager."

The Technical Standards Manager, Karl Ruling, held up one of the easy-to-read pamphlets to show that copies were available. No restraint of trade issues were brought to the attention of the assembly.

7 Approval of agenda

Ted Paget moved that the draft agenda be accepted. The motion was seconded and then approved with a show of hands.

8 Old business

8.1 ANSI E1.3-2001 (R2006)

No news or action.

8.2 ANSI E1.11 - 2008 (revision of ANSI E1.11 - 2004)

No news or action.

8.3 BSR E1.20-20xx, Remote Device Management (revision of ANSI E1.20 - 2006)

8.3.1 Report on public review comment resolutions

Mike Lay read aloud a report from Scott Blair, which he had submitted by email:

"Please send my regrets for not attending. Between work travel and then my fractured ankle it just wasn't meant to happen!

"Draft comment resolutions have been sent to the TG along with detailed draft errata document of all changes to be made to E1.20. Once the TG accepts those two documents then we will then

make all the changes to the full E1.20 document. We plan to make this errata document available for existing owners of E1.20. This document will then control all changes made to the full E1.20 document forward to reduce any editing errors."

8.3.2 Confirmation of task group membership and leadership

The task group membership and leadership was discussed and confirmed.

Scott Blair is the leader. The members are:

- Tracy Underhill
- Doug Fleenor
- Eric Johnson
- Dan Antonuk
- Peter Willis
- Bob Goddard
- Kevin Loewen
- Charles Reese
- Paul Kleissler

Lay and Underhill announced that this roster is the official BSR E1.20-20xx task group.

8.4 E1.17 Architecture for Control Networks

8.4.1 Error correction

Dan Antonuk said that the task group has discussed the errata and is working on them, but is not ready to bring any document forward yet to the working group.

Dan Antonuk noted that Open ACN is now available for many platforms, including Windows. It's available on Source Forge (<http://sourceforge.net/projects/openacn/>). There also is support from the audio industry for ACN, which is adding up. Freescale Semiconductor is putting ACN in the evaluation kit for their processors.

8.4.2 Confirmation of task group membership and leadership

The task group membership and leadership was discussed and confirmed.

Dan Antonuk is the leader.

The members are:

- Philip Nye
- Alan Martello
- Uli Kunkle
- Kevin Loewen
- Ingve Sandboe
- Rick Leinen

The E1.30 task group is the same, said Dan Antonuk, with the addition of Tom Grimes.

The E1.33 task group is the combination of this group (with Tom Grimes) and the RDM group, said Dan Antonuk.

Lay and Underhill announced that these rosters are the official rosters for these projects.

8.5 E1.27-X, cabling

8.5.1 ANSI E1.27-1-2006 (portable DMX512/E1.11 cabling)

No news or action.

8.5.2 BSR E1.27-2 (permanent DMX512/E1.11 cabling)

Karl Ruling reported that the CPWG had accepted it as an ANS, and so had the TSC. He needs to send it to the ESTA Board for its approval.

8.6 BSR E1.30, Application level equipment interoperability for control of commonly encountered entertainment technology devices using E1.17

8.6.1 BSR E1.30-3

Karl Ruling reported that the CPWG had accepted it as an ANS, and so had the TSC. He needs to send it to the ESTA Board for its approval.

8.6.2 BSR E1.30-4

Ruling reported that the CPWG and the TSC had approved the public review.

8.6.3 BSR E1.30-7

Karl Ruling reported that the CPWG had accepted as an ANS, and so had the TSC. He needs to send it to the ESTA Board for its approval.

8.6.4 BSR E1.30-10

Karl Ruling reported that the CPWG had accepted the document as an ANS, and so had the TSC. He has sent it to the ESTA Board for its approval at the Board meeting, this meeting cycle.

There was a discussion of giving the EPIs away for free. They are useless without ACN, which we will sell.

8.6.5 Other BSR E1.30-x documents

Dan Antonuk reported that work has been done on the other EPIs. He reminded the people what the EPIs are supposed to do and gave a brief description of them.

8.6.6 Confirmation of task group membership and leadership

Dan Antonuk is the leader.

The members are:

- Philip Nye
- Alan Martello
- Uli Kunkle
- Kevin Loewen
- Ingve Sandboe
- Rick Leinen
- Tom Grimes

8.7 BSR E1.31, Lightweight streaming protocol for transport of DMX512 using ACN

Karl Ruling reported that the CPWG had accepted as an ANS, and so had the TSC. He has sent it to the ESTA Board for its approval at the Board meeting, this meeting cycle.

Dan Antonuk reported on how elegant E1.31 is. It will work even if the IP addresses are screwed up on the network.

8.8 BSR E1.33-200x, Extensions to E1.31 for Transport of ANSI E1.20 (RDM)

8.8.1 Progress report.

Dan Antonuk said that a lot had been done. They are working on the discovery of RDM devices over E1.31. Kevin Loewen is working on reducing the requirements for Service Location Protocol for leaner devices.

Scott Blair's email, read by Mike Lay, echoed what Antonuk reported:

"We made some good headway at the last meetings. The biggest challenge is handling a scalable discovery that still remains very simple. I believe we all pretty much got our arms around a solution at the last meeting that involves a very, very limited SLP type solution. Kevin was going to draft the text for the discovery section as this is his proposal. Hopefully he will have something for this meeting. If that happens then I'm hoping we can start to have a solid document to really start digging into around July."

Antonuk noted that Tracy Underhill and Frances Thompson have worked to avoid meeting overlaps and time conflicts for the task groups. Mike Lay said that a policy change made at the recent TSC meeting requires working chairs to coordinate task group meetings.

8.8.2 Confirmation of task group membership and leadership

See above.

8.9 BSR E1.37-200x—Additional Message Sets for ANSI E1.20, Remote Device Management

8.9.1 Progress report

Scott Blair's emailed report was read:

"We made good progress on the E1.37-1 document thanks to help from Zero88 at the last meeting. Peter [McEwan] is going back through all his previous work to make sure there is nothing missing from the Zero88 document we are working from. The goal is to keep this simple and get it done at this point rather than being everything to everyone, which originally derailed it, but instead be the common things that most dimmer manufacturers expose to their end users vs. all the proprietary things they might do as part of commissioning a new system. Tracy Underhill, I believe, is going to guide any work on this document during the meetings this week."

8.9.2 Confirmation of task group membership and leadership

Tracy Underhill said that Peter Willis is the leader. Members include Paul McEwan, Tracy Underhill, Scott Blair, and Dan Antonuk.

9 New business

None.

10 Other business

Mike Lay asked Mitch Heffer to report on the actions at the TSC meeting.

11 Schedule for future meetings

Karl Ruling announced that the next meeting is scheduled for Saturday, July 18 from 13:00 to 16:00 at the Marriott Solana in Westlake, TX.

12 Adjournment

Ted Paget moved that the meeting adjourn. The motion was seconded and then approved with a show of hands. Mike Lay declared the meeting adjourned at 10:15.

Working Group Membership and Contact Information as of 13 May 2009

Name	Company	Representing (Primary sort field.)	Voting status	Int. cat.
Jean-Francois Canuel	Spectrum Manufacturing Inc.	A.C. Lighting Ltd.	P	CP
Tim Bachman	A.C.T Lighting, Inc.	A.C.T Lighting, Inc.	O	DR
Andre Broucke	ADB - TTV Technologies	ADB-TTV Group	O	MP
John Sellers	AIM Northwest	AIM Northwest	O	G
Arnold Tang	Arnold Tang Productions	Arnold Tang Productions	O	U
Wayne David Howell	Artistic Licence (UK) Ltd.	Artistic Licence (UK) Ltd.	O	CP
Simon Hobday	Artistic Licence (UK) Ltd.	Artistic Licence (UK) Ltd.	O	CP
Steve Friedlander	Auerbach Pollock Friedlander	Auerbach Pollock Friedlander	O	U
J. B. Toby	Avolites Ltd.	Avolites Ltd.	O	MP
Shahid Anwar	Avolites Ltd.	Avolites Ltd.	O	MP
Richard Salzedo	Avolites Ltd.	Avolites Ltd.	O	MP
Barbara Wohlsen	Barbara Wohlsen	Barbara Wohlsen	O	U
Tobin Neis	Barbizon Companies	Barbizon Companies	O	DR
Scott M. Blair	High End Systems Inc.	Barco	P	MP
Tom Grimes	High End Systems, Inc.	Barco	A	MP
Jiantong Wu	Beijing Special Engineering Design & Research Institute	Beijing Special Engineering Design & Research Institute	O	G
Bernardo Benito Rico	Ben-Ri Electronica S.A.	Ben-Ri Electronica S.A.	O	MP
Lee J. Bloch	Bloch Design Group, Inc.	Bloch Design Group, Inc.	O	G
Soo-Myong Chung	Bloch Design Group, Inc.	Bloch Design Group, Inc.	O	G
Bill Ellis	Candela Controls, Inc.	Candela Controls, Inc.	O	U
Will Wagner	Carallon Ltd.	Carallon Ltd.	O	MP
Steve Roberts	Carr & Angier	Carr & Angier	O	G
Bob Toms	Catalyst Microsystems LLC	Catalyst Microsystems LLC	O	G
Marty Lazarus	Chicago Spotlight, Inc.	Chicago Spotlight, Inc.	O	G
Chuck Seifried	Phoenix Civic Plaza	City of Phoenix	O	U
Paul Kleissler	City Theatrical, Inc.	City Theatrical, Inc.	P	MP
Larry Dunn	City Theatrical, Inc.	City Theatrical, Inc.	O	MP
Fabiano Pina	Clay Paky S.P.A.	Clay Paky S.P.A.	O	MP
Yehuda Shukram	Compulite Systems	Compulite Systems	O	MP
Dietmar Rottinghaus	Connex GmbH	Connex GmbH	O	G
Paul Kenneth McEwan	Zero 88	Cooper Controls Ltd.	O	MP
Edward A. (Ted) Paget	Vortek Rigging Division	Daktronics Inc.	P	G
David Bertenshaw	David Bertenshaw	David Bertenshaw	O	G
Larry Schoeneman	Designlab Chicago, Inc.	Designlab Chicago, Inc.	O	DR
Ulrich Kunkel	E3 Engineering & Education for Entertainment GmbH	DIN, NVBF Committee	P	U
Doug Fleenor	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	P	MP
Milton Davis	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP

Name	Company	Representing (Primary sort field.)	Voting status	Int. cat.
Gary Dove	Dove Systems	Dove Systems	O	MP
Jerry Durand	Durand Interstellar, Inc.	Durand Interstellar, Inc.	O	CP
Jussi Kallioinen	Eastway Sound & Lighting	Eastway Sound & Lighting	O	U
Edward R. Condit	Edward R. Condit	Edward R. Condit	O	G
Ed Jones	Edwin Jones Co., Inc.	Edwin Jones Co., Inc.	O	CP
Joost van Eenbergen	ELC Lighting	ELC Lighting	O	MP
Bill Fehrmann	Electrol Engineering, Inc.	Electrol Engineering, Inc.	O	MP
Daniel W. Antonuk	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	P	MP
Adam Bennette	Electronic Theatre Controls Ltd.	Electronic Theatre Controls, Inc.	O	MP
Hans Leiter	ETC GmbH	Electronic Theatre Controls, Inc.	O	MP
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	A	MP
Tracy Underhill	Electronics Diversified LLC	Electronics Diversified LLC	P	MP
Ralph Weber	ENDL Texas	ENDL Texas	O	G
Philip Nye	Engineering Arts	Engineering Arts	P	G
Eric Johnson	Eric Johnson	Eric Johnson	O	MP
Eric Proce	Eric Proce	Eric Proce	O	U
Erwin Rol	Erwin Rol Software Engineering	Erwin Rol	O	G
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	MP
Sierk Janszen	Kiss Box	Ground Zero	O	U
Shawn Coughlin	Harting Inc, North America	Harting KGAA	P	G
Jody Williquette	Harting Inc, North America	Harting KGAA	A	G
Trevor Forrest	Helvar Lighting Control	Helvar Lighting Control	O	MP
Bill Hewlett	Hewlett Electronics	Hewlett Electronics	O	CP
Steve Carlson	High Speed Design, Inc.	High Speed Design, Inc.	O	MP
Kirk D. Keen	Hollywood Lighting Services, Inc.	Hollywood Lighting, Inc.	O	DR
Alan Martello	Horizon Control Inc.	Horizon Control Inc.	P	MP
Robert Bell	Horizon Control Inc.	Horizon Control Inc.	A	MP
Gary Douglas	Horizon Control Inc.	Horizon Control Inc.	A	MP
Peter Willis	Howard Eaton Lighting Ltd.	Howard Eaton Lighting Ltd.	P	CP
Paul J. Clark	HxDx	HxDx	O	CP
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U
John Huntington	City Tech, Ent Tech Department	I.A.T.S.E. Local 1	A	U
Roger Lattin	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	P	U
Dennis Grow	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Alan M. Rowe	IATSE Local 728	I.A.T.S.E. Local 728	A	U
Geoffrey O. Thompson	Nortel Networks, Inc.	IEEE 802.3/Nortel Networks	O	G
John (Javid) D. Butler	Integrated Theatre, Inc.	Integrated Theatre, Inc.	O	CP
Michael (Mike) Whetstone	Integrated Theatre, Inc.	Integrated Theatre, Inc.	O	CP
Rob Johnston	Interactive Technologies, Inc.	Interactive Technologies, Inc.	O	MP

Name	Company	Representing (Primary sort field.)	Voting status	Int. cat.
David Timmins	Jands Electronics	Jands Electronics	O	MP
Helge Hoffmann	JB Lighting	JB Lighting	O	MP
Christopher Purpura	Jones & Phillips Associates, Inc.	Jones & Phillips Associates, Inc.	O	G
Josh Gubler	Josh Gubler	Josh Gubler	O	CP
John Mehlretter	Lehigh Electric Products Co.	Lehigh Electric Products Co.	O	MP
Mark T. Kraft	Lehigh Electric Products Co.	Lehigh Electric Products Co.	O	MP
Ken Vannice	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	P	MP
Rick Leinen	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	O	MP
Lars Wernlund	Lewlight	Lewlight	O	MP
Tyrone Mellon Jr.	Lex Products Corp.	Lex Products Corp.	P	CP
Klaus Amling	Licht-Technik	Licht-Technik	O	MP
Andrew Sherar	Lightmoves PLC	Lightmoves PLC	O	MP
Avraham Mendall Mor "Avi"	Lightswitch	Lightswitch	O	U
Simon Alpert	Lighttech Event Technologies	Lighttech Event Technologies	O	CP
Gary Pritchard	LSC Lighting Systems (Aust) PTY Ltd	LSC Lighting Systems PTY Ltd	O	MP
Bart Swinnen	Luminex LCE	Luminex LCE	O	MP
Jim Holladay	Luxence	Luxence	O	G
Daniel Weiermann	Mainstage Theatrical Supply - Milwaukee	Mainstage Theatrical Supply	O	DR
Torben Kaas Rasmussen	Martin Professional A/S	Martin Professional A/S	O	G
Flemming Jensen	Martin Professional A/S	Martin Professional A/S	O	G
Hiroshi Kita	Marumo Electric Co., Ltd.	Marumo Electric Co., Ltd.	O	MP
Stuart Cotts	Oregon Shakespeare Festival	Oregon Shakespeare Festival	P	U
David A. Boller	Organic Machines LLC	Organic Machines LLC	O	CP
William Benner	Pangolin Laser Systems	Pangolin Laser Systems	O	MP
Kevin Loewen	Pathway Connectivity Inc.	Pathway Connectivity Inc.	P	MP
Dave Higgins	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	MP
Robert Armstrong	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	MP
Ron Bonner	PLASA	PLASA	P	G
James Eade	PLASA	PLASA	O	G
Charles Reese	Production Resource Group	Production Resource Group	P	DR
Robert Tooker	Production Resource Group	Production Resource Group	A	DR
Paul F. Mardon	Pulsar Ltd.	Pulsar Ltd.	O	MP
Steve Unwin	Pulsar Ltd.	Pulsar Ltd.	O	MP
Stephen J. Tyrrell	Quantum Logic	Quantum Logic	O	MP
Douglas Franz	QVC Network	QVC Network	O	U
Sean Harding	Rhode Island College	Rhode Island College	O	U
Charlie Richmond	Richmond Sound Design Ltd.	Richmond Sound Design Ltd.	O	CP
Martin Farnik	Robe Show Lighting s.r.o.	Robe Show Lighting s.r.o.	O	MP
Michael Lay	Philips Strand Lighting	Royal Philips Electronics	P	MP

Name	Company	Representing (Primary sort field.)	Voting status	Int. cat.
Mike Blackwell	Philips/Color Kinetics	Royal Philips Electronics	O	MP
John Warwick	Philips/Color Kinetics	Royal Philips Electronics	O	MP
Hans Lau	Sand Network Systems, Inc.	Sand Network Systems, Inc.	P	MP
Yngve Sandboe	Sand Network Systems, Inc.	Sand Network Systems, Inc.	A	MP
Kimberly Corbett	Schuler Shook	Schuler Shook	P	G
Lars F. Paape	Scientific Algorithms and Embedded Systems	Scientific Algorithms and Embedded Systems	O	U
Mick Martin	ShowCAD Control Systems	ShowCAD Control Systems	O	MP
Loren Wilton	Showman Systems	Showman Systems	O	CP
Mark Manthei	Shure Inc.	Shure Inc.	O	G
Kehang Wu	Shure Inc.	Shure Inc.	O	G
Jon R. Farley	Sixteenth Avenue Systems	Sixteenth Avenue Systems	O	CP
Robert Barbagallo	Solotech Inc.	Solotech Inc.	O	U
Michael Gonzales	Spectrum Lighting Inc.	Spectrum Lighting Inc.	O	DR
Ujjal Kar	Standard Robotics & Lighting	Standard Robotics & Lighting	O	G
Paul K. Ericson	Syska Hennessy Group Lighting Design	Syska Hennessy Group Lighting Design	O	U
Stephen Bickford	T. Kondos Associates	T. Kondos Associates	O	U
Tad Trylski	Tad Trylski	Tad Trylski	O	U
Klas Dalbjorn	Labgruppen AB	TC Group	O	MP
Dominic Vincenty	TPS	Television Production Service	O	DR
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	O	G
Phillip M. Gallo	TMB	TMB	P	DR
Colin Waters	TMB	TMB	O	U
Mitch Hefter	Entertainment Technology (Royal Philips Electronics)	USITT	P	U
Torrey Bievenour	Vision Quest Lighting	Vision Quest Lighting	O	G
Eric Cornwell	West Side Systems	West Side Systems	O	U
John Sondericker III	Wybron, Inc.	Wybron, Inc.	O	MP

Key to codes:

P	principal voting member	MP	mass-market producer interest category
A	alternate voting member	CP	custom-market producer interest category
I	individual voting member	DR	dealer or rental company interest category
O	observer, non-voting	U	user interest category
		G	general-interest interest category