

Minutes
Control Protocols Working Group

Thursday, 20 March 2003
Hilton Minneapolis
Minneapolis, MN

Chairmen: Steve Carlson; High Speed Design, Inc.; P; MP
Steve Terry; Electronic Theatre Controls; A; MP

Recording secretary: Karl G. Ruling; ESTA

Members attending: Wayne David Howell; Artistic Licence (UK) Ltd.; P; MP
Hans Lau; AVAB America Inc.; P; MP
Michael A. (Sandy) Twose; AVAB America Inc.; A; MP
Tobin Neis; Barbizon Companies; P; DR
George Kindler; Pelton Marsh Kinsella (Carter & Burgess, Inc.); P; G
Doug Fleenor; Doug Fleenor Design, Inc.; P; MP
Gary Dove; Dove Systems; O; MP (arrived late)
Daniel W. Antonuk; Electronic Theatre Controls, Inc.; P; MP
Tracy Underhill; Electronics Diversified Inc.; P; MP
Philip Nye; Engineering Arts; P; G
Tom Grimes; High End Systems, Inc.; P; MP
Scott M. Blair; Scott M. Blair (Hubbell Inc.); P; G
Richard Thornton Brown; Zero 88 Ltd. (i Light Group PLC); P; MP
Edwin S. Kramer; I.A.T.S.E. Local 1; P; U
John Huntington; I.A.T.S.E. Local 1; A; U
Roger Lattin; I.A.T.S.E. Local 728; P; U
Edward Paget; Jones & Phillips Associates, Inc.; P; G
Christopher Purpura; Jones & Phillips Associates, Inc.; A; G (joined at this meeting)
Rick Leinen; Colortran (Leviton Manufacturing Co., Inc.); P; MP
John (Javid) D. Butler; Mainstage Theatrical Supply - South (Mainstage Theatrical Supply); P; DR
Ole Bystrup; Martin Professional A/S; P; MP
Gary Douglas; Pathway Connectivity Inc.; P; MP (arrived late)
James Eade; PLASA; P; G
Brian Dowd; TMB; P; U
Mitch Hefter; Entertainment Technology (Genlyte Thomas Group), representing USITT; P; U
Charles Reese; VLPS; P; MP

Key to codes:

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

Peter Willis of Howard Eaton Lighting Ltd. had sent regrets for being unable to attend.

There were no visitors.

1 Opening remarks

Steve Carlson called the meeting to order at 09:00. He and Steve Terry introduced themselves.

2 Attendance and membership

2.1 Introductions of those present and taking attendance

Steve Terry asked those present to introduce themselves. The self-introductions proceeded around the table in a clockwise direction. While this was done, a chartreuse sign-in sheet was circulated.

2.2 Determination of quorum

Terry announced that a quorum was present so working group business could be conducted.

2.3 Recognition of alternate voting members

Terry reminded alternate voting members that they could not vote if the principal was voting on an issue. The rule is one vote per company or organization.

2.4 Requirements for membership

Steve Carlson reminded attendees that working group membership is open to all who are affected by the work of the group, but that 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.

2.5 Processing of new membership requests

Working group membership applications had been received from the following:

Christopher Purpura; Jones & Phillips Assoc.; A; G

Andre Broucke; ADB; O;MP

Bob Barbagallo, Solotech; O; DR

Robert Bell; Shock Lighting Ltd. representing Horizon Control Inc.; O; MP

Torrey Bienvenour, Vision Quest Lighting; O, G

Ted Paget moved that the applications be accepted. The motion was seconded. The motion was approved by a unanimous show of hands.

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

Name	Company	Representing	Voting status	Int. cat.
Arnold Tang	Arnold Tang Productions	Arnold Tang Productions	P	U
Wayne David Howell	Artistic Licence (UK) Ltd.	Artistic Licence (UK) Ltd.	P	MP
Hans Lau	AVAB America Inc.	AVAB America Inc.	P	MP
Yngve Sandboe	AVAB America Inc.	AVAB America Inc.	A	MP
Michael A. (Sandy) Twose	AVAB America Inc.	AVAB America Inc.	A	MP
Tobin Neis	Barbizon Companies	Barbizon Companies	P	DR
George Kindler	Pelton Marsh Kinsella	Carter & Burgess, Inc.	P	G
Rick Szijarto	Cast Software	Cast Group of Companies, Inc.	P	CP
Doug Fleenor	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	P	MP
Milton Davis	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Ken Wagner	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Ed Jones	Edwin Jones Co., Inc.	Edwin Jones Co., Inc.	P	CP
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 Inc.	Electronics Diversified Inc.	P	MP
James Johnson	Electronics Diversified Inc.	Electronics Diversified Inc.	A	MP
Alfred Langguth	Embedded Controls by Design, LLC	Embedded Controls by Design, LLC	P	MP
Phillip Nye	Engineering Arts	Engineering Arts	P	G
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	MP
Tom Grimes	High End Systems, Inc.	High End Systems, Inc.	P	MP
William Wagner	Flying Pig Systems	High End Systems Inc.	A	MP

Steve Carlson	High Speed Design, Inc.	High Speed Design, Inc.	P	MP
Peter Willis	Howard Eaton Lighting Ltd.	Howard Eaton Lighting Ltd.	P	CP
Scott M. Blair	Scott M. Blair	Hubbell Inc.	P	G
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U
John Huntington	I.A.T.S.E. Local 1	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	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Richard Thornton Brown	Zero 88 Ltd.	i Light Group PLC	P	MP
Edward Paget	Jones & Phillips Associates, Inc.	Jones & Phillips Associates, Inc.	P	G
Christopher Purpura	Jones & Phillips Associates, Inc.	Jones & Phillips Associates, Inc.	A	G
Rick Leinen	Colortran	Leviton Manufacturing Co., Inc.	P	MP
Ken Vannice	Colortran	Leviton Manufacturing Co., Inc.	A	MP
Tim Bachman	Leviton/Colortran	Leviton Manufacturing Co., Inc.	A	MP
John (Javid) D. Butler	Mainstage Theatrical Supply - South	Mainstage Theatrical Supply	P	DR
Ole Bystrup	Martin Professional A/S	Martin Professional A/S	P	MP
Gary Douglas	Pathway Connectivity Inc.	Pathway Connectivity Inc.	P	MP
Dave Higgins	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	MP
Kevin Loewen	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	MP
James Eade	PLASA	PLASA	P	G
Tony Douglas-Beveridge	PLASA	PLASA	A	G
Paul F. Mardon	Pulsar Ltd.	Pulsar Ltd.	P	MP
Steve Unwin	Pulsar Ltd.	Pulsar Ltd.	A	MP
Richard Lawrence	Strand Lighting Ltd.	Strand Lighting Ltd.	P	MP
Michael Lay	Strand Lighting	Strand Lighting Ltd.	A	MP
Brian Dowd	TMB	TMB	P	U
Mitch Hefter	Entertainment Technology (Genlyte Thomas Group)	USITT	P	U
Charles Reese	VLPS	VLPS	P	MP
Michael Gonzales	Wrightson, Johnson, Haddon & Williams, Inc.	Wrightson, Johnson, Haddon & Williams, Inc.	P	U
Mark Jensen	Wybron, Inc.	Wybron, Inc.	P	MP
			33 TOTAL	17 MP
				3 CP
				2 DR
				6 U
				5 G

John Sellers of AIM Northwest had been a voter at the previous meeting but was moved to observer status at the end of the meeting because of his inattendance. Thus, this roster has one less general interest voting member than the roster for the last meeting.

3 Approval of the minutes from the previous meeting

Ted Paget moved that the minutes of the last meeting as written and circulated be approved. The motion was seconded. The motion was approved by a unanimous show of hands, except for one abstention by a member who had not read the minutes.

4 Reading of the call for patents

The following was read aloud to the assembly by Steve Carlson:

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

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

Wayne Howell asked if we mean patent applications, too, and not simply patents. This led to an explanation of the patent policy. Wayne Howell revealed that Color Kinetics has a European and US patent application that might have an impact on lighting control. The application is WO-02101702. He said he'd found it on Delphion.

[Note to CPWG members from the TSM: Patent application WO02101702 is available for free online at the European Patent Office's online registration website. Go to <http://register.epoline.org/espacenet/ep/en/srch-reg.htm> and type WO02101702 in the search field at the top of the form. It all seems to be there, including the over 100 claims, except for some of the illustrations.]

5 The reading of the anti-trust statement

The following was read aloud by Steve Carlson:

"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 \$100,000 and imprisoned for up to three years. An easy to read pamphlet describing restraint of trade issues is available from the Technical Standards Manager."

The easy-to-read pamphlet was displayed by Karl Ruling. No restraint of trade issues were brought to the attention of the assembly.

6 Approval of agenda

Ted Paget moved that the draft agenda be adopted as written. The motion was seconded. The motion was approved by a unanimous voice vote.

7 Old business

7.1 E1.11

7.1.1 Public review comment resolutions

Mitch Hefter moved that the comment resolutions (CP/2002-1010r1) be accepted. The motion was seconded. In the discussion, Javid Butler pointed out that there are some defective cross references in the revised E1.11 draft standard. By a show of hands, 21 vote in favor and none against. The motion was accepted by a clear supermajority.

7.1.2 BSR E1.11 (without cabling) version 6.5

Mitch Hefter said that the 6.5 version with the exception of the PICS is ready for public review. He moved that we accept draft 6.5 with editorial corrections supplied by Javid Butler (JB001) regarding incorrect clause references and with the addition of a completed PICS as draft 7.0, and that we forward the document to the TSC with a recommendation that it be sent to public review. The motion was seconded. The motion was accepted on a roll call ballot with 22 voting in favor, none against, and with one abstention, which was a supermajority.

Name	Company	Representation	Voting status	Int. cat.	Yes	No	Abstain
Arnold Tang	Arnold Tang Productions	Arnold Tang Productions	P	U			
Wayne David Howell	Artistic Licence (UK) Ltd.	Artistic Licence (UK) Ltd.	P	MP	1		
Hans Lau	AVAB America Inc.	AVAB America Inc.	P	MP	1		
Tobin Neis	Barbizon Companies	Barbizon Companies	P	DR	1		
George Kindler	Pelton Marsh Kinsella	Carter & Burgess, Inc.	P	G	1		
Rick Szijarto	Cast Software	Cast Group of Companies, Inc.	P	CP			
Doug Fleenor	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	P	MP	1		

Ed Jones	Edwin Jones Co., Inc.	Edwin Jones Co., Inc.	P	CP			
Daniel W. Antonuk	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	P	MP	1		
Tracy Underhill	Electronics Diversified Inc. (Colorado)	Electronics Diversified Inc.	P	MP	1		
Alfred Langguth	Embedded Controls by Design, LLC	Embedded Controls by Design, LLC	P	MP			
Philip Nye	Engineering Arts	Engineering Arts	P	G	1		
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	MP			
Tom Grimes	High End Systems, Inc.	High End Systems, Inc.	P	MP	1		
Steve Carlson	High Speed Design, Inc.	High Speed Design, Inc.	P	MP	1		
Peter Willis	Howard Eaton Lighting Ltd.	Howard Eaton Lighting Ltd.	P	CP			
Scott M. Blair	Scott M. Blair	Hubbell Inc.	P	G	1		
Richard Thornton Brown	Zero 88 Ltd.	i Light Group PLC	P	MP	1		
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U	1		
Roger Lattin	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	P	U	1		
Edward Paget	Jones & Phillips Associates, Inc.	Jones & Phillips Associates, Inc.	P	G	1		
Rick Leinen	Colortran	Leviton Manufacturing Co., Inc.	P	MP	1		
John ("Javid") D. Butler	Mainstage Theatrical Supply - South	Mainstage Theatrical Supply	P	DR	1		
Ole Bystrup	Martin Professional A/S	Martin Professional A/S	P	MP	1		
Kevin Loewen	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	MP	1		
James Eade	PLASA	PLASA	P	G			1
Paul F. Mardon	Pulsar Ltd.	Pulsar Ltd.	P	MP			
Steve Unwin	Pulsar Ltd.	Pulsar Ltd.	A	MP			
Richard Lawrence	Strand Lighting Ltd.	Strand Lighting Ltd.	P	MP			
Michael Lay	Strand Lighting	Strand Lighting Ltd.	A	MP			
Brian Dowd	TMB (NJ)	TMB	P	U	1		
Mitch Hefter	Entertainment Technology (Genlyte Thomas Group)	USITT	P	U	1		
Charles Reese	VLPS	Vari-Lite, Inc.	P	MP	1		
Michael Gonzales	Wrightson, Johnson, Haddon & Williams, Inc.	Wrightson, Johnson, Haddon & Williams, Inc.	P	U			
Mark Jensen	Wybron, Inc.	Wybron, Inc.	P	MP			
		TOTALS		all	22	0	1
				MP	12	0	0
				CP	0	0	0
				DR	2	0	0
				G	4	0	1
				U	4	0	0

7.1.3 Cabling

There was a discussion of the E1.11/DMX cabling standard project. The task group will meet and have a report at the next meeting.

Steve Carlson reported that SC25 is working on Industrial Premises Cabling and we've been invited to get involved in the project. We are considered experts in light industrial ethernet cabling. No motions were made and no formal action was taken, but the sense of the group is that we should be involved. (See item 7.4.9 below for more info.)

7.2 E1.20 Remote Device Management with DMX512

Scott Blair reported that the discovery process has been modified and that the new process works. The sections of the document dealing with timing and splitters have been improved. Blair said that the task group needs to clean up what it has, clarify the language, fix cross references, and avoid any more changes. A draft for the working group will be presented at the July meeting.

7.3 E1.17

Dan Antonuk reported that the transport and protocol layer specifications have been sent to the group and feedback has been gotten. The DDL is the project now, and there has been a lot of work done on it. A full set of documents for the working group is expected in July.

7.4 IEEE report

Steve Carlson reported on a number of IEEE and related issues.

7.4.1 The "Get 802" free standards program is back. An agreement was reached with the Board of Governors in July 2002. The standards will not be free until six months after publication; you have to

pay for them if you want them within the first six months. 802.3-2002 is now available. See <http://standards.ieee.org/getieee802/> for more information.

- 7.4.2** Regarding P802.3af DTE Power via MDI: the D4.1 Sponsor Ballot recirculation closed 2 March 2003. There was a return rate of 77% (75% required) with an approval rate of 94% (75% required). The task force met in March 2003 and resolved all comments. the vote is now 100% for approval. The second recirculation ballot starts March 22 and ends April 4. The task force then meets April 9-10. D5.0 should be submitted in May for approval at the June STB meeting. Then it's DONE!
- 7.4.3** The P802.3ah Ethernet First Mile project has revived and is now moving rapidly with D1.SQRT2 in March 2003. The big issue slowing things is the adoption of the appropriate ADSL line code. A decision on this by T1E1.4 is expected in June. The target date for the standard is July 2004. Check it out at <http://grouper.ieee.org/groups/802/3/efm/index.html>. The goal of this is to be able to send two-megabits a second, full duplex, with base band signaling over regular telephone line for 2700 meters.
- 7.4.4** There are also some new projects of note. One is the new Study Group - 10GBASE-T. This is to send 10G over 100m of UTP. Probably CAT 6E will be the physical medium. Sponsors include Intel, Sun, Solarflare, and Plato Labs. The study group is lead by Brad Booth of Intel. More info is at <http://grouper.ieee.org/groups/802/3/10GBT/index.html>.
- 7.4.5** Another notable new project is embodied in Study Group 10GBASECX-4. This is to allow low-cost equipment-to-equipment interconnect at 10G with copper using InfiniBand 4 cable/connectors over links up to 15m long. Sponsors include H-P (Agilent), 3Com, Cisco, and CDT. This project is lead by Dan Dove of H-P. More info is at <http://grouper.ieee.org/groups/802/3/10GBCX4/index.html>. This group is moving fairly quickly.
- 7.4.6** There is also an Exec Study Group Link Security in 802 Networks. This group is studying possible physical layer encryption for all 802 protocols. The project is lead by Dolores Sala. More info is at <http://grouper.ieee.org/groups/802/linksec/>. This group has not been making much progress.
- 7.4.7** The 802.15.4 low power, low cost, 250Kbps radio link (30m line-of-sight) project is now in Sponsor Ballot recirculation.
- 7.4.8** 802.11g: Higher Rate PHY (54Mbps) for 802.11b (20Mbps) D6.2 closed Sponsor Ballot with an 84% approval rate but with a substantial number of TRs, which are No votes. Carlson sees this as trouble.
- 7.4.9** There is also a new project to create a cabling standard for industrial and building automation. This is the project to which Carlson referred during the E1.11/DMX cabling report. The full -- or fuller -- title of the project is IEC/ISO/JTC1\SC25\WG3 IPTG (Industrial Premises Task Group). It's an IEC project, so it is being done by a Technical Advisory Group. The contact for the TAG in Europe is Alan Flatman <a_flatman@compuserve.com>. The TAG contact in North America is Dave Hess <Dave.Hess@Berktek.com>
- 7.4.10** The 802.3 Working Group Officers are:
Chairman: Bob Grow, bob.grow@intel.com
Vice-Chairman: David Law, David_Law@3com.com
Secretary: Steve Carlson, scarlson@esta.org
The next meeting will be at the Hyatt Regency, 20 -24 July 2003. More information is available at <http://grouper.ieee.org/groups/802/3/index.html>

8 New business

There was a discussion of the new archived email reflector. Instructions for signing up were distributed. The current dumb reflectors will be shut down, so people need to register and get on the new reflectors if they wish to stay in the loop.

Signing up is a two step process: sign up on the website to get access to the archives, then sign up to be on specific reflector lists. Simply registering on the site will give CPWG members access to the archived email for the working group and for all the tasks groups within it. However, working group members also need to sign up to be on the working group's reflector if they want working group email to be forwarded to them. Task group members also need to sign up to be on the reflectors for their particular task groups in order for mail sent to the task group's reflector to be automatically bounced to them. If members don't do this, the email is available for browsing on the website in the archive, but they won't get it automatically, and they won't be able to post to a reflector.

9 Other business

None.

10 Changes to observer status due to lack of attendance

Voting members and alternates who together have missed the previous two meetings in a row are moved to observer at the end of the third meeting missed.

Steve Carlson noted that Ed Jones was not in attendance at this meeting, and had therefore not met the attendance requirement for voting members. He will now be listed as an observer.

11 Schedule for future meetings

Steve Terry announced that the next CPWG meeting will be Saturday, 26 July at the Dallas/Ft. Worth Marriott South. The following task group meetings are also scheduled:

BSR E1.11 (DMX)

Saturday, 26 July 2003, 13:00 - 18:00

BSR E1.17 (ACN)

Friday, 25 July 2003, 09:00 - 18:00

Saturday, 26 July 2003, 13:00 - 18:00

Sunday, 27 July 2003, 09:00 - 18:00

BSR E1.20 (RDM)

Friday, 25 July 2003, 18:00 - 23:00

Saturday, 26 July 2003, 13:00 - 18:00

Sunday, 27 July 2003, 09:00 - 18:00

The LDI meetings will be held at the Sheraton World Resort in Orlando, FL. The Control Protocols Working Group meeting will be Thursday, 20 November 2003.

12 Adjournment

Ted Paget moved that the meeting adjourn. The motion was seconded. The motion was approved on a voice vote. Steve Terry declared the meeting adjourned at 10:29.

Control Protocols Working Group Membership and Contact Information

Name	Company	Representing	Voting status	Int. cat.
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	P	U
Wayne David Howell	Artistic Licence (UK) Ltd.	Artistic Licence (UK) Ltd.	P	MP
Steve Friedlander	Auerbach Pollock Friedlander	Auerbach Pollock Friedlander	O	U
Hans Lau	AVAB America Inc.	AVAB America Inc.	P	MP
Yngve Sandboe	AVAB America Inc.	AVAB America Inc.	A	MP
Michael A. (Sandy) Twose	AVAB America Inc.	AVAB America Inc.	A	MP
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	P	DR
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
Bradley Klinkradt	Bradley Klinkradt	Bradley Klinkradt	O	G
Ted Fregon	Bytecraft Pty. Ltd.	Bytecraft Pty. Ltd.	O	MP
Bill Ellis	Candela Controls, Inc.	Candela Controls, Inc.	O	U
George Kindler	Pelton Marsh Kinsella	Carter & Burgess, Inc.	P	G
Rick Szijarto	Cast Software	Cast Group of Companies, Inc.	P	CP
Marty Lazarus	Chicago Spotlight, Inc.	Chicago Spotlight, Inc.	O	G
Ohad Ashery	Compulite Systems	Compulite Systems	O	MP
Simeon Aladjem	Compulite Systems	Compulite Systems	O	MP
Yehuda Shukram	Compulite Systems	Compulite Systems	O	MP
Jason Friedman	Creative Realities, Inc.	Creative Realities, Inc.	O	G
David Bertenshaw	David Bertenshaw	David Bertenshaw	O	G
Bob Toms	Design Advantage LLC	Design Advantage LLC	O	G
Doug Fleenor	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	P	MP
Milton Davis	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Ken Wagner	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Gary Dove	Dove Systems	Dove Systems	O	MP
Jussi Kallioinen	Eastway Sound & Lighting	Eastway Sound & Lighting	O	U
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	Transtechnik Lichtsysteme GmbH & Co. KG	Electronic Theatre Controls, Inc.	O	MP
Anders Ekvall	Transtechnik Lichtsysteme GmbH	Electronic Theatre Controls, Inc.	O	MP
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	A	MP
Tracy Underhill	Electronics Diversified Inc. (Colorado)	Electronics Diversified Inc.	P	MP
Paul Bennett	Electronics Diversified Inc.	Electronics Diversified Inc.	O	MP
James Johnson	Electronics Diversified Inc.	Electronics Diversified Inc.	A	MP
Alfred Langguth	Embedded Controls by Design, LLC	Embedded Controls by Design, LLC	P	MP
Philip Nye	Engineering Arts	Engineering Arts	P	G
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	MP

Sierk Janszen	Ground Zero	Ground Zero	O	U
Alan P. Symonds	Harvard College	Harvard University	O	U
Trevor Forrest	Helvar Lighting Control	Helvar Lighting Control	O	MP
Bill Hewlett	Hewlett Electronics	Hewlett Electronics	O	CP
Tom Grimes	High End Systems, Inc.	High End Systems, Inc.	P	MP
William Wagner	Flying Pig Systems	High End Systems Inc.	A	MP
Steve Carlson	High Speed Design, Inc.	High Speed Design, Inc.	P	MP
Robert Bell	Shock Lighting Ltd.	Horizon Control Inc.	O	MP
Peter Willis	Howard Eaton Lighting Ltd.	Howard Eaton Lighting Ltd.	P	CP
Scott M. Blair	Scott M. Blair	Hubbell Inc.	P	G
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U
John Huntington	I.A.T.S.E. Local 1	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	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Richard Thornton Brown	Zero 88 Ltd.	i Light Group PLC	P	MP
Gian Carlo C. Bartolotti	Ibeam SP / Banco de Eventos	Ibeam SP / Banco de Eventos	O	U
Geoffrey O. Thompson	Nortel Networks, Inc.	IEEE 802.3/Nortel Networks	O	G
Rob Johnston	Interactive Technologies, Inc.	Interactive Technologies, Inc.	O	MP
Larry Schoeneman	Interesting Products, Inc.	Interesting Products, Inc.	O	G
David Timmins	Jands Electronics	Jands Electronics	O	MP
Helge Hoffmann	JB Lighting	JB Lighting	O	MP
Edward Paget	Jones & Phillips Associates, Inc.	Jones & Phillips Associates, Inc.	P	G
Christopher Purpura	Jones & Phillips Associates, Inc.	Jones & Phillips Associates, Inc.	A	G
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
Rick Leinen	Colortran	Leviton Manufacturing Co., Inc.	P	MP
Ken Vannice	Colortran	Leviton Manufacturing Co., Inc.	A	MP
Tim Bachman	Leviton/Colortran	Leviton Manufacturing Co., Inc.	A	MP
Klaus Amling	Licht-Technik	Licht-Technik	O	P
Andrew Sherar	Lightmoves PLC	Lightmoves PLC	O	MP
Gary Pritchard	LSC Lighting Systems PTY Ltd	LSC Lighting Systems PTY Ltd	O	MP
J. P. Steiner	Lutron Electronics	Lutron Electronics	O	MP
Jim Holladay	Luxence	Luxence	O	G
John (Javid) D. Butler	Mainstage Theatrical Supply - South	Mainstage Theatrical Supply	P	DR
Ole Bystrup	Martin Professional A/S	Martin Professional A/S	P	MP
Hiroshi Kita	Marumo Electric Co., Ltd.	Marumo Electric Co., Ltd.	O	MP
David A. Boller	Organic Machines LLC	Organic Machines LLC	O	CP
William Benner	Pangolin Laser Systems	Pangolin Laser Systems	O	MP
Gary Douglas	Pathway Connectivity Inc.	Pathway Connectivity Inc.	P	MP
Dave Higgins	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	MP
Kevin Loewen	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	MP
James Eade	PLASA	PLASA	P	G
Tony Douglas-Beveridge	PLASA	PLASA	A	G
Mac Perkins	PNTA Inc.	PNTA Inc.	O	G
Paul F. Mardon	Pulsar Ltd.	Pulsar Ltd.	P	MP
Steve Unwin	Pulsar Ltd.	Pulsar Ltd.	A	MP
Stephen J. Tyrrell	Quantum Logic	Quantum Logic	O	MP
Douglas Franz	QVC Network	QVC Network	O	U
Charlie Richmond	Richmond Sound Design Ltd.	Richmond Sound Design Ltd.	O	CP
Kenneth Mockler	Sceno Plus	Sceno Plus		
Mick Martin	ShowCAD Control Systems	ShowCAD Control Systems	O	MP
Jon R. Farley	Sixteenth Avenue Systems	Sixteenth Avenue Systems	O	CP

Robert Barbagallo	Solotech Inc.	Solotech Inc..	O	U
Ujall Kar	Standard Robotics & Lighting	Standard Robotics & Lighting	O	G
John Mitchell	Sterling Technical Services	Sterling Technical Services	O	U
Richard Lawrence	Strand Lighting Ltd.	Strand Lighting Ltd.	P	MP
Michael Lay	Strand Lighting	Strand Lighting Ltd.	A	MP
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
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	O	G
Brian Dowd	TMB (NJ)	TMB	P	U
Colin Waters	TMB	TMB	O	U
Matt Stroud	University of Texas at Austin	University of Texas at Austin	O	G
Jason Potterf	University of Texas at Austin	University of Texas at Austin	O	G
Mitch Hefter	Entertainment Technology (Genlyte Thomas Group)	USITT	P	U
Torrey Bievenour	Vision Quest Lighting	Vision Quest Lighting	O	G
Charles Reese	VLPS	VLPS	P	MP
Eckart Steffens	SOUNDLIGHT	VPLT	O	G
Eric Cornwell	West Side Systems	West Side Systems	O	U
Michael Gonzales	Wrightson, Johnson, Haddon & Williams, Inc.	Wrightson, Johnson, Haddon & Williams, Inc.	P	U
Mark Jensen	Wybron, Inc.	Wybron, Inc.	P	MP
John Sondericker III	Wybron, Inc.	Wybron, Inc.	O	MP

Key to codes:

- P principal voting member
- A alternate voting member
- I individual voting member
- O observer, non-voting

- MP mass-market producer interest category
- CP custom-market producer interest category
- DR dealer or rental company interest category
- U user interest category
- G general-interest interest category