

Minutes
Control Protocols Working Group
Saturday, 4 May 2002
Dallas/Ft. Worth Airport Marriott South
Ft. Worth, TX

Chairs: Steve Carlson; High Speed Design, Inc.; principal; producer
Steve Terry; Electronic Theatre Controls; alternate; producer

Recording secretary: Karl G. Ruling

Members attending: John Sellers; AIM Northwest; principal; general interest
Arnold Tang; Arnold Tang Productions; principal; user
Wayne David Howell; Artistic Licence (UK) Ltd.; principal; producer
Tobin Neis; Barbizon Companies; principal; user
George Kindler; Pelton Marsh Kinsella (Carter & Burgess, Inc.); principal; user
(joined at this meeting)
Doug Fleenor; Doug Fleenor Design, Inc.; principal; producer
Milton Davis; Doug Fleenor Design, Inc.; alternate; producer
Daniel W. Antonuk; Electronic Theatre Controls, Inc.; principal; producer
Tracy Underhill; Electronics Diversified Inc.; principal; producer
Alfred Langguth; Embedded Controls by Design, LLC; principal; producer (joined at
this meeting)
Philip Nye; Engineering Arts; principal; general interest
Peter Willis; Howard Eaton Lighting Ltd.; principal; producer
Edwin S. Kramer; I.A.T.S.E, Local 1; principal; user
Roger Lattin; IATSE Local 728; principal; user
Edward Paget; Jones & Phillips Associates, Inc.; principal; general interest
Rick Leinen; Colortran (Leviton Manufacturing Co., Inc.); principal; producer
Ole Pedersen; Martin Professional A/S; principal; producer
Gary Douglas; Pathway Connectivity Inc.; alternate; producer
Tim Cox; PLASA; principal; general interest
Scott M. Blair; Scott M. Blair; individual; general interest
Richard Lawrence; Strand Lighting Ltd.; principal; producer
Brian Dowd; TMB; principal; user
Mitch Hefter; Entertainment Technology (Genlyte Thomas Group) representing
USITT; principal; user
Michael Gonzales; Wrightson, Johnson, Haddon & Williams, Inc.; observer; user

1 Opening remarks

Steve Carlson called the meeting to order at 09:00. He welcomed all to the new Dallas/Ft. Worth Airport Marriott South.

2 Attendance and membership

2.1 Introductions of those present and taking attendance

Carlson asked those present to introduce themselves. The self-introductions proceeded in a clockwise direction around the hollow square table, and continued from one end to the other on the separate overflow table.

2.2 Determination of quorum

Carlson noted that a quorum was present.

2.3 Recognition of alternate voting members

Carlson asked for alternates who would be voting in place of principals to identify themselves.

2.4 Requirements for membership

Steve Terry explained the requirements for membership. The working group is open to all who are materially affected by the work of the group. Terry emphasized that voters are required to attend meetings. He urged those who cannot attend regularly to be observers rather than voting members.

2.5 Processing of new membership requests

Steve Terry read the new applications:

Alfred Langguth, formerly with Vari-Lite, applied as a principal for his own company, Embedded Controls by Design LLC, in the producer interest category.

Jon Farley, formerly with Entertainment Technology, applied as an observer for his own company, Sixteenth Avenue Systems, in the producer interest category.

George Kindler, formerly with SPL Integrated Solutions, applied as a principal for Pelton Marsh Kinsella, a subsidiary of Carter & Burgess, Inc., in the user interest category.

Sierk Janszen, formerly of Avenger Showcontrol, applied as an observer for Ground Zero in the user interest category.

Steve Terry asked for a show of hands of those supporting the acceptance of these applications. There was unanimous approval.

The voting body for this meeting, including those not present, was thus:

Name	Company	Representation	Voting status	Interest category
John Sellers	AIM Northwest	AIM Northwest	P	G
Arnold Tang	Arnold Tang Productions	Arnold Tang Productions	P	U
Wayne David Howell	Artistic Licence (UK) Ltd.	Artistic Licence (UK) Ltd.	P	P
Tobin Neis	Barbizon Companies	Barbizon Companies	P	U
George Kindler	Pelton Marsh Kinsella	Carter & Burgess, Inc.	P	U
Doug Fleenor	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	P	P
Milton Davis	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	P
Ed Jones	Edwin Jones Co., Inc.	Edwin Jones Co., Inc.	P	P
Daniel W. Antonuk	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	P	P
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	A	P
Tracy Underhill	Electronics Diversified Inc.	Electronics Diversified Inc.	P	P
Scott Rempel	Electronics Diversified Inc.	Electronics Diversified Inc.	A	P
Alfred Langguth	Embedded Controls by Design	Embedded Controls by Design	P	P
Philip Nye	Engineering Arts	Engineering Arts	P	G
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	P
Steve Carlson	High Speed Design, Inc.	High Speed Design, Inc.	P	P
Peter Willis	Howard Eaton Lighting Ltd.	Howard Eaton Lighting Ltd.	P	P
Richard Thornton Brown	Zero 88 Ltd.	i Light Group PLC	P	P
Edwin S. Kramer	I.A.T.S.E., Local 1	I.A.T.S.E. Local 1	P	U
John Huntington	IATSE Local 1	I.A.T.S.E. Local 1	A	U
Roger Lattin	IATSE Local 728	I.A.T.S.E. Local 728	P	U
Edward Paget	Jones & Phillips Associates, Inc.	Jones & Phillips Associates, Inc.	P	G
Rick Leinen	Colortran	Leviton Manufacturing Co., Inc.	P	P
Ken Vannice	Colortran	Leviton Manufacturing Co., Inc.	A	P
Tim Bachman	Leviton/Colortran	Leviton Manufacturing Co., Inc.	A	P
Ole Pedersen	Martin Professional A/S	Martin Professional A/S	P	P
Dave Higgins	Pathway Connectivity Inc.	Pathway Connectivity Inc.	P	P
Gary Douglas	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	P
Tim Cox	PLASA	PLASA	P	G
Tony Douglas-Beveridge	PLASA	PLASA	A	G
Robert Barbagallo	Proximo Inc.	Proximo Inc.	P	U
Paul F. Mardon	Pulsar Ltd.	Pulsar Ltd.	P	P
Steve Unwin	Pulsar Ltd.	Pulsar Ltd.	A	P
Scott M. Blair	Scott M. Blair	Scott M. Blair	I	G
David George	Spectrum Manufacturing Inc.	Spectrum Manufacturing Inc.	P	P

Name	Company	Representation	Voting status	Interest category
Richard Lawrence	Strand Lighting Ltd.	Strand Lighting Ltd.	P	P
Michael Lay	Strand Lighting	Strand Lighting Ltd.	A	P
Brian Dowd	TMB	TMB	P	U
Mitch Hefter	Entertainment Technology (Genlyte Thomas Group)	USITT	P	U
Charles Reese	Vari-Lite, Inc.	Vari-Lite, Inc.	P	P
Eckart Steffens	SOUNDLIGHT	VPLT	P	G
		users	8	
		general interest	6	
		producers	17	
		total	31	

3 Approval of the minutes from the previous meeting

Ted Paget moved that the draft minutes be accepted as written. The motion was seconded. The motion was approved by a unanimous show of hands.

4 Reading of the call for patents

Steve Carlson read the following aloud:

"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."

There were no comments or issues identified.

5 The reading of the anti-trust statement

Steve Carlson read the following aloud:

"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."

Karl Ruling held up a copy of the pamphlet. No anti-trust issues were brought to the attention of the chairs or the assembly.

6 Approval of agenda

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

7 Old business

7.1 BSR E1.11

7.1.1 Report on legal counsel's opinion regarding anti-trust claims

Ruling directed people to read David Saltiel's letter (Saltiel_2002-04-16.pdf) in regard to the anti-trust issues that were raised at the last meeting. He summarized that our legal counsel has advised that he sees no anti-trust issues in the way that we are proceeding in resolving public review comments and drafting a new version of BSR E1.11. Therefore, we can move on to considering the public review comment resolutions and the draft document .

Steve Terry said that the third paragraph was particularly important and read it aloud.

"Mr. Willis' comments reflect the general concerns raised in respect to all standards adopted in any industry – that is, that the adoption and implementation of any standard, by definition, may negatively impact a manufacturer who does not currently manufacture products complying with the standard. It is precisely for this reason that the standards-making policies and procedures are so carefully and methodically detailed in the ANSI-approved Policies and Procedures for the Development and Approval of Technical Standards adopted by ESTA in connection with its Technical Standards Program (the "Policies and Procedures").

Carlson said that the fourth paragraph was also important, so that was read aloud, too.

"As you are aware, the promulgation of industry standards will generally not violate the antitrust laws unless the standards have either the purpose or the effect of unreasonably restricting competition. As currently structured, the ESTA Technical Standards Program is open to the public and affords any interested parties the opportunity to participate in the standards-making process. The program also affords interested parties the right to appeal any action or decision of ESTA with which they disagree, and also affords any party the right to seek an interpretation of an existing standard. Furthermore, the technical standards developed by ESTA are completely voluntary in nature and do not bind any ESTA member or any firms in the industry. The latter point is particularly relevant in the case of the designations of pins for particular uses, inasmuch as those manufacturers that do not wish to adhere to a final standard with respect to pin designation, can simply elect not to adopt the standard with the only consequence being that it cannot promote their plugs as being compliant with the ANSI-approved standard. I also note that in the event a standard with respect to the allocation of these pins is adopted, the designation of a pin for data or pass-through purposes is not proprietary and may be adopted or rejected without significant additional cost or other preventative barriers."

7.1.2 Public review comment resolution (E1-11_1st_Rv_Rsltns(2001-1008r2).pdf)

7.1.3 Revised version of BSR E1.11 (DMX_r5-1.pdf)

7.1.2 and 7.1.3 were handled as one item.

Mitch Hefter went through the minor editorial changes in the DMX_r5-2 document that make it differ from DMX_r5-1.

Mitch Hefter moved that the resolutions document be accepted and the revised standards document be sent to another public review. The motion was seconded.

Carlson said that the debate should be limited by allowing people to speak no more than twice for three minutes each time. There were no objections. Comments were offered.

By roll call ballot, the motion was accepted with a supermajority.

Name	Company	Representation	Voting status	Int. cat.	Accept	Accept in part	Accept in principle	Reject	Abstain
John Sellers	AIM Northwest	AIM Northwest	P	G	1	0	0	0	0
Arnold Tang	Arnold Tang Productions	Arnold Tang Productions	P	U	1	0	0	0	0
Wayne David Howell	Artistic Licence (UK) Ltd.	Artistic Licence (UK) Ltd.	P	P	1	0	0	0	0
Tobin Neis	Barbizon Companies	Barbizon Companies	P	U	1	0	0	0	0
Doug Fleenor	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	P	P	0	0	0	0	1
Milton Davis	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	P	0	0	0	0	0
Ed Jones	Edwin Jones Co., Inc.	Edwin Jones Co., Inc.	P	P	0	0	0	0	0
Daniel W. Antonuk	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	P	P	1	0	0	0	0
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	A	P	0	0	0	0	0
Tracy Underhill	Electronics Diversified Inc.	Electronics Diversified Inc.	P	P	1	0	0	0	0
Scott Rempel	Electronics Diversified Inc.	Electronics Diversified Inc.	A	P	0	0	0	0	0
Philip Nye	Engineering Arts	Engineering Arts	P	G	0	0	0	0	1
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	P	0	0	0	0	0
Steve Carlson	High Speed Design, Inc.	High Speed Design, Inc.	P	P	1	0	0	0	0
Peter Willis	Howard Eaton Lighting Ltd.	Howard Eaton Lighting Ltd.	P	P	0	0	0	1	0
Richard Thornton Brown	Zero 88 Ltd.	i Light Group PLC	P	P	0	0	0	0	0
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U	1	0	0	0	0
John Huntington	IATSE Local 1	I.A.T.S.E. Local 1	A	U	0	0	0	0	0
Roger Lattin	IATSE Local 728	I.A.T.S.E. Local 728	P	U	1	0	0	0	0
Edward Paget	Jones & Phillips Associates	Jones & Phillips Associates, Inc.	P	G	1	0	0	0	0
Rick Leinen	Colortran	Leviton Manufacturing Co., Inc.	P	P	1	0	0	0	0
Ken Vannice	Colortran	Leviton Manufacturing Co., Inc.	A	P	0	0	0	0	0
Tim Bachman	Leviton/Colortran	Leviton Manufacturing Co., Inc.	A	P	0	0	0	0	0
Ole Pedersen	Martin Professional A/S	Martin Professional A/S	P	P	1	0	0	0	0
Dave Higgins	Pathway Connectivity Inc.	Pathway Connectivity Inc.	P	P	0	0	0	0	0
Gary Douglas	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	P	1	0	0	0	0
Tim Cox	PLASA	PLASA	P	G	0	0	0	0	1
Tony Douglas-Beveridge	PLASA	PLASA	A	G	0	0	0	0	0
Robert Barbagallo	Proximo Inc.	Proximo Inc.	P	U	0	0	0	0	0
Paul F. Mardon	Pulsar Ltd.	Pulsar Ltd.	P	P	0	0	0	0	0
Steve Unwin	Pulsar Ltd.	Pulsar Ltd.	A	P	0	0	0	0	0
Scott M. Blair	Scott M. Blair	Scott M. Blair	I	G	1	0	0	0	0
David George	Spectrum Manufacturing Inc.	Spectrum Manufacturing Inc.	P	P	0	0	0	0	0
Richard Lawrence	Strand Lighting Ltd.	Strand Lighting Ltd.	P	P	1	0	0	0	0
Michael Lay	Strand Lighting	Strand Lighting Ltd.	A	P	0	0	0	0	0
Brian Dowd	TMB	TMB	P	U	1	0	0	0	0
Mitch Hefter	Entertainment Technology (Genlyte Thomas Group)	USITT	P	U	1	0	0	0	0
Charles Reese	Vari-Lite, Inc.	Vari-Lite, Inc.	P	P	1	0	0	0	0
Eckart Steffens	SOUNDLIGHT	VPLT	P	G	0	0	0	0	0
George Kindler	Pelton Marsh Kinsella	Carter & Burgess, Inc.	P	U	1				
Langguth	Embedded Controls by Design LLC	Embedded Controls by Design LLC	P	P	1				
		users	8		20	0	0	1	3
		general interest	6						
		producers	17						
		total	31		20			1	3

7.1.4 Accessory power

A scope statement written by Philip Nye was presented by Doug Fleenor.

Ted Paget moved that the task group be directed to develop a set of objectives for the project for consideration by the CPWG prior to the working group's consideration of this project becoming an American National Standard project. The motion was seconded. There was a discussion, which touched on connectors, voltages, data protocols, and backward compatibility. By show of hands, the motion was accepted.

7.2E1.20 Remote Device Management with DMX512

Scott Blair reported that the task group hopes to have a document ready to offer for comments available at the next meeting. Failing that, it will be available at the October LDI meeting.

Blair reported that they are working with a version of Wayne Howell's DMX Dongle as a reference platform. They also have another hardware platform selected to use if that proves unsuitable.

Wayne Howell offered a statement of thanks to High End Systems for their generous patent licensing. High End has agreed to license its protected intellectual property necessary to implement RDM to any one, but urges that a donation be made to the TSP equal to one year's ESTA membership dues in lieu of a royalty to High End Systems.

7.3E1.17 Task Group report

Steve Carlson reported that since November they have been teleconferencing about once a week to work on the project. They have found this productive, and have found that the email reflector works better than a forum.

Carlson said the group is working on slimming and optimizing the protocol. It will present a draft of the SDT (Session Data Transport) document for working group review at the next working group meeting (July). Three versions of SDT exist now and are being evaluated. The Device Management Protocol (DMP) is the next thing, and a review document is expected by LDI. The DDL (Device Description Language) should be available at the first meeting of 2003.

There will be two other documents for ACN. One will be the overview and requirements document. This will outline the other public domain protocols that will be needed to support the ACN protocol. There will also be a template document showing how data should be formatted for use by SLP (Service Locator Protocol), one of the public domain protocols. [This replaces the Network Management Protocol that was originally suggested as part of the ACN suite.] The second of these two other documents will be a PICS document for all the protocols. This will point to other performance and test documents that will outline how conformance can be confirmed.

Dan Antonuk added that they have re-evaluated the transport layer. He said he thinks they have come up with a solid, extensible model of the transport layer. He said that the DMP, which is the envelope that will travel in the SDT mail system, will be much easier to develop than the SDT. ETC has done analysis of the latency and through-put of the new SDT, and it looks promising.

Steve Terry reported that Tera Johnson has been appointed as an ACN marketing person. There was a discussion of the appropriateness of marketing a protocol that is not available yet. Ruling tried to explain that this was not marketing to get people to buy ACN, but was marketing in the sense of public relations: trying to keep interest in the project, and also trying to develop realistic expectations for what ACN will do and when it might be available.

7.4IEEE Report

Carlson did a PowerPoint presentation about what's up at the IEEE.

The "Get 802" free standards program is on hold per the IEEE Board of Governors. They cited a drop in revenue, but the move was done without warning, and with no compelling financial evidence presented to concerned parties. People are not happy. The 802 committee has voted to withhold funding until the program is restored.

The 802.3ae 10G Ethernet group is in comment resolution and recirculation balloting.

The 802.3af DTE power on Ethernet group resolved D3.0 comments in March and created a D3.01 TF draft. Comment resolution for D3.1 is expected in July, the sponsor ballot for D4.0 will be in July. The comment resolution for D4.0 would be in September.

The 802.3ah "Ethernet in the First Mile" project adopted objectives in March. It is supposed to support a variety of subscriber access network topologies:

- Point to multipoint on optical fiber
- Point to point on optical fiber
- Point to point on copper

It is supposed to provide a family of physical layer specifications:

- 1000BASE-LX extended temperature range optics
- 1000BASE-X >= 10km over single SM fiber
- 100BASE-X >= 10km over single SM fiber
- PHY for PON, >= 10km, 1000Mbps, single SM fiber, >= 1:16
- PHY for PON, >= 20km, 1000Mbps, single SM fiber, >= 1:16
- PHY for single pair non-loaded voice grade copper
- Distance >=750m and speed >=10Mbps full-duplex

It is also supposed to support management of the subscriber access networks:

- Remote failure indication
- Remote loopback
- Link monitoring

The copper physical layer part of the group is also working with the spectrum management restrictions imposed by operating on public access networks.

Regarding Cable Discharge Events, there is continuing research. Carlson noted that there is a paper that is relevant: "Cable Discharge Event in the Local Area Network Environment," Intel White Paper, July 2001

The 802.3 working group has new officers:

Chair: Bob Grow, bob.grow@intel.com
Vice-Chair: David Law, David_Law@3com.com
Secretary: Steve Carlson, scarlson@esta.org
Geoff Thompson is now 1st. Vice-Chair of 802

Carlson said that 802.11 (wireless Ethernet) stuff in theatres has to be thoroughly tested before it can be counted on to work. Changing anything in the environment can radically change the effective range. There was a discussion of the need for an article about wireless networking. Wayne Howell offered to write such an article for [Protocol](#).

8 New business

None.

9 Other business

Steve Carlson suggested that we should write a letter of thanks to Geoff Thompson for his service to the industry.

Ted Paget moved that Steve Carlson write a letter on our behalf thanking Geoff Thompson for his service to the industry. The motion was seconded. There was a discussion of the contributions Thompson has made to the networking community and to ESTA's TSP. The motion was approved by a unanimous show of hands with no abstentions or negative votes.

10 Schedule for future meetings

Steve Carlson announced that the next meeting will be July 27, same time, same place. Steve Terry said that room assignments for the LDI need to be nailed down soon because changes will be extremely difficult.

11 Adjournment

Ted Paget moved that the meeting adjourn. The motion was seconded. The motion was approved unanimously by acclamation. The meeting was declared adjourned by Steve Carlson at 10:45.

Working Group Membership, Updated as of 21 June 2002

Name	Company	Representing	Voting status	Int. cat.
John Sellers	AIM Northwest	AIM Northwest	P	G
Arnold Tang	Arnold Tang Productions	Arnold Tang Productions	P	U
Wayne David Howell	Artistic Licence (UK) Ltd.	Artistic Licence (UK) Ltd.	P	P
Steve Friedlander	Auerbach & Associates, Inc.	Auerbach & Associates, Inc.	O	U
J. B. Toby	Avolites Ltd.	Avolites Ltd.	O	P
Shahid Anwar	Avolites Ltd.	Avolites Ltd.	O	P
Richard Salzedo	Avolites Ltd.	Avolites Ltd.	O	P
Barbara Wohlsen	Barbara Wohlsen	Barbara Wohlsen	O	U
Tobin Neis	Barbizon Companies	Barbizon Companies	P	U
Bernardo Benito Rico	Ben-Ri Electronica S.A.	Ben-Ri Electronica S.A.	O	P
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	P
Bill Ellis	Candela Controls, Inc.	Candela Controls, Inc.	O	U
George Kindler	Pelton Marsh Kinsella	Carter & Burgess, Inc.	P	U
Marty Lazarus	Chicago Spotlight, Inc.	Chicago Spotlight, Inc.	O	G
Jason Friedman	Creative Realities, Inc.	Creative Realities, Inc.	O	G
David Bertenshaw	David Bertenshaw	David Bertenshaw	O	P
Bob Toms	Design Advantage LLC	Design Advantage LLC	O	G
Doug Fleenor	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	P	P
Milton Davis	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	P
Gary Dove	Dove Systems	Dove Systems	O	P
Jussi Kallioinen	Eastway Sound & Lighting	Eastway Sound & Lighting	O	U
Ed Jones	Edwin Jones Co., Inc.	Edwin Jones Co., Inc.	P	P
Bill Fehrmann	Electrol Engineering, Inc.	Electrol Engineering, Inc.	O	P
Adam Bennette	Electronic Theatre Controls Ltd.	Electronic Theatre Controls, Inc.	O	P
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	A	P
Daniel W. Antonuk	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	P	P
Paul Bennett	Electronics Diversified Inc.	Electronics Diversified Inc.	O	P
Scott Rempel	Electronics Diversified Inc.	Electronics Diversified Inc.	A	P
Tracy Underhill	Electronics Diversified Inc.	Electronics Diversified Inc.	P	P
Alfred Langguth	Embedded Controls by Design, LLC	Embedded Controls by Design, LLC	P	P
Philip Nye	Engineering Arts	Engineering Arts	P	G
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	P
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	P
Bill Hewlett	Hewlett Electronics	Hewlett Electronics	O	P
Steve Carlson	High Speed Design, Inc.	High Speed Design, Inc.	P	P
Peter Willis	Howard Eaton Lighting Ltd.	Howard Eaton Lighting Ltd.	P	P
John Huntington	IATSE Local 1	I.A.T.S.E. Local 1	A	U
Edwin S. Kramer	I.A.T.S.E, Local 1	I.A.T.S.E. Local 1	P	U
Roger Lattin	IATSE Local 728	I.A.T.S.E. Local 728	P	U
Peter Brooks	Zero 88 Ltd.	i Light Group PLC	A	P
Richard Thornton Brown	Zero 88 Ltd.	i Light Group PLC	P	P
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	P
Larry Schoeneman	Interesting Products, Inc.	Interesting Products, Inc.	O	G
David Timmins	Jands Electronics	Jands Electronics	O	P
Helge Hoffmann	JB Lighting	JB Lighting	O	P
Edward Paget	Jones & Phillips Associates, Inc.	Jones & Phillips Associates, Inc.	P	G

John Mehlretter	Lehigh Electric Products Co.	Lehigh Electric Products Co.	O	P
Mark T. Kraft	Lehigh Electric Products Co.	Lehigh Electric Products Co.	O	P
Rick Leinen	Colortran	Leviton Manufacturing Co., Inc.	P	P
Ken Vannice	Colortran	Leviton Manufacturing Co., Inc.	A	P
Tim Bachman	Leviton/Colortran	Leviton Manufacturing Co., Inc.	A	P
Andrew Sherar	Lightmoves PLC	Lightmoves PLC	O	P
Gary Pritchard	LSC Lighting Systems PTY Ltd	LSC Lighting Systems PTY Ltd	O	P
J. P. Steiner	Lutron Electronics	Lutron Electronics	O	P
Jim Holladay	Luxence	Luxence	O	G
Hiroshi Kita	Marumo Electric Co., Ltd.	Marumo Electric Co., Ltd.	O	P
David A. Boller	Organic Machines LLC	Organic Machines LLC	O	P
William Benner	Pangolin Laser Systems	Pangolin Laser Systems	O	P
Dave Higgins	Pathway Connectivity Inc.	Pathway Connectivity Inc.	P	P
Gary Douglas	Pathway Connectivity Inc.	Pathway Connectivity Inc.	A	P
Tony Douglas-Beveridge	PLASA	PLASA	A	G
Tim Cox	PLASA	PLASA	P	G
Mac Perkins	PNTA	PNTA Inc.	O	G
Robert Barbagallo	Proximo Inc.	Proximo Inc.	P	U
Paul F. Mardon	Pulsar Ltd.	Pulsar Ltd.	P	P
Steve Unwin	Pulsar Ltd.	Pulsar Ltd.	A	P
Stephen J. Tyrrell	Quantum Logic	Quantum Logic	O	P
Douglas Franz	QVC Network	QVC Network	O	U
Charlie Richmond	Richmond Sound Design Ltd.	Richmond Sound Design Ltd.	O	P
Kenneth Mockler	Sceno Plus	Sceno Plus	O	U
Scott M. Blair	Scott M. Blair	Scott M. Blair	I	G
Mick Martin	ShowCAD Control Systems	ShowCAD Control Systems	O	P
Andre Broucke	ADB - TTV Technologies	Siemens	O	P
Jon R. Farley	Sixteenth Avenue Systems	Sixteenth Avenue Systems	O	P
David George	Spectrum Manufacturing Inc.	Spectrum Manufacturing Inc.	P	P
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	P
Michael Lay	Strand Lighting	Strand Lighting Ltd.	A	P
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
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	O	G
Colin Waters	TMB	TMB	O	U
Brian Dowd	TMB	TMB	P	U
Hans Leiter	Transtechnik GmbH	Transtechnik GmbH	O	P
Anders Ekvall	AVAB Scandinavia	Transtechnik GmbH	O	P
Mitch Hefter	Entertainment Technology (Genlyte Thomas Group)	USITT	P	U
Charles Reese	Vari-Lite, Inc.	Vari-Lite, Inc.	P	P
Eckart Steffens	SOUNDLIGHT	VPLT	P	G
Ken Wagner	Walt Disney Imagineering	Walt Disney	O	U
Eric Cornwell	West Side Systems	West Side Systems	O	U
Michael Gonzales	Wrightson, Johnson, Haddon & Williams, Inc.	Wrightson, Johnson, Haddon & Williams, Inc.	O	U
John Sondericker III	Wybron, Inc.	Wybron, Inc.	O	P
		Voters	16	P
			6	G
			8	U
		Observers	27	P
			11	G
			17	U

Voting Status

- P Principal voting representative for a company or organization
- A Alternate voting representative for a company or organization
- I Individual representing no organization other than himself or herself
- O Observer, non-voting

Interest Categories

- P Producer (manufacturer) of control devices or products
- U User of control devices or products
- G General interest in control devices or products