

Minutes Control Protocols Working Group

Thursday, 15 November 2007
Rosen Plaza Hotel
Orlando, Florida

Chairmen: Steve Terry; Electronic Theatre Controls, Inc.; A; MP
Tracy Underhill; Electronics Diversified LLC; P; MP

Recording secretary: Karl G. Ruling; ESTA

Members attending:

Jean-Francois Canuel; Spectrum Manufacturing Inc. (A.C. Lighting Ltd.); P; CP
Arnold Tang; Arnold Tang Productions; O; U
Wayne David Howell; Artistic Licence (UK) Ltd.; P; CP
Bill Ellis; Candela Controls, Inc.; O; U
Ulrich Kunkel; E3 Engineering & Education for Entertainment, representing the DIN NVBF
Committee; P; U (joined at this meeting)
Doug Fleenor; Doug Fleenor Design, Inc.; P; MP
Milton Davis; Doug Fleenor Design, Inc.; A; MP
Daniel W. Antonuk; Electronic Theatre Controls, Inc.; P; MP
Philip Nye; Engineering Arts; P; G
Michael Lay; Strand Lighting (Genlyte Group LLC); P; MP
Scott M. Blair; High End Systems Inc.; P; MP
Alan Martello; Horizon Control Inc.; P; MP
Peter Willis; Howard Eaton Lighting Ltd.; P; CP
Roger Lattin; I.A.T.S.E .Local 728; P; U
John (Javid) D. Butler; Integrated Theatre, Inc.; P; CP
Rick Leinen; Colortran (Leviton Manufacturing Co., Inc.); P; MP
Stuart Cotts; Oregon Shakespeare Festival; P; U (became a voter at this meeting)
Kevin Loewen; Pathway Connectivity Inc.; P; MP
Ron Bonner; PLASA; P; G
Charles Reese; Production Resource Group; P; DR
Robert Tooker; Production Resource Group; A; DR
Yngve Sandboe; Sand Network Systems, Inc.; A; MP
Kimberly Corbett; Schuler Shook; P; G
Dominic Vincenty; TPS (Television Production Service); O; DR
Mitch Hefter; Entertainment Technology (Genlyte Group), representing USITT; P; U

Visitor: Steve Vanciel

1 Opening remarks

Steve Terry called the meeting to order at 09:02. He noted that this is his last meeting as CPWG co-chair. His first meeting was August 27, 1994, so he has been a CPWG co-chair for 27% of his life. He's enjoyed the work, and a lot of work has been done in 13 years, but there is a lot more work to be done in the future. Michael Lay will take over as co-chair, serving with Tracy Underhill, at the January meeting. Steve Terry said he would stay active in the working group, but simply as a working group member.

2 Attendance

2.1 Introductions of those present and circulation of attendance sheet

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

2.2 Determination of a quorum

Steve Terry announced that a quorum was present and business could be conducted.

2.3 Recognition of alternate voting members

Steve Terry reminded people that there is only one vote allowed per company on a motion.

3 Membership

3.1 Requirements for membership

Terry reminded those present that membership in the working group 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 Processing of new membership requests and reaffirmation of members with new companies

Stuart Cotts of the Oregon Shakespeare Festival applied to be moved from observer to principal voting status. He is in the User interest category. Ulrich Kunkel of E3 Engineering & Education for Entertainment applied to represent DIN's NVBF Committee as a principal in the user interest category.

Roger Lattin moved that the applications be accepted. The motion was seconded and then approved with a unanimous show of hands.

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
Wayne David Howell	Artistic Licence (UK) Ltd.	Artistic Licence (UK) Ltd.	P	CP
Simon Hobday	Artistic Licence (UK) Ltd.	Artistic Licence (UK) Ltd.	A	CP
Ulrich Kunkel	E3 Engineering & Education for Entertainment	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
Ken Wagner	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
Ralph Weber	ENDL Texas	ENDL Texas	P	G
Philip Nye	Engineering Arts	Engineering Arts	P	G
Michael Lay	Strand Lighting	Genlyte Group LLC	P	MP
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	MP
Scott M. Blair	High End Systems Inc.	High End Systems Inc.	P	MP
Tom Grimes	High End Systems, Inc.	High End Systems, Inc.	A	MP
Jason Potterf	High End Systems Inc.	High End Systems Inc.	A	MP
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

Name	Company	Representing	Voting status	Int. cat.
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
John (Javid) D. Butler	Integrated Theatre, Inc.	Integrated Theatre, Inc.	P	CP
Michael (Mike) Whetstone	Integrated Theatre, Inc.	Integrated Theatre, Inc.	A	CP
Rick Leinen	Colortran	Leviton Manufacturing Co., Inc.	P	MP
Ken Vannice	Colortran	Leviton Manufacturing Co., Inc.	A	MP
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
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
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
Mark Manthei	Shure Inc.	Shure Inc.	P	G
Mitch Hefter	Entertainment Technology (Genlyte Group)	USITT	P	U
		Total votes possible	25	
		Votes by interest category	4	CP
			10	MP
			1	DR
			5	U
			5	G

4 Approval of the minutes from the previous meeting

Minor editorial corrections were made to CP/2007-1009, file name CPmin07-2007.pdf. No substantive changes were made. Mitch Hefter moved that the corrected document be accepted. The motion was seconded, and then approved by a show of hands.

5 Reading of the call for patents

Tracy Underhill read the following statement aloud to the assembly:

"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.

6 The reading of the anti-trust statement

Tracy Underhill read the following statement aloud to the assembly:

"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."

Karl Ruling, the Technical Standards Manager, held up one of the easy-to-read pamphlets.

No restraint of trade issues were brought to the attention of the assembly.

7 Approval of agenda

Steve Terry added "TSP finances" under New Business. Peter Willis asked for an update on the interoperability pavilion to be added also.

Roger Lattin moved that the modified 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.

8.2 E1.11/DMX512-A Recommended Practice: PLASA proposal

Ron Bonner reported what happened after the last meeting. The task group had voiced serious concerns, and he took those back to James Eade. Bonner has been trying to reach a resolution, and felt that a face-to-face meeting and discussion would be good, but that having such a discussion at LDI would be too difficult, so the next likely meeting time and venue would be at the TSP meetings in January 2008 in Ft. Worth.

Steve Terry said that he had spoken to James Eade and Adam Bennette. Steve Terry feels that the Eade document had deviated from the needs of the end-user and added a lot of information for system designers. Adam Bennette has reviewed his book for end-users and found that not a lot of update was needed. Steve Terry offered to let Adam Bennette revise his book to create an end-user's guide to ANSI E1.11 on ETC's time. Steve Terry suggested that the James Eade document could be a stand-alone document. The Adam Bennette book would be the joint ESTA/PLASA document.

There was discussion. There were concerns that

- (a) people might not buy the standard because a guide is close enough, and
- (b) people might think the handy guide is an official interpretation.

Philip Nye suggested that standards should be free on the ESTA website.

Steve Terry said that he would instruct Adam Bennette to proceed. This was the consensus of the group.

The developers guide (James Eade document) was still a question. Mitch Hefter suggested that Ron Bonner, James Eade, and Steve Terry discuss this further, but that the CPWG provide fact checking rather than oversight. Bonner asked for a letter from the CPWG Chair thanking James Eade for his efforts, and explaining why there would be this distancing of his book from the CPWG.

8.3 ANSI E1.11 (DMX512-A) Revision

Mitch Hefter presented the revised version of ANSI E1.11. It had been submitted well past the two-week deadline.

Steve Terry asked for a straw poll if people need time to consider the editorial changes. Some did, so Steve Terry said that we would deal with the revised document in January. There were no objections to this delay.

8.3.1 Comments during the ANSI PINS comment period

8.3.1.1 Proposal for OpenDMX using ASC 4Ch

See OpenDMX Protocol V1_0 PHX 601-01.pdf. Mitch Hefter moved that the proposal not be accepted as an extension to DMX. The protocol is a proprietary one that the company can continue to use or share with others. The motion was seconded. The motion was approved with a unanimous show of hands.

8.3.1.2 Proposal for allowing Unicode text messages

See KarlRulingUnicodeProposal.pdf. There was discussion. The consensus was that the working group will think about it. It is in the draft revised document, which will be considered at the next meeting.

8.3.2 E1.11 auf Deutsch [Ruling]

Karl Ruling held up a copy of the published document. It was circulated among the attendees.

8.4 ANSI E1.20-2006, Remote Device Management

Scott Blair reported on the errors in the document. There was a discussion of the way forward to correct it. The consensus was that we need to publish a list of the recognized errata and then start a revision project. The errata document will be distributed for free, and will be used as the public review document.

8.5 ANSI E1.17-2006 Multipurpose Control Network Protocol Suite

Dan Antonuk said that they need to publish an errata for this document too, and start a revision project. The revision project would also add some base behaviors.

8.6 E1.27-X, cabling

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

Javid Butler said he had no big news, but that he has found that companies are not doing the labeling that is required by the standard.

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

No news. It's public review runs through 19 November.

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

Dan Antonuk reported that a new EPI for ACN over wireless is being developed. The task group has discovered that wireless access points reshape the traffic by holding messages, which causes things to time-out. At ETC they have managed to make ACN run over lots of difficult wireless environments.

Antonuk said that the task group has several EPIs that would like to offer for public review. Javid Butler moved that these EPIs be offered for public review. Philip Nye seconded the motion. The motion will be decided by letter ballot.

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

Progress report on drafting resolutions for the working group to consider. See the summary of comments, E1-31FrstRvwCmmntSmmry.pdf.

Charles Reese reported that some progress has been made, but that the task group did not meet the milestone for this meeting, but should have the draft resolutions done by the January meeting. The document has been revised to address the comments.

8.9 BSR E1.33-200x, Extensions to E1.31 (DMX512 Streaming Protocol) for Transport of ANSI E1.20 (RDM)

Charles Reese reported no news.

Dan Antonuk said that there some changes have been made to E1.31 to facilitate E1.33. There was a discussion of the interlink between E1.31 and E1.33.

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

Scott Blair reported that no significant work has been done. The focus is on E1.31. The two major parts of this are the dimmer messages and the bulk data upload. Blair thinks that effort can be better spent on dimmer messages. Bulk data transport keeps running into road blocks.

There was discussion of whether to drop this to focus on more important projects. Terry urged people to focus on market needs. Great ideas that make the market yawn are not helpful.

8.11 Report on the TSC vote for the working group's cochairman to serve with Tracy Underhill next year.

The working group's recommendation of Michael Lay to serve as the working group co-chairman had been forwarded to the TSC. Steve Terry reported that the TSC has appointed Mike Lay to be the co-chair. His first meeting as co-chair will be in January 2008.

9 New business

9.1 Interoperability Pavilion

Peter Willis apologized if CPWG members feel uninformed about this project, and gave a report on it. The task group have filled a 10' x 20' trade show booth with equipment, and it is "bursting at the seams," as the cliché goes. Both RDM and ACN equipment is represented. About eight different types of responders (over 80 items), more than half a dozen controllers and many gateway devices. He read off a list of contributors, which was long and included many manufacturers outside the CPWG and outside North America. Booth personnel is being provided by Wybron, Doug Fleenor Design, Pathway, and HELL.

Tracy Underhill thanked Peter Willis for leading the project. The working group gave Willis a round of applause.

Peter Willis said that RDM is not plug and play. Some stuff doesn't work well with others. There are also some problems with some implementations. There are stupid ways to do it, that are technically correct, but that makes RDM not work well.

9.2 TSP Finances

Steve Terry reported on financing. He said that normally the working groups are insulated from finance issues, but he would like to enlist people's help. He outlined the overall ESTA budget and the TSP's segment of that. About half of the ESTA dues go to fund the TSP. The other sources are contributions and standards sales, with contributions the larger by far. Contributions have been about \$100,000 a year but are declining, heading toward \$50,000. There are other worthy causes asking for money from our past donors, so we need to expand the number of donors and restate the case for supporting the TSP. Please advocate for funding the program to your corporate sponsors, Terry asked. CPWG members are potentially the best advocates. Please, if your company has the capacity to contribute, urge them to do so.

Philip Nye suggests that a "donate now" button on the TSP website might help.

Roger Lattin asked for a reproducible article explaining the value of standards to the end-user. He has trouble making this argument, it is beyond his writing abilities.

9.3 Thanks to Steve Terry

Wayne Howell offered a thanks to departing co-chair. Many calls of "hear hear" were offered.

10 Other business

None.

11 Schedule for future meetings

Steve Terry announced that the next meeting is scheduled for Saturday, 26 January 2008, from 14:00 to 18:00 at the Dallas/Ft. Worth Airport Marriott South, in Ft. Worth, Texas. This is a new time.

12 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:

Wayne David Howell and Simon Hobday of Artistic Licence (UK) Ltd.
Ralph Weber of ENDL Texas
Scott M. Blair, Tom Grimes, and Jason Potterf of High End Systems

Steve Terry noted that Ralph Weber is now moved to observer status.

13 Adjournment

Mitch Hefter moved that the meeting adjourn. The motion was seconded and then approved with a unanimous show of hands. Steve Terry declared the meeting adjourned at 11:50. Dan Antonuk said, "You're free, Steve." There was applause.

Working Group Membership and Contact Information as of Tuesday, 27 November 2007

Name	Company	Representing (This is the 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.	P	CP
Simon Hobday	Artistic Licence (UK) Ltd.	Artistic Licence (UK) Ltd.	A	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
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
Larry Dunn	City Theatrical, Inc.	City Theatrical, Inc.	O	CP
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
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	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
Ken Wagner	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Gary Dove	Dove Systems	Dove Systems	O	MP
Jerry Durand	Durand Interstellar, Inc.	Durand Interstellar, Inc.	O	CP
Dirk Beiner	e:cue GmbH & Co. KG	e:cue GmbH & Co. KG	O	MP
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
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 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
Erwin Rol	Erwin Rol Software Engineering	Erwin Rol	O	G
Michael Lay	Strand Lighting	Genlyte Group LLC	P	MP
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	MP
Sierk Janszen	Ground Zero	Ground Zero	O	U
Trevor Forrest	Helvar Lighting Control	Helvar Lighting Control	O	MP
Bill Hewlett	Hewlett Electronics	Hewlett Electronics	O	CP
Scott M. Blair	High End Systems Inc.	High End Systems Inc.	P	MP
Tom Grimes	High End Systems, Inc.	High End Systems, Inc.	A	MP
Jason Potterf	High End Systems Inc.	High End Systems Inc.	A	MP
Steve Carlson	High Speed Design, Inc.	High Speed Design, Inc.	O	MP

Name	Company	Representing (This is the sort field.)	Voting status	Int. cat.
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
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
John (Javid) D. Butler	Integrated Theatre, Inc.	Integrated Theatre, Inc.	P	CP
Michael (Mike) Whetstone	Integrated Theatre, Inc.	Integrated Theatre, Inc.	A	CP
Rob Johnston	Interactive Technologies, Inc.	Interactive Technologies, Inc.	O	MP
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
Lawrence Neal	Lawrence Neal	Lawrence Neal	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
Rick Leinen	Colortran	Leviton Manufacturing Co., Inc.	P	MP
Ken Vannice	Colortran	Leviton Manufacturing Co., Inc.	A	MP
Lars Wernlund	Lewlight	Lewlight	O	MP
Klaus Amling	Licht-Technik	Licht-Technik	O	P
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 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
Ron Bonner	PLASA	PLASA	P	G
James Eade	PLASA	PLASA	O	G
Mac Perkins	PNTA Inc.	PNTA Inc.	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
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
Mick Martin	ShowCAD Control Systems	ShowCAD Control Systems	O	MP
Loren Wilton	Showman Systems	Showman Systems	O	CP
Mark Manthei	Shure Inc.	Shure Inc.	P	G
Kehang Wu	Shure Inc.	Shure Inc.	O	G
Jon R. Farley	Sixteenth Avenue Systems	Sixteenth Avenue Systems	O	CP

Name	Company	Representing (This is the sort field.)	Voting status	Int. cat.
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
Pete Baselici	The Watt Stopper	The Watt Stopper	O	MP
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	O	G
Colin Waters	TMB	TMB	O	U
Mitch Hefter	Entertainment Technology (Genlyte Group)	USITT	P	U
Torrey Bievenour	Vision Quest Lighting	Vision Quest Lighting	O	G
Eckart Steffens	SOUNDLIGHT	VPLT	O	G
Eric Cornwell	West Side Systems	West Side Systems	O	U
John Sondericker III	Wybron, Inc.	Wybron, Inc.	O	MP
Paul Kenneth McEwan	Zero 88 Lighting Limited	Zero 88 Lighting Ltd.	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