

Minutes
Control Protocols Working Group
Saturday, 26 July 2014
D/FW Marriott Solana
Westlake, TX

Presiding Chairperson: Michael Lay; Philips Color Kinetics; Royal Philips; P; MP

Recording Secretaries: Karl Ruling and Erin Grabe; PLASA NA; exf

Members attending:

Scott M. Blair; Full Throttle Films/ VER; P; DR
Sang-Il Choi; Kyungpook National University; O; G
Milton Davis; Doug Fleenor Design, Inc.; A; MP
Hamish Dumbreck; JESE Ltd.; O; MP by ClickMeeting
Bill Ellis; Candela Controls, Inc.; O; U
Robert Goddard; Goddard Design Co.; P; MP
Mitch Hefter; USITT; P; U
Eric Johnson; O; G
Tyrone Mellon_Jr.; Lex Products Corp.; P; CP
Michael Karlsson; LumenRadio AB; P; MP
Hyun Jong Kim; ETRI; Electronics and Telecommunications Research Institute; A; G
Paul Kleissler; City Theatrical, 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
Sang-Kyu Lim; ETRI; Electronics and Telecommunications Research Institute; P; G
Kevin Loewen; Pathway Connectivity Inc.; Acuity Brands Inc.; P; MP
Simon Newton; Open Lighting Project; P; G
Maya Nigrosh; Electronic Theatre Controls, Inc.; A; MP
Philip Nye; Acuity Brands Lighting; Acuity Brands Inc.; A; MP
Edward A. (Ted) Paget; Daktronics Automated Rigging Solutions; Daktronics Inc. ; P; G
Jason Potterf; Cisco; P; MP
Larry Schoeneman; DesignLab Chicago, Inc.; P; DR
Steve Terry; Electronic Theatre Controls, Inc.; A; MP
Ken Vannice; Ken Vannice LLC; I; G
Peter Willis; Howard Eaton Lighting Ltd.; P; CP

Visitors:

Ritchie Argue; VER
Richard Cadena; APT

1 Opening remarks

Michael Lay called the meeting to order at 14:05, and asked everyone to silence their devices.

Erin Grabe gave some advice on teleconference microphones and speaking, with regard to the meeting's audio system.

Michael Lay asked people to identify themselves when they speak.

2 Attendance

2.1 Introductions of those present and circulation of attendance sheet

No introductions were done, though a salmon-colored sign-in sheet was handed around.

2.2 Determination of a quorum

Michael Lay announced a quorum present by counting a show of voter's hands.

2.3 Recognition of alternate voting members

3 Membership

3.1 Requirements for membership

The following statement was read aloud to the assembly by Michael Lay:

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

The following voters have missed the last two meetings and have been moved to Observer status due to lack of attendance:

Ulrich Kunkel; DIN, NVBF Committee
Eckart Steffens; Soundlight, the DMX Company

3.3 Processing of new membership requests

As of 2 July 2014, the following applications were received:

Ashley Simper; TMB; O; DR
Ford Sellers; Chauvet Lighting; O; MP
Matthew Earnshaw; acdc LED Ltd.; O; MP
Peter Newman; Open Lighting Project; A; G
Tucker Downs; Tucker Downs; O; U
Christian Allabauer; Lighting Innovation, Hermann Sorger GmbH; O; CP

Ted Paget moved to approve the applications. The motion was seconded and approved by a unanimous show of hands.

3.4 Consensus body

The full consensus body of this working group at the time of this meeting, including those not present, was:

Name	Representing	Voting status	Interest category
Kevin Loewen	Acuity Brands Inc.	P	MP
Robert Bell	Acuity Brands Inc.	A	MP
Gary Douglas	Acuity Brands Inc.	A	MP
Philip Nye	Acuity Brands Inc.	A	MP
Garrett Gallant	Acuity Brands Inc.	A	MP
Jason Potterf	Cisco	P	MP
Paul Kleissler	City Theatrical, Inc.	P	MP
Edward A. (Ted) Paget	Daktronics Inc.	P	G
Larry Schoeneman	DesignLab Chicago, Inc.	P	DR
Casey Diers	DesignLab Chicago, Inc.	A	DR
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
Steve Terry	Electronic Theatre Controls, Inc.	A	MP
Maya Nigrosh	Electronic Theatre Controls, Inc.	A	MP

Name	Representing	Voting status	Interest category
Sang-Kyu Lim	Electronics and Telecommunications Research Institute	P	G
Hyun Jong Kim	Electronics and Telecommunications Research Institute	A	G
Scott M. Blair	Full Throttle Films/ VER	P	DR
Jeremy Hochman	Full Throttle Films/ VER	A	DR
Claude Ostyn	Full Throttle Films/ VER	A	DR
Robert Goddard	Goddard Design Co.	P	MP
Ed Garstkiewicz	Harting KGAA	P	G
Howard Forryan	Harting KGAA	A	G
Peter Willis	Howard Eaton Lighting Ltd.	P	CP
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
Dennis Grow	I.A.T.S.E. Local 728	A	U
Alan M. Rowe	I.A.T.S.E. Local 728	A	U
Ken Vannice	Ken Vannice LLC	I	G
Tyrone Mellon_Jr.	Lex Products Corp.	P	CP
Joshua Liposky	Lex Products Corp.	A	CP
Michael Karlsson	LumenRadio AB	P	MP
Marcus Bengtsson	LumenRadio AB	A	MP
Hans Lau	LumenRadio AB	A	MP
Peter Kirkup	LumenRadio AB	A	MP
Simon Newton	Open Lighting Project	P	G
Peter Newman	Open Lighting Project	A	G
Charles Reese	Production Resource Group	P	DR
Michael Lay	Royal Philips	P	MP
Kimberly Corbett Oates	Schuler Shook	P	DE
Mitch Hefter	USITT	P	U
Voting Status Key: P = Principal voter, A = Alternate voter, I = Individual voter			
Votes by Interest Category:			
Custom-market producer		CP	2
Designer		DE	1
Dealer or rental company		DR	3
General interest		G	5
Mass-market producer		MP	8
User		U	3
Total votes possible:			22

4 Approval of the minutes from the March meeting
See CPmin03-2014.pdf.

Eddie Kramer moved to approve the minutes of the March meeting as drafted. The motion was seconded and approved by a show of hands, with five abstentions and no opposition.

5 Reading of the call for patents

The following statement was read aloud to the assembly by Michael Lay:

PLASA intends not to publish any standard that contains protected intellectual property, unless that information can be licensed by anyone for a reasonable fee. PLASA uses a process of open patent and copyright disclosures to implement its intent. PLASA 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.

Nothing was revealed.

6 Reading of the anti-trust statement

The following statement was read aloud to the assembly by Michael Lay:

PLASA and its members take seriously their obligation to comply with all applicable antitrust laws. Therefore, during this meeting and during all PLASA events, all discussions will be limited to those subjects that are permitted by the antitrust laws. All members should refrain from any discussion or mention of competitively sensitive subjects such as the current or future prices charged for any member product or services, current or future marketing plans or strategies, and current or future costs, including employee salaries. There also must be no agreement on the suppliers or customers that members will do business with or the markets in which members will conduct business.

Violations of the antitrust laws can have serious consequences. If you have any questions or concerns about anything that is discussed at a PLASA meeting, please bring your concern to PLASA management. An easy to read pamphlet describing the antitrust laws is available from the PLASA staff.

The pamphlet was held up for the group. No questions or issues were raised.

7 Approval of agenda

Eddie Kramer moved to approve the agenda as drafted. The motion was seconded and approved by a show of hands.

8 Old business

8.05 Standards Maintenance

Any news or action needed on any of the following standards? This is a placeholder in the agenda, so we don't forget to maintain them. Documents prefaced with an emboldened asterisk () are on the agenda for discussion.*

No news or action on any items, aside from those marked with an asterisk and noted as a separate agenda item.

ANSI E1.3 – 2001 (R2011), Entertainment Technology - Lighting Control Systems - 0 to 10V Analog Control Specification & Application Guide For ANSI E1.3 – 2004 Lighting Control Systems 0 to 10V Analog Control Specifications. (Revision, reaffirmation or withdrawal by 2016)

ANSI E1.11 – 2008 (R2013), Entertainment Technology - USITT DMX512-A, Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories. (Revision, reaffirmation, or withdrawal by 2018)

* ANSI E1.17 – 2010 Entertainment Technology - Architecture for Control Networks (ACN) (Revision, reaffirmation, or withdrawal by 2015)

ANSI E1.20 - 2010, Remote Device Management over USITT DMX512. (Revision, reaffirmation or withdrawal by 2016)

ANSI E1.27-1 – 2006 (R2011), Entertainment Technology - Standard for Portable Control Cables for Use with USITT DMX512/1990 and E1.11 (DMX512-A) Products. (Revision, reaffirmation or withdrawal by 2016)

ANSI E1.27-2 – 2009 (R2014), Entertainment Technology - Recommended Practice for Permanently Installed Control Cables for Use with ANSI E1.11 (DMX512-A) and USITT DMX512/1990 Products.

ANSI E1.30-1 - 2010, EPI 23, Device Identification Subdevice. (Revision, reaffirmation or withdrawal by 2016)

ANSI E1.30-3 – 2009 (R2014), EPI 25, Time Reference in ACN Systems Using SNTP and NTP.

ANSI E1.30-4 – 2010, EPI 26, Device Description Language (DDL) Extensions for DMX512 and E1.31 Devices. (Revision, reaffirmation, or withdrawal by 2015)

* ANSI E1.30-7 – 2009, EPI 29, Allocation of Internet Protocol Version 4 Addresses to ACN Hosts. (Revision, reaffirmation, or withdrawal by 2014)

ANSI E1.30-10 – 2009 (R2014), EPI 32, Identification of Draft Device Description Language Modules.

ANSI E1.37-1 - 2012, Additional Message Sets for ANSI E1.20, Remote Device Management. (Revision, reaffirmation, or withdrawal by 2017)

ANSI E1.45-2013, Unidirectional Transport of IEEE 802 data frames over ANSI E1.11 (DMX512-A) (Revision, reaffirmation, or withdrawal by 2018)

8.1 Revision of ANSI E1.17 - 2010, Architecture for Control Networks

Maya Nigrosh said that she had drafted resolutions and sent them on, but neither Erin nor Karl had received them. The error is to be sorted out and the documents will be distributed after the meeting.

Philip Nye reported that Acuity Brands has released under open source a full implementation of ACN. Go to <http://src.acacian.org/acacian>.

8.2 ANSI E1.27-2 – 2009 (R2014), Entertainment Technology - Recommended Practice for Permanently Installed Control Cables for Use with ANSI E1.11 (DMX512-A) and USITT DMX512/1990 Products

No news or action at this time.

8.3 ANSI E1.30-3 – 2009 (R2014), EPI 25, Time Reference in ACN Systems Using SNTP and NTP

No news or action at this time.

8.4 Reaffirmation ANSI E1.30-7 – 2009, EPI 29, Allocation of Internet Protocol Version 4 Addresses to ACN Hosts

Scott Blair reported that the task group will draft resolutions to the comments received when they meet at LDI.

8.5 ANSI E1.30-10 – 2009 (R2014), EPI 32, Identification of Draft Device Description Language Modules

No news or action at this time.

8.6 BSR E1.30-11, EPI 33

The draft was reported as being in public review through 15 September 2014.

8.7 BSR E1.31 with Universe Synchronization

Maya Nigrosh reported that most of the comments received were about clarification, but there are some technical issues that need to be considered. Another formal meeting of the task group will be held at LDI.

8.8 BSR E1.33, Transport of ANSI E1.20 (RDM) in an E1.31 environment

From the draft March minutes:

Would like to send [the draft] to public review before the July meetings. The motion would be to:

- *accept the comment resolutions*
- *accept the revised standard as a valid implementation of the resolutions*
- *and to offer the draft standard for public review.*

Scott Blair made a motion to the effect of the above statement. The motion was seconded, and the plan was approved with a show of hands.

The draft standard and comment resolutions were not received; there has been no action.

Scott Blair said that the hope had been to have MDNS rather than SLP for discovery. Jason Potterf was leading the effort, and has tested MDNS. It does not scale as they had expected, but they have found ways to work with it. The task group will meet Sunday and will work on creating a document.

8.9 BSR E1.37-2, Additional Message Sets for ANSI E1.20 (RDM) – Part 2, IPv4 & DNS Configuration Messages

Simon Newton moved to accept the comment resolutions distributed. The motion was seconded and approved by a show of hands, with 17 in favor and 1 abstention.

Simon Newton then moved to accept the revised draft as an American National Standard. The motion was seconded and will be decided by letter ballot.

8.10 BSR E1.37-3, E1.20 Support for E1.45 devices and VLC luminaires

Sang-Kyu Lim reported on the progress of the task group from his report, *BSR E1_37_3 TG meeting report_25July2014.pdf*. From that document:

1. Sang-Kyu Lim sent an e-mail including TG report document (BSR E1_37_3 TG Report_As of 21July2014) and the initial draft r1 (BSR E1-37-3_draft_CP_2014_xxr1) to Task Group a few days ago in order to report our working status.
2. We had the face-to-face Task Group meeting for about two and a half hours last night.
3. The first thing that we did was taking a photo for 26th anniversary .
4. At the beginning of the meeting, some members addressed their concerns about the current situation in real industrial area to commercialize VLC product and services.

So, Sang-Kyu Lim reported that there are some activities of 2 companies in Korea to make a product using ANSI E1.45 and DMX physical link . In addition, Sang-Kyu Lim said that they will try to bring their prototype demonstrating VLC application using E1.45 and DMX link to the Task Group next LDI meeting or January meeting next year as much as possible. January meeting next year was preferred in Task Group.

5. As the next step, the initial draft r1 was reviewed from section 1, Normative References, to Appendix.

In this review, many editorial and technical issues from a standard document point of view, for examples, References, English expressions, parameter notation, the usages of some PIDs and parameters, the origination of some parameters, parameter synchronization between each section and so on, were mainly pointed out and discussed. All of the issues related to the draft were resolved and TG members agreed to the resolutions. So, the draft will be revised and updated according to the resolutions

6. At the end of the meeting, Sang-Kyu Lim showed their video clips demonstrating a VLC application using E1.45 and DMX link and prototype sale navigation service using VLC technology. He also showed an article published in IEEE Communications Magazine as a VLC special Issue, December last year.

8.11 BSR E1.37-4, Firmware updates via ANSI E1.20, RDM

Peter Willis addressed the group by saying that the task group is meeting tomorrow after the TSC meeting. The email reflector will be used to begin talks in getting this project off the ground.

8.12 BSR E1.37-5, General Purpose Messages for ANSI E1.20 RDM

Simon Newton reported that work will begin. The task group needs to communicate via email and there was a long discussion of reflectors. There is need to have their contents published for the working group.

Simon Newton noted that he hopes to have a public review document for November

8.13 BSR E1.37-x, Additional Message Sets for ANSI E1.20, LED walls and video displays

Scott Blair said that VER is working on it. Right now it is internal company business, but he is putting some of the information into a draft standards document. He noted that since the last meeting there had been a lot of work on the document, with involvement from LED companies. He concluded by saying that an ad-hoc task group meeting met last night where lots of good discussion was had.

8.14 European Plugfest

Peter Willis reported on the breadth of nations represented at the event. He noted, also, that there were several architectural lighting companies represented. The next European Plugfest will be 22-24 of April 2015.

8.15 Texas Plugfest

It seemed to be a smaller event this time, said Scott Blair. Task group meetings have cut into Plugfest time, and noted that the summer session is normally a bit slower anyway, because of the cost of travel. Scott Blair mentioned the need for better marketing, and added that he was not aware of any press releases that went out.

9 New business

No new business.

10 Other business & announcements

10.1 Above & Beyond Awards

Michael Lay reminded people that the nomination site is open year round at tsp.plasa.org/AboveandBeyond.

10.2 TSP sessions at LDI 2014

Michael Lay announced that members of the CPWG will be participating in the following CPWG-related sessions at LDI:

*Thursday, 20 November 1:30-3:00, Cool Things That ACN and RDM Are Already Doing
Peter Willis, Maya Nigrosh, and Philip Nye are doing the session.*

Maya Nigrosh called for more members to participate and asked for more cool things to show.

*Friday, 21 November, 3:30-5:00, RDMNet: An Overview
Simon Newton and Scott Blair*

10.3 USITT Sessions

Mitch Hefter said that USITT's programming for the next conference is done at the prior conference, so they are looking for 2016 sessions now. The 2015 sessions are already set.

10.4 PLASA DMX512/RDM Educational Kit - "Train the Trainer" Session

Bill Ellis thanked all who participated in the training session this morning. It created more work than had been anticipated. He noted that there was talk of a need for a larger variety of sessions (i.e., 2-hour, 8-hour, etc.),

while this session was focused on the 45-minute. The kit still needs to be boxed up. Allowing 60 days for that, sessions can then begin to be scheduled.

Bob Goddard noted that the attendees at the session were impressed by the amount and quality of the work that was done.

10.5 Nominations for working group leadership

Karl Ruling gave a brief summary of the vote for the leadership of the working group. The two co-chairs of this group serve 2-year terms, and Michael Lay's seat is up at this cycle. Karl Ruling explained how the instant runoff would work and then collected the following nominations, who agreed to serve if elected:

- Michael Lay
- Ted Paget
- Maya Nigrosh
- Roger Lattin

An email ballot with this list of nominees will be sent to voting member in the next week.

10.6 Geek Beat TV

Milton Davis reported on Geek Beat TV, which has a facility in Dallas. Tomorrow he and Bill Ellis will visit the studios to talk to them and to show them what the CPWG does, describe how standards are made, and speak about the technology behind entertainment events.

10.7 Anti-copying

Peter Willis spoke on an educational campaign that was started at PLASA's Annual General Meeting to educate the market on the negative effects of buying copies of products. He noted that it affects the health of the industry and stifles innovation.

11 Next meeting

Michael Lay reminded the group that the next meeting is scheduled for 20 November 2014 between 09:00 and 13:00 at the Westgate Las Vegas Resort & Casino, previously called the Las Vegas Hotel. The meeting schedule is available at <http://na.plasa.org/news/meetings.php>.

12 Adjournment

Ted Paget made a motion to adjourn. The motion was seconded and approved by voice vote. Michael Lay declared the meeting adjourned at 15:26.

Name	Company	Representing	Voting status	Interest cat.
Christian Allabauer	Lighting Innovations, Hermann Sorger GmbH	Lighting Innovations, Hermann Sorger GmbH	O	CP
Simon Alpert	Lighttech Event Technologies	Lighttech Event Technologies	O	CP
Klaus Amling	Licht-Technik	Licht-Technik	O	MP
Daniel W. Antonuk	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	P	MP
Matthew Ardine	IATSE Local 728	IATSE Local 728	O	U
Avraham Mendall Mor "Avi"	Lightswitch	Lightswitch	O	U
Robert Barbagallo	Solotech Inc.	Solotech Inc.	O	U
Paul Beasley	Walt Disney Imagineering	Walt Disney Company	O	U
Robert Bell	Acuity Brands Lighting	Acuity Brands Inc.	A	MP
BenDarrington	Wireless Solutions Sweden AB	Wireless Solutions Sweden AB	O	MP
Marcus Bengtsson	LumenRadio AB	LumenRadio AB	A	MP
Adam Bennette	Electronic Theatre Controls Ltd.	Electronic Theatre Controls, Inc.	O	MP
David Bertenshaw	David Bertenshaw	David Bertenshaw	O	G
Stephen Bickford	T. Kondos Associates	T. Kondos Associates	O	U
Torrey Bievenour	Vision Quest Lighting	Vision Quest Lighting	O	G
Scott M. Blair	Full Throttle Films/ VER	Full Throttle Films/ VER	P	DR
Lee J. Bloch	Bloch Design Group, Inc.	Bloch Design Group, Inc.	O	G
David A. Boller	Organic Machines LLC	Organic Machines LLC	O	CP
Ron Bonner	PLASA Technical Resources Office	PLASA EU	O	G
André Broucke	André Broucke	André Broucke	O	G
Ken Bruns	Lumenpulse Lighting Inc.	Lumenpulse Lighting Inc.	O	MP
John (Javid) D. Butler	Integrated Theatre, Inc.	Integrated Theatre, Inc.	O	CP
Justyn Butler	JBOTS	JBOTS	O	CP
Jean-Francois Canuel	Spectrum Manufacturing Inc.	A.C. Lighting Ltd.	O	CP
Steve Carlson	High Speed Design, Inc.	High Speed Design, Inc.	O	MP
Sang-Il Choi	Kyungpook National University	Kyungpook National University	O	G

Name	Company	Representing	Voting status	Interest cat.
Soo-Myong Chung	Bloch Design Group, Inc.	Bloch Design Group, Inc.	O	G
Paul J. Clark	HxDx	HxDx	O	CP
Edward R. Condit	Edward R. Condit	Edward R. Condit	O	G
Fraser Connolly	Artistic Licence Engineering Ltd.	Artistic Licence Holdings	O	DE
Eric Cornwell	West Side Systems	West Side Systems	O	U
Stuart Cotts	Oregon Shakespeare Festival	Oregon Shakespeare Festival	O	U
Klas Dalbjorn	Labgruppen AB	TC Group	O	MP
Milton Davis	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	A	MP
Jeremy Day	Philips Color Kinetics	Royal Philips	O	MP
Gilray Densham	CAST Software	CAST Group Inc	O	MP
Casey Diers	DesignLab Chicago, Inc.	DesignLab Chicago, Inc.	A	DR
Gary Douglas	Acuity Brands Lighting	Acuity Brands Inc.	A	MP
Gary Dove	Dove Systems	Dove Systems	O	MP
Tucker Downs	Tucker Downs	Tucker Downs	O	U
Yongshun Duan	Macostar Physics Application Technology Development (Wuhan) Ltd.	Macostar International Ltd.	O	CP
Hamish Dumbreck	JESE Ltd.	James Embedded Systems Engineering	O	MP
Lauren E. Dunn	Lauren E. Dunn (Larry)	Lauren E. Dunn (Larry)	O	DE
Jerry Durand	Durand Interstellar, Inc.	Durand Interstellar, Inc.	O	CP
James Eade	PLASA	PLASA EU	O	G
Andrew Eales	Wellington Institute of Technology	Rhodes University	O	U
Matthew Earnshaw	acdc LED Ltd.	acdc LED Ltd.	O	MP
Bill Ellis	Candela Controls, Inc.	Candela Controls, Inc.	O	U
Paul K. Ericson	Sparling	Sparling & IES	O	DE
Jon R. Farley	Sixteenth Avenue Systems	Sixteenth Avenue Systems	O	CP
Martin Farnik	Robe Show Lighting s.r.o.	Robe Show Lighting s.r.o.	O	MP
Doug Fleenor	Doug Fleenor Design, Inc.	Doug Fleenor Design, Inc.	P	MP
Trevor Forrest	Helvar Lighting Control	Helvar Lighting Control	O	MP

Name	Company	Representing	Voting status	Interest cat.
Howard Forryan	Harting Ltd.	Harting KGAA	A	G
Steve Friedlander	Auerbach Pollock Friedlander	Auerbach Pollock Friedlander	O	U
Ed Garstkiewicz	Harting Inc., North America	Harting KGAA	P	G
Robert Goddard	Goddard Design Co.	Goddard Design Co.	P	MP
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	O	G
Erin Grabe	PLASA NA	PLASA NA	exf	G
Tom Grimes	High End Systems, Inc.	Barco	O	MP
Dennis Grow	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	A	U
Josh Gubler	Josh Gubler	Josh Gubler	O	CP
Rob Halliday	Rob Halliday	Rob Halliday	O	U
Sean Harding	High Output, Inc.	High Output, Inc.	O	G
Mitch Hefter	Mitch Hefter	USITT	P	U
Douglas Heriot	Douglas Heriot	Douglas Heriot	O	MP
Bill Hewlett	Hewlett Electronics	Hewlett Electronics	O	CP
Jeremy Hochman	Full Throttle Films/ VER	Full Throttle Films/ VER	A	DR
Helge Hoffmann	JB Lighting	JB Lighting	O	MP
Jim Holladay	Luxence	Luxence	O	G
Wayne David Howell	Artistic Licence Engineering Ltd.	Artistic Licence Holdings	O	DE
John Huntington	City Tech, Ent Tech Department	I.A.T.S.E. Local 1	A	U
Sierk Janszen	Kiss Box	Ground Zero	O	U
Eric Johnson	Eric Johnson	Eric Johnson	O	G
Rob Johnston	Interactive Technologies, Inc.	Interactive Technologies, Inc.	O	MP
Ed Jones	Edwin Jones Co., Inc.	Edwin Jones Co., Inc.	O	CP
Tyrone Mellon_Jr.	Lex Products Corp.	Lex Products Corp.	P	CP
Jussi Kallioinen	Eastway Sound & Lighting	Eastway Sound & Lighting	O	U
Tae Gyu Kang	ETRI	Electronics and Telecommunications Research Institute	O	G
Michael Karlsson	LumenRadio AB	LumenRadio AB	P	MP

Name	Company	Representing	Voting status	Interest cat.
Reza Khanmalek	Spectrum Manufacturing Inc.	A.C. Lighting Ltd.	O	CP
Hyun Jong Kim	ETRI	Electronics and Telecommunications Research Institute	A	G
Peter Kirkup	LumenRadio AB	LumenRadio AB	A	MP
Hiroshi Kita	Marumo Electric Co., Ltd.	Marumo Electric Co., Ltd.	O	MP
Phil Klapwyk	IATSE Local 891	IATSE Local 891	O	U
Paul Kleissler	City Theatrical, Inc.	City Theatrical, Inc.	P	MP
Mark T. Kraft	Lehigh Electric Products Co.	Lehigh Electric Products Co.	O	MP
Edwin S. Kramer	I.A.T.S.E. Local 1	I.A.T.S.E. Local 1	P	U
Ulrich Kunkel	E3 Engineering & Education for Entertainment GmbH	DIN, NVBF Committee	O	U
Jason Kyle	JPK Systems Ltd.	JPK Systems Ltd.	O	MP
Roger Lattin	I.A.T.S.E. Local 728	I.A.T.S.E. Local 728	P	U
Hans Lau	LumenRadio AB	LumenRadio AB	A	MP
Michael Lay	Philips Color Kinetics	Royal Philips	P	MP
Rick Leinen	Leviton Manufacturing Co., Inc.	Leviton Manufacturing Co., Inc.	O	MP
Hans Leiter	ETC GmbH	Electronic Theatre Controls, Inc.	O	MP
Jon Lenard	Applied Electronics	Applied Electronics	O	MP
Maarten Lepelaars	eldoLED	eldoLED	O	MP
Sang-Kyu Lim	ETRI	Electronics and Telecommunications Research Institute	P	G
Joshua Liposky	Lex Products Corp.	Lex Products Corp.	A	CP
Kevin Loewen	Pathway Connectivity Inc.	Acuity Brands Inc.	P	MP
Mark Manthei	Shure Inc.	Shure Inc.	O	G
Paul F. Mardon	Pulsar Ltd.	Pulsar Ltd.	O	MP
Mick Martin	ShowCAD Control Systems	ShowCAD Control Systems	O	MP
Paul Kenneth McEwan	Zero 88	Cooper Controls Ltd.	O	MP
John Mehlretter	Lehigh Electric Products Co.	Lehigh Electric Products Co.	O	MP
Jeff T. Miller	Worldwide Standards and Auditing	Walt Disney Company	O	U
John Musarra	John Musarra	John Musarra	O	U

Name	Company	Representing	Voting status	Interest cat.
Tobin Neis	Barbizon Companies	Barbizon Companies	O	DR
Peter Newman	Open Lighting Project	Open Lighting Project	A	G
Simon Newton	Open Lighting Project	Open Lighting Project	P	G
Dan T. Nguyen	LynTec	LynTec	O	MP
Maya Nigrosh	Electronic Theatre Controls, Inc.	Electronic Theatre Controls, Inc.	A	MP
Philip Nye	Acuity Brands Lighting	Acuity Brands Inc.	A	MP
Kimberly Corbett Oates	Schuler Shook	Schuler Shook	P	DE
Claude Ostyn	Full Throttle Films/ VER	Full Throttle Films/ VER	A	DR
Lars F. Paape	Scientific Algorithms and Embedded Systems	Scientific Algorithms and Embedded Systems	O	U
Edward A. (Ted) Paget	Daktronics Automated Rigging Solutions	Daktronics Inc.	P	G
Ben Peoples	Pittsburgh Hoist & Sandbag Company	Pittsburgh Hoist & Sandbag Company	O	CP
Jason Potterf	Cisco	Cisco	P	MP
Gary Pritchard	LSC Lighting Systems (Aust) PTY Ltd	LSC Lighting Systems PTY Ltd	O	MP
Gordan Rancic	Phoenix Service srl	Phoenix Service srl	O	MP
Torben Kaas Rasmussen	Martin Professional A/S	Martin Professional A/S	O	G
Charles Reese	Production Resource Group	Production Resource Group	P	DR
Charlie Richmond	Richmond Sound Design Ltd.	Richmond Sound Design Ltd.	O	CP
Bernardo Benito Rico	Ben-Ri Electronica S.A.	Ben-Ri Electronica S.A.	O	MP
Steve Roberts	Carr & Angier	Carr & Angier	O	G
Erwin Rol	Erwin Rol Software Engineering	Erwin Rol	O	G
Dietmar Rottinghaus	Connex GmbH	Connex GmbH	O	MP
Alan M. Rowe	IATSE Local 728	I.A.T.S.E. Local 728	A	U
Karl G. Ruling	PLASA NA	PLASA NA	exf	G
Richard Salzedo	Avolites Ltd.	Avolites Ltd.	O	MP
Yngve Sandboe	Sand Network Systems, Inc.	Sand Network Systems, Inc.	O	MP
Larry Schoeneman	DesignLab Chicago, Inc.	DesignLab Chicago, Inc.	P	DR
Martin Searancke	Dream Solutions Ltd.	Dream Solutions Ltd.	O	MP

Name	Company	Representing	Voting status	Interest cat.
Chuck Seifried	Phoenix Civic Plaza	City of Phoenix	O	U
John Sellers	AIM Northwest	AIM Northwest	O	G
Ford Sellers	Chauvet Lighting	Chauvet Lighting	O	MP
Andrew Sherar	Lightmoves PLC	Lightmoves PLC	O	MP
Yehuda Shukram	Compulite Systems	Compulite Systems	O	MP
Sean Sill	Open Lighting Project	Open Lighting Project	O	G
Ashley Simper	TMB	TMB	O	DR
Storm K. Staley	Stormwerx	Stormwerx	O	U
Eckart Steffens	Soundlight, the DMX Company	Soundlight, the DMX Company	O	CP
Ralph Stillinger	Strand Lighting	Royal Philips	O	MP
Bart Swinnen	Luminex LCE	Luminex LCE	O	MP
Arnold Tang	Arnold Tang Productions	Arnold Tang Productions	O	U
Steve Terry	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	A	MP
Geoffrey O. Thompson	Nortel Networks, Inc.	IEEE 802.3/Nortel Networks	O	G
Christopher Tilton	Westlake Reed Leskosky	Westlake Reed Leskosky	O	DE
Robert Timmerman	Philips Color Kinetics	Royal Philips	O	MP
David Timmins	Jands Electronics	Jands Electronics	O	MP
Victoria Tisdale	Colby College	Google Summer of Code 2013	O	G
J. B. Toby	Avolites Ltd.	Avolites Ltd.	O	MP
Bob Toms	Catalyst Microsystems LLC	Catalyst Microsystems LLC	O	G
Robert Tooker	Robert Tooker	Robert Tooker	O	U
Tad Trylski	Tad Trylski	Tad Trylski	O	U
Stephen J. Tyrrell	Quantum Logic	Quantum Logic	O	MP
Tracy Underhill	4U Consulting	4U Consulting	O	G
Steve Unwin	Pulsar Ltd.	Pulsar Ltd.	O	MP
Samuli Valo	Picturall Ltd.	Picturall Ltd.	O	MP
Ken Vannice	Ken Vannice LLC	Ken Vannice LLC	I	G

Name	Company	Representing	Voting status	Interest cat.
Carlo Venturati	Clay Paky S.P.A.	Clay Paky S.P.A.	O	MP
Will Wagner	Carallon Ltd.	Carallon Ltd.	O	MP
Oliver Waits	Avolites Ltd.	Avolites Ltd.	O	MP
John Warwick	Philips Color Kinetics	Royal Philips	O	MP
Colin Waters	TMB	TMB	O	DR
Ralph Weber	ENDL Texas	ENDL Texas	O	G
Lars Wernlund	Capture Visualisation AB	Capture Visualisation AB	O	MP
Michael (Mike) Whetstone	Integrated Theatre, Inc.	Integrated Theatre, Inc.	O	CP
Peter Willis	Howard Eaton Lighting Ltd.	Howard Eaton Lighting Ltd.	P	CP
Loren Wilton	Showman Systems	Showman Systems	O	CP
Barbara Wohlsen	Barbara Wohlsen	Barbara Wohlsen	O	U
C. S. Wong	Macostar International Ltd.	Macostar International Ltd.	O	CP
Jiantong Wu	Beijing Special Engineering Design & Research Institute	Beijing Special Engineering Design & Research Institute	O	G
Kehang Wu	Shure Inc.	Shure Inc.	O	G
David Yellin	LightMinded Industries, Inc.	LightMinded Industries, Inc.	O	MP
Larry Zoll	Zoll Design & Consulting, LLC	Zoll Design & Consulting, LLC	O	U

Voting Status Key: P = Principal voter, A = Alternate voter, I = Individual voter, O = Observer member

Interest Category Key: CP = Custom-market producer, DE = Designer, DR = Dealer or rental company, G = General interest, MP = Mass-market producer, U = User